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Date: 08 /06/2026

To,

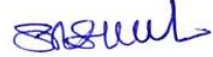
1. The Director of Research, Junagadh Agricultural University, Junagadh
2. The Director of Research, Navsari Agricultural University, Navsari
3. The Director of Research, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar

Sub : Proceeding of 22nd Combined AGRESKO of SAUs of Gujarat...regarding

With reference to above cited subject, please find enclosed herewith the proceeding of the **22nd Combined AGRESKO meeting** of SAUs of Gujarat held during **5th May to 21st May, 2026** organized by Anand Agricultural University, Anand. This is for your information and further needful action.

Thanking you.

Encl: As above


**Director of Research &
Dean P.G. Studies**

Copy f.w.cs.to:

1. PS to Hon. Vice Chancellor, Anand Agricultural University, Anand
2. PS to Hon. Vice Chancellor, Junagadh Agricultural University, Junagadh
3. PS to Hon. Vice Chancellor, Navsari Agricultural University, Navsari
4. PS to Hon. Vice Chancellor, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar

**PROCEEDING OF THE 22nd MEETING OF
COMBINED AGRESO OF SAUs OF GUJARAT**



ORGANIZED BY

**ANAND AGRICULTURAL UNIVERSITY
ANAND**

MAY 05 - 21, 2026

**DIRECTORATE OF RESEARCH
ANAND AGRICULTURAL UNIVERSITY
ANAND 388110**

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Proceeding of the 22nd meeting of Combined AGRESCO of SAUs of Gujarat

22.1 CROP IMPROVEMENT

Date & Venue: 05-07 May, 2026 at Seminar Hall, Cotton Quality Evaluation Laboratory, JAU, Junagadh

Chairman	Dr. V.P. Chovatia	Hon'ble Vice chancellor, JAU Junagadh
Co-Chairman	Dr. P.T. Patel,	Registrar, SDAU, Sardarkrushinagar
	Dr. K.D. Mungra,	Research Scientist (Bajra), JAU, Jamnagar
Rapporteurs	Dr. R.B. Madariya	Research Scientist (Oilseed), JAU, Jamnagar
	Dr. N. B. Patel	Professor, SDAU, Sardarkrushinagar
	Dr. V.P. Patel	Research Scientist (GPB), NAU, Vyara
	Dr. Sneha Macwana	Professor & Head, AAU. Anand
Statistician	Dr. D.V. Patel	Professor, JAU, Junagadh

The inaugural session of the 22nd Meeting of Combined AGRESCO of SAUs was chaired by Dr. V. P. Chovatia, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh and Co-chaired by Dr. P.T. Patel, Registrar, SDAU, Sardarkrushinagar and Dr. K.D. Mungra, Research Scientist (Bajra), JAU, Jamnagar. Dr. A. G. Pansuriya, Director of Research and Dean PG Studies, in his inaugural speech welcomed Dr. V. P. Chovatia, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh and chairman of this meeting. He also welcomed Co-chaired Dr. P.T. Patel, Registrar, SDAU, Sardarkrushinagar and Dr. K.D. Mungra, Research Scientist (Bajra) and all dignitaries, scientists, rapporteurs and delegates from different State Agricultural Universities. During his welcome address, Dr. A.G. Pansuriya emphasized the importance of coordinated research programmes for strengthening crop improvement activities. He highlighted the role of varietal evaluation, coordinated trials and multi-location testing in identifying superior crop varieties with higher yield potential, adaptability and resistance.

In his inaugural address, Dr. V. P. Chovatia Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh and chairman of this meeting stressed the importance of collaborative research among SAUs for varietal development. He appreciated the efforts of scientists involved in crop improvement programmes and emphasized the need for developing farmer-oriented varieties suitable for different agro-climatic regions. He also highlighted the importance of extension activities and technology dissemination for effective adoption of improved varieties by farmers. Furthermore, he urged the members of the AGRESCO to critically examine all research recommendations and new technical programmes presented during the meeting. He encouraged active participation, constructive discussions, and the sharing of valuable insights to refine research proposals and new technical programme. He stressed that such platforms provide an excellent opportunity for scientists to exchange ideas, review progress, and align their efforts toward common goals of technology development.

The inaugural session concluded on a note of gratitude with the vote of thanks proposed by Dr. M. G. Valu, Research Scientist (Cotton), Junagadh Agricultural University, Junagadh. In his address, he expressed sincere gratitude to the Hon'ble Vice Chancellor for his inspiring inaugural speech and guidance. He also thanked the co-chairs, dignitaries, scientists, and delegates for their enthusiastic participation and valuable contributions. He acknowledged the efforts of the organizing team for the successful arrangement of the inaugural session.

**Presentation of Release Proposals, Recommendations and New Technical Programmes
by conveners of SAUs**

Sr. No.	Name	Designation and University
1.	Dr. R. R. Acharya	Research Scientist (Vegetables), MVRS, AAU, Anand
2.	Dr. M. G. Valu	Research Scientist (Cotton), CRS, JAU, Junagadh
3.	Dr. R. K. Patel	Professor and Head, Dept. of GPB, NMCA, Navsari
4.	Dr. R.A. Gami	Research Scientist, CMR, SDAU, Deesa

Summary of the Release Proposals, Recommendations and New Technical Programmes

Name of University	No. of Recommendations				New Technical Programs	
	Release Proposals		Recommendations		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	06	06	0	0	0	0
JAU	07	07	0	0	11	8
NAU	10	10	0	0	0	0
SDAU	05	04	1	1	3	1
TOTAL	28	27	1	1	14	9

22.1.1 RELEASE PROPOSALS OF VARIETIES / HYBRIDS FOR FARMING COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.1.1.1	Okra: Gujarat Okra 101 (GO 101: Anand Red Lady) The farmers of Gujarat growing okra are recommended to grow red colour fruit variety Gujarat Okra 101 (GO 101: Anand Red Lady) during <i>kharif</i> and summer seasons. It recorded 125 q/ha average fruit yield in Gujarat which is 16.01, 18.31, 24.44, 8.66, 5.61 and 13.17 % higher over the checks Kashi Lalima, Pusa Sawani, AOL 23-01, GAO 8, GO 9 and GO 10, respectively in <i>kharif</i> season. While during summer season, it gave 112 q/ha average fruit yield which is 20.41, 27.43, 33.83 and 9.66% higher than checks Kashi Lalima, Pusa Sawani, AOL 23-01 and GAO 8, respectively. The variety has medium plant stature with short internodes and dark purple vein colour of leaf. Fruits are dark red colour, tender and medium long. It contains anthocyanin, total soluble sugars, antioxidant activity, crude fiber and phenol, which are comparable with check varieties. Under natural field condition, this variety has less prevalence of yellow vein mosaic virus and enation leaf curl virus diseases. It has lower jassids and whitefly population as well as shoot and fruit borer damage as compared to the check varieties. ગુજરાત રાજ્યમાં ચોમાસુ અને ઉનાળુ ઋતુમાં ભીંડાની ખેતી કરતા ખેડૂતોને લાલ કલર ના ફળ વાળી ગુજરાત ભીંડા ૧૦૧ (જીઓ ૧૦૧ : આણંદ રેડ લેડી) જાતની ભલામણ કરવામાં આવે છે. આ જાતનું ચોમાસું ઋતુમાં સરેરાશ ઉત્પાદન ૧૨૫ કિવ./હે. છે, જે અંકુશ જાતો કાશી લાલીમા, પુસા સાવની, એઓએલ ૨૩-૦૧, જીએઓ ૮, જીઓ ૯ અને જીઓ ૧૦ કરતા અનુક્રમે ૧૬.૦૧, ૧૮.૩૧, ૨૪.૪૪, ૮.૬૬, ૫.૬૧ અને ૧૩.૧૭% વધારે છે. જ્યારે ઉનાળુ ઋતુમાં સરેરાશ ઉત્પાદન ૧૧૨ કિવ./હે. છે, જે અંકુશ જાતો કાશી લાલીમા, પુસા સાવની, એઓએલ ૨૩-૦૧ અને જીએઓ ૮ કરતા અનુક્રમે ૨૦.૪૧, ૨૭.૪૩, ૩૩.૮૩ અને ૯.૬૬% વધારે છે. આ જાતના છોડમાં આંતરગાંઠો વચ્ચેનું ઓછું અંતર અને પાંદડામાં નસો જાંબલી રંગની હોય છે. આ જાતની શીંગો ઘાટા લાલ રંગની, કુણી અને મધ્યમ લંબાઈની છે. આ જાત માં એન્ટીઓક્સિડન્ટ, કુલ દ્રાવ્ય શર્કરા, એન્ટીઓક્સિડન્ટ, કુલ ફાઇબર અને ફીનોલનું પ્રમાણ અંકુશ જાતોની સરખામણીએ તુલનાત્મક છે. આ જાતમાં પીળી નસનો પચરંગીયો, એનેસન પાનનો કોકડવા રોગ, લીલા તડતડીયા, સફેદ માખી તથા ફૂખ અને ફળ કોરી ખાનાર ઈયળનો ઉપદ્રવ અંકુશ જાતો કરતાં ઓછો જોવા મળે છે. Approved by the house with the following suggestions: 1. Separate mean table of <i>kharif</i> and <i>rabi</i> season 2. Remove table from point 5(a) and attached as an annexure Action: Research Scientist (Veg.), MVRs, AAU, Anand
22.1.1.2	Bottle Gourd: Gujarat Bottle Gourd 3 (GBG 3: Anand Chandra) The farmers of Middle Gujarat growing bottle gourd are recommended to grow variety Gujarat Bottle Gourd 3 (GBG 3: Anand Chandra) during the summer and <i>kharif</i> seasons. The proposed variety recorded an average fruit yield of 276 q/ha during the summer season, which was 19.71 and 32.04% higher over the check varieties ABG 1 and Pusa Naveen, respectively. During the <i>kharif</i> season, it yielded 283 q/ha, which was 19.06 and 27.89% higher than the respective check varieties. The variety has medium size cylindrical shaped fruits having a light green skin with soft textured seed at marketable stage. The variety contains higher moisture, total carbohydrates and total soluble sugar than the check varieties. This variety has less prevalence of mosaic virus and powdery mildew disease as well as fruit fly and leaf miner infestation as compared

	to the check varieties. મધ્ય ગુજરાતમાં ઉનાળું અને ચોમાસું ઋતુમાં દુધીની ખેતી કરતા ખેડૂતોને ગુજરાત દુધી ૩(જીબીજી ૩: આણંદ ચંદ્રા) જાતની ભલામણ કરવામાં આવે છે. ઉનાળું ઋતુમાં આ જાતનું સરેરાશ ઉત્પાદન ૨૭૬ કિવ./હે. છે, જે અંકુશ જાત આણંદ દુધી ૧ અને પુસા નવીન કરતા અનુક્રમે ૧૯.૭૧ અને ૩૨.૦૪ ટકા વધારે છે. જ્યારે ચોમાસું ઋતુમાં ૨૮૩ કિવ./હે. છે, જે અંકુશ જાત કરતા અનુક્રમે ૧૯.૦૬ અને ૨૭.૮૯ ટકા વધારે છે. આ જાતના ફળ મધ્યમ લાંબા, નળાકાર અને આછા લીલા રંગના છે તેમજ વેચાણ યોગ્ય અવસ્થાએ નરમ બીજ હોય છે. આ જાતમાં ભેજ, કુલ શર્કરા અને કુલ દ્રાવ્ય શર્કરા અંકુશ જાત કરતા વધારે છે. આ જાતમાં અંકુશ જાતની સરખામણીમાં પંચરંગીયો અને ભૂકીછારા નો રોગ તેમજ પાનકોરીયું અને ફળમાખીનું પ્રમાણ ઓછું જોવા મળેલ છે.
	The proposal is Approved by the house Action: Research Scientist (Veg.), MVRs, AAU, Anand
22.1.1.3	Sweet Potato: Gujarat Sweet Potato 2 (GSP 2: Anand Sindoori) The farmers of Gujarat growing sweet potato are recommended to grow variety Gujarat Sweet Potato 2 (GSP 2: Anand Sindoori) during <i>rabi</i> season. The proposed variety has recorded 260 q/ha average tuber yield during <i>rabi</i> season. It showed 12.25 and 42.83% higher tuber yield over the check varieties Bhu Kanti and Gouri, respectively. This variety has triangular leaf shape without lateral leaf lob. It has elliptical shaped tuber with light orange skin colour and vivid orange flesh. Tuber contains reducing sugars, flavanoids, total carotenoids, β-carotene and anthocyanin, which are comparable with check varieties. It showed lower infestation of sweet potato weevil compared to check varieties under field condition. ગુજરાત રાજ્યમાં રવિ ઋતુ દરમિયાન શક્કરિયાની ખેતી કરતા ખેડૂતોને ગુજરાત શક્કરિયા ૨ (જીએસપી ૨: આણંદ સિંદૂરી) જાતની ભલામણ કરવામાં આવે છે. આ જાત ના કંદનું સરેરાશ ૨૬૦ ક્વિન્ટલ પ્રતિ હેક્ટર ઉત્પાદન રવિ ઋતુ દરમિયાન જોવા મળેલ છે, જે અંકુશ જાત ભૂ કાંતી અને ગૌરીની સરખામણીમાં અનુક્રમે ૧૨.૨૫ અને ૪૨.૮૩ ટકા વધુ છે. આ જાતમાં ત્રિકોણાકાર અને ખાચા વગરના પાંદડા જોવા મળે છે. તેના કંદ લંબગોળ આકારના હોય છે, જેમાં આછા નારંગી રંગની ત્વચા અને ગાઢ નારંગી રંગનો માવો જોવા મળે છે. આ જાતના કંદોમાં રીડ્યુસિંગ સુગર, ફ્લેવોનોઈડ, કુલ કેરોટીનોઈડ, બીટા કેરોટીન અને એન્થોસાયનિનનું પ્રમાણ અંકુશ જાતો જેટલું છે. આ જાતમાં શક્કરિયાના ચાંચવાનો ઉપદ્રવ અંકુશ જાતો કરતા ઓછો જોવા મળે છે.
	Approved by the house with the following suggestion: 1. Highlight quality parameters like carotenoid and beta-carotene in recommendation and salient features Action: Research Scientist (Veg.), MVRs, AAU, Anand
22.1.1.4	Rice: Gujarat Rice 29 (GR 29: Anand Jayvakra) The farmers of Gujarat growing transplanted rice are recommended to grow variety Gujarat Rice 29 (GR 29: Anand Jayvakra) during <i>kharif</i> season. The proposed variety recorded 5552 kg/ha average grain yield which is 23.3 and 17.4 % higher than check varieties Jaya and GNR 3, respectively. This variety is medium in height and mid late in maturity. The grain of this variety is long bold with milling percentage of 67.2 and head rice recovery 64.9%. It is moderately resistant to neck blast and resistant to stem borer, leaf folder and white backed plant hopper (WBPH). ગુજરાત રાજ્યમાં ચોમાસું ઋતુ દરમિયાન રોપણ ડાંગર કરતા ખેડૂતોને ગુજરાત ડાંગર ૨૯ (જીઆર ૨૯: આણંદ જયવજ્ર) જાતની ભલામણ કરવામાં આવે છે. આ જાતનું સરેરાશ ઉત્પાદન ૫,૫૫૨ કિ.ગ્રા./હે. છે જે અંકુશ જાતો, જયા અને જીએનઆર ૩ કરતા અનુક્રમે ૨૩.૩ અને ૧૭.૪ ટકા વધુ છે. આ જાત મધ્યમ ઊંચાઈ અને મધ્યમ મોડી પાકતી છે. આ જાત લાંબા અને જાડા દાણાવાળી છે, જેનાં મીલીંગનાં ટકા ૬૭.૨ અને આખા ચોખાનાં

	ટકા ૬૪.૯ છે. આ જાત કંટી ના કરમોડી સામે મધ્યમ પ્રતિકારકશક્તિ ધરાવે છે અને ગાભમારાની ઈયળ, પાનવાળનારી ઈયળ તથા સફેદ પીઠ વાળા ચુસીયા સામે પ્રતિકારકશક્તિ ધરાવે છે. Approved by the house with the following suggestions: 1. In table 1 add data of percent increase over Jaya 2. Remove data of Fe from table 6(b) 3. Retest popping data 4. Remove word resistant from recommendation para and Table 8 Action: Research Scientist (Rice), MRRS, AAU, Nawagam
22.1.1.5	Fodder Sorghum: Gujarat Fodder Sorghum 10 (GFS 10: Anand Harasona) The farmers of Gujarat growing fodder sorghum during <i>khari</i> season are recommended to grow fodder sorghum variety Gujarat Fodder Sorghum 10 (GFS 10: Anand Harasona) for single cut as well as multi-cut (three cuts). In single cut, this variety recorded average green fodder yield of 434 q/ha and dry fodder yield of 168 q/ha, which is 37.76, 19.75, 43.79 and 8.54% higher in green fodder yield and 47.50, 23.03, 44.45 and 28.42% higher in dry fodder yield as compared to the check varieties GFS 6, GFS 8, GAFS 12 and CSV 46F(NC), respectively. In multi-cut, this variety has recorded average green fodder yield of 636 q/ha and dry fodder yield of 186 q/ha, which is 21.85 and 46.22% higher in green fodder yield and 9.42 and 35.50% higher in dry fodder yield as compared to the check varieties CoFS 29 and CSV 33MF(NC), respectively. This variety is tall and has long leaves with thin stem diameter. This variety contains 31.49% dry matter, 7.13% crude protein, 69.46% neutral detergent fiber, 48.98% acid detergent fiber and 46.24 ppm HCN content. It is moderately resistant to anthracnose disease. ગુજરાત રાજ્યમાં ચોમાસુ ઋતુમાં ઘાસચારા જુવારની ખેતી કરતા ખેડૂતોને એક કાપણી તથા બહુકાપણી (ત્રણ કાપણી) માટે ગુજરાત ઘાસચારા જુવાર ૧૦ (જીએફએસ ૧૦: આણંદ હરાસોના) જાતની ભલામણ કરવામાં આવે છે. એક કાપણીમાં આ જાતનાં લીલાચારાનું ૪૩૪ કિવ./ હે. તેમજ સુકાચારાનું ૧૬૮ કિવ./ હે. ઉત્પાદન મળેલ, જે અંકુશ જાતો જીએફએસ ૬, જીએફએસ ૮, જીએએફએસ ૧૨ અને સીએસવી ૪૬એફ કરતાં અનુક્રમે ૩૭.૭૬, ૧૯.૭૫, ૪૩.૭૯ અને ૮.૫૪% લીલાચારાનું તેમજ ૪૭.૫૦, ૨૩.૦૩, ૪૪.૪૫ અને ૨૮.૪૨% સુકાચારાનું ઉત્પાદન વધારે છે. જ્યારે બહુકાપણીમાં, લીલાચારાનું ૬૩૬ કિવ./ હે. તેમજ સુકાચારાનું ૧૮૬ કિવ./ હે. ઉત્પાદન મળેલ, જે અંકુશ જાતો સીઓએફએસ ૨૯ અને સીએસવી ૩૩એમએફ કરતાં અનુક્રમે ૨૧.૮૫ અને ૪૬.૨૨% લીલાચારાનું તેમજ ૯.૪૨ અને ૩૫.૫૦% સુકાચારાનું ઉત્પાદન વધારે છે. આ જાતના છોડ વધુ ઉચાઈ ધરાવતા તેમજ લાંબા પાન અને પાતળું થડ ધરાવે છે. આ જાત ૩૧.૪૯% શુષ્ક પદાર્થ, ૭.૧૩% કુડ પ્રોટીન, ૬૯.૪૬% ન્યૂટ્રલ ડિટર્જેન્ટ ફાઇબર, ૪૮.૯૮% એસીડ ડિટર્જેન્ટ ફાઇબર તેમજ ૪૬.૨૪ પીપીએમ જેટલું એચસીએનનું પ્રમાણ ધરાવે છે. આ જાત રાતડાનાં રોગ સામે મધ્યમ પ્રતિકારકતા ધરાવે છે. Approved by the house with the following suggestions: 1. In recommendation and salient feature text remove word of multi cut variety 2. In point 14, mention standard seed production practices for fodder sorghum 3. Remove disease and pest reaction in table 7, 7a and 8 Action: Research Scientist, MFRS, AAU, Anand
22.1.1.6	Linseed: Gujarat Linseed 1 (GL 1: Anand Urja) The farmers of Gujarat growing linseed are recommended to grow variety Gujarat Linseed 1 (GL 1: Anand Urja). The proposed variety recorded 1165 kg/ha average seed yield which is 27.60, 24.07 and 29.05% higher than the national check varieties Kartika, RLC 92 and Deepika, respectively. It has disc flower shape and blue anther colour. The variety has semi-erect plant growth habit and medium plant height. It has light brown seed colour with medium size seeds and more number of capsules per plant. The proposed variety contains higher phenol and crude fiber as well as comparable Alpha Linolenic Acid (omega-3) to the check varieties. The occurrence of wilt and

	powdery mildew diseases as well as aphid, thrips and bud fly damage are comparatively less with check varieties. ગુજરાતમાં અળસીનો પાક ઉગાડતા ખેડૂતોને ગુજરાત અળસી ૧ (જીએલ ૧: આણંદ ઉર્જા) જાતનું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાતનું સરેરાશ ઉત્પાદન ૧૧૬૫ કિ.ગ્રા./હે. છે, જે રાષ્ટ્રીય અંકુશ જાતો કાર્તિકા, આરએલસી ૯૨ અને દીપિકા કરતા અનુક્રમે ૨૭.૬૦, ૨૪.૦૭ અને ૨૯.૦૫ ટકા વધારે છે. આ જાતમાં ફૂલ ડિસ્ક આકારના અને પુંકેસર ભૂરા રંગના હોય છે. આ જાતના છોડ મધ્યમ ઉંચાઈ ધરાવે છે. આ જાતના બીજ મધ્યમ કદના આછા કથ્થઈ રંગના અને છોડ દીઠ વધુ સંખ્યામાં કેપ્સુલ ધરાવે છે. આ જાતમાં ફીનોલ અને ફુડ ફાયબરનું પ્રમાણ વધારે તેમજ આલ્ફા લીનોલેનિક એસીડ (ઓમેગા-૩)નું પ્રમાણ અંકુશ જાતો સાથે તુલનાત્મક છે. આ જાતમાં અંકુશ જાતોની સરખામણીમાં સુકારો અને ભૂકીછારો રોગ તેમજ મોલોમસી, થ્રીપ્સ તથા બડફલાયનું તુલનાત્મક રીતે ઓછું નુકસાન જોવા મળે છે.
	Approved by the house with the following suggestions: 1. In table 6, remove disease reaction 2. In point 5(a), mention selection procedure
	Action: Associate Research Scientist & Head, ARS, AAU, Dahod

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22.1.1.7	GROUNDNUT VARIETY: GUJARAT GROUNDNUT 104 (GG 104: SORATH JANAKI) The farmers of Gujarat state growing groundnut during <i>kharif</i> season are recommended to grow high yielding Spanish bunch groundnut variety Gujarat Groundnut 104 (GG 104: Sorath Janaki). This variety has recorded mean pod yield of 3398 kg/ha, which was 10.5 and 35.3 per cent higher than the check varieties GJG 32 (3074 kg/ha) and TG 37A (2512 kg/ha), respectively. This variety has also recorded higher kernel yield, shelling per cent and oil yield over the check varieties. GG 104 was comparable to the checks against late leaf spot and rust, while stem rot incidence was lower as compared to checks. The incidence of spodoptera was comparable to the checks. ગુજરાત રાજ્યમાં ચોમાસું ઋતુમાં મગફળીનું વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન આપતી ઉભડી પ્રકારની મગફળીની જાત ગુજરાત મગફળી ૧૦૪ (જીજી ૧૦૪: સોરઠ જાનકી) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાતના ડોડવાનું સરેરાશ ઉત્પાદન ૩૩૯૮ કિગ્રા/હે મળેલ છે, જે અંકુશ જાતો જીજી ૩૨ (૩૦૭૪ કિગ્રા/હે) અને ટીજી ૩૭એ (૨૫૧૨ કિગ્રા/હે) કરતા અનુક્રમે ૧૦.૫ અને ૩૫.૩ ટકા વધારે માલુમ પડેલ છે. અંકુશ જાતોની સરખામણીએ આ જાતમાં દાણાનું ઉત્પાદન, દાણાનો ઉતારો અને તેલનું ઉત્પાદન વધારે મળેલ છે. આ જાતમાં પાનના ટપકા અને ગેરુ રોગનું પ્રમાણ અંકુશ જાતો જેટલું જોવા મળેલ છે, જ્યારે થડનો કોહવારો અંકુશ જાતો કરતા ઓછો જોવા મળેલ છે. આ જાતમાં પાનખાનાર ઈયળથી થતું નુકસાન અંકુશ જાતો જેટલું જોવા મળેલ છે.
	The proposal is approved by the house
	Action: Research Scientist (Groundnut), MORS, JAU, Junagadh
22.1.1.8	CHICKPEA VARIETY: GUJARAT GRAM 9 (GG 9: SORATH UDAY) Farmers of Gujarat state growing chickpea under irrigated condition are recommended to grow Gujarat Gram 9 (GG 9: Sorath Uday). It recorded 2674 kg/ha average seed yield, which was 23.1, 22.6 and 9.8 per cent higher over check varieties Dahod Yellow, Gujarat Gram 1 and Gujarat Gram 5, respectively. Seeds of this variety are of large in size (27.5 g/100 seeds) and brown in colour. This variety found resistant

	against wilt and moderately resistant against stunt disease. ગુજરાત રાજ્યમાં પિયત પરિસ્થિતિ હેઠળ ચણાનું વાવેતર કરતા ખેડૂતોને ગુજરાત ચણા ૯ (જીજી ૯: સોરઠ ઉદય) જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતમાં દાણાનું સરેરાશ ઉત્પાદન ૨૬૭૪ કિ.ગ્રા./હે. મળેલ છે, જે અંકુશ જાતો દાહોદ પીળા, ગુજરાત ચણા ૧ અને ગુજરાત ચણા ૫ કરતા અનુક્રમે ૨૩.૧, ૨૨.૬ અને ૯.૮ ટકા વધુ છે. આ જાતના દાણા કદમાં મોટા (૨૭.૫ ગ્રામ/ ૧૦૦ દાણા) અને કથ્થાઈ રંગના છે. આ જાત સુકારાના રોગ સામે પ્રતિકારક અને સ્ટન્ટ રોગ સામે મધ્યમ પ્રતિકારક માલુમ પડેલ છે.
	The proposal is approved by the house Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh
22.1.1.9	CHICKPEA VARIETY : GUJARAT GRAM 10 (GG 10: SORATH UPVAN) Farmers of Gujarat state growing chickpea under irrigated condition are recommended to grow early maturing variety Gujarat Gram 10 (GG 10: Sorath Upvan). It is suitable for mechanical harvesting as it possesses plant with more height and erect growth habit. This variety has produced 2586 kg/ha average seed yield, which was 11.8, 46.4 and 28.3 per cent higher over check varieties Gujarat Gram 5, NBeG 47 and JG 24, respectively. Seeds of this variety are of large in size (28.3 g/100 seeds) and brown in colour. This variety found resistant against wilt and moderately resistant against stunt disease. ગુજરાત રાજ્યમાં પિયત પરિસ્થિતિ હેઠળ ચણાનું વાવેતર કરતા ખેડૂતોને વહેલી પાકતી ગુજરાત ચણા ૧૦ (જીજી ૧૦: સોરઠ ઉપવન) જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતના છોડ ઊંચા અને સીધા હોવાથી મશીન (હાર્વેસ્ટર) થી કાપણી કરવા માટે અનુકૂળ છે. આ જાતમાં દાણાનું સરેરાશ ઉત્પાદન ૨૫૮૬ કિ.ગ્રા./હે. મળેલ છે, જે અંકુશ જાતો ગુજરાત ચણા ૫, એનબીઈજી ૪૭ અને જીજી ૨૪ કરતા અનુક્રમે ૧૧.૮, ૪૬.૪ અને ૨૮.૩ ટકા વધુ છે. આ જાતના દાણા કદમાં મોટા (૨૮.૩ ગ્રામ/ ૧૦૦ દાણા) અને કથ્થાઈ રંગના છે. આ જાત સુકારાના રોગ સામે પ્રતિકારક અને સ્ટન્ટ રોગ સામે મધ્યમ પ્રતિકારક માલુમ પડેલ છે.
	Approved by the house with the following suggestions: 1. Write recommended spacing of 45 x 10 cm for this variety Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh
22.1.1.10	PIGEON PEA VARIETY: GUJARAT TUR 114 (GT 114: SORATH SHUBHRA) Farmers of Gujarat state growing pigeonpea are recommended to grow white colour medium maturing variety Gujarat Tur 114 (GT 114: Sorath Shubhra). It recorded 2342 kg/ha average seed yield, which was 20.4, 53.6, 41.8, 24.5, 11.7, 17.7 and 26.3 per cent higher over check varieties GJP 1, AGT 2, BDN 2, GT 104, GT 106, GT 108 and BDN 716, respectively. Seeds of this variety are large in size (10.52 g/100 seeds) and it has high protein content as compared to the check varieties. This variety showed moderate resistance against sterility mosaic disease and wilt disease with low pod borer damage. ગુજરાત રાજ્યના તુવેરનું વાવેતર કરતા ખેડૂતોને સફેદ રંગની મધ્યમ પાકતી ગુજરાત તુવેર ૧૧૪ (જી.ટી ૧૧૪: સોરઠ શુભ્રા) જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતમાં દાણાનું સરેરાશ ઉત્પાદન ૨૩૪૨ કિ.ગ્રા./હે. મળેલ છે, જે અંકુશ જાતો જીજીપી ૧, એજીટી ૨, બીડીએન ૨, જીટી ૧૦૪, જીટી ૧૦૬, જીટી ૧૦૮ અને બીડીએન ૭૧૬ કરતાં અનુક્રમે ૨૦.૪, ૫૩.૬, ૪૧.૮, ૨૪.૫, ૧૧.૭, ૧૭.૭ અને ૨૬.૩ ટકા વધુ છે. આ જાતના દાણા મોટા કદના (૧૦.૫૨ ગ્રામ/૧૦૦ દાણા) અને અંકુશ જાતોની સરખામણીમાં વધુ પ્રોટીન જોવા મળેલ છે. આ જાત વંધ્યત્વ અને સુકારાના રોગ સામે મધ્યમ પ્રતિકારકતા ધરાવે છે, તેમજ શીંગ કોરી ખાનાર ઈયળથી ઓછું નુકસાન જોવા મળેલ છે.
	Approved by the house with the following suggestions: 1. Give range in table 7(a) 2. In point 9(b), mention distinguishable morphological characters

	Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh
22.1.1.11	WHEAT VARIETY: GUJARAT WHEAT 554 (GW 554: SORATH KRANTI) The farmers of Gujarat state growing wheat are recommended to grow high yielding and good quality Gujarat Wheat 554 (GW 554: Sorath Kranti) variety under irrigated timely sown condition. This variety recorded mean grain yield of 55 q/ha, which was 14.4, 2.4, 1.7 and 4.5 per cent higher than the check varieties GW 496, GW 322, GW 451 and GW 513, respectively. This variety found resistant to blast, stem rust and leaf rust diseases and also possessed good bread and chapatti making quality. ગુજરાત રાજ્યના પિયત ઘઉંની સમયસરની વાવણી કરતા ખેડૂતોને વધુ ઉત્પાદન આપતી અને સારી ગુણવત્તાવાળી ગુજરાત ઘઉં ૫૫૪ (જીડબલ્યુ ૫૫૪: સોરઠ ક્રાંતિ) જાતનું વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું સરેરાશ ઉત્પાદન ૫૫.૦ ક્વિન્ટલ/હેક્ટર છે, જે અંકુશ જાતો જીડબલ્યુ ૪૯૬, જીડબલ્યુ ૩૨૨, જીડબલ્યુ ૪૫૧ અને જીડબલ્યુ ૫૧૩ કરતાં અનુક્રમે ૧૪.૪, ૨.૪, ૧.૭ અને ૪.૫ ટકા વધારે માલુમ પડેલ છે. આ જાત ઘઉંના કરમોડી તેમજ કાળા અને બદામી ગેરુ રોગ સામે પ્રતિકારક માલુમ પડેલ છે, તેમજ બ્રેડ અને રોટલી બનાવવા માટે સારી ગુણવત્તા ધરાવે છે. Approved by the house with the following suggestions: 1. In point 9(b), write medium anthocyanin pigmentation on auricles 2. Add name of scientists involved in evaluation Action: Research Scientist (Wheat), Wheat Research Station, JAU, Junagadh
22.1.1.12	WHEAT VARIETY: GUJARAT WHEAT 567 (GW 567: SORATH GRISHMA) The farmers of Gujarat state growing wheat under irrigated late sown condition are recommended to grow high yielding, early maturing variety Gujarat Wheat 567 (GW 567: Sorath Grishma). This variety recorded mean grain yield of 50.1 quintal per hectare, which was 20.1, 11.7, 10.2, 12.7 and 16.6 per cent higher grain yield than check varieties GW 173, GW 11, HD 2932, HD 2864 and GW 499, respectively. This variety found resistant to stem rust and leaf rust diseases. ગુજરાત રાજ્યના પિયત ઘઉંની મોડી વાવણી કરતા ખેડૂતોને વધુ ઉત્પાદન આપતી, વહેલી પાકતી ગુજરાત ઘઉં ૫૬૭ (જીડબલ્યુ ૫૬૭: સોરઠ ગ્રીષ્મા) જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. આ જાતના દાણાનું સરેરાશ ઉત્પાદન ૫૦.૧ ક્વિન્ટલ/હેક્ટર છે, જે અંકુશ જાતો જીડબલ્યુ ૧૭૩, જીડબલ્યુ ૧૧, એચ.ડી. ૨૯૩૨, એચ.ડી. ૨૮૬૪ અને જીડબલ્યુ ૪૯૯ કરતાં અનુક્રમે ૨૦.૧, ૧૧.૭, ૧૦.૨, ૧૨.૭ અને ૧૬.૬ ટકા વધારે માલુમ પડેલ છે. આ જાત ઘઉંના કાળા અને બદામી ગેરુ રોગ સામે પ્રતિકારક માલુમ પડેલ છે. Approved by the house with the following suggestions: 1. Add name of scientists involved in evaluation Action: Research Scientist (Wheat), Wheat Research Station, JAU, Junagadh
22.1.1.13	COWPEA VARIETY: GUJARAT VEGETABLE COWPEA 10 (GVCP 10 : SORATH RUSHITA) The farmers of Gujarat growing vegetable cowpea crop are recommended to grow vegetable cowpea variety, Gujarat Vegetable Cowpea 10 (GVCP 10: Sorath Rushita) during <i>kharif</i> and summer season. It recorded 115.0 q/ha average green pod yield which was 66.8, 33.0 and 41.7 per cent higher over the checks Pusa Phalguni, AVCP 1 and GVC 9, respectively in <i>kharif</i> season. It recorded 112.0 q/ha average green pod yield in summer season which was 64.0, 35.9 and 39.3 per cent higher than the checks Pusa Phalguni, AVCP 1 and GVC 9, respectively. The pods of GVCP 10 are dark green, long in size with curved shape. Yellow mosaic virus and leaf spot disease was found lower as compare to check varieties during <i>kharif</i> and summer season. Pod borer per cent damage was found low to comparable in proposed variety as compared to all the check varieties during <i>kharif</i> and summer season.

	ગુજરાતમાં ચોમાસું અને ઉનાળુ ઋતુ દરમિયાન શાકભાજી ચોળીનું વાવેતર કરતા ખેડૂતોને શાકભાજી ચોળીની ગુજરાત શાકભાજી ચોળી ૧૦ (જીવીસીપી ૧૦: સોરઠ રુશિતા) જાતનું વાવેતર કરવા ભલામણ કરવામાં આવે છે. ચોમાસુ ઋતુમાં તેની લીલી શીંગોનું સરેરાશ ઉત્પાદન ૧૧૫.૦ કિવિ./હે. નોંધાયેલ છે, જે અંકુશ જાતો પુસા ફાલ્ગુની, એવીસીપી ૧ અને જીવીસી ૯ કરતા અનુક્રમે ૬૬.૮, ૩૩.૦ અને ૪૧.૭ ટકા વધુ માલુમ પડેલ છે. ઉનાળુ ઋતુમાં ૧૧૨.૦ કિવિ./હે. સરેરાશ લીલી શીંગોનું ઉત્પાદન આપે છે, જે અંકુશ જાતો પુસા ફાલ્ગુની, એવીસીપી ૧ અને જીવીસી ૯ કરતા અનુક્રમે ૬૪.૦, ૩૫.૯ અને ૩૯.૩ ટકા વધુ માલુમ પડેલ છે. જીવીસીપી ૧૦ ની શીંગો ઘેરી લીલી, કદમાં લાંબી સાથે વક્ર આકારની હોય છે. ચોમાસું અને ઉનાળુ ઋતુ દરમિયાન આ જાત મગનાં પીળા પચરંગીયા રોગ અને પાનનાં ટપકાંના રોગ અંકુશજાતોની તુલનામાં ઓછો જોવા મળેલ છે. જ્યારે ચોમાસું અને ઉનાળુ ઋતુમાં શીંગ કોરીખાનાર ઈયળનું પ્રમાણ તમામ અંકુશજાતોની તુલનામાં આ જાતમાં ઓછા થી સરખું જોવા મળેલ છે.
	Approved by the house with the following suggestion: 1. Remove word 'resistant' from recommendation paragraph
	Action: Research Scientist (Garlic-Onion), Vegetable Research Station, JAU, Junagadh

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Sr. No.	Recommendation for Farmers community
22.1.1.14	Release proposal of coriander variety GCo-6 (Navsari Laxmi) The farmers of Gujarat state are recommended to grow late maturing coriander variety GCo-6 (Navsari Laxmi) during Rabi season. The proposed variety recorded average seed yield of 2156 kg/ha, which was 24.08 %, 43.37 % and 5.95 % higher over the checks Hisar Anand (NC), RCr-728 (NC) and GCo-3 (SC), respectively. It possesses higher number of umbels per plant, umbellates per umbel and seeds per umbellate, which makes it more productive. The seeds are small, oblong and characterized by higher essential oil and linalool content, imparting pleasant aroma, which serves as an important value-added trait. The proposed variety is moderately resistant against fusarium wilt and powdery mildew. ગુજરાત રાજ્યના ખેડૂતોને શિયાળુ ઋતુ દરમિયાન મોડી પાકતી ધાણાની જાત જીકો-૬ (નવસારી લક્ષ્મી)નું વાવેતર કરવા ભલામણ કરવામાં આવે છે. સુચિત ધાણાની જાતનું સરેરાશ બીજ ઉત્પાદન ૨૧૫૬ કિ.ગ્રા./હેક્ટર આવે છે. જે રાષ્ટ્રિય અંકુશ જાતો હિસ્સાર આનંદ, આરસીઆર-૭૨૮ અને રાજ્ય અંકુશ જાત જી.કો-૩ કરતા અનુક્રમે ૨૪.૦૮%, ૪૩.૩૭% અને ૫.૯૫% જેટલું વધુ બીજ ઉત્પાદન આપે છે. આ જાત વધુ ચક્કર પ્રતિ છોડ, ઉપચક્કર પ્રતિ ચક્કર અને દાણા પ્રતિ ઉપચક્કર ધરાવતી હોવાથી વધુ ઉત્પાદન આપે છે. આ જાતના બીજ નાના, અંડાકાર, વધુ આવશ્યક તેલ તથા લિનાલૂલના પ્રમાણને કારણે આનંદદાયી સુગંધિત ગુણધર્મ ધરાવે છે, જે મહત્વપૂર્ણ મૂલ્યવર્ધિત લક્ષણ છે. સુચિત જાત સુકારા તેમજ ભૂકી છારાનાં રોગ સામે મધ્યમ પ્રતિકારકતા ધરાવે છે.
	Approved with the following suggestion: 1. Remove word 'late maturity' from salient feature
	Action: Professor & Head, Dept. of GPB, NMCA, NAU, Navsari
22.1.1.15	Release proposal of Rice variety GR 30 (Navsari Dhruva) The farmers of Gujarat state are recommended to grow early maturing rice variety GR 30 (Navsari Dhruva) under rainfed transplanted condition during kharif season. The proposed rice variety GR 30 recorded average grain yield of 5458 kg/ha, which was 37.6% and 42% higher over the checks IR 28 and GNR 6, respectively. Long slender grain rice variety GR 30 contains high head rice recovery (61%), high 1000 grain weight (28.5 g) and intermediate amylose (24.9%). The proposed variety is moderately

	resistant against leaf blast, BPH and sheath mite. ગુજરાત રાજ્યમાં ખરીફ ઋતુ દરમિયાન વરસાદ આધારિત રોપણ ડાંગરની ખેતી કરતાં ખેડૂતોને વહેલી પાકતી ચોખાની જાત જી.આર ૩૦ (નવસારી ધ્રુવા) ભલામણ કરવામાં આવે છે. સૂચિત ડાંગર જાત જી.આર ૩૦નું સરેરાશ ઉત્પાદન ૫૪૫૮ કિ.ગ્રા./હેક્ટર છે, જે અંકુશ જાતો આઈઆર ૨૮ અને જી.એન.આર ૬ કરતા અનુક્રમે ૩૭.૬% અને ૪૨% વધુ છે. લાંબા અને પાતળા દાણા ધરાવતી આ જાત વધુ આખા ચોખાનું પ્રમાણ (૬૧%), વધારે ૧૦૦૦ દાણાનું વજન (૨૮.૫ ગ્રામ) અને મધ્યમ એમાઇલોસ (૨૪.૯%) ધરાવે છે. સૂચિત જાત પર્ણનાં કરમોડી રોગ, બદામી ચૂસીયા અને પર્ણતાલ કથીરી સામે મધ્યમ પ્રતિકારક છે.
	Approved with the following suggestions: 1. Remove trader opinion table 2. In all tables instead of test entry code proposed name should be mention
	Action: Research Scientist, Regional Rice Research Station, NAU, Vyara-Tapi
22.1.1.16	Release proposal of Rice variety GR 31 (Navsari Balram) The farmers of Gujarat state are recommended to grow long bold rice variety GR 31 (Navsari Balram) in transplanted condition during <i>kharif</i> season. The proposed rice variety GR 31 recorded average grain yield of 5538 kg/ha, which was 20.8%, 26.5% and 8.5% higher over the check varieties GNR-3, Jaya and GR-25 respectively. GR 31 contains high head rice recovery (56.3%), high 1000 grain weight (30.14 g) and intermediate amylose (22.5%). Rice variety GR 31 is moderately resistant against leaf blast, leaf folder and resistant against brown plant hopper. ગુજરાત રાજ્યમાં ખરીફ ઋતુમાં રોપણ ડાંગરનો પાક ઉગાડતા ખેડૂતોને લાંબા અને જડા દાણાવાળી ચોખાની જાત જી.આર ૩૧ (નવસારી બલરામ) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. ડાંગરની આ સૂચિત જાતનું સરેરાશ ઉત્પાદન ૫૫૩૮ કિ.ગ્રા./હેક્ટર નોંધાયું છે, જે અંકુશ જાતો જી.એન.આર-૩, જયા અને જી.આર.૨૫ કરતાં અનુક્રમે ૨૦.૮%, ૨૬.૫% અને ૮.૫% વધુ છે. ડાંગરની જાત જી. આર ૩૧ વધુ આખા ચોખાનું પ્રમાણ (૫૬.૩%), વધુ ૧૦૦૦ દાણાનું વજન (૩૦.૧૪ ગ્રામ) અને મધ્યમ એમાઇલોસ (૨૨.૫%) ધરાવે છે. જી. આર ૩૧ જાત પર્ણના કરમોડી રોગ, પાન વાળનારી ઈયળ સામે મધ્યમ પ્રતિકારક શક્તિ અને બદામી ચૂસીયા સામે પ્રતિકારક શક્તિ ધરાવે છે.
	Approved with the following suggestions 1. Remove trader opinion table 2. In Point number 11c, average yield should be mentioned
	Action: Research Scientist, Regional Rice Research Station, NAU, Vyara-Tapi
22.1.1.17	Release proposal of Rice variety GR 32 (Navsari Devbhog) The farmers of Gujarat state are recommended to grow early maturing rice variety GR 32 (Navsari Devbhog) in upland ecology during <i>kharif</i> season. The proposed variety recorded average grain yield of 3186 kg/ha, which was 24.4 %, 28.3 % and 24.6 % higher over the checks Purna, AAUDR-1 and GR-16, respectively. Medium slender grain rice variety GR 32 contains high head rice recovery (55.9%), medium 1000 grain weight (23.0 g) and intermediate amylose (24.8%). The proposed variety is moderately resistant reaction against leaf blast disease and moderately tolerant against brown plant hopper, leaf folder, stem borer and sheath mite. ગુજરાતમાં ખરીફ ઋતુ દરમિયાન ઓરાણ ડાંગરનું વાવેતર કરતા ખેડૂતો માટે વહેલી પાકતી મધ્યમ પાતળા દાણાવાળી જાત જી.આર. ૩૨ (નવસારી દેવભોગ) ની ભલામણ કરવામાં આવે છે. ડાંગરની સૂચિત જાતનું સરેરાશ ઉત્પાદન ૩૧૮૬ કિ.ગ્રા./હેક્ટર છે, જે અંકુશ જાતો પૂર્ણા, એ.એ.યુ.ડી.આર-૧ અને જી.આર.-૧૬ કરતાં અનુક્રમે ૨૪.૪ %, ૨૮.૩ % અને ૨૪.૬ % વધુ છે. જી.આર ૩૨ વધુ આખા ચોખાનું પ્રમાણ (૫૫.૯%), મધ્યમ ૧૦૦૦ દાણાનું વજન (૨૩.૦ ગ્રામ) અને મધ્યમ એમાઇલોસ

	(૨૪.૮%) ધરાવે છે. ડાંગરની સુચિત જાત પર્ણના કરમોડી, બદામી ચૂસિયા, પાન વાળનારી ઈંચળ, ગાભમારાની ઈંચળ તથા પર્ણતલ કથીરી સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે.
	Approved with the following suggestions 1. Remove trader opinion table 2. Average yield should be mention in point number 11(C).
	Action: Research Scientist, Regional Rice Research Station, NAU, Vyara-Tapi
22.1.1.18	Release proposal of Sorghum variety Gujarat Jowar 104 (Navsari Shree Anna) The farmers of Gujarat state are recommended to grow sorghum variety Gujarat Jowar 104 (Navsari Shree Anna) during <i>rabi</i> season under irrigated and residual moisture condition. The proposed variety recorded average grain yield of 2996 kg/ha and dry fodder yield of 7754 kg/ha under irrigated condition and exhibited grain yield superiority of 29.9, 14.4, 19.2 and 25.4 per cent over the check varieties Phule Revati, GJ-101, CSV 26R and CSV 29R, respectively. While under residual moisture condition, this variety produced 1474 kg/ha grain yield and 4833 kg/ha dry fodder yield with grain yield superiority of 27.6, 16.3, 38.5 and 34.4 per cent over the check varieties Phule Revati, GJ-101, CSV 26R and CSV 29R, respectively. This variety showed disease reaction comparable to the better checks and lower than the susceptible checks for sugary disease, grain mold, red rot and leaf blight. It also recorded lower infestation of stem borer and shoot fly compared to both better and susceptible checks. ગુજરાત રાજ્યમાં શિયાળુ ઋતુમાં જુવારની ખેતી કરતા ખેડૂતોને જુવારની જાત ગુજરાત જુવાર-૧૦૪ (નવસારી શ્રી અન્ન) નુ શિયાળુ ઋતુમાં પિયત તેમજ સંગ્રહીત ભેજમાં વાવેતર માટે ભલામણ કરવામાં આવે છે. જુવારની આ સુચિત જાતમાં શિયાળુ ઋતુ પિયત પરિસ્થિતિમાં સરેરાશ ૨,૯૯૬ કિ.ગ્રા./હે. દાણા અને ૭,૭૫૪ કિ.ગ્રા./હે. સુકા ઘાસચારાનું ઉત્પાદન મળેલ છે. જે દાણાના ઉત્પાદનમાં અંકુશ જાતો કુલે રેવતી, જી.જે.-૧૦૧, સી.એસ.વી.-૨૬આર અને સી.એસ.વી.-૨૮આર કરતા અનુક્રમે ૨૯.૯, ૧૪.૪, ૧૯.૨, અને ૨૫.૪ ટકા વધુ છે. આ જાતમાં સંગ્રહીત ભેજ પરિસ્થિતિમાં દાણાનું સરેરાશ ઉત્પાદન ૧,૪૭૪ કિ.ગ્રા./હે. તથા સુકા ઘાસચારાનું ઉત્પાદન ૪,૮૩૩ કિ.ગ્રા./હે. મળેલ છે. જે દાણાના ઉત્પાદનમાં અંકુશ જાતો કુલે રેવતી, જી.જે.-૧૦૧, સી.એસ.વી.-૨૬આર અને સી.એસ.વી.-૨૮આર કરતા અનુક્રમે ૨૭.૬, ૧૬.૩, ૩૮.૫, અને ૩૪.૪ ટકા વધુ છે. જુવારની આ જાતમાં સંવેદનશીલ અંકુશ જાતની તુલનામાં મધિયો રોગ, દાણાની ફૂગ, રાતડો અને પાનના સુકારાનો પ્રકોપ ઓછો જોવા મળ્યો છે, તેમજ ગાભમારાની ઈંચળ અને સાંઠાની માખીનો ઉપદ્રવ પણ સારી અંકુશ જાતો અને સંવેદનશીલ અંકુશ જાત કરતા ઓછો જોવા મળે છે.
	Approved with the following suggestions: 1. Table nomenclature should be uniform and verify average of Table 1, 2 and add significance in Table 2 2. In point 9d, mention maturity 3. In point 5d, specify breeding objective and 5a flow chart add as annexure 4. In proposal, contributor must be Agricultural Officer and above
	Action: Research Scientist, Main Sorghum Research Station, NAU, Navsari

22.1.1.19	Release proposal of Sorghum variety Gujarat Jowar 47 (Navsari Surya) The farmers of Gujarat state are recommended to grow grain sorghum variety Gujarat Jowar 47 (<i>Navsari Surya</i>) during <i>Kharif</i> seasons. This variety recorded average 2813 kg/ha grain yield and 14812 kg/ha dry fodder yield with grain yield increment of 17.8, 15.9, 20.2, 18.7 and 16.8 percent over the check varieties GJ 43, GJ 44, CSV 41, GJ 45 and CSV 55, respectively whereas, 30.8, 15.9 and 4.8 percent dry fodder yield increments over the check varieties GJ 44, GJ 45 and CSV 55, respectively. This variety showed disease reaction comparable to the better checks and lower than the susceptible checks for sugary disease, grain mold, anthracnose and late blight. It also recorded lower infestation of stem borer and shoot fly compared to both better and susceptible checks. Gujarat Jowar 47 exhibited higher protein, zinc and iron content compared to the better check. ગુજરાત રાજ્યમાં દાણાની જુવારની ખેતી કરતા ખેડૂતોને ચોમાસુ ઋતુ માટે જુવારની જાત ગુજરાત જુવાર-૪૭ (નવસારી સુર્યા)નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. જુવારની આ જાત ચોમાસુ ઋતુમાં સરેરાશ ૨૮૧૩ કિ.ગ્રા./હે. દાણા અને ૧૪૮૧૨ કિ.ગ્રા./હે. સુકા ઘાસચારાનું ઉત્પાદન આપે છે. જે દાણાના ઉત્પાદનમાં અંકુશ જાતો જી.જે.-૪૩, જી.જે.-૪૪, સી.એસ.વી. ૪૧, જી.જે.-૪૫ અને સી.એસ.વી. ૫૫ કરતા અનુક્રમે ૧૭.૮, ૧૫.૯, ૨૦.૨, ૧૮.૭ અને ૧૬.૮ ટકા વધુ છે. તથા સુકા ઘાસચારાના ઉત્પાદનમાં અંકુશ જાતો જી.જે.-૪૪, જી.જે.-૪૫ અને સી.એસ.વી. ૫૫ કરતા અનુક્રમે ૩૦.૮, ૧૫.૯ અને ૪.૮ ટકા વધુ છે. આ જાતમાં પ્રોટીન, ઝિંક અને આયર્નનું પ્રમાણ સારી અંકુશ જાતની તુલનામાં વધુ જોવા મળેલ છે. જુવારની આ જાતમાં સંવેદનશીલ અંકુશ જાતની તુલનામાં મધિયો રોગ, દાણાની ફૂગ, રાતડો અને પાનના સુકારાનો પ્રકોપ ઓછો જોવા મળ્યો છે, તેમજ ગાભમારાની ઈયળ અને સાંઠાની માખીનો ઉપદ્રવ પણ સારી અંકુશ જાતો અને સંવેદનશીલ અંકુશ જાત કરતા ઓછો જોવા મળ્યો છે. Approved with the following suggestions 1. In point 5a, recast flow chart and add as annexure 2. In Table 2, add significance and Verify unit of production in table 4 3. In proposal, contributor must be Agricultural Officer and above and add name of scientist involved in evaluation 4. Verify Fe and Zn data Action: Research Scientist, Main Sorghum Research Station, NAU, Navsari
22.1.1.20	Release proposal of Finger millet variety GN 11 (Navsari Swarna) The finger millet variety GN 11 (<i>Navsari Swarna</i>) is recommended for finger millet growing region of Gujarat in <i>Kharif</i> season. The finger millet variety GN 11 (<i>Navsari Swarna</i>) (2864 kg/ha) performed well with 24.14 % and 29.59% increase over local check GNN 7 and GN 8 while, 0.49% and 34.33% grain yield superiority over national check varieties, CFMV 2 and VL 352, respectively in Gujarat. It has higher amount of protein (5.36%), carbohydrate (78.35%), Ca (420 mg/100g), Fe (8.35 mg/100g) and Zn (1.88 mg/100g) in comparison to the checks. The variety GN 11' is having attractive white grain colour, uniform maturing and non-shattering plant type. It is resistant to foot rot and moderately resistant to leaf, neck and finger blast and resistant to pest like stem borer (% dead heart) and ear head caterpillar under field condition. ગુજરાતમાં નાગલીની ખેતી કરતા વિસ્તારમાં ચોમાસું ઋતુમાં નાગલીની જાત જી.એન.-૧૧ (નવસારી સ્વાર્ણા) ની વાવેતર માટે ભલામણ કરવામાં આવે છે. નાગલીની જાત જી.એન.-૧૧ (નવસારી સ્વાર્ણા)માં દાણાનું સરેરાશ ઉત્પાદન ૨૮૬૪ કિ.ગ્રા./હેક્ટર આવે છે, જે એકંદરે સ્થાનિક જાત જી.એન.એન.-૭ અને જી.એન.-૮ કરતા અનુક્રમે ૨૪.૧૪ ટકા, ૨૯.૫૯ ટકા તથા રાષ્ટ્રીય કક્ષાની જાત સીએફએમવી-૨ અને વી.એલ.-૩૫૨ કરતા અનુક્રમે ૦.૪૯ ટકા, ૩૪.૪૪ ટકા વધારે ઉત્પાદન આપે છે. આ જાતમાં પ્રોટીન (૫.૩૬%), કાર્બોહાઈડ્રેટ (૭૮.૩૫%), કેલ્શિયમ (૪૨૦ મી.ગ્રા./૧૦૦ ગ્રામ), લોહતત્વ

	(૮.૩૫ મી.ગ્રા./૧૦૦ ગ્રામ) અને ઝીંક (૧.૮૮ મી.ગ્રા./૧૦૦ ગ્રામ) નું પ્રમાણ અંકુશ જાતો કરતા વધારે નોંધાયેલ છે. આ જાત (જી.એન.-૧૧) આકર્ષક સફેદ દાણાવળી, એકસરખી પરિપક્વતા ધરાવતી અને દાણા ખરી જવા સામે પ્રતિકારકતા ધરાવતી હોવાથી વધુ ઉત્પાદન આપે છે. આ જાત થડના કોહવારા સામે પ્રતિકારકતા તેમજ પર્ણ, ગાંઠ અને કણસલાના કરમોડીના રોગ સામે મધ્યમ પ્રતિકારકતા ધરાવે છે. આ જાત ગાભમારા અને કંટીની ઈંચળ સામે પ્રતિકારકતા ધરાવે છે. Approved with the following suggestions 1. Remove the flow chart from point 5a and add it in annexure 2. Verify the weighted means of table 1a 1b and table 5 3. In point 9b, check morphological features 4. Remove word 'non lodging' from recommendation text 5. Remove trader opinion table 7 6. Modify the pedigree flow chart Action: Associate Research Scientist, HMRS, NAU, Waghai
22.1.1.21	Release proposal of Tannia variety Gujarat Tannia 2 (Navsari Komal) Tannia variety NT 11 is recommended for Tannia growing areas of Gujarat as Gujarat Tannia 2 (Navsari Komal) during <i>kharif</i> season. The proposed variety recorded an average green leaf yield of 9.14 t/ha, which is 38.07 per cent higher than the national check variety Konkan Haritparni and 5.54 per cent higher than the state check variety Navsari Pari, while after 270 days of planting it produced 14.45 t/ha corm and cormel yield, which is 39.34 per cent and 26.09 per cent higher than Konkan Haritparni and Navsari Pari, respectively. It recorded higher amount of antioxidant (37.99 %), low fibre (1.60 %) and less amount of Calcium oxalate (0.12 %) with value added traits. It has found lower population of aphid as well as less prevalence of <i>phytophthora</i> leaf blight and corm rots as compared to check. ચોમાસા ઋતુ દરમિયાન ગુજરાતના પત્તરવેલી ઉગાડતા વિસ્તારો માટે પત્તરવેલીની જાત એનટી ૧૧ ની ભલામણ ગુજરાત તાનિયા-૨ (નવસારી કોમલ) તરીકે કરવામાં આવે છે. આ જાતનું ગુજરાતમાં સરેરાશ લીલા પાનનું ઉત્પાદન ૯.૧૪ ટન/હેક્ટર મળેલ છે, જે રાષ્ટ્રીય અંકુશ જાત કોંકણ હરિતપર્ણી કરતાં અનુક્રમે ૩૮.૦૭ ટકા તેમજ રાજ્ય અંકુશ જાત નવસારી પરી કરતાં અનુક્રમે ૫.૫૪ ટકા વધુ ઉત્પાદન મળેલ છે. જ્યારે રોપણી બાદ ૨૭૦ દિવસ પછી ગાંઠનું ઉત્પાદન ૧૪.૪૫ ટન/હેક્ટર મળેલ છે, જે રાષ્ટ્રીય અંકુશ જાત કોંકણ હરિતપર્ણી કરતાં અનુક્રમે ૩૯.૩૪ ટકા તેમજ રાજ્ય અંકુશ જાત નવસારી પરી કરતાં અનુક્રમે ૨૬.૦૯ ટકા વધુ ઉત્પાદન મળેલ છે. આ જાત વધુ એન્ટી-ઓક્સિડન્ટ (૩૭.૯૯ %), ઓછા રેસા (૧.૬૦ %) અને કેલ્શિયમ ઓક્સલેટ (૦.૧૨ %) ધરાવે છે. આ જાતમાં મોલોમશી જીવાતનું પ્રમાણ તથા “પાનનો સુકારો” અને “ગાંઠના કોહવારા” રોગોથી થતું નુકસાન અંકુશ જાત કરતા ઓછું જોવા મળેલ છે. Approved with the following suggestions 1. Flow chart added as annexure instead of point 5(a). 2. Mention per cent increase over in one decimal. 3. Recast table 8 4. Recast recommendation text Action: Prof. and Head, Dept. of Veg. Sci., ACH, NAU, Navsari
22.1.1.22	Release proposal of sugarcane variety GNS 14 (Navsari Gayatri) Sugarcane clone CoN 19071 is recommended for sugarcane growing areas in south Gujarat as GNS-14 (Navsari Gayatri). Erect growth habit, late flowering and mid-late maturing sugarcane variety CoN 19071 (133.6 t/ha) performed very well in South Gujarat, where it exhibits overall 28.7% 33.5% and 33.2% cane yield superiority over the checks CoN 04131 and Co 86032, Co 99004 respectively. This clone possesses higher sugar yield; showed moderately resistant reaction against major diseases like wilt, red rot and whip smut and showed less susceptible reaction to major insect pest. Proposed clone

	is suitable for ratoon crop as well. શેરડીની આ નવી જાત કો.એન. ૧૯૦૭૧ દક્ષિણ ગુજરાત માટે જીએનએસ ૧૪ (નવસારી ગાયત્રી) તરીકે ભલામણ કરવામાં આવે છે. સારો પ્રતિભાવ આપતી, સીધી વૃદ્ધિ ધરાવતી, મોડા ફુલો આવતી તથા મધ્યમ મોડી પાકતી શેરડીની આ જાત કો.એન. ૧૯૦૭૧ (૧૩૩.૬ ટન/હે.) જે પ્રમાણભૂત જાતો કો.એન. ૦૪૧૩૧, કો. ૮૬૦૩૨ તથા કો. ૯૯૦૦૪ કરતા અનુક્રમે ૨૮.૭ %, ૩૩.૫ % અને ૩૩.૨ % શેરડીનું વધુ ઉત્પાદન આપે છે. આ કલોન વેપારી ખાંડનું ઉત્પાદન પણ સારું આપે છે. આ કલોન શેરડીના મુખ્ય રોગો જેવા કે સુકારો, રાતડો અને ચાબુક આંજીયો સામે મધ્યમ પ્રતિકારક છે તથા શેરડીની અગત્યની જીવાતો સામે ઓછી ગ્રાહ્ય છે. આ કલોન લામ પાક માટે અનુકૂળ છે. Approved with the following suggestions 1. Refine salient features 2. In point 9(b), remove data of check and kept only distinguishable features of proposed variety 3. Refine Gujarati recommendation paragraph Action: Research Scientist, MSRS, NAU, Navsari
22.1.1.23	Release proposal of Spider lily variety Navsari Spider Lily-1 (Navsari Sarvika) Farmers of Gujarat are recommended to grow spider lily variety S19 as Navsari Spider Lily 1 (Navsari Sarvika). The proposed variety Navsari Spider Lily 1 (NSL 1) recorded 29.19 lakh flower buds/ ha and 5.25 lakh bulbs/ha with yield increment of 31.40 % and 28.91% for flower buds and 62.54 % and 41.28 % for bulbs than Vada Local (Check 1) and Gandevi Local (Check 2), respectively. The spider lily variety NSL 1 produced white coloured, longer flower buds (18.70 cm) with more shelf life (1.07 days) as compared to the checks. It also contains higher total phenol, flavonoids and other bioactive compounds in bulbs, leaves and flowers than checks. This variety was also found resistant to leaf tip blight disease and less incidence of lily caterpillar as compared to the checks. ગુજરાતમાં સ્પાઈડર લીલીની એસ ૧૯ જાતને નવસારી સ્પાઈડર લીલી ૧ (નવસારી સર્વિકા) તરીકે ઉગાડવાની ભલામણ કરવામાં આવે છે. ભલામણ કરેલ જાત નવસારી સ્પાઈડર લીલી ૧ (એનએસએલ ૧)નું ઉત્પાદન ૨૯.૧૯ લાખ ફૂલ કળી/હે. અને ૫.૨૫ લાખ કંદ/હે. નોંધાયેલ છે, જે અંકુશ જાતો વાડા લોકલ (ચેક ૧) અને ગણદેવી લોકલ (ચેક ૨) કરતાં ૩૧.૪૦% અને ૨૮.૯૧% વધુ ફૂલની કળી તેમજ ૬૨.૫૪% અને ૪૧.૨૮% વધુ કંદનું ઉત્પાદન આપે છે. સ્પાઈડર લીલીની જાત એનએસએલ ૧ સફેદ રંગની લાંબી ફૂલની કળી (૧૮.૭૦ સે.મી.) ઉત્પન્ન કરે છે જે અંકુશ જાતોની સરખામણીમાં કાપ્યા પછી વધુ સમય (૧.૦૭ દિવસ) તાજું રહે છે. અંકુશ જાતોની સરખામણીએ આ જાતના કંદ, પાન અને ફૂલોમાંથી વધુ માત્રામાં ફીનોલ અને ફ્લેવેનોઇડ તેમજ વધુ બાયોક્રિટિક કમ્પાઉન્ડ નોંધાયેલ છે. તે પાનની ટોચનો સુકારાના રોગ સામે પ્રતિકારકતા ધરાવે છે તેમજ પાન અને કળી કોરી ખાનાર ઇયળનો ઓછો ઉપદ્રવ જોવા મળેલ છે. Approved with the following suggestions 1. Per cent increase over should be in one decimal point 2. Committee of horticulture crops formed during 21st Combined AGRESO at AAU, Anand should have to finalize the SOP for evaluation of entries of floriculture crops. Committee should be informed by concern Director of Research about release of variety. Action: Professor & Head, Dept. of Floriculture, ACH, NAU, Navsari

**SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY,
SARDARKRUSHINAGAR**

22.1.1.24	Release Proposal of Sorghum variety Gujarat Jowar 46 (GJ 46) (SDAU Megh) The sorghum growing farmers of Gujarat state are recommended to grow the sorghum variety GJ 46 (SDAU Megh) in the <i>kharif</i> season. This variety recorded mean grain and dry fodder yields of 2466 kg/ha and 16656 kg/ha, respectively which was 5.1, 4.0, 8.4, 7.6 and 5.3 per cent higher in grain yield and 6.4, 44.1, 12.3, 16.2 and 8.0 per cent in dry fodder as compared to the check varieties GJ 43, GJ 44, CSV 41, GJ 45 and CSV 55, respectively. It has tall height with long and broad leaves. It is moderately resistant to diseases like leaf blight, anthracnose and grain mold and has a lower infestation of shoot fly and stem borer than checks. The grain is attractive, good lustrous, circular in shape and contains a good amount of crude protein. Dry fodder has good digestibility parameters. ગુજરાત રાજ્યમાં ચોમાસુ જુવારનું વાવેતર કરતા ખેડૂતોને ગુજરાત જુવાર ૪૬ (એસડીએચ મેઘ) જાત વાવેતર માટે ભલામણ કરવામાં આવે છે. આ જાત સામાન્ય પરિસ્થિતિમાં હેક્ટરે સરેરાશ ૨૪૬૬ કિ.ગ્રા. દાણા તથા ૧૬૬૫૬ કિ.ગ્રા. સુકી કડબનું ઉત્પાદન આપે છે. જે અંકુશ જાતો જીજે ૪૩, જીજે ૪૪, સીએસવી ૪૧, જીજે ૪૫ અને સીએસવી ૫૫ કરતા અનુક્રમે ૫.૧, ૪.૦, ૮.૪, ૭.૬ અને ૫.૩ ટકા વધુ દાણાં તેમજ અનુક્રમે ૬.૪, ૪૪.૧, ૧૨.૩, ૧૬.૨ અને ૮.૦ ટકા વધુ સુકા ઘાસચારાનું ઉત્પાદન મળેલ છે. આ ઉપરાંત આ જાત વધુ ઉચાઈ, લાંબા અને પહોળા પાન ધરાવે છે. આ જાત પાનનો સુકારો, કાલવ્રણ અને દાણાની ફૂગ જેવા રોગો સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે તેમજ તેમાં સાંઠાની માખી અને ગાભમારાની ઈયળનો ઓછો ઉપદ્રવ જોવા મળેલ છે. ગુણવત્તાની દ્રષ્ટીએ આ જાતના દાણા આકર્ષક, ચમકદાર, ગોળ તેમજ સારી માત્રામાં કુડ પ્રોટીન ધરાવે છે તેમજ આ જાતની ઘાસચારાની ગુણવત્તા સારી છે. Approved with the following suggestions 1. Check mean of table 1, 2 and 3 Action: Research Scientist, Centre for Millets Research, SDAU, Deesa
22.1.1.25	Release Proposal of Sorghum variety Gujarat Forage Sorghum 9 (GFS 9) (SDAU Chari) The farmers of Gujarat state growing forage sorghum during the <i>kharif</i> season are recommended to grow medium maturing single cut forage sorghum Gujarat Forage Sorghum 9 (GFS 9: SDAU Chari 2). This variety recorded mean green forage and dry fodder yields of 40630 kg/ha and 15170 kg/ha, respectively, which was 25.6, 34.8, 7.2 and 16.8 per cent higher in green forage yield and 28.3, 28.3, 16.4 and 18.4 per cent in dry fodder as compared to the check varieties GFS 6, GAFS 12, CSV 46F and GFS 8, respectively. This variety has long and medium broad leaves with thin stem diameter. It is moderately resistant to leaf blight and anthracnose diseases and exhibited lower infestation of shoot fly and stem borer. This variety has recorded good TSS and protein as well as low HCN content. ગુજરાત રાજ્યમાં ચોમાસુ ઘાસચારા જુવારનું વાવેતર કરતા ખેડૂતોને મધ્યમ પાકતી એક કાપણી વાળી ઘાસચારા જુવાર ગુજરાત ઘાસચારા જુવાર ૯ (જીએફએસ ૯ : એસડીએચ ચારી ૨) નું વાવેતર કરવા માટે ભલામણ કરવામાં આવે છે. આ જાત હેક્ટરે સરેરાશ ૪૦૬૩૦ કિ.ગ્રા. લીલા ઘાસચારાનું તથા ૧૫૧૭૦ કિ.ગ્રા. સુકા ઘાસચારાનું ઉત્પાદન આપે છે. જે અંકુશ જાતો જીએફએસ ૬, જીએફએસ ૧૨, સીએસવી ૪૬ એફ અને જીએફએસ ૮ કરતા અનુક્રમે ૨૫.૬, ૩૪.૮, ૭.૨ અને ૧૬.૮ ટકા વધુ લીલા ઘાસચારાનું તેમજ અનુક્રમે ૨૮.૩, ૨૮.૩, ૧૬.૪ અને ૧૮.૪ ટકા વધુ સુકા ઘાસચારાનું ઉત્પાદન મળેલ છે. આ જાત લાંબા અને મધ્યમ પહોળા પાન તથા પાતળો સાઠો ધરાવે છે. આ જાત પાનનો સુકારો અને કાલવ્રણ રોગો સામે મધ્યમ પ્રતિકારક શક્તિ ધરાવે છે તેમજ આ જાતમાં સાંઠાની માખી અને ગાભમારાની ઈયળનો ઉપદ્રવ ઓછો જોવા મળેલ છે. આ જાતમાં સારી માત્રામાં ટીએસએસ અને પ્રોટીન તેમજ એચસીએન ઓછું જોવા મળેલ છે. Approved with the following suggestion 1. In point 9(b), add distinguish morphological characters Action: Research Scientist, Centre for Millets Research, SDAU, Deesa

22.1.1.26	Release Proposal of Dillseed variety Gujarat Dillseed 4 (GD 4) (SDAU Suvas) The farmers of Gujarat state growing Dillseed in irrigated condition are recommended to grow Dillseed variety Gujarat Dillseed 4 (SDAU Suvas). It gave average seed yield of 1946 kg/ha which is 8.7 and 24.3 per cent higher over checks Gujarat Dillseed 3 and Gujarat Anand Dillseed 1, respectively. It has more number of umbelletes per umbel and seeds per umbellete. It is moderately resistant to powdery mildew disease. ગુજરાત રાજ્યના પિયત સુવાની વાવણી કરતા ખેડૂતોને ગુજરાત સુવા ૪ (એસડીએયું સુવાસ) જાતની વાવણી કરવા ભલામણ કરવામાં આવે છે. આ જાત સરેરાશ ૧૯૪૬ કિ.ગ્રા./હે ઉત્પાદન આપે છે. જે અંકુશ જાતો ગુજરાત સુવા ૩ અને ગુજરાત આણંદ સુવા ૧ અનુક્રમે ૮.૭ અને ૨૪.૩ ટકા વધુ ઉત્પાદન આપે છે. આ જાતમાં ઉપચક્કર પ્રતિ ચક્કર અને દાણા પ્રતિ ઉપચક્કરમાં વધુ છે. આ જાત ભૂકીછારા રોગ સામે માધ્યમ પ્રતિકારકશક્તિ ધરાવે છે. Approved with the following suggestions 1. Refine flow chart 2. Mention NIL in table 7 because no pests incidence appeared
	Action: Research Scientist, Seed Spices Research Station, SDAU, Jagudan
22.1.1.27	Release Proposal of Isabgol variety Gujarat Isabgol 5 (GI 5) (SDAU Saral) The farmers of Gujarat state growing isabgol are recommended to grow isabgol variety Gujarat Isabgol 5 (SDAU Saral). It gave average seed yield of 1035 kg/ha which is 9.5 and 32.9 per cent higher over checks Gujarat Isabgol 3 and Gujarat Isabgol 4, respectively. Proposed variety has long spikes with more number of seeds per spike. It is moderately resistant to downy mildew. ગુજરાત રાજ્યના ઈસબગુલની વાવણી કરતા ખેડૂતોને ગુજરાત ઈસબગુલ ૫ (એસડીએયું સરલ) ની વાવણી કરવાની ભલામણ કરવામાં આવે છે. આ જાત સરેરાશ ૧૦૩૫ કી.ગ્રા./હે ઉત્પાદન આપે છે. જે અંકુશ જાતો ગુજરાત ઈસબગુલ ૩ અને ગુજરાત ઈસબગુલ ૪ કરતા અનુક્રમે ૯.૫ અને ૩૨. ૯ ટકા વધુ છે. આ જાત લાંબી ઉંબીઓ અને પ્રતિ ઉંબી દાણાની વધુ સંખ્યા ધરાવે છે. આ જાત તળછારા રોગ સામે મધ્યમ પ્રતિરોધક શક્તિ ધરાવે છે. The proposal is approved by the house
	Action: Research Scientist, Seed Spices Research Station, SDAU, Jagudan
22.1.1.28	Release Proposal of Pigeonpea hybrid Gujarat Tur Hybrid 2 (GTH 2) (SDAU Sanman) Not approved due to proposed hybrid not showing considerable heterosis over checks. Action: Research Scientist, Pulses Research Station, SDAU, Sardarkrushinagar
	PROPOSED RECOMMENDATIONS FOR FARMING COMMUNITY
22.1.2.1	Effect of packaging material and method on storage of groundnut pods The farmers of Gujarat who store groundnut pod for seed purpose are recommended to store the groundnut pods using HDPE bag + polythene bag 50 micron + 10 g aluminium phosphide 56 % pouch in godown after giving one month fumigation treatment for keeping seeds up to standard germination percentage, avoiding stored pod insect damage, obtaining higher seed vigour index as well as maintaining optimum seed moisture content. Such pods can be stored up to nine months ગુજરાત રાજ્યના મગફળીના ડોડવાનો બીજ તરીકે સંગ્રહ કરતા ખેડૂતોને બીજના ધારાધોરણ મુજબનો ઉગાવો મેળવવા, સંગ્રહિત જીવાતના નુકશાનથી બચાવવા, ઉગાવાનો વધુ જુસ્સો મેળવવા તથા બીજમાં યોગ્ય ભેજ જાળવવા માટે કોઠારમાં મગફળીના ડોડવાને એક મહીના સુધી ફુમીગેશનમાં રાખ્યા બાદ ૫૦ માઈક્રોન પ્લાસ્ટીકની થેલીમાં ભરી ૧૦ ગ્રામ એલ્યુમિનિયમ ફોસ્ફાઇડ ૫૬% ની પડીકી મુકી એચ.ડી.પી.ઇ. ના થેલામાં સંગ્રહ કરવાની ભલામણ કરવામાં આવે છે. આ મુજબ મગફળીના ડોડવાનો બીજ માટે નવ માસ સુધી સંગ્રહ કરી શકાય છે.
	Suggestion: approved
	Action: Associate Research Scientist, ARS, SDAU, Aseda

22.1.2 SCIENTIFIC INFORMATION –NIL

22.1.3 NEW TECHNICAL PROGRAMMES

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title	Suggestion/s and Action
22.1.3.1	Induced mutagenesis in garlic (<i>Allium sativum</i> L.) for novel morphotypes, bulb yield and its component traits	1. Report up to Joint AGRESCO
	Action: Professor & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh	
22.1.3.2	Induced mutagenesis in Gaillardia (<i>Gaillardia pulchella</i>) using different mutagenic treatments	1. Report up to Joint AGRESCO
	Action: Professor & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh	
22.1.3.3	Development of gynoeious lines in <i>Luffa acutangula</i> via interspecific introgression from <i>Luffa hermaphrodita</i>	Approved by the house
	Action: Professor & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh	
22.1.3.4	Screening and identification of wheat genotypes tolerant to heat stress under the Saurashtra region.	1. Report up to Joint AGRESCO
	Action: Professor & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh	
22.1.3.5	Effect of biopriming agents on germination of China aster [<i>Callistephus chinensis</i> (L.) Nees]	Approved by the house with following suggestion: 1. Remove methodology in point 4
	Action: Professor & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh	
22.1.3.6	Effect of pelleted seeds on direct seeding in onion (<i>Allium cepa</i> L.)	Approved by the house with following suggestion: 1. Add Cost benefit ratio
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	
22.1.3.7	Effect of biopolymeric seed coating on seed yield and input use efficiency in groundnut	Approved by the house
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	
22.1.3.8	Effect of biopolymeric seed coating on seed yield and input use efficiency in cotton	Approved by the house
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	

22.1.3.9	Influence of polymer, nutrient and fungicide seed coating treatments and storage conditions on seed quality in soybean (<i>Glycine max</i> L. Merrill)	Approved by the house
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	
22.1.3.10	Effect of pelleted seeds on direct seeding in chilli (<i>Capsicum annuum</i> L.)	Approved by the house with following suggestions: 1. Include data of plant stand percent 2. Add cost benefit ratio
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	
22.1.3.11	Effect of storage conditions and packaging materials on seed quality of chilli (<i>Capsicum annuum</i> L.) pelleted seeds during storage	Approved by the house
	Action: Professor & Head, Dept. of Seed Science and Technology, JAU, Junagadh	

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

22.1.3.12	Exploration and germplasm collection of indigenous flora of Kachchh	Approved by the house with following suggestion: Try to collect maximum possible endangered species during exploration
	Action: Principal, College of Agriculture, Bhuj	
22.1.3.13	Evaluation of Isabgol mutants developed through physical mutagenesis	Report up to Joint AGRESCO
	Action: Principal, Polytechnic in Agriculture, Amirgadh	
22.1.3.14	Development of high yielding and yellow mosaic resistance variety in urdbean	Report up to Joint AGRESCO
	Action: Principal, Polytechnic in Agriculture, Khedbrahma	

Common suggestions of the house

1. Committee of horticulture crops formed during 21st Combined AGRESCO at AAU, Anand should have to finalize the SOP for evaluation of entries of floriculture crops.
2. For disease and pest reaction, write resistant or tolerant only when the entry is tested under epiphytotic conditions or sick plot, otherwise write low or comparable with respect to checks.
3. Check should be added from PET trials and maintained the consistency of check throughout evaluation
4. When crop is confined to specific zone and not cultivated widely, Zonal multilocation data is consider for release of variety
5. Write proposed name instead of entry code in all tables.

22.2 CROP PRODUCTION

Venue: Sh. D. N. Moga Conference Hall, SSK, SDAU, SARDARKRUSHINAGAR

Date: 5-7 May, 2026

Chairman : Dr. S. D. Solanki Hon'ble Vice-Chancellor, SDAU, Sardarkrushinagar

Co-Chairmen: Dr. H. M. Virdia, Registrar, NAU, Navsari

Dr. P. D. Kumawat, Principal and Dean, CoA, JAU, Junagadh

Rapporteur : 1. Dr. T. U. Patel, Associate Professor, NAU, Bharuch
2. Dr. M. B. Virdia, Professor, AAU, Anand
3. Dr. V. B. Bhalu, Associate Professor, Junagadh
4. Dr. K. M. Patel, Associate Professor, SDAU, Sardarkrushinagar

The 22nd Combine AGRESCO meeting was held at Sh. D. N. Moga, Conference Hall, SSK, SDAU, Sardarkrushinagar in the august presence of Chairman, Co-chairmen, Rapporteur, Directorate of Research, concern conveners of the AGRESCO Sub-committees, Scientist of various research centers of crop production group. More than 45 scientists were participated in the technical session.

The inaugural session commenced with a welcome address delivered by Dr. L. J. Desai, Research Scientist (IFS) and Convener of the Crop Production Sub-Committee, SDAU. After the opening remarks, the Chairman and Co-Chairman (ADR) were formally honored with floral welcomes. To conclude the ceremonial proceedings, the dignitaries participated in the traditional lighting of the lamp, officially marking the start of the meeting.

Dr. P. D. Kumawat, Principal of CoA, JAU, Junagadh, emphasized the importance of adopting natural farming practices to reduce cultivation costs, boost production and enhance the efficiency of natural resources. He advocated for a shift toward "next-generation agriculture," focusing research efforts on plant, soil and animal health as well as nitrogen-use efficiency and quality production. Highlighting the digital transformation, AI, IoT and Big Data is essential for the modern era. He further urged soil scientists to spearhead climate-smart farming and sustainable technologies, suggesting a redefinition of nutrient management tailored to specific regional soil conditions and crop varieties. His address also called for the inclusion of modern innovations such as carbon farming, Agrivoltaics (solar) systems and laser levelling, while highlighting the need to verify mycorrhiza for phosphorus (P_2O_5) resource saving. He concluded by commending the dedication of the scientist and congratulating them for their ongoing untired efforts.

Dr. H. M. Virdia, Registrar, NAU, Navsari is highlighted the urgent need to increase agricultural output while addressing rising concerns regarding high labour wages, escalating cultivation costs and the degradation of natural resources. He characterized researchers and scientists as the essential "fillers" responsible for bridging the gap between government policy

and the farming community. Furthermore, he emphasized that integrating modern technologies such as nano-fertilizers and drones into current research programs is vital for the future of the sector.

Dr. S. D. Solanki, Honourable Vice Chancellor, SDAU congratulated the scientific community for their contributions toward developing farmer-oriented recommendations. He urged researchers to prioritize the development of reliable, user-friendly technologies that are accessible even to the most common farmers. Emphasizing a balance in academic pursuits, he requested that new scientists focus equally on cutting-edge technical advancements and fundamental basic research. He spotlighted value addition as a critical strategy for boosting farmer income and advocated for the deployment of AI, drone technology, robotics and general mechanization directly in the field to simplify operations for end users. Addressing the significant challenge of labour shortages, which he described as a major setback for the agriculture, he called for an aggressive promotion of mechanization. He concluded with an earnest appeal for the gathering to work with dedication to uplift both state and national agriculture.

The inaugural ceremony concluded with a vote of thanks delivered by Dr. S.K. Shah, Associate Professor, SDAU, Sardarkrushinagar. Following the formal session, the house conducted a thorough screening of all recommendations presented by the various conveners. After detailed deliberations, the proposals were approved, incorporating specific suggestions from the participants. The finalized proceedings and recommendations are organized in the tabular format below:

Summary

Name of University	No. of farmers Recommendations				Information for Scientific community			New Technical Programs	
	Proposed	Approved	Dropped/Shifted*	Extended	Proposed	Approved	Dropped/Shifted [#]	Proposed	Approved
AAU	20	17	1 + 1*	1	7	6 + 1*	1 [#]	30	30
JAU	13	12	1*	0	7	6 + 1** + 1***	1	37	37
NAU	18	18	0	0	1	1 + 1**	0	25	25
SDAU	13	12	1*	0	6	5 + 1***	1	51	51+1 ^{##}

* Farmer recommendation shifted to scientific

** Scientific information generated from farmers recommendation

*** Shifted from farmers recommendation

Merged with farmer recommendation

New technical programme derived from proposed NTP of WRS, SDAU, Vijapur

22.2.1 RECOMMENDATIONS FOR FARMING COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

Department of Agronomy, BACA, AAU, Anand	
22.2.1.1	Response of irrigated wheat to potassium application <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone cultivating irrigated wheat are recommended in soil having medium status of available potassium to apply only recommended dose of fertilizer (120-60-00 kg NPK/ha), no need to apply potassium fertilizer. <u>ખેડૂતોપયોગી ભલામણ</u> મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં પિયત ઘઉંનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, મધ્યમ પ્રમાણમાં લભ્ય પોટાશ ધરાવતી જમીનમાં ઘઉંના પાકમાં ફક્ત ભલામણ કરેલ રાસાયણિક ખાતર (૧૨૦-૬૦-૦૦ ના.ફો.પો. કિ.ગ્રા./હે.) આપવું. પોટાશ ખાતર આપવાની જરૂરીયાત નથી. Suggestion: Approved (Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)
22.2.1.2	Effect of nano nitrogen on irrigated wheat <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone cultivating irrigated wheat are recommended to apply 75% RDN (90 kg N/ha, 50 % N as basal and 50 % N at 25 DAS) along with two foliar sprays of 4 % urea (40 g/L water) at 30-35 and 50-55 DAS to get higher yield and net returns. Besides, apply recommended dose of phosphorus i.e. 60 kg P₂O₅/ha as basal. <u>ખેડૂતોપયોગી ભલામણ</u> મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં પિયત ઘઉંનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ઘઉંના પાકને ૭૫% ભલામણ કરેલ નાઇટ્રોજન (૯૦ કિ.ગ્રા. નાઇટ્રોજન/હે., ૫૦% પાયામાં અને ૫૦% વાવણીના ૨૫ દિવસ બાદ) આપવો અને ૪ % યુરિયા (૪૦ ગ્રામ/લિટર પાણી) નો ૩૦-૩૫ અને ૫૦-૫૫ દિવસે એમ બે વખત છંટકાવ કરવાથી વધુ ઉત્પાદન અને નફો મળે છે. વધુમાં, ભલામણ કરેલ ફોસ્ફરસ ૬૦ કિ.ગ્રા./હે. પાયામાં આપવો. Suggestion: Approved (Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)

22.2.1.3	Response of irrigation regimes and mulching on sweet corn and its effect on greengram under organic farming Suggestion: Shifted to information for scientific community (Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)
22.2.1.4	Nutrient management in sweet corn- grain amaranth-green gram cropping sequence under organic farming <u>Recommendation for farming community</u> The farmers of middle Gujarat agro-climatic zone adopting sweet corn-grain amaranth-green gram cropping sequence organically are recommended to apply 10 t FYM/ha only to sweet corn in <i>kharif</i> season for getting higher sweet corn equivalent yield of system and net returns. In addition, - Seed treatment of Anubhav Bio NPK consortium 5.0 mL/kg in sweet corn and grain amaranth and Bio NP (<i>Rhizobium</i> and PSB) 5.0 mL /kg in green gram should be applied as seed treatment. - Common application of <i>Trichoderma viridi</i> 1.5 kg/100 kg FYM in sweet corn only. - One blanket application of Bio NPK/NP after sowing @ 1 L/ha with irrigation in all crops. - In sweet corn, <i>insitu</i> sunnhemp mulching at 30 DAS, in grain amaranth spreading of previous sweet corn stover 5 t/ha as mulching and in green gram spreading of previous grain amaranth stover 2 t/ha. <u>ખેડૂતોપયોગી ભલામણ</u> મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં સેન્દ્રીય ખેતી હેઠળ મીઠી મકાઈ (સ્વીટકોર્ન)-રાજગરો-મગ પાક પદ્ધતિ અપનાવતા ખેડૂતોને સ્વીટકોર્ન સમકક્ષ વધુ ઉત્પાદન અને નફો મેળવવા માટે ફક્ત સ્વીટકોર્નને ચોમાસું ઋતુમાં ૧૦ ટન છાણીયુ ખાતર/હે. પાયામાં આપવાની ભલામણ કરવામાં આવે છે. - સ્વીટકોર્ન અને રાજગરાને અનુભવ બાયો એન.પી.કે. કોન્સોસિયમ તથા મગને બાયો એન.પી. (રાઈજોબીયમ અને પીએસબી) ૫ મિલિ/કિ.ગ્રા.ની બીજ માવજત આપવી. - ટ્રાયકોડરમાં વિરીડી ૧.૫ કિ.ગ્રા./૧૦૦ કિ.ગ્રા. છાણીયા ખાતર સાથે ફક્ત સ્વીટકોર્ન પાકને આપવું. - દરેક પાકમાં બાયો એન.પી.કે./બાયો એન.પી.વાવણી બાદ વાવણીના ૩૦ દિવસ પછી ૧ લિ./હે.મુજબ પિયત સાથે આપવું. - સ્વીટકોર્નમાં, વાવણીના ૩૦ દિવસ પછી સ્વીટકોર્નની બે હાર વચ્ચે વાવેલ શણ કાપી આચ્છાદન કરવું. રાજગરામાં અગાઉના પાક સ્વીટકોર્નનાં સુકા ધાસનું ૫ ટન/હે. મુજબ આચ્છાદન કરવું અને મગમાં અગાઉના પાક રાજગરાનું ભૂસું ૨ ટન/હે. મુજબ આચ્છાદન કરવું. Approved with following Suggestions: 1. Write “grain amaranth” word in place of amaranthus in report 2. Check and verify data of BD and O.C. data 3. Write past tense in noting section (Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)

Main Rice Research Station, AAU, Nawagam	
22.2.1.5	Optimizing method of sowing and seed rate of bold grain rice under DSR (direct seeded rice) method <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone growing bold grain rice in <i>kharif</i> season through direct seeded rice (DSR) method are recommended to adopt seed rate 50 kg/ha with spacing of either 20 cm or 30 cm between two rows for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં ચોમાસું ઋતુમાં જાડા દાણા ધરાવતી ડાંગરની જાતોનું સીધી વાવણી પદ્ધતી (ડી.એસ.આર.) થી વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે બિયારણનો દર ૫૦ કિ.ગ્રા/હે. રાખી બે હાર વચ્ચે ૨૦ સે.મી. અથવા ૩૦ સે.મી. અંતર જાળવી વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestion: 1. Write crop name in all tables (Action: Research Scientist (Rice), MRRS, AAU, Nawagam)
22.2.1.6	Optimizing method of sowing and seed rate of fine grain rice under DSR (direct seeded rice) method <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone growing fine grain rice through direct seeded rice (DSR) method in <i>kharif</i> season are recommended to adopt seed rate 40 kg/ha and keeping 20 cm spacing between two rows for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં પાતળા દાણા ધરાવતી ડાંગરની જાતોનું સીધી વાવણી પદ્ધતી (ડી.એસ.આર.) થી ચોમાસું ઋતુમાં વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે બિયારણનો દર ૪૦ કિ.ગ્રા/હે. રાખી બે હાર વચ્ચે ૨૦ સે.મી અંતર રાખી વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestions: 1. Use past tense in noting section 2. Put initial soil analysis data (Action: Research Scientist (Rice), MRRS, AAU, Nawagam)
22.2.1.7	Effect of soil conditioners on growth, yield and nutrient content in rice-wheat cropping sequence <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone adopting rice - wheat cropping sequence are recommended to apply recommended dose of fertilizer (80:25:00 NPK kg/ha) along with either FYM 10 t/ha or vermicompost 4 t/ha or NADEP compost 10 t/ha or Diatomaceous earth 4t/ha for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં ડાંગર-ઘઉંની પાક પદ્ધતિ અપનાવતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે ભલામણ કરેલ માત્રામાં ખાતર (૮૦:૨૫:૦૦ ના: ફો: પો/હે.) સાથે છાણીયું ખાતર ૧૦ ટન/હે અથવા વર્મીકંપોસ્ટ ખાતર ૪ ટન/હે અથવા નાડેપ કમ્પોસ્ટ ૧૦ ટન/હે. અથવા ડાઈટોમેસીયસ અર્થ (માટી) ૪ ટન/હેક્ટર આપવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestions: 1. Check data of P uptake in grain and straw 2. Use N:P₂O₅:K₂O in report 3. Add word “NADEP” in T₁₀ and T₁₁ (Action: Research Scientist (Rice), MRRS, AAU, Nawagam)

Main Forage Research Station, AAU, Anand	
22.2.1.8	Effect of seed priming on green fodder yield and quality of fodder maize <u>Recommendation for farming community</u> The farmers of middle Gujarat agro-climatic zone growing fodder maize in <i>rabi</i> season are recommended to soak seed for six hours in water before sowing for getting higher green fodder yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત-આબોહવાકિય વિસ્તારમાં ઘાસચારા મકાઈનું શિયાળું ઋતુમાં વાવેતર કરતા ખેડૂતોને લીલાચારાનું વધુ ઉત્પાદન અને નફો મેળવવા માટે મકાઈના બીજને છ કલાક માટે પાણીમાં પલાળીને વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Research Scientist, MFRS, AAU, Anand)
22.2.1.9	Response of nitrogen and phosphorus levels on green fodder yield of <i>kharif</i> fodder maize <u>Recommendation for farming community</u> The farmers of middle Gujarat agro-climatic zone growing fodder maize in <i>kharif</i> season are recommended to apply 100 kg N/ha and 40 kg P₂O₅/ha, in which 50 kg N/ha, 40 kg P₂O₅/ha and 25 kg Zn SO₄/ha to be applied as a basal, and remaining 50 kg N/ha applied at 30 Days after sowing for getting higher green fodder yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત-આબોહવાકિય વિસ્તારમાં ઘાસચારા મકાઈનું ચોમાસુ ઋતુમાં વાવેતર કરતા ખેડૂતોને લીલાચારાનું વધુ ઉત્પાદન અને નફો મેળવવા માટે ૧૦૦ કિ.ગ્રા. નાઇટ્રોજન અને ૪૦ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેક્ટરે આપવાની ભલામણ કરવામાં આવે છે, જે પૈકી ૫૦ કિ.ગ્રા. નાઇટ્રોજન, ૪૦ કિ.ગ્રા. ફોસ્ફરસ અને ૨૫ કિ.ગ્રા. ઝીંક સલ્ફેટ પ્રતિ હેક્ટરે પાયામાં તથા બાકી રહેલ ૫૦ કિ.ગ્રા. નાઇટ્રોજન વાવણી બાદ ૩૦ દિવસે આપવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestions: 1. Check data of P content 2. Add table nutrient content and uptake in report 3. Table 7 recast the title 4. Check economics (Action: Research Scientist, MFRS, AAU, Anand)
22.2.1.10	Effect of seed rate, method of sowing and time of cutting on green fodder yield and quality of lucerne <u>Recommendation for farming community</u> The farmers of middle Gujarat agro-climatic zone growing annual lucerne are recommended to sow 15 kg/ha seed keeping 30 cm row spacing and take the first cut at 45 DAS and subsequent cuts at 30 days interval (maximum six cuts) for getting higher green fodder yield and net returns. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત-આબોહવાકિય વિસ્તારમાં વર્ષાયુ રજકાનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે બિયારણનો દર ૧૫ કિ.ગ્રા. પ્રતિ હેક્ટર રાખી બે હાર વચ્ચે ૩૦ સે.મીના અંતરે વાવણી કરવી તથા પ્રથમ કાપણી વાવણીના ૪૫ દિવસ બાદ કરવી અને ત્યાર પછીની કાપણી ૩૦ દિવસના અંતરે (વધુમાં વધુ છ કાપણી) કરવાથી લીલાચારાનું વધુ ઉત્પાદન અને નફો મેળવી શકાય છે. Approved with following Suggestions: 1. Check sowing dates and cutting dates

	2. Put individual year green fodder data 3. Verify treatment cost table 4. Add NDF and ADF data as per proceeding of combined AGRESCO (Action: Research Scientist, MFRS, AAU, Anand)
AICRP-Weed Management, BACA, AAU, Anand	
22.2.1.11	Bio-efficacy of different herbicides against complex weed flora in <i>kharif</i> black gram <u>Recommendation for farming community</u> The farmers of middle Gujarat agro-climatic zone growing blackgram in <i>kharif</i> season are recommended to adopt any one of the following weed management practices for obtaining higher seed yield, effective weed management and higher returns. • Propaquizafop 2.5% + imazethapyr 3.75% w/w ME (ready-mix) 125 g a.i./ha (40 ml in 10 L of water) at 15-20 DAS or • Sodium acifluorfen 16.5% + clodinafop propargyl 8% EC (ready-mix) 245 g a.i./ha (20 ml in 10 L of water) at 15-20 DAS or • IC <i>fb</i> HW at 15 and 30 DAS • There was no any carry over effect of applied herbicide in <i>kharif</i> blackgram on succeeding (wheat, chickpea and mustard) crops. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત-આબોહવાકિય વિસ્તારમાં ચોમાસુ ઋતુમાં અડદનું વાવેતર કરતા ખેડૂતોને અડદનું વધુ ઉત્પાદન, અસરકારક નીંદણ વ્યવસ્થાપન અને વધુ વળતર મેળવવા માટે નીચેના પૈકી કોઈ એક નીંદણ વ્યવસ્થાપન પદ્ધતિ અપનાવવા ભલામણ કરવામાં આવે છે. • અડદની વાવણી બાદ ૧૫ થી ૨૦ દિવસે પ્રોપાક્વીઝાફોપ ૨.૫% + ઈમાઝેથાપીર ૩.૭૫% વ/વ એમઇ ૧૨૫ ગ્રામ સક્રિય તત્વ/હે (૪૦ મિલિ/૧૦ લીટર પાણી) • અડદની વાવણી બાદ ૧૫ થી ૨૦ દિવસે સોડીયમ એસીફ્લોરફેન ૧૬.૫% + ક્લોડીનાફોપ પ્રોપાર્ગીલ ૮% ઇસી ૨૪૫ ગ્રામ સક્રિય તત્વ/હે (તૈયાર મિશ્રણ) (૨૦ મિલિ/૧૦ લીટર પાણી) • અડદની વાવણી બાદ ૧૫ અને ૩૦ દિવસે આંતરખેડ બાદ હાથ નિંદામણ • ચોમાસુ અડદના પાકમાં છંટકાવ કરેલ નીંદણનાશકોની તેના પછીના પાકો (ઘઉં, ચણા અને રાઈ) પર કોઈપણ પ્રકારની આડઅસર જોવા મળેલ નથી. Approved with following Suggestion: 1. Varify hand weeding dates (Action: Agronomist & PI, AICRP on Weed Management, BACA, AAU, Anand)
College of Agriculture, AAU, Jabugam	
22.2.1.12	Integrated nutrient management in soyabean and its residual effect on chickpea <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone adopting soyabean- chickpea cropping sequence are recommended to apply 75 % RDF (33.75:45:00 kg/ha NPKS) through chemical fertilizer along with 25 % N through vermicompost (approx. 750 kg/ha) as basal OR apply 50 % RDF (22.50:30:00 kg/ha NPKS) through chemical fertilizer along with 50% nitrogen through FYM (approx. 4000 kg/ha) as basal only to soyabean crop, while in chickpea, only seed treatment with Bio-NP @ 5 ml/kg seed should be given for getting higher soyabean equivalent yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં સોયાબીન-ચણા પાક પદ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ફક્ત સોયાબીન પાકને ભલામણ કરેલ ખાતરના ૭૫% (૩૩.૭૫:૪૫:૦૦ ના:ફો:પો:સ કિ.ગ્રા./હે.) રાસાયણિક ખાતર દ્વારા અને બાકીનો ૨૫% નાઈટ્રોજન

	વર્મીકમ્પોસ્ટ (અંદાજિત ૭૫૦ કિ.ગ્રા./હે) દ્વારા અથવા ભલામણ કરેલ ખાતરના ૫૦% (૨૨.૫:૩૦:૦૦ ના:ફો:પો:સ કિ.ગ્રા./હે.) રાસાયણિક ખાતર દ્વારા અને બાકીનો ૫૦% નાઈટ્રોજન છાણિયા ખાતર (અંદાજિત ૪૦૦૦ કિ.ગ્રા./હે.) દ્વારા પાયામાં આપવો તથા ચણા પાકમાં ફક્ત બાયો એનપી ૫ મિલી/કી.ગ્રા બીજ પ્રમાણે બીજ માવજત આપવાથી સોયાબીન સમકક્ષ વધુ ઉત્પાદન અને નફો મેળવી શકાય છે. Approved with following Suggestions: 1. Write “stover yield” in soybean and chickpea in report 2. Write “metre” word in place of meter 3. Write the dates of interculturing, weeding and thinning 4. Verify the stover yield include in equivalent yield calculation (Action: Principal and Unit Head, CoA, AAU, Jabugam)
22.2.1.13	Studies on sorghum and soyabean intercropping system in <i>kharif</i> season <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone growing sorghum+soyabean intercropping are recommended to sow 2 rows of sorghum and 4 rows of soyabean at 45 cm row spacing for getting higher sorghum equivalent yield and net return. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારના જુવાર+સોયાબીન આંતરપાક પદ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે જુવારની બે હાર તથા સોયાબીનની ચાર હાર ૪૫ સે.મી. ના અંતરે વાવેતર કરવાથી જુવાર સમકક્ષ વધુ ઉત્પાદન તથા નફો મેળવી શકાય છે. Approved with following Suggestion: 1. Write stover yield in place of haulm yield in report (Action: Principal and Unit Head, CoA, AAU, Jabugam)
Department of Microbiology and bio-fertilizer project, BACA, Anand	
22.2.1.14	Evaluation of phosphate and potash rich organic manure on <i>rabi</i> maize and their residual effect on succeeding green gram <u>Recommendation for farming community</u> The farmers of middle Gujarat agro climatic zone growing maize in <i>rabi</i> - green gram in summer season cropping sequence are recommended to apply 160 kg N/ha (In four equal splits each at basal, four-leaf stage, knee-high stage and at tasseling) along with 60 kg P₂O₅/ha through PROM (Phosphate Rich Organic Manure). Moreover, in green gram only seed treatment with Bio-NP @ 5 mL/kg seed should be given for getting higher maize equivalent yield and net returns. For preparation of PROM containing 60 kg P₂O₅, total 250 kg high grade rock phosphate (containing about 24-30% P₂O₅) need to be mixed with 1000 kg of cow dung along with 2 L of Phosphate Solubilizing Fungus (10⁸ spore/mL) need to be added in the mixture. The mixture needs to be allowed for decomposition for 45-60 days in a pit/container with maintaining optimum moisture. ખેડૂતોપયોગી ભલામણ મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં શિયાળુ મકાઈ-ઉનાળુ મગની ખેતી પદ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે મકાઈના પાકમાં હેક્ટર દીઠ ૧૬૦ કિ.ગ્રા. નાઈટ્રોજન (ચાર સરખા ભાગે: વાવણી સમયે, ચાર પાન અવસ્થાએ, ધુંટણ અવસ્થાએ તથા ચમરી

	અવસ્થાએ) અને ૬૦ કિ.ગ્રા. ફોસ્ફરસ (ફોસ્ફરસ યુક્ત સેન્દ્રીય ખાતર- પ્રોમ દ્વારા) આપવાથી વધુ મકાઈ સમકક્ષ ઉત્પાદન અને નફો મેળવી શકાય છે. વધુમાં, મગના બીજને બાયો એન. પી. ૫ મીલી પ્રતિ કિ.ગ્રા. ના દરે બીજ માવજત આપવી. પ્રોમ (૬૦ કિ.ગ્રા. P_2O_5) બનાવવા માટે, કુલ ૨૫૦ કિ.ગ્રા. ઉચ્ચ ગુણવત્તાવાળા રોક ફોસ્ફેટ (૨૪-૩૦% P_2O_5) ને ૧૦૦૦ કિ.ગ્રા. ગાયના છાણ સાથે મિશ્ર કરી આ મિશ્રણમાં ૨ લિટર ફોસ્ફેટ સોલ્યુબિલાઈઝીંગ ફ્લૂ (૧૦% સ્પોર/મિલી) ઉમેરી આ મિશ્રણને ખાડામાં યોગ્ય ભેજ જાળવી રાખીને ૪૫-૬૦ દિવસ સુધી વિઘટન માટે રહેવા દેવું. Suggestion: Approved (Action: HOD, Department of Ag. Microbiology, BACA, AAU, Anand)
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Bidi Tobacco Research Station, AAU, Anand

22.2.1.15 Effect of Nano N particles on yield, quality and nutrient content of bidi tobacco

Recommendation for farming community

The farmers of middle Gujarat agro-climatic zone growing bidi tobacco are recommended to apply 75% nitrogen i.e. 135 kg N/ha of recommended dose (180 kg/ha) in two equal splits and spray of 2 % urea. First split of nitrogen fertilizer (67.5 kg/ha) should be given as a basal through ammonium sulphate (338 kg/ha) and second split of nitrogen (67.5 kg/ha) in form of urea (147 kg/ha) at 30 DATP as well as foliar spray of 2% Urea (20 g/l water) should be applied at 60 and 90 DATP for getting higher bidi tobacco cured leaf yield as well as net return.

ખેડૂતોપયોગી ભલામણ

મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં બીડી તમાકુની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ભલામણ કરેલ જથ્થાના (૧૮૦ કિ.ગ્રા./હે નાઈટ્રોજન) ૭૫% નાઈટ્રોજન (૧૩૫ કિ.ગ્રા./હે) બે સરખા હપ્તામાં આપવો તથા ૨% યુરિયા ખાતરનો છંટકાવ કરવો. પ્રથમ નાઈટ્રોજનનો હપ્તો (૬૭.૫ કિ.ગ્રા./હે) પાયાના ખાતર તરીકે એમોનીયમ સલ્ફેટના રૂપમાં (૩૩૮ કિ.ગ્રા./હે) અને બીજો હપ્તો (૬૭.૫ કિ.ગ્રા./હે) યુરિયાના રૂપમાં (૧૪૭ કિ.ગ્રા./હે) ફેરોપણી બાદ ૩૦ દિવસે આપવો, તદ્દપરાંત ૨% યુરિયા (૨૦ ગ્રા.મ/લિ પાણી)નો છંટકાવ ફેરોપણી બાદ ૬૦ અને ૯૦ દિવસે કરવાથી બીડી તમાકુના પાનનું વધુ ઉત્પાદન અને નફો મેળવી શકાય છે.

Approved with following Suggestion:

1. Check P_2O_5 data in table
2. In economics table remove column 3 data

(Action: Research Scientist, BTRS, AAU, Anand)

Regional Research Station, AAU, Anand

22.2.1.16 Effect of row spacing and mulch on summer okra under drip irrigation system

Recommendation for farming community

The Farmers of Middle Gujarat Agro-climatic Zone growing summer okra are recommended to sow seed at 60-30-60 cm x 20 cm paired row pattern on 50 cm bund size with 25-micron silver black poly mulch under drip irrigation system increase the fruit yield and net returns. Fertilizer scheduling and specifications of drip irrigation system should be followed as per below.

Fertigation scheduling of okra crop										
Stage	Crop stage	Fertigation	Fertilizer grade	Fertilizer (kg/ha)	Nutrient applied			% of requirement		
					N	P	K	N	P	K

1	Early growth stage	5 DAS	19:19:19	13.15	2.50	2.50	2.50	10	20	10
			13:00:45	5.55	0.72	-	2.50			
			Urea	14.74	6.78	-	-			
			Sub Total			10.00	2.50			
2	Flowering stage	15 and 30 DAS	19:19:19	26.32	5.00	5.00	5.00	40	40	40
			13:00:45	44.44	5.78	-	15.00			
			Urea	63.52	29.22	-	-			
			Sub Total			40.00	5.00			
3	Flowering to fruiting	45 and 60 DAS	19:19:19	13.15	2.50	2.50	2.50	30	20	30
			13:00:45	33.33	4.33	-	15.00			
			Urea	72.11	33.17	-	-			
			Sub Total			30.00	2.50			
4	Alternate day from picking	75 DAS	19:19:19	13.15	2.50	2.50	2.50	20	20	20
			13:00:45	16.67	2.17	-	7.50			
			Urea	33.33	15.33	-	-			
			Sub Total			20.00	2.50			
					100.0	12.5	50.00			

Note: 75% recommended dose of phosphorus applied as SSP at basal = 234.50 kg/ha

Drip Specifications		
Lateral discharge	:	4 liter/hr
Lateral diameter	:	16 mm
Lateral spacing	:	As per treatment
Dripper spacing	:	30 cm
Time of operation	:	0.8 PEF
Frequency	:	Alternate day

ખેડૂતોપયોગી ભલામણ

મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં ઉનાળુ ભીંડાનું ટપક સિંચાઈ પદ્ધતિથી વાવેતર કરતા ખેડૂતોને જોડીયા હાર પદ્ધતિમાં બે હાર વચ્ચે ૩૦ સેમી. અને બે જોડીયા હાર વચ્ચે ૬૦ સેમી. (૬૦-૩૦-૬૦ × ૨૦ સેમી.) નું અંતર રાખી ૫૦ સેમી.ના પાટલા પર ૨૫ માઇક્રોન સિલ્વર બ્લેક પોલી મલ્ચનું આવરણ કરી વાવેતર કરવાની ભલામણ કરવામાં આવે છે. આ રીતે વાવેતર કરવાથી ભીંડાનું વધુ ઉત્પાદન અને નફો મેળવી શકાય છે. વધુમાં ટપક સિંચાઈ અને ફર્ટિગેશનનું નીચેની માહિતિ મુજબ સમય પત્રક જાળવવું.

ભીંડા પાકનું ફર્ટીગેશન સમય પત્રક										
અવસ્થા	પાક અવસ્થા	ફર્ટીગેશન	ખાતરના ગ્રેડ	ખાતર (કિગ્રા/હે)	પોષક તત્વો (કિગ્રા/હે)			ટકામાં જરૂરિયાત		
					ના.	ફો.	પો.	ના.	ફો.	પો.
૧	વહેલી વૃદ્ધિ અવસ્થા	વાવણીના ૫ દિવસ પછી	૧૯:૧૯:૧૯	૧૩.૧૫	૨.૫૦	૨.૫૦	૨.૫૦	૧૦	૨૦	૧૦
			૧૩:૦૦:૪૫	૫.૫૫	૦.૭૨	-	૨.૫૦			
			યુરીયા	૧૪.૭૪	૬.૭૮	-	-			
			કુલ		૧૦.૦૦	૨.૫૦	૫.૦૦			
૨	કુલ આવવાની અવસ્થા	વાવણીના ૧૫ અને ૩૦ દિવસ પછી	૧૯:૧૯:૧૯	૨૬.૩૨	૫.૦૦	૫.૦૦	૫.૦૦	૪૦	૪૦	૪૦
			૧૩:૦૦:૪૫	૪૪.૪૪	૫.૭૮	-	૧૫.૦૦			
			યુરીયા	૬૩.૫૨	૨૯.૨૨	-	-			
			કુલ		૪૦.૦૦	૫.૦૦	૨૦.૦૦			

૩	ફૂલમાંથી ફળ બેસવાની અવસ્થા	વાવણીના ૪૫ અને ૬૦ દિવસ પછી	૧૯:૧૯:૧૯	૧૩.૧૫	૨.૫૦	૨.૫૦	૨.૫૦	૩૦	૨૦	૩૦
			૧૩:૦૦:૪૫	૩૩.૩૩	૪.૩૩	-	૧૫.૦૦			
			ચુરીયા	૭૨.૧૧	૩૩.૧૭	-	-			
			કુલ			૩૦.૦૦	૨.૫૦	૧૫.૦૦		
૪	વીણી પછી એકાંતરે દિવસે	વાવણીના ૭૫ દિવસ પછી	૧૯:૧૯:૧૯	૧૩.૧૫	૨.૫૦	૨.૫૦	૨.૫૦	૨૦	૨૦	૨૦
			૧૩:૦૦:૪૫	૧૬.૬૭	૨.૧૭	-	૭.૫૦			
			ચુરીયા	૩૩.૩૩	૧૫.૩૩	-	-			
			કુલ			૨૦.૦૦	૨.૫૦	૧૦.૦૦		
					૧૦૦.૦૦	૧૨.૫	૫૦.૦૦			

નોંધ: ભલામણ કરેલ ફોસ્ફરસનો ૭૫% જથ્થો સીંગલ સુપર ફોસ્ફેટ (૨૩૪.૫૦ કિ.ગ્રા.) ના રૂપમાં પાયામાં આપવો.

ટપક સિંચાઈની માહિતી		
લેટરલની કેપેસિટી	:	૪ લી./હે.
લેટરલનો વ્યાસ	:	૧૬ મિમી.
લેટરલનું અંતર	:	ટ્રીટમેન્ટ મુજબ
ટપકણીયાનું અંતર	:	૩૦ સેમી.
ચલાવવાનો સમય	:	૦.૮ પી. ઈ. એફ.
ક્યારે આપવું	:	એકાંતરે દિવસે

Suggestion: Approved

(Action: Research Scientist, RRS, AAU, Anand)

Agriculture and Horticulture Research Station, AAU, Khanmbholaj

22.2.1.17 Nutrient management through organic sources in blackgram in semi *rabi* and their residual effects on summer sesamum

Recommendation for farming community

The farmers of middle Gujarat agro climatic zone growing black gram in semi *rabi* and sesame in summer season cropping sequence organically are recommended to apply N equivalent of 20 kg/ha through FYM (approx. 2.6 t/ha) to black gram while apply 75 % of recommended dose of nitrogen *i.e.* 30 kg N to sesame crop through FYM (approx. 4.0 t/ha) for getting higher black gram equivalent yield and net returns.

ખેડૂતોપયોગી ભલામણ

મધ્ય ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં સેન્ટ્રિય ખેતી દ્વારા અર્ધ શિયાળુ અડદ-ઉનાળુ તલ પાક પદ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે અડદના પાકમાં પ્રતિ હેક્ટરે ૨૦ કિ.ગ્રા. નાઈટ્રોજન સમકક્ષ છાણિયું ખાતર (અંદાજે ૨.૬ ટન/હેક્ટર) જ્યારે તલના પાકમાં ભલામણ કરેલ નાઈટ્રોજનના ૭૫% એટલે ૩૦ કિ.ગ્રા. નાઈટ્રોજન છાણિયા ખાતર (અંદાજે ૪.૦ ટન/હેક્ટર) દ્વારા આપવાથી અડદ સમકક્ષ વધુ ઉત્પાદન અને નફો મેળવી શકાય છે.

Approved with following Suggestions:

1. Check soil status data of O.C., P₂O₅ and microbial count
2. Check equivalent yield data
3. Write word “sesame” in place of sesamum in text and report

(Associate Research Scientist, Agricultural and Horticulture Res. Station, Khambholaj)

Agricultural Research Station, AAU, Dahod	
22.2.1.18	Integrated nutrient management in <i>kharif</i> maize and its residual effect on succeeding chickpea Suggestion: Dropped due to improper soil parameters data and nutrient content (Action: Research Scientist, Agricultural Research Station, Dahod)
Tribal Research Cum Training Centre, AAU, Devgadhbhar	
22.2.1.19	Effect of multi-micronutrient mixture grades application on growth, yield and quality of grain amaranth Suggestion: 1. Extended for one more year, due to two-year experiment data and Year is NS. 2. Write word “grain amaranth” instead of “amaranthus” in all text (Action: Research Scientist, Agricultural Research Station, Devgadhbhar)
Agricultural Research Station, AAU, Arnej	
22.2.1.20	Effect of multi-micronutrient mixture grades application on growth, yield and quality of durum wheat under restricted irrigation condition in <i>Bhal</i> region <u>Recommendation for farming community</u> The farmers of Bhal and Coastal agro-climatic zone growing <i>bhalia</i> durum wheat under restricted irrigation (first at 21 DAS and second at 45 DAS) with recommended dose of fertilizer (60 kg nitrogen and 25 kg phosphorus per hectare) are recommended to apply 1% foliar spray of Government notified multi-micronutrient mixture Grade IV (Fe: 4.0, Mn: 1.0, Zn:6.0, Cu:0.5 and B:0.5 per cent) at 30 and 50 days after sowing for getting higher yield and net return. <u>ખેડૂતોપયોગી ભલામણ</u> ભાલ અને દરિયા કાંઠા ખેત આબોહવાકીય વિસ્તારમાં મર્યાદિત પિયત (પહેલું પિયત ૨૧ દિવસે અને બીજું પિયત ૪૫ દિવસે) થી ભાલીયા (ડયુરમ) ઘઉં ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે ભલામણ કરેલ ખાતરના જથ્થા (૬૦ કિ.ગ્રા. નાઈટ્રોજન અને ૨૫ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હેક્ટર) ઉપરાંત સરકાર માન્ય મલ્ટિમાઈક્રોન્યૂટ્રીયન્ટ મિક્ચર ગ્રેડ ૪ (Fe: 4.0, Mn: 1.0, Zn: 6.0, Cu: 0.5 and B: 0.5%) ના ૧% દ્રાવણનો વાવણી બાદ ૩૦ અને ૫૦ દિવસે છંટકાવ કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Associate Research Scientist, ARS, AAU, Arnej)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Dept. of Agronomy, CoA, JAU, Junagadh	
22.2.1.21	Evaluation of different varieties of soyabean under various row spacing in South Saurashtra Agro-climatic condition <u>Recommendation for farming community</u> The farmers of South Saurashtra Agro-climatic zone growing <i>kharif</i> soyabean are recommended to grow variety GS 4 with row spacing of 30 cm (80 kg/ha seed rate) or 45 cm (60 kg/ha seed rate) and GS 3 with row spacing of 45 cm (60 kg/ha seed rate) to obtain higher seed yield and net return.

	ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ચોમાસુ સોયાબીનનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે સોયાબીનનું મહત્તમ ઉત્પાદન અને ચોખ્ખું વળતર માટે સોયાબીનની જાત ગુજરાત સોયાબીન ૪ ને બે હાર વચ્ચે ૩૦ સે.મી. (૮૦ કિ.ગ્રા./હે. બિયારણનો દર) અથવા ૪૫ સે.મી. (૬૦ કિ.ગ્રા./હે. બિયારણનો દર) નું અંતર રાખી વાવેતર કરવું અને ગુજરાત સોયાબીન ૩ ને બે હાર વચ્ચે ૪૫ સે.મી. (૮૦ કિ.ગ્રા./હે. બિયારણનો દર) નું અંતર રાખી વાવેતર કરવું. Approved with following Suggestions: 1. Add cost of cultivation data 2. Mention net plot area spacing wise (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.1.22	Evaluation of low-cost natural farming in wheat + chickpea intercropping system Suggestions: 1. First three years present as information for scientific community 2. One more year to be extended and present with remaining year data for farmers recommendation (Action: Professor & Head, Department of Agronomy, JAU, Junagadh)
22.2.1.23	Weed management in <i>rabi</i> onion Recommendation for farming community The farmers of south Saurashtra Agro-climatic Zone growing <i>rabi</i> onion are recommended to apply pendimethalin 625 g/ha (38.7% CS 32.3 mL/10 L water) before transplanting <i>fb</i> pre-mix propaquizafop 5% + oxyfluorfen 43.75+105 g/ha (5%+12% EC 17.5 mL/10 L water) as post-emergence at 30 DAP OR tank-mix pendimethalin 450 g/ha (30% EC 30 mL/10 L water) + oxyfluorfen 60 g/ha (23.5% EC 5 mL/10 L water) before transplanting <i>fb</i> tank-mix quizalofop 20 g/ha (5% EC 8 mL/10 L water) + oxyfluorfen 60 g/ha (23.5% EC 5 mL/10 L water) as post-emergence at 30 DAP OR tank-mix pendimethalin 450 g/ha (30% EC 30 mL/10 L water) + oxyfluorfen 60 g/ha (23.5% EC 5 mL/10 L water) before transplanting <i>fb</i> hand weeding at 40 DAP for effective weed management and achieving higher bulb yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં શિયાળું ડુંગળીનું વાવેતર કરતાં ખેડૂતોને અસરકારક નીંદણ નિયંત્રણ તથા મહત્તમ ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા માટે નીચે મુજબ ભલામણ કરવામાં આવે છે. • ડુંગળીનાં ધરૂની ફેરોપણી પહેલા પેન્ડીમીથાલીન ૬૨૫ ગ્રા./હે. (૩૮.૭% સી.એસ. ૩૨.૩ મી.લી./૧૦ લી. પાણી) પ્રમાણે છંટકાવ કરવો અને ધરૂની ફેરોપણી બાદ ૩૦ દિવસે પૂર્વ-મિશ્રિત પ્રોપાક્વીઝાફોપ + ઓક્ઝીફ્લોરફેન ૪૩.૭૫+૧૦૫ ગ્રા./હે (૫+૧૨% ઈ.સી. ૧૭.૫ મી.લી./૧૦ લી. પાણી) પ્રમાણે છંટકાવ કરવો અથવા • ડુંગળીનાં ધરૂની ફેરોપણી પહેલા ટાંકી-મિશ્રણ પેન્ડીમીથાલીન ૪૫૦ ગ્રા./હે. (૩૦% ઈ.સી. ૩૦ મી.લી./૧૦ લી. પાણી) + ઓક્ઝીફ્લોરફેન ૬૦ ગ્રા./હે. (૨૩.૫% ઈ.સી. ૫ મી.લી./૧૦ લી. પાણી) પ્રમાણે છંટકાવ કરવો અને ધરૂની ફેરોપણી બાદ ૩૦ દિવસે ટાંકી-મિશ્રણ ક્વીઝાલોફોપ ૨૦ ગ્રા./હે. (૫% ઈ.સી. ૮ મી.લી./૧૦ લી. પાણી) + ઓક્ઝીફ્લોરફેન ૬૦ ગ્રા./હે. (૨૩.૫% ઈ.સી. ૫ મી.લી./૧૦ લી. પાણી) પ્રમાણે છંટકાવ કરવો અથવા

	ડુંગળીનાં ધરૂની ફેરોપણી પહેલા ટાંકી-મિશ્રણ પેન્ડીમીથાલીન ૪૫૦ ગ્રા./હે. (૩૦% ઈ.સી. ૩૦ મી.લી./૧૦ લી. પાણી) + ઓક્ઝીફ્લોરેન ૬૦ ગ્રા./હે. (૨૩.૫% ઈ.સી. ૫ મી.લી./૧૦ લી. પાણી) પ્રમાણે છંટકાવ કરવો અને ધરૂની ફેરોપણી બાદ ૪૦ દિવસે હાથ નિદાંમણ કરવું. Approved with following Suggestion: 1. Remove CD value in DNMRT (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.1.24	Response of pigeonpea to subsoiling and furrow irrigation Recommendation for farming community The farmers of South Saurashtra Agro-climatic zone growing pigeonpea are recommended in-row subsoiling at 45 cm depth before sowing and apply irrigation with alternate furrow irrigation method when required after cessation of monsoon to secure higher yield and net return along with saving of water as well as soil moisture conservation. ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત-આબોહવાકીય વિસ્તારમાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે તુવેરનું મહત્તમ ઉત્પાદન અને ચોખ્ખી આવક મેળવવા તથા પાણીની બચત અને જમીનમાં ભેજ સંરક્ષણ કરવા માટે વાવેતર પહેલા હારમાં ૪૫ સે.મી. ઉંડાઈ સુધી સબસોઈલિંગ કરી તુવેરનું વાવેતર કરવું તથા ચોમાસું પૂર્ણ થયે જરૂરિયાત જણાય ત્યારે એકાંતરે ચાસમાં પિયત આપવું. Suggestion: Approved (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
Main Dry Farming Research Station, JAU, Targhadia	
22.2.1.25	Cropping geometry of groundnut with different intercrops for increasing productivity and rain water use efficiency under groundnut-fodder sorghum sequence in rainfed condition Recommendation for farming community The farmers of North Saurashtra Agro-climatic Zone growing groundnut crop under <i>kharif</i> groundnut-<i>rabi</i> fodder sorghum crop sequence in rainfed condition are recommended to grow sweet corn as intercrop in paired row planting of groundnut (45-75-45 cm x 10 cm) for obtaining higher yield, net return and rain water use efficiency. ખેડૂતોપયોગી ભલામણ ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ચોમાસું મગફળી-શિયાળુ ચારા જુવારની પાક પદ્ધતિ હેઠળ મગફળીનો પાક ઉગાડતા ખેડૂતોને વરસાદ આધારિત પરિસ્થિતિમાં વધુ ઉત્પાદન અને ચોખ્ખું વળતર તેમજ વરસાદના પાણીની વધુ કાર્યક્ષમતા મેળવવા માટે મગફળીની જોડીયા હારના વાવેતર (૪૫-૭૫-૪૫ સે.મી. x ૧૦ સે.મી.) માં આંતરપાક તરીકે મીઠી મકાઈ ઉગાડવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
22.2.1.26	Nutrient management in groundnut-Bt. cotton cropping sequence under rainfed condition Recommendation for farming community The farmers of North Saurashtra Agro-climatic Zone adopting groundnut - Bt. cotton crop rotation under rainfed condition are recommended to apply 100% RDF to groundnut (12.5-25-00 kg N-P₂O₅-K₂O/ha + 6 t FYM/ha (along with <i>Rhizobium</i> culture seed treatment 200 mL/10 kg of groundnut seed and 100% RDF to cotton (80 kg N/ha +10 t FYM t/ha + 500 kg castor cake/ha) along with <i>Azotobacter</i> + PSB soil drenching 2.5 litre/ha) in respective crop for obtaining higher yield and net return as well as sustaining soil fertility.

	ખેડૂતોપયોગી ભલામણ ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારિત પરિસ્થિતિમાં મગફળી અને બીટી કપાસની પાક ફેરબદલી અપનાવતા ખેડૂતોને વધારે ઉત્પાદન અને આર્થિક વળતર મેળવવા તેમજ જમીનની ફળદ્રુપતાની જાળવણી માટે અનુક્રમે મગફળી પાકને ૧૦૦% ભલામણ કરેલ ખાતરનો જથ્થો (૧૨.૫-૨૫-૦૦ કિગ્રા ના-ફો-પો./હેક્ટર + ૬ ટન છાણીયું ખાતર/હેક્ટર) સાથે રાઈઝોબિયમ કલ્ચરની બીજ માવજત ૨૦૦ મિલી/૧૦ કિલો મગફળીના બીજ મુજબ અને કપાસના પાકને ૧૦૦% ભલામણ કરેલ ખાતરનો જથ્થો (૮૦ કી.ગ્રા. નાઈટ્રોજન + ૧૦ ટન છાણીયું ખાતર/હેક્ટર અને ૫૦૦ કી.ગ્રા. દીવેલીનો ખોળ/હેક્ટર) સાથે અઝોટોબેક્ટર અને પીએસબી ૨.૫ લી/હેક્ટર જમીનમાં રેડીને આપવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
22.2.1.27	Response of Bt. cotton to foliar application of nano urea and urea under rainfed condition Recommendation for farming community The farmers of North Saurashtra Agro climatic Zone growing rainfed Bt. cotton are recommended to apply 50 % RDN (20 kg/ha as basal and 20 kg/ha as top dressing at 45 days after sowing) + foliar spray of 2 % urea solution at 30 and 60 days after sowing along with 10 t FYM/ha + 500 kg castor cake/ha as basal for obtaining higher yield as well as maximum net return. ખેડૂતોપયોગી ભલામણ ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં વરસાદ આધારિત બી.ટી. કપાસનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે બી.ટી. કપાસનું વધારે ઉત્પાદન અને આર્થિક વળતર મેળવવા માટે ૫૦ ટકા ભલામણ કરેલ નાઈટ્રોજન (૨૦ કી.ગ્રા. નાઈટ્રોજન પ્રતિ હેક્ટર પાયામાં અને ૨૦ કી.ગ્રા. નાઈટ્રોજન પ્રતિ હેક્ટર પુરતી ખાતર રૂપે વાવેતર બાદ ૪૫ દિવસે આપવો) અને ૨ ટકા ચુરિયાનો છંટકાવ વાવેતર બાદ ૩૦ અને ૬૦ દિવસે કરવાની સાથે પાયામાં ૧૦ ટન છાણીયું ખાતર અને ૫૦૦ કી.ગ્રા. દીવેલીનો ખોળ આપવો. Approved with following Suggestion: 1. Take treatment T₇ as information for scientific community (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
Main Oilseeds Research Station, JAU, Junagadh	
22.2.1.28	Effect of Nano urea (liquid) on yield and various agronomic traits of castor Recommendation for farming community Farmers of the South Saurashtra Agro-climatic Zone growing castor under irrigated condition are recommended to apply 100% recommended dose of P₂O₅ (50 kg P₂O₅/ha) and K₂O (50 kg K₂O/ha) as basal and 90 kg N/ha in four split i.e., 30 kg N/ha as basal, followed by 22 kg N/ha at 40 DAS, 22 kg N/ha at 70 DAS and 16 kg N/ha at 100 DAS along with urea 40 g/liter of water as foliar spray at 40 and 80 DAS for securing higher seed yield and net returns. ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં પિયત હેઠળ દિવેલાનું વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન અને યોગ્ય આવક મેળવવા માટે ભલામણ કરવામાં આવે છે કે ભલામણ કરેલ માત્રાનો ૧૦૦ ટકા ફોસ્ફરસ (૫૦ કિ.ગ્રા. ફોસ્ફરસ પ્રતિ હે.) અને પોટાશ (૫૦ કિ.ગ્રા. પોટાશ

	પ્રતિ હે.) પાયામાં અને ૮૦ કિ.ગ્રા. નાઈટ્રોજન/હે. ચાર હપ્તામાં આપવો. તેમાં ૩૦ કિ.ગ્રા. નાઈટ્રોજન પ્રતિ હે. વાવણી વખતે તથા ૨૨ કિ.ગ્રા. નાઈટ્રોજન ૪૦ દિવસે, ૨૨ કિ.ગ્રા. નાઈટ્રોજન ૭૦ દિવસે અને ૧૬ કિ.ગ્રા. નાઈટ્રોજન ૧૦૦ દિવસે આપવો સાથે યુરિયા ૪૦ ગ્રામ/લિટર પાણી પ્રમાણે ૪૦ અને ૮૦ દિવસે છંટકાવ કરવો. Approved with following Suggestions: 1. Write capsule/spike in table 2. Write units in all the tables (Action: Research Scientist (Groundnut), Main Oilseeds Res. Station, JAU, Junagadh)
22.2.1.29	Effect of nano urea (liquid) on yield and various agronomic traits of summer groundnut <u>Recommendation for farming community</u> The farmers of South Saurashtra Agro-climatic Zone growing summer groundnut are recommended to apply 18.75 kg N/ha (75% RDN) + 50 kg P₂O₅/ha (100% RDP) + 50 kg K₂O/ha (100% RDK) as a basal followed by urea 40 g/L of water spray at 30 DAS for obtaining higher groundnut yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં ઉનાળુ મગફળી ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખી આવક મેળવવા માટે ભલામણ કરેલ રાસાયણિક ખાતર ૧૮.૭૫ કિ.ગ્રા. નાઈટ્રોજન/હે. (૭૫ ટકા નાઈટ્રોજન) + ૫૦ કિ.ગ્રા. ફોસ્ફરસ/હે. (૧૦૦ ટકા ફોસ્ફરસ) + ૫૦ કિ.ગ્રા. પોટાશ/હે. (૧૦૦ ટકા પોટાશ) જથ્થો પાયામાં આપવો તેમજ યુરિયા ખાતર ૪૦ ગ્રામ પ્રતિ એક લીટર પાણીમાં વાવેતર બાદ ૩૦ દિવસે છંટકાવ કરવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestion: 1. Write table title with crop name in all the tables (Action: Research Scientist (Groundnut), Main Oilseeds Res. Station, JAU, Junagadh)
Dept. of Soil Science & Agri. Chem., COA, JAU, Junagadh	
22.2.1.30	Effect of N, P and K fertilizer on yield and nutrients uptake by Indian bean <u>Recommendation for farming community</u> The farmers of South Saurashtra Agro-climatic Zone growing Indian bean in medium black calcareous soil in <i>rabi</i> season are recommended to apply 30 kg N/ha, 40 kg P₂O₅/ha and 20 kg K₂O/ha as basal for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારમાં મધ્યમ કાળી યુનાયુક્ત જમીનમાં શિયાળુ ઋતુમાં પાપડી વાલોળનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, નાઈટ્રોજન ૩૦ કિ.ગ્રા./હેક્ટર, ફોસ્ફરસ ૪૦ કિ.ગ્રા./હેક્ટર અને પોટાશ ૨૦ કિ.ગ્રા./હેક્ટર પાયામાં આપવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે. Approved with following Suggestions: 1. Add plant population data 2. Write irrigation date as well as harvesting and picking dates 3. Add table of picking wise yield (Action: Professor and Head, Dept. of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)
22.2.1.31	Effect of foliar application of various fertilizers on growth, yield and nutrient uptake by pigeonpea <u>Recommendation for farming community</u> Farmers of South Saurashtra Agro-climatic Zone growing pigeonpea in <i>kharif</i> season are recommended to apply 75% recommended dose of fertilizer (18.75-37.5-37.5 kg/ha N-P₂O₅-K₂O) as basal and foliar spray of water soluble fertilizer (19:19:19) 1% (10 g/L) and micronutrient Grade IV 1% (10 g/L) at 45 and 60 days after sowing OR 75% recommended dose of fertilizer (18.75-37.5-37.5 kg/ha N-P₂O₅-K₂O) as basal and foliar spray of water soluble

	fertilizer (19:19:19) 1% (10 g/L) and humic acid 0.3% (3 mL/L) at 45 and 60 days after sowing for getting higher yield and net returns. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારમાં ખરીફ ઋતુ દરમિયાન તુવેરનું વાવેતર કરતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા માટે ભલામણ કરેલ રાસાયણિક ખાતરના ૭૫% (૧૮.૭૫-૩૭.૫-૩૭.૫ કિ.ગ્રા./હેક્ટર ના-ફો-પો) પાયામાં ઉપરાંત પાણીમાં દ્રાવ્ય ખાતર (૧૯:૧૯:૧૯) ૧ ટકા (૧૦ ગ્રામ/લી.) અને સુક્ષ્મતત્વ ગ્રેડ-૪ ૧ ટકા (૧૦ ગ્રામ/લી.) અથવા ભલામણ કરેલ રાસાયણિક ખાતરના ૭૫% (૧૮.૭૫-૩૭.૫-૩૭.૫ કિ.ગ્રા./હેક્ટર ના-ફો-પો) પાયામાં ઉપરાંત પાણીમાં દ્રાવ્ય ખાતર (૧૯:૧૯:૧૯) ૧ ટકા (૧૦ ગ્રામ/લી.) અને હ્યુમિક એસિડ ૦.૩ ટકા (૩ મીલી./લી.) વાવેતરના ૪૫ અને ૬૦ દિવસે છંટકાવ કરવો. Approved with following Suggestions: 1. Write date of cultural operations 2. Recommend the treatments T₈ and T₁₀ 3. Add plant population data (Action: Professor and Head, Dept. of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)
Pearl millet Research Station, JAU, Jamnagar	
22.2.1.32	Response of summer pearl millet to foliar application of nano urea <u>Recommendation for farming community</u> The farmers of North Saurashtra Agro-climatic Zone growing summer pearl millet are recommended to apply 40 kg N/ha and 60 kg P₂O₅/ha as basal and 50 kg N/ha at 25 days after sowing followed by foliar application of 2% urea at 30 and 45 days after sowing for getting higher grain yield and net return. This also reduces 19 percentage of nitrogen quantity used in summer pearl millet. <u>ખેડૂતોપયોગી ભલામણ</u> ઉત્તર સૌરાષ્ટ્ર ખેત આબોહવાકિય વિસ્તારમાં ઉનાળું બાજરાનું વાવેતર કરતાં ખેડૂતોએ વધારે ઉત્પાદન અને ચોખ્ખી આવક મેળવવા ૪૦ કિ.ગ્રા./હેક્ટર નાઈટ્રોજન અને ૬૦ કિ.ગ્રા./હેક્ટર ફોસ્ફરસ પાયામાં અને ૫૦ કિ.ગ્રા./હેક્ટર નાઈટ્રોજન વાવેતરના ૨૫ દિવસ બાદ આપવો તેમજ ૨% યુરીયા દ્રાવણનો છંટકાવ વાવેતર બાદ ૩૦ અને ૪૫ દિવસે કરવાની ભલામણ કરવામાં આવે છે. જે ઉનાળું બાજરામાં વપરાતા નાઈટ્રોજનના જથ્થાને ૧૯ ટકા ઘટાડે છે. Suggestion: Approved (Action: Research Scientist (Pearl millet), Pearl millet Research Station, JAU, Jamnagar)
Cotton Research Station, JAU, Junagadh	
22.2.1.33	Effect of high-density planting and NPK fertilizer on productivity of sympodial Bt. cotton <u>Recommendation for farming community</u> The farmers of South Saurashtra Agro-climatic Zone growing Bt. cotton under irrigated condition are recommended to grow Bt. cotton in high density planting system at 60 x 45 cm with 75% RDF (180-37.50-112.50 N-P₂O₅-K₂O kg/ha) i.e. 45 kg N/ha, 37.50 kg P₂O₅/ha and 56.25 kg K₂O/ha as basal and remaining 135 kg N in three equal splits at 21 days intervals and 56.25 kg K₂O/ha at the time of earthing-up for getting higher yield and net realization. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ સૌરાષ્ટ્ર ખેત આબોહવાકીય વિસ્તારના પિયત પરિસ્થિતિમાં બીટી કપાસની ધનિષ્ઠ પાક પદ્ધતિમાં વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે, બીટી કપાસનું ૬૦ × ૪૫ સેમીનાં અંતરે વાવેતર કરી સાથે ભલામણ કરેલ રાસાયણિક ખાતરનાં ૭૫% (૧૮૦-૩૭.૫૦-

	૧૧૨.૫૦ ના.ફો.પો. કિ.ગ્રા./હે.) પૈકી ૪૫ કિ.ગ્રા. નાઈટ્રોજન/હે., ૩૭.૫ કિ.ગ્રા. ફોસ્ફરસ/હે. અને ૫૬.૨૫ કિ.ગ્રા. પોટાશ/હે. પાયામાં આપવું અને બાકી રહેલ ૧૩૫ કિ.ગ્રા. નાઈટ્રોજન ૨૧ દિવસના અંતરે ત્રણ સરખા હપ્તામાં તેમજ ૫૬.૨૫ કિ.ગ્રા. પોટાશ/હે. પાળા ચડાવતી વખતે આપવાથી વધુ ઉપજ અને ચોખ્ખો નફો મળે છે. Approved with following Suggestions: 1. Verify harvest dates 2. Verify the yield data of interaction & economics data 3. Recommend S₂F₁ treatments and correct recommendation para accordingly 4. Mention N application as basal and three equal split at 21 DAS intervals (Action: Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)
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NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Soil and Water Management Research Unit, NAU, Navsari																																																																																																												
22.2.1.34	Effect of water application through vertical inserted pipe in clay soil with different levels of irrigation and fertigation on growth and yield of sapota																																																																																																											
	<u>Recommendation for farming community</u>																																																																																																											
	Farmers of South Gujarat having two years established sapota plantation (7.5 m x 7.5 m spacing) are recommended to apply irrigation water through drip at 0.60 ET_c in vertically inserted HDPE pipe (75 mm diameter) at 45 cm soil depth via online fitted 8 lph dripper connected by spaghetti tubes (4 mm) instead of surface drip irrigating at 0.75 ET_c. Farmers are also advised to apply 100% of recommended dose of phosphorus and 80% recommended dose of nitrogen and potassium. Phosphorus fertilizer (SSP) should be applied in soil (ring method) in two equal splits: before monsoon in May and after the monsoon in October. Nitrogen (urea) and potassium (Muriate of potash) should be applied through fertigation in 10 equal splits: five before monsoon (starting from 3rd week of May) and five after monsoon (starting from 3rd week of October) by maintaining an 8-days interval between two splits. By adopting drip irrigation at 0.60 ET_c (45 cm below ground level), 10.3 per cent saving in irrigation water, increase in yield and higher net income can be achieved over surface drip irrigation. The year wise details of drip irrigation system along with no. of inserted pipes, drippers and spaghetti tubes, recommended doses of biocompost and fertilizers are given below.																																																																																																											
	<table border="1"> <thead> <tr> <th colspan="2">Particulars</th><th>3rd year</th><th>4th year</th><th>5th year</th><th colspan="2">6th year</th><th colspan="2">7th year</th><th colspan="2">8th year</th></tr> </thead> <tbody> <tr> <td rowspan="2">Drip system details</td><td>No. of vertical inserted pipes and spaghetti tubes / tree</td><td>2</td><td>2</td><td>4</td><td>4</td><td>2</td><td>4</td><td>4</td><td>4</td><td>4</td></tr> <tr> <td>Distance of placement of vertical pipes around the tree trunk (m)</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.0</td><td>1.5</td><td>1.0</td><td>1.5</td><td>1.0</td><td>1.5</td></tr> <tr> <td colspan="2">Operating time (minutes)</td><td colspan="9"></td></tr> <tr> <td colspan="2">Nov. to Jan.</td><td>30-40</td><td>75-90</td><td>75-95</td><td colspan="2">92-105</td><td>Nov. to Dec.</td><td>95-105</td><td colspan="2">130-140</td></tr> <tr> <td colspan="2">Feb. to Mar,</td><td>41-45</td><td>90-100</td><td>90-100</td><td colspan="2">110-120</td><td>Jan. to Feb.</td><td>110-120</td><td colspan="2">150-160</td></tr> <tr> <td colspan="2">Apr to Jun.</td><td>50-55</td><td>110-120</td><td>115-125</td><td colspan="2">140-150</td><td>Mar. to Apr.</td><td>130-140</td><td colspan="2">175-190</td></tr> <tr> <td colspan="2"></td><td></td><td></td><td></td><td colspan="2"></td><td>May to Jun.</td><td>155-170</td><td colspan="2">210-220</td></tr> <tr> <td colspan="2">Fertilizer dose (N:P₂O₅:K₂O g/tree)</td><td>240:150:120</td><td>320:200:160</td><td>400:250:200</td><td colspan="2">480:300:240</td><td colspan="2">560:350:280</td><td colspan="2">640:400:320</td></tr> </tbody> </table>										Particulars		3 rd year	4 th year	5 th year	6 th year		7 th year		8 th year		Drip system details	No. of vertical inserted pipes and spaghetti tubes / tree	2	2	4	4	2	4	4	4	4	Distance of placement of vertical pipes around the tree trunk (m)	1.0	1.0	1.0	1.0	1.5	1.0	1.5	1.0	1.5	Operating time (minutes)											Nov. to Jan.		30-40	75-90	75-95	92-105		Nov. to Dec.	95-105	130-140		Feb. to Mar,		41-45	90-100	90-100	110-120		Jan. to Feb.	110-120	150-160		Apr to Jun.		50-55	110-120	115-125	140-150		Mar. to Apr.	130-140	175-190									May to Jun.	155-170	210-220		Fertilizer dose (N:P ₂ O ₅ :K ₂ O g/tree)		240:150:120	320:200:160	400:250:200	480:300:240		560:350:280		640:400:320	
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Biocompost application before monsoon (kg/tree)	15	20	25	30	35	40
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ખેડૂતોપયોગી ભલામણ

દક્ષિણ ગુજરાતમાં બે વર્ષના ચીકુ (૭.૫ મી x ૭.૫ મી અંતર) ધરાવતા ખેડૂતોને સરફેસ ટપક પદ્ધતિથી ૦.૭૫ ઇંટીસીના દરે પિયત આપવાના બદલે ૮ લિટર પ્રતિ કલાક ક્ષમતા ધરાવતા ઓન લાઇન ટપકણીયા પર લગાવેલ ૪ મી.મી. સ્પેગેટી ટ્યુબની મદદથી ૭૫ મી.મી. વ્યાસની એચ.ડી.પી.ઈ. પાઈપ દ્વારા ૪૫ સે.મી. ઊંડાઈએ ૦.૬૦ ઇંટીસીના દરે જમીનમાં સિંચાઈ આપવાની ભલામણ કરવામાં આવે છે. ખેડૂતોને ખાતર વ્યવસ્થાપન માટે ૧૦૦ ટકા ભલામણ કરેલ ફોસ્ફરસ અને ૮૦ ટકા ભલામણ કરેલ નાઈટ્રોજન તથા પોટાશ આપવાની પણ સલાહ આપવામાં આવે છે. ફોસ્ફરસ ખાતર (એસ.એસ.પી.) જમીનમાં રીંગ પદ્ધતિથી બે સમાન હપ્તામાં; જે પૈકી એક મે મહિનામાં (ચોમાસા પહેલા) અને બીજું ઓક્ટોબર મહિનામાં (ચોમાસા પછી) આપવું. નાઈટ્રોજન (યુરિયા) અને પોટાશ (મ્યુરેટ ઓફ પોટાશ) ફર્ટિગેશન પદ્ધતિથી ૧૦ સમાન હપ્તામાં આપવા; જેમાં ૫ હપ્તા ચોમાસા પહેલા (મે મહિનાના ત્રીજા સપ્તાહની શરૂઆતથી) અને બાકીના ૫ હપ્તા (ઓક્ટોબર મહિનાના ત્રીજા સપ્તાહની શરૂઆતથી) ચોમાસા પછી શરૂ કરીને બે હપ્તા વચ્ચે ૮ દિવસનું અંતર રાખવું. આ રીતે ૦.૬૦ ઇંટીસી દરે (૪૫ સે.મી. જમીન નીચે) ટપક સિંચાઈ અપનાવવાથી સરફેસ ટપક સિંચાઈની તુલનામાં ૧૦.૩ ટકા પાણીની બચત, ઉત્પાદન વધારો અને વધુ ચોખ્ખો નફો મેળવી શકાય છે.

વિગતો		ત્રીજુ વર્ષ	ચોથુ વર્ષ	પાંચમું વર્ષ	છઠ્ઠુ વર્ષ		સાતમું વર્ષ		આઠમું વર્ષ	
ટપક પદ્ધતિની વિગત	દરેક વૃક્ષ દીઠ જમીનમાં નાખેલી પાઇપો, ટપકણીયા અને સ્પેગેટી ટ્યુબોની સંખ્યા	૨	૨	૪	૪	૨	૪	૪	૪	૪
	વૃક્ષના થડથી જમીનમાં નાખેલી પાઇપોના અંતર	૧.૦	૧.૦	૧.૦	૧.૦	૧.૫	૧.૦	૧.૫	૧.૦	૧.૫
પદ્ધતિ ચલાવવાનો સમય (મિનિટમાં)										
નવેમ્બર થી જાન્યુઆરી		૩૦-૪૦	૭૫-૮૦	૭૫-૮૫	૯૨-૧૦૫		નવેમ્બર - ડિસેમ્બર	૮૫-૧૦૫	૧૩૦-૧૪૦	
ફેબ્રુઆરી થી માર્ચ		૪૧-૪૫	૮૦-૧૦૦	૮૦-૧૦૦	૧૧૦-૧૨૦		જાન્યુઆરી - ફેબ્રુઆરી	૧૧૦-૧૨૦	૧૫૦-૧૬૦	
એપ્રિલથી જૂન		૫૦-૫૫	૧૧૦-૧૨૦	૧૧૫-૧૨૫	૧૪૦-૧૫૦		માર્ચ- એપ્રિલ	૧૩૦-૧૪૦	૧૭૫-૧૮૦	
							મેઈ - જૂન	૧૫૫-૧૭૦	૨૧૦-૨૨૦	
રાસાયણિક ખાતરની માત્રા (ના: ફો: પો, ગ્રામ/વૃક્ષ)		૨૪૦:૧૫૦ :૧૨૦	૩૨૦:૨૦૦ :૧૬૦	૪૦૦:૨૫૦ :૨૦૦	૪૮૦:૩૦૦ :૨૪૦		૫૬૦:૩૫૦:૨૮૦		૬૪૦:૪૦૦:૩૨૦	
ચોમાસા પહેલા બાયોકોમ્પોસ્ટ નાખવાની માત્રા (કિગ્રા/વૃક્ષ)		૧૫	૨૦	૨૫	૩૦		૩૫		૪૦	

	Suggestion: Approved (Action: Research Scientist, SWMRU, NAU, Navsari)
22.2.1.35	Standardization of soil moisture sensor for drip irrigation management in banana <u>Recommendation for farming community</u> The farmers of South Gujarat growing drip irrigated banana crop (2.40 m x 1.20 m) are recommended to irrigate the crop at 20% soil moisture depletion of Available Soil Moisture (ASM) by placing soil moisture sensor (Frequency Domain Sensor) at 40 cm depth and 30 cm away from the stem at the time of planting for getting higher yield and net income. For initial establishment of freshly planted banana and sensor, common irrigation applied through drip for 1.5 month and thereafter schedule irrigation on sensor based. They are further advised to apply recommended dose of fertilizers through fertigation. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતના ટપક સિંચાઈથી કેળનો પાક (૨.૪૦ મી. x ૧.૨૦ મી.) લેતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, તેઓએ વધુ ઉપજ અને ચોખ્ખી આવક મેળવવા માટે વાવેતર સમયે સોઈલ મોઈસ્ટર સેન્સર (ફ્રિક્વન્સી ડોમાઈન સેન્સર) ૪૦ સે.મી. ની ઉડાંઈએ અને કેળના થડથી ૩૦ સે.મી. ના અંતરે ગોઠવીને ઉપલબ્ધ જમીન ભેજના ૨૦% ઘટાડા પ્રમાણે પાકને પિયત આપવું. નવી વાવેતર કરેલ કેળ અને સેન્સરની પ્રારંભિક સ્થાપના કરવા, દોઢ મહિના સુધી ટપક દ્વારા જરૂરી પિયત અને ત્યારબાદ સેન્સર આધારીત પિયત આપવું. તેઓને વધુ સલાહ આપવામાં આવે છે કે, ફર્ટિગેશન દ્વારા ભલામણ કરેલ ખાતરની માત્રા આપવી. Approved with following Suggestion: 1. Include fertilizer schedule methodology in report. (Action: Research Scientist, SWMRU, NAU, Navsari)
22.2.1.36	Effect of different levels of saline water and mulching on drip irrigated summer okra under coastal salt affected soils <u>Recommendation for farming community</u> The farmers of South Gujarat growing drip irrigated okra in summer season (paired row; 30 cm in 2 rows x 30 cm: 60 cm) in coastal saline-sodic soils are recommended to use irrigation water (0.7 ETc) up to 4 dS/m along with silver black plastic mulch (25 μ thickness with 56% coverage) or irrigation water having 2 dS/m along with sugarcane trash mulch (@ 5 t/ha) for achieving higher yield and net profit. They are also recommended to apply 5 t/ha biocompost at the time of land preparation and 50 kg P₂O₅ per hectare as basal and 120 kg N and 50 kg K₂O per hectare through fertigation. Growing of transplanted <i>kharif</i> rice after summer okra helped in reducing the salinity in the soil. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતના દરિયાકાંઠાની ક્ષારિય- ભાસ્મિક જમીનમાં ટપક પિયતથી (૦.૭૦ ઈટીસી) ઉનાળુ ભીંડા લેતા (જોડિયા હાર; ૩૦ સે.મી. બે હાર x ૩૦ સે.મી.: ૬૦ સે.મી.) ખેડૂતોને વધુ ઉપજ અને ચોકો નફો મેળવવા માટે ૪ dS/m સુધીના ક્ષાર ધરાવતા સિંચાઈ પાણીના ઉપયોગ સાથે સિલ્વર-બ્લેક પ્લાસ્ટિક મલ્ચ (૨૫ માઇક્રોન જાડાઈ અને ૫૬% આવરણ) અથવા ૨ dS/m ક્ષાર ધરાવતા પાણી સાથે શેરડીની પરાળના આવરણની (૫ ટન પ્રતિ હેક્ટર) ભલામણ કરવામાં આવે છે. જમીન તૈયાર કરતી વખતે ૫ ટન પ્રતિ હેક્ટર બાયોકમ્પોસ્ટ અને ફોસ્ફોરસ: ૫૦ કિ.ગ્રા. ખાતરો આપવા અને ફર્ટિગેશન દ્વારા પ્રતિ હેક્ટર ૧૨૦ કિ.ગ્રા. નાઈટ્રોજન અને ૫૦ કિ.ગ્રા. પોટાશ ખાતરો

	આપવાની પણ ભલામણ કરવામાં આવે છે. ઉનાળુ ભીંડા પછી ચોમાસુ રોપણ ડાંગર ઉગાડવાથી જમીનની ક્ષારીયતા ઘટાડવામાં મદદ મળે છે. Approved with following Suggestion: 1. Include pod length observation in report. (Action: Research Scientist, SWMRU, NAU, Navsari)
22.2.1.37	Effect of sowing method and tillage practices on <i>kharif</i> aerobic rice <u>Recommendation for farming community</u> The farmers of South Gujarat following <i>kharif</i> aerobic rice are recommended to adopt sowing of rice with no tillage practices under wet seeded rice by soaking the seed in water for 24 hrs and place in shade for 12 hrs before sowing for achieving higher yield and net return along with improvement in soil physical properties. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાત વિસ્તારમાં ચોમાસુ ઋતુમાં એરોબિક ડાંગર કરતાં ખેડૂતોને ડાંગરના બિયારણને પાણીમાં ૨૪ કલાક બોળી અને છાંયડામાં ૧૨ કલાક રાખી ખેડ કર્યા વિના વાવણી કરવાની ભલામણ કરવામાં આવે છે. આમ કરવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફાની સાથે જમીનના ભૌતિક ગુણધર્મમાં સુધારો થાય છે. Suggestion: Approved (Action: Research Scientist, SWMRU, NAU, Navsari)
Main Sugarcane Research Station, NAU, Navsari	
22.2.1.38	Integrated weed management in sugarcane planted through single eye budded settling under south Gujarat condition <u>Recommendation for farming community</u> The farmers of south Gujarat planting sugarcane crop through single eye bud settling are recommended to keep the crop weed free up to 150 DAP by hand weeding at an interval of 30 days. Under paucity of labours, one hand weeding at 30 DAP and application of 2-4-D sodium salt 80 % WP @1.5 kg/ha (38 g/10 litre water) + Metribuzin 70 % WP @1.0 kg/ha (29 g/10 litre water) OR application of Mesotrione 2.27% w/w + Atrazine 22.7% w/w SC @ 875 g/ha (70 mL/10 litre water) (Ready mix) OR application of Sulfentrazone 28% + Clomazone 30% WP @ 700 + 750 g/ha (52 g/10 litre water) (Ready mix) at 60 DAP for effective weed control and obtaining profitable higher yield. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાત વિસ્તારમાં એક આંખના રોપાથી શેરડીની રોપણી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નિંદામણના અસરકારક નિયંત્રણ અને વધુ નફાકારક ઉત્પાદન મેળવવા માટે દર ૩૦ દિવસના અંતરે રોપણીના ૧૫૦ દિવસ સુધી હાથથી નિંદામણ કરવું અને મજૂરોની અછત હોય તો રોપણીના ૩૦ દિવસ પછી એક વખત હાથથી નિંદામણ કરવું, ત્યાર બાદ રોપણીના ૬૦ દિવસ પછી ૨-૪-ડી સોડિયમ સોલ્ટ ૮૦% ડબલ્યુપી પ્રતિ ૧.૫ કી.ગ્રા./હે (૩૮ ગ્રામ /૧૦ લિટર પાણી) + મેટ્રીબ્યૂઝીન ૭૦% ડબલ્યુપી પ્રતિ ૧.૦ કી.ગ્રા./હે (૨૯ ગ્રામ /૧૦ લિટર પાણી) પ્રમાણે છંટકાવ કરવો અથવા મેસોટ્રીઓન ૨.૨૭% ડબલ્યુ/ડબલ્યુ + એટ્રાઝીન ૨૨.૭% ડબલ્યુ/ડબલ્યુ એસસી પ્રતિ ૮૭૫ ગ્રા./હે (૭૦ મિલી/૧૦ લિટર પાણી) (રેડીમીક્ષ) પ્રમાણે છંટકાવ કરવો અથવા સલ્ફેન્ટ્રાઝોન ૨૮% + ક્લોમેઝોન ૩૦% ડબલ્યુપી પ્રતિ ૭૦૦ +૭૫૦ ગ્રામ/હે (૫૨ ગ્રામ/૧૦ લિટર પાણી) (રેડીમીક્ષ) પ્રમાણે છંટકાવ કરવો. Suggestion: Approved (Action: Research Scientist, MSRS, NAU, Navsari)
Pulse and Castor Research Station, NAU, Navsari	

22.2.1.39	Effect of cutting in Indian bean Recommendation for farming community The farmers of South Gujarat growing Indian bean (GNIB-22) during <i>kharif</i> season are recommended to cut the plant at 15 to 25 cm from ground level at 45 DAS for getting higher yield and net return. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ ગુજરાતમાં ચોમાસું ઋતુમાં પાપડી (જી.એન.આઇ.બી.-૨૨) ની ખેતી કરતાં ખેડૂતોને પાપડીનાં પાકમાં વધુ ઉત્પાદન અને નફો મેળવવા માટે ૪૫ દિવસ બાદ છોડ જમીનથી ૧૫ થી ૨૫ સે. મી. ઊંચાઈએથી કાપવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestion: 1. Check the cost of cultivation in economic table (Action: Research Scientist, Pulse and Castor, NAU, Navsari)
Agricultural Experiment Station, NAU, Paria	
22.2.1.40	Effect of soil and foliar application of multi-micronutrients on yield and quality of mango cv. Kesar Recommendation for farming community The mango growing farmers of South Gujarat are recommended to apply recommended dose of fertilizer with 100 g multi-micronutrients grade-V in soil per tree in month of June for more than 25 years old tree and foliar application of 1% multi-micronutrients grade-IV (10 ml/l water) at flowering stage and 30 days thereafter for obtaining higher fruit yield with net return. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ ગુજરાતના આંબાવાડીયુ ધરાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૨૫ વર્ષથી મોટા ઝાડ માટે ભલામણ કરેલ ખાતર સાથે જુન મહિનામાં જમીનમાં ઝાડ દીઠ ૧૦૦ ગ્રામ મલ્ટી-માઈક્રોન્યુટ્રીઅન્ટ ગ્રેડ-૫ આપવું તથા મલ્ટી-માઈક્રોન્યુટ્રીઅન્ટ ગ્રેડ-૪નો ૧ ટકા (૧૦ મીલી પ્રતિ ૧ લી પાણી) પ્રમાણે ફુલ અવસ્થાએ અને ત્યારબાદ ૩૦ દિવસે છંટકાવ કરવાથી કેરીનું વધારે ઉત્પાદન સાથે ચોખ્ખી આવક મેળવી શકાય છે. Approved with following Suggestion: 1. Add objectives in report (Action Taken by: Research Scientist, AES, NAU, Pariya)
Main Cotton Research Station, NAU, Surat	
22.2.1.41	Effect of integrated nutrient management on cotton under high density planting system Recommendation for farming community Farmers of south Gujarat growing cotton with high density planting system (60 x 20 cm spacing) under irrigated condition are recommended to apply 100 % RDN (225 N kg/ha) + FYM 5 t/ha or apply 25% nitrogen (55 kg/ha) through biocompost (3 t/ha) or farm yard manure (7 t/ha) at basal and application of 75 % recommended dose of nitrogen (170 kg N/ha) through urea in five equal splits at 30, 60, 75, 90 and 105 days after sowing for achieving higher seed cotton yield as well as net monetary returns. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ ગુજરાતના પિયત વિસ્તારમાં સાંકડા ગાળે (૬૦x૨૦ સેમીના અંતરે) કપાસનું વાવેતર કરતા ખેડૂતોને સંકલિત પોષણ વ્યવસ્થાપન અપનાવી કપાસનું વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવવા માટે ભલામણ કરેલ નાઈટ્રોજનનો ૧૦૦ % (૨૨૫ કિ.ગ્રા./હેક્ટર) + છાણિયું ખાતર ૫ ટન/હેક્ટર અથવા વાવણી સમયે બાયોકમ્પોસ્ટ (૩ ટન/હેક્ટર) અથવા છાણીયા ખાતર (૭ ટન/હેક્ટર) સાથે ભલામણ કરેલ નાઈટ્રોજનનો ૭૫% જથ્થો (૧૭૦ કિ.ગ્રા./હેક્ટર) યુરિયા દ્વારા પાંચ

	સરખા હપ્તામાં વાવણી બાદ ૩૦, ૬૦ ૭૫, ૯૦ અને ૧૦૫ દિવસે આપવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Research Scientist, MCRS, NAU, Surat)
Cotton Research Sub Station, NAU, Achhalia	
22.2.1.42	Studies on fertilizer application methods and nitrogen splits on growth and yield of rainfed cotton <u>Recommendation for farming community</u> The farmers of South Gujarat cultivating <i>Bt.</i> cotton hybrid under rainfed condition are advised to drill recommended dose of nitrogenous fertilizer (120 kg N/ha) at 5 cm depth, in four equal splits at 30, 45, 60 and 75 days after sowing at 15, 20, 25 and 30 cm apart, respectively at both side of row for achieving higher seed cotton yield, net returns and nitrogen use efficiency. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતનાં બિનપિયત પરિસ્થિતિમાં સંકર બીટીકપાસ ઉગાડતાં ખેડૂતોને કપાસનું વધુ ઉત્પાદન તથા આવક મેળવવા અને નાઇટ્રોજન ખાતરના કાર્યક્ષમ ઉપયોગ માટે ભલામણ કરેલ નાઇટ્રોજનનો જથ્થો (૧૨૦ કિ.ગ્રા. નાઇટ્રોજન/ હે) ચાર સરખા હપ્તામાં વાવણી પછી ૩૦, ૪૫, ૬૦ અને ૭૫ દિવસે ૫ સે.મી. ઉડાઇએ ચાસની બન્ને બાજુમાં અનુક્રમે ૧૫, ૨૦, ૨૫ અને ૩૦ સે.મી. નાં અંતરે ઓરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Associate Research Scientist, CRSS, NAU, Achhalia)
Agricultural Research Station, NAU, Mangrol	
22.2.1.43	Effect of irrigation schedule on the performance of various late sown wheat cultivars under south Gujarat <u>Recommendation for farming community</u> The farmers of South Gujarat are recommended to grow wheat (GW 499) and apply total five irrigation, 1st irrigation at the time of sowing, 2nd irrigation at CRI stage (18-20 DAS), 3rd irrigation at active tillering stage (30-35 DAS), 4th irrigation at flowering stage (50-55 DAS) and last 5th irrigation at grain filling (milking) stage (70-75 DAS) for getting higher yield and net returns. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતનાં ખેડૂતો ને ભલામણ કરવામાં આવે છે કે ઘઉંને (જીડબલ્યુ-૪૯૯) કુલ પાંચ પિયત, પહેલું વાવણી બાદ, બીજું પિયત મુકટ અવસ્થાએ (૧૮-૨૦ દિવસે), ત્રીજું પિયત ફૂટ અવસ્થાએ (૩૦-૩૫ દિવસે), ચોથું પિયત ફૂલ અવસ્થાએ (૫૦-૫૫ દિવસે) અને છેલ્લું પાંચમું પિયત દુધિયા દાણા અવસ્થાએ (૭૦-૭૫ દિવસે) આપવાથી વધુ ઉત્પાદન તેમજ ચોખ્ખો નફો મળે છે. Suggestion: Approved (Action: Asst. Res. Scientist, ARS, NAU, Mangrol)
Department of Agronomy, NMCA, NAU, Navsari	
22.2.1.44	Effect of land configuration and irrigation on summer green gram (<i>Vigna radiata</i> L.) under south Gujarat condition <u>Recommendation for farming community</u> The farmers of South Gujarat growing green gram during summer season are recommended to grow their crop on raised bed (Three lines of green gram on raised bed of 90 cm top width followed by 45 cm wide and 30 cm deep furrow) and irrigate the crop at the time of sowing, 20 and 50 DAS for getting higher yield, net return and water use efficiency with 34 % water saving ખેડૂતોપયોગી ભલામણ

	દક્ષિણ ગુજરાતના ઉનાળુ ઋતુમાં મગ ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન, ચોખ્ખો નફો, પાણીની કાર્યક્ષમતા અને ૩૪% જેટલી પાણીની બચત મેળવવા માટે પાકનુ ગાદી ક્યારા (૯૦ સે.મી. ઉપરથી પહોળા ગાદી ક્યારા પર મગની ત્રણ હાર (૩૦ સેમી ના અંતરે) અને ત્યાર બાદ ૪૫ સે.મી. પહોળા અને ૩૦ સે.મી.ઊંડા ચાસ) પર વાવેતર કરવુ અને વાવણી સમયે, ૨૦ દિવસે અને ૫૦ દિવસે પિયત આપવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Professor and Head, Agronomy, NMCA, NAU, Navsari)
22.2.1.45	Integrated weed management in chickpea (<i>Cicer arietinum</i> L.) under south Gujarat condition <u>Recommendation for farming community</u> The farmers of South Gujarat growing chickpea are recommended to adopt inter culturing and hand weeding at 20 and 40 DAS for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતમાં ચણાની ખેતી કરતાં ખેડૂતોને વાવણી બાદ ૨૦ અને ૪૦ દિવસે આંતરખેડ સાથે હાથ નીંદામણ કરવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મેળવી શકાય છે. Suggestion: Approved (Action: Professor and Head, Agronomy, NMCA, NAU, Navsari)
22.2.1.46	Integrated weed management in grain amaranth <u>Recommendation for farming community</u> The farmers of South Gujarat growing grain amaranth are recommended to keep crop weed free through hand weeding at 20, 40 and 60 days or interculturing with two hand weeding at 20 and 40 days after sowing under South Gujarat condition for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતના ખેડૂતોને રાજગરાનું વધુ ઉત્પાદન તેમજ નફો મેળવવા માટે ૨૦, ૪૦ અને ૬૦ દિવસે હાથથી નિંદણ કરી પાકને નિંદણ મુક્ત રાખવો અથવા ૨૦ અને ૪૦ દિવસે આંતરખેડ અને હાથથી નિંદણ દૂર કરવાની ભલામણ કરવામાં આવે છે. Approved with following Suggestion: 1. Add irrigation date in report (Action: Professor and Head, Agronomy, NMCA, NAU, Navsari)
Department of NRM, ACH, NAU, Navsari	
22.2.1.47	Influence of different organics on fruiting, yield and quality of mango (<i>Mangifera indica</i> L.) cv. Kesar <u>Recommendation for farming community</u> The farmers of south Gujarat growing mango organically are recommended to apply five sprays of 4% Gliricidia leaf extract (40 mL/L water) starting first spray from flower initiation and remaining spray at 15, 30, 45 and 60 days after first spray for achieving higher yield and net profit. They are also advised to apply 36 kg compost/tree in two equal splits, i.e., before monsoon and after monsoon. Preparation method for Gliricidia leaf extract: Take 20 kg Gliricidia leaf + 20 kg cow dung + 20 L cow urine + 2 kg soil and prepare 200 liter volume with water. Use it after 40-45 days. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતમાં સેન્દ્રિય ખેતી યુક્ત આંબાવાડી ધરાવતા ખેડૂતોને વધુ ઉત્પાદન અને ચોખ્ખું વળતર મેળવવા માટે ૪% ગ્લિરિસિડિયા પાંદડાનો અર્ક (૪૦ મીલી/લી પાણી) ના પાંચ

	છંટકાવની ભલામણ કરવામાં આવે છે, જેનો પ્રથમ છંટકાવ ફૂલની શરૂઆત થાય ત્યારે અને બાકીના છંટકાવ પ્રથમ છંટકાવ પછી ૧૫, ૩૦, ૪૫ અને ૬૦ દિવસે કરવા. ઉપરાંત પ્રતિ ઝાડ ૩૬ કિ.ગ્રા. કમ્પોસ્ટ ખાતર બે સરખા ભાગમાં ચોમાસા પહેલા અને ચોમાસા બાદ નાખવાની સલાહ આપવામાં આવે છે. ઝિરિસિડિયા પાંદડાનો અર્ક બનાવવાની રીત: ૨૦ કી.ગ્રા. ઝિરિસિડિયા પાંદડા + ૨૦ કી.ગ્રા. ગાયનું છાણ + ૨૦ લી. ગૌમૂત્ર + ૨ કિ.ગ્રા. માટી લઈ પાણીથી ૨૦૦ લીટર દ્રાવણ બનાવવું. જેને ૪૦-૪૫ દિવસ બાદ ઉપયોગ કરવો. Suggestion: Approved (Action Taken: Professor and Head, NRM, ACH, NAU, Navsari)
College of Agriculture, NAU, Waghai	
22.2.1.48	Effect of foliar spray of organic liquids in chickpea (<i>Cicer arietinum</i> L.) under south Gujarat condition <u>Recommendation for farming community</u> The farmers of South Gujarat growing chickpea organically are recommended to apply foliar spray of 2% NOVEL organic nutrients (200 mL per 10 lit. water) at 30, 45 and 60 DAS in addition to FYM @ 3t/ha and recommended dose of bio-fertilizers (<i>Rhizobium</i> + PSB 10 mL/kg seed) to obtain higher yield. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ ગુજરાતમાં સેન્દ્રિય રીતે ચણાની ખેતી કરતાં ખેડૂતોને વધુ ઉત્પાદન અને વળતર મેળવવા માટે ૩ ટન છાણીયું ખાતર અને ભલામણ કરેલ પ્રવાહી જૈવિક ખાતર (રાઈઝોબિયમ + પી એસ બી ૧૦ મિલી/કિ.ગ્રા. બીજ) ઉપરાંત પાકના વાવેતર પછી ૩૦, ૪૫ અને ૬૦ દિવસે ૨ % નોવેલ સેન્દ્રીય પ્રવાહી (૨૦૦ મિલી. પ્રતિ ૧૦ લી. પાણી) નો પાક ઉપર છંટકાવ કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action Taken: Professor and Head, Agronomy, CoA, NAU, Waghai)
College of Agriculture, NAU, Bharuch	
22.2.1.49	Feasibility of pigeon pea based small millets intercropping system under rainfed condition <u>Recommendation for farming community</u> The farmers of south Gujarat growing pigeon pea with 120 x 20 cm row spacing under rainfed condition are recommended to adopt intercropping with small millets (Finger millet/Little millet/Kodo millet) in 1:2 row ratio with pigeon pea for getting higher pigeon pea equivalent yield and economic returns. <u>ખેડૂતોપયોગી ભલામણ</u> દક્ષિણ ગુજરાતમાં વરસાદ આધારિત ખેતીમાં ૧૨૦ x ૨૦ સે.મી. અંતરે તુવેર વાવતા ખેડૂતોને વધુ તુવેર સમકક્ષ ઉત્પાદન અને આર્થિક વળતર મેળવવા માટે તુવેરની બે હાર વચ્ચે હલકા ધાન્ય પાક (નાગલી/વરી/કોદરા) ની બે હાર આંતર પાક તરીકે અપનાવવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Professor and Head, Agronomy, CoA, NAU, Bharuch)

22.2.1.50	Feasibility of mustard (<i>Brassica Juncea</i> L.) under varying fertilizer levels in South Gujarat condition <u>Recommendation for farming community</u> The farmers of south Gujarat growing mustard are recommended to apply 75-50-40 kg NPS/ha (37.5 kg nitrogen/ha, 50 kg phosphorus/ha and 40 kg Sulphur/ha as basal and remaining 37.5 kg nitrogen/ha at 30 DAS) for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતમાં રાઈની ખેતી કરતા ખેડૂતોને વધુ તેમજ નફાકારક ઉત્પાદન મેળવવા માટે ૭૫-૫૦-૪૦ કિ.ગ્રા. ના.ફો.સ./હે. (૩૭.૫ કિ.ગ્રા. નાઇટ્રોજન/હે., ૫૦ કિ.ગ્રા. ફોસ્ફરસ/હે. અને ૪૦ કિ.ગ્રા. સલ્ફર/હે. પાયામાં તેમજ બાકીનો ૩૭.૫ કિ.ગ્રા. નાઇટ્રોજન/હે. વાવણીના ૩૦ દિવસ બાદ) આપવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Professor and Head, Agronomy, CoA, NAU, Bharuch)
KVK, NAU, Surat	
22.2.1.51	Evaluation of different times of sowing of <i>rabi</i> sorghum <u>Recommendation for farming community</u> Farmers of South Gujarat growing irrigated <i>rabi</i> sorghum are recommended to sow the crop during 3rd week of October for achieving higher yield and net returns. ખેડૂતોપયોગી ભલામણ દક્ષિણ ગુજરાતના શિયાળુ જુવાર ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને નફાકારક વળતર મેળવવા માટે પાકને ઓક્ટોબરના ત્રીજા અઠવાડિયા દરમિયાન વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Senior Scientist, KVK, NAU, Surat)

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Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar	
22.2.1.52	Effect of sowing time and topping on seed yield of sunhemp (<i>Crotalaria juncea</i> L.) <u>Recommendation for farming community</u> The farmers of North Gujarat agro climatic zone growing sunhemp for seed production are recommended to sow sunhemp during second week of September and remove terminal bud manually at 35 days after sowing for obtaining higher seed yield and net return. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં બીજ ઉત્પાદન માટે શણ ઉગાડતા ખેડૂતોને વધુ બીજ ઉત્પાદન અને નફો મેળવવા માટે શણના પાકની વાવણી સપ્ટેમ્બર માસના બીજા અઠવાડિયામાં કરવી અને પાકની વાવણી બાદ ૩૫ દિવસે અગ્રકલીકાને હાથથી દુર કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Prof. and Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)
22.2.1.53	Effect of FYM and bio-enhancer on chickpea (<i>Cicer arietinum</i> L.) and its residual effect on succeeding forage sorghum (<i>Sorghum bicolor</i> L.) under organic farming <u>Recommendation for farming community</u> The farmers of North Gujarat agro climatic zone growing chickpea-forage sorghum crop sequence under organic farming are recommended to apply FYM @ 7.5 t/ha at the time of sowing and foliar spray of <i>panchagavya</i> @ 3% at branching and flowering stages to chickpea

	and apply castor cake 1 t/ha as basal and cow urine spray @ 5% at flowering stage to forage sorghum for securing higher chickpea equivalent yield and net return. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના સજીવખેતી હેઠળ ચણા-ઘાસચારા જુવાર પાક પદ્ધતિ અપનાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ચણાના પાકની વાવણી સમયે પ્રતિ હેક્ટરે ૭.૫ ટન છાણીયું ખાતર તથા ડાળીઓ અને ફૂલ અવસ્થાએ ૩% પંચગવ્ય દ્રાવણનો છંટકાવ કરવો તથા ઘાસચારાની જુવારને વાવણી સમયે પ્રતિ હેક્ટરે એક ટન દિવેલી ખોળ આપવો તથા ફૂલ અવસ્થાએ ૫% ગૌમૂત્રના દ્રાવણનો છંટકાવ કરવાથી ચણા સમકક્ષ વધુ ઉત્પાદન અને નફો મેળવી શકાય છે. Approve with following Suggestions: 1. Update unit in nodules per plant (mg/plant) 2. Verify cost of cultivation of <i>panchgavya</i> and cow urine (Action: Prof. and Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)
CNRM, SDAU, Sardarkrushinagar	
22.2.1.54	Performance of pigeonpea based intercropping systems under rainfed condition <u>Recommendation for farming community</u> The farmers of North Gujarat agro-climatic zone IV growing pigeonpea under rainfed conditions are recommended to adopt intercropping of pigeonpea with greengram (1:1) or sesame (1:1) for securing higher pigeonpea equivalent yield, net return and rain water use efficiency. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિભાગના વરસાદ આધારિત તુવેર વાવતા ખેડૂતોને તુવેર સમકક્ષ વધુ ઉત્પાદન, નફો અને પાણીના કાર્યક્ષમ ઉપયોગ માટે તુવેર સાથે મગ (૧:૧) અથવા તલ (૧:૧) ની આંતરપાક પદ્ધતિ અપનાવવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: RS, CNRM, SDAU, Sardarkrushinagar)
22.2.1.55	Effect of weed management practices on growth and yield of turmeric (<i>Curcuma longa</i>) under organic farming <u>Recommendation for farming community</u> The farmers of North Gujarat agro-climatic zone growing turmeric under organic farming are recommended to apply either castor shell mulch 7.5 t/ha at within 3 days <i>fb</i> hand weeding at 60, 90 and 120 DAP for effective non-chemical weed control and obtaining higher yield and net return. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના સજીવ ખેતી હેઠળ હળદરનું વાવેતર કરતાં ખેડૂતોને અસરકારક બિન-રાસાયણિક નીંદણ નિયંત્રણ તેમજ લીલી હળદરનું વધુ ઉત્પાદન અને નફો મેળવવા માટે હળદરની રોપણી બાદ ત્રણ દિવસ સુધીમાં દિવેલાની ફોતરી ૭.૫ ટન પ્રતિ હેક્ટરે આચ્છાદન કરવું અને રોપણી બાદ ૬૦, ૯૦ અને ૧૨૦ દિવસે હાથ નીંદામણ કરવું. Approve with following Suggestion: 1. Add which transformation used in weed data (Action: Research Scientist, CNRM, SDAU, Sardarkrushinagar)
22.2.1.56	Production potential of vegetable cowpea through organic farming <u>Recommendation for farming community</u> The farmers of North Gujarat agro-climatic zone growing vegetable cowpea under organic farming are recommended to apply FYM 5 t/ha before 15 days of sowing and spraying of <i>panchgavya</i> 3% at 45 and 60 days after sowing for obtaining higher yield and net return.

	ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારમાં સજીવ ખેતી આધારિત શાકભાજી માટેની ચોળી ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન અને આવક મેળવવા માટે વાવણીના પંદર દિવસ પહેલાં પ્રતિ હેક્ટરે ૫.૦ ટન છાણીયું ખાતર અને વાવણીના ૪૫ અને ૬૦માં દિવસે ૩ ટકા પંચગવ્યનો છંટકાવ કરવાની ભલામણ કરવામાં આવે છે. Approve with following Suggestions: 1. Add input analysis in report 2. Check data of BD and EC 3. Add unit in table (Action: Research Scientist, CNRM, SDAU, Sardarkrushinagar)
	Pulses Research Station, SDAU, Sardarkrushinagar
22.2.1.57	Integrated crop management in chickpea Suggestion: Shifted to information for scientific community (Action: Res. Sci., Pulses Research Station, SDAU, Sardarkrushinagar)
	Centre for Oil Seed Research, SDAU Sardarkrushinagar
22.2.1.58	Influence of resources conservation techniques on castor-based relay inter- cropping systems and soil health Recommendation for farming community The farmers of North Gujarat agro-climatic zone are recommended for disc plough once in 2 years + two cultivations with cultivators every year in greengram-castor relay intercropping system (1:2) for securing higher castor equivalent yield. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ખેડૂતોને દિવેલા સમકક્ષ વધુ ઉત્પાદન મેળવવા માટે એકાંતરા વર્ષે ડિસ્ક પ્લાઉ તેમજ દર વર્ષે બે વાર કલ્ટીવેટરથી ખેડ કરી મગ-દિવેલા રિલે આંતરપાક (૧:૨) માં વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Approve with following Suggestion: 1. Mention unit in EC table (Action: RS, Centre for Oil Seed Research, SDAU)
	Wheat Research Station, SDAU, Vijapur
22.2.1.59	Nutrient management in wheat (<i>Triticum aestivum</i> L.) and its residual effect on succeeding green gram crop Recommendation for farming community The farmers of North Gujarat agro-climatic zone growing wheat-green gram cropping sequence are recommended to apply castor cake 750 kg/ha along with 75% RDF (90:45:00 kg N:P₂O₅:K₂O/ha), out of this 45 kg nitrogen and 45 kg phosphorus apply as basal and remaining 45 kg nitrogen should be apply at first irrigation (18-21 DAS) as top dressing and foliar spray of cow urine 5% at tillering (35-40 DAS) and jointing stage (50-55 DAS) for securing higher wheat equivalent yield and net return with saving of 25% RDF of wheat. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના ઘઉં-મગ પાક પદ્ધતિ અપનાવતા ખેડૂતોને ઘઉં સમકક્ષ વધુ ઉત્પાદન અને નફો મેળવવા ઘઉંના પાકને ૭૫૦ કિ.ગ્રા./હે. દિવેલી ખોળ સાથે ભલામણ કરેલ રાસાયણિક ખાતર ના ૭૫ ટકા (૯૦:૪૫:૦૦ ના.:ફો.:પો. કિ.ગ્રા./હે.) પૈકી ૪૫ કિ.ગ્રા. નાઇટ્રોજન અને ૪૫ કિ.ગ્રા.ફોસ્ફરસ પાયામાં આપવું અને બાકી નો ૪૫ કિ.ગ્રા. નાઇટ્રોજન પ્રથમ પિયત સમયે (૧૮-૨૧ દિવસે) આપવો તેમજ કુટ અવસ્થા (૩૫-૪૦ દિવસ) અને ગાભે અવસ્થાએ (૫૦-૫૫ દિવસ) બે વાર ૫ ટકા ગૌમુત્રના દ્રાવણનો છંટકાવ કરવાની ભલામણ

	કરવામાં આવે છે, જેથી ઘઉં પાકમાં ભલામણ કરેલ રાસાયણિક ખાતરનો ૨૫ ટકા બચાવ થાય છે Suggestion: Approved (Action: Research Scientist, Wheat Research Station, SDAU, Vijapur)
Agricultural Research Station, SDAU, Aseda	
22.2.1.60	Management of <i>Orobanche</i> in cumin crop <u>Recommendation for farming community</u> The farmers of Gujarat growing cumin in the <i>orobanche</i> infected region are recommended to carry out four times manual hand culling of <i>orobanche</i> at weekly interval 40 days after sowing for effective <i>orobanche</i> control, securing higher yield and net return. ખેડૂતોપયોગી ભલામણ ગુજરાત રાજ્યના વાકુંબા ઉપદ્રવીત વિસ્તારમાં જીરુંનું વાવેતર કરતા ખેડૂતોને વાકુંબાનું અસરકારક નિયંત્રણ, જીરાનું વધુ ઉત્પાદન અને નફો મેળવવા માટે વાવેતરના ૪૦ દિવસથી વાકુંબાને ચાર વખત દર અઠવાડીયે હાથથી ખેંચી કાઢવાની ભલામણ કરવામાં આવે છે. Approve with following Suggestion: 1. Verify data of dry weight of weed (Action: Assoc. Research Scientist, Agricultural Research Station, Aseda)
Dry Farming Research Station, SDAU, Radhanpur	
22.2.1.61	Studies on intercropping in rainfed castor <u>Recommendation for farming community</u> The farmers of North West agro climatic zone of Gujarat growing castor under rainfed condition are recommended for intercropping of castor + greengram (1:1 or 1:2, 30 cm row spacing of greengram) for securing higher castor equivalent yield and net return. ખેડૂતોપયોગી ભલામણ ગુજરાતના ઉત્તર પશ્ચિમ ખેત આબોહવાકીય વિભાગમાં વરસાદ આધારિત દિવેલાનું વાવેતર કરતાં ખેડૂતોને વધુ દિવેલા સમકક્ષ ઉત્પાદન અને નફો મેળવવા માટે દિવેલા + મગ (૧:૧ અથવા ૧:૨, મગની બે હાર વચ્ચે ૩૦ સે.મી.) ની આતરપાક પદ્ધતિથી વાવેતર કરવા ભલામણ કરવામાં આવે છે. Suggestion: 1. Add vitiated year data in report (Action: Dry Farming Research Station, SDAU, Radhanpur)
Regional Research Station, SDAU, Bhachau	
22.2.1.62	Response of Castor GCH 8 to variable spacing <u>Recommendation for farming community</u> The farmers of North-West agro-climatic zone of Gujarat growing castor hybrid GCH 8 are recommended to dibble at spacing of 180 cm × 120 cm for getting higher yield and net return. ખેડૂતોપયોગી ભલામણ ગુજરાતના ઉત્તર પશ્ચિમ ખેત આબોહવાકીય વિસ્તારના સંકર દિવેલા (જીસીએચ ૮) ઉગાડતા ખેડૂતોને વધારે ઉત્પાદન અને નફો મેળવવા માટે ૧૮૦ સેમી × ૧૨૦ સેમી ના અંતરે વાવેતર કરવાની ભલામણ કરવામાં આવે છે. Approve with following Suggestion: 1. Write input and selling price (Action: Regional Research Station, SDAU, Bhachau)

Regional Research Station, SDAU, Kothara	
22.2.1.63	Soil moisture conservation techniques in pearl millet under rainfed conditions <u>Recommendation for farming community</u> The farmers of North West agro-climatic zone of Gujarat growing pearl millet under rainfed condition are recommended to sow pearl millet on compartmental bunding (4.5 m × 3.0 m) or dead furrow (5 line after 22.5 cm depth furrow) method to obtain higher pearl millet yield and net return. ખેડૂતોપયોગી ભલામણ ગુજરાતના ઉત્તર પશ્ચિમ ખેત આબોહવાકીય વિસ્તારના વરસાદ આધારિત બાજરીનું વાવેતર કરતાં ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે ક્યારા-પાળી (૪.૫ મી. X ૩.૦ મી.) અથવા ૫ લાઈન પછી ૨૨.૫ સેમી ઊંડાઈનો ચાસ (ડેડ ફરો) પધ્ધતિની ભલામણ કરવામાં આવે છે. Approve with following suggestion: 1. Add initial value of NPK (Action: Regional Research Station, SDAU, Kothara)
KVK, SDAU, Deesa	
22.2.1.64	Effect of PROM and bio inoculant on greengram <u>Recommendation for farming community</u> The farmers of North Gujarat agro-climatic zone growing green gram are recommended to apply 40 kg P₂O₅ through PROM (385 kg/ha) along with Vesicular Arbuscular Mycorrhiza 5 kg/ha besides 20 kg nitrogen and FYM 5 t/ha at the time of sowing for securing higher yield and net return. ખેડૂતોપયોગી ભલામણ ઉત્તર ગુજરાત ખેત આબોહવાકીય વિસ્તારના મગનું વાવેતર કરતાં ખેડૂતોને વધુ ઉત્પાદન અને નફો મેળવવા માટે હેક્ટર દીઠ ૪૦ કિ.ગ્રા. ફોસ્ફરસ પ્રોમ ખાતર (૩૮૫ કિ.ગ્રા./હે.) મારફત અને ૫ કી.ગ્રા. વેસીક્યુલર આર્બુસ્ક્યુલર માઈકોરાઈઝા (વામ) સાથે ૨૦ કિ.ગ્રા. નાઈટ્રોજન અને ૫ ટન છાણિયું ખાતર જમીનમાં વાવણી સમયે આપવાની ભલામણ કરવામાં આવે છે. Approve with following suggestions: 1. Mention quantity of PROM in text 2. Put analysis of PROM (Action: Senior Scientist and Head, KVK, SDAU, Deesa)

22.2.2 INFORMATION FOR SCIENTIFIC COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

Department of Agronomy, BACA, AAU, Anand	
22.2.2.1	Effect of nano nitrogen on irrigated wheat <u>Information for Scientific community</u> Application of 75 % RDN (90 kg N/ha, 50% N as basal and 50% N at 25 DAS) along with two foliar sprays of Nano nitrogen (3.1% N) (4 mL/L) at 30-35 and 50-55 DAS in wheat produced higher yield. Besides, apply recommended dose of phosphorus i.e. 60 kg P₂O₅/ha as basal. Approved with following suggestions: 1. Write nitrogen content (3.1%) in recommendation para 2. Check content and uptake data (Action: Professor & Head, Dept. of Agronomy, BACA, AAU, Anand)
22.2.2.2	Response of irrigation regimes and mulching on sweet corn and its effect on green gram under organic farming <u>Information for Scientific community</u>

	<i>Rabi</i> sweet corn irrigated at sowing, knee high stage (30-35 DAS), tasseling (50-55 DAS), milking (65-70 DAS) and grain development (75-80 DAS) stages with mulching paddy straw @ 5 t/ha produce higher sweet corn equivalent yield (<i>rabi</i> sweet corn and summer green gram cropping sequence) under organic farming. Further, in succeeding green gram, only Bio NP (5 mL/kg of seed) should be applied as seed treatment. Besides, apply FYM (about 18 t/ha) equivalent to 120 kg N/ha only to sweet corn. Approved with following suggestion: Recast the text for scientific community (Action: Professor and Head, Department of Agronomy, BACA, AAU, Anand)
AICRP on Weed Management, BACA, AAU, Anand	
22.2.2.3	Bio-efficacy of different herbicides against complex weed flora in <i>kharif</i> blackgram <u>Information for Scientific community</u> Application of either quizalofop ethyl 7.5% + imazethapyr 15% w/w EC (ready-mix) 112.5 g a.i./ha PoE (15-20 DAS) or pendimethalin 30% + imazethapyr 2% EC (ready-mix) 800 g a.i./ha PE (1-2 DAS) provide effective and economical weed management of complex weed flora in <i>kharif</i> blackgram. There was no adverse effect of applied herbicide in <i>kharif</i> black gram on succeeding (wheat, chickpea and mustard) crops. Suggestion: Approved (Action: Agronomist & PI, AICRP on Weed Management, BACA, AAU, Anand)
Dept. of Agril. Microbiology, BACA, AAU, Anand	
22.2.2.4	Evaluation of phosphate and potash rich organic manure on rabi maize and their residual effect on succeeding green gram Suggestion: Merged with farmer recommendation number 22.2.1.14 (Action: HoD, Dept. of Agril. Microbiology, BACA, AAU, Anand)
BTRS, AAU, Anand	
22.2.2.5	Effect of nano nitrogen particle on yield, quality and nutrient of <i>bidi</i> tobacco <u>Information for Scientific community</u> Application of 75 % of recommended dose of nitrogen 180 kg/ha N i.e. 135 kg/ha N, in two equal split and spray of 4 ml/l nano nitrogen gives better <i>bidi</i> tobacco cured leaf yield. First split of nitrogen fertilizer (67.5 kg/ha) should be given as a basal in the form of ammonium sulphate (338 kg/ha) and second split of nitrogen (67.5 kg/ha) in form of Urea (147 kg/ha) at 30 DATP as well as foliar spray of nano nitrogen (4 ml/l) should be applied at 60 and 90 DATP. Suggestion: Approved (Action: Research Scientist, BTRS, AAU, Anand)
Department of Basic Science and Humanities	
22.2.2.6	Assessment of Spatial Variability in Soil and Crop Parameters with the Perspective of Precision Agriculture <u>Information for Scientific community</u> Multispectral satellite data at fine scale spatial resolutions (10 m and 20 m) hold potential for systematic assessment of field-scale variability of soil and crop parameters using vegetation indices. NDVI and EVI are recommended for reliable estimation of Leaf Area Index (LAI) and monitoring crop growth, while MSAVI, WNEVI, and MTCI can be effectively used to assess crop nitrogen status and canopy development for wheat crop. Suggestion: Approved (Action: Dept. of Basic Sciences and Humanities, BACA, AAU, Anand)
22.2.2.7	Mapping of Salt-affected Soils using Remote Sensing <u>Information for Scientific community</u> Sentinel-2 multispectral satellite derived salinity indices, along with the site specific developed multiple linear regression models, can be effectively used for regional estimation and spatial mapping of EC, ESP, and SAR. These models can support large-scale

monitoring and assessment of salt-affected soils in coastal regions such as *Bhal* and *Khambhat* using remote sensing data.

Variables Included	Model Equation	Adjusted R ²	RMSE
SI8, SI5, SI3, COSRI	EC = 1.05 + 16.3(SI8) + 6.8 (SI5) + 5.4 (SI3) + 3.2 (COSRI)	0.72	0.40
SI8, SI5, SI3, COSRI	ESP = -8.25 + 23.5(SI8) + 11.6 (SI5) + 9.2 (SI3) + 6.8 (COSRI)	0.76	3.06
SI8, SI5, SI3, COSRI	SAR = -2.74 + 8.9 (SI8) + 4.8 (SI5) + 3.6 (SI3) + 2.4 (COSRI)	0.75	1.29

Approved with following suggestion:

1. Write unit of soil parameters in report

(Action: Dept. of Basic Sciences and Humanities, BACA, AAU, Anand)

AINP on Pesticide Residues, ICAR unit, AAU, Anand

Information for Scientific Community

22.2.2.8

Impact of organic amendments on pesticide degradation in soils

Information for Scientific community

Pre-emergence application of pendimethalin 30% EC + propanil 80% DF at 1875 + 3750 g a.i./ha resulted in initial soil residues (2 hrs after application) of 2.212 mg/kg for pendimethalin and 0.960 mg/kg for propanil in the non-amended treatment, respectively. Whereas, lower initial residues were recorded in all organic amendment treatments.

- Among the organic amendments, half-lives for pendimethalin ranging from 4.62 to 15.73 days in which 4.62 days for *ghanjeevamrut*, 5.12 days for microbial culture, 7.29 days for FYM, 11.67 days for vermicompost and 15.73 for biogas slurry.
- Irrespective of organic amendment, residues decreased below the limit of quantification (LOQ, 0.01 mg/kg) by 60 days after application. In contrast, propanil dissipated rapidly and fell below the LOQ within 3 day after application.
- At harvest, residues of both the herbicides were not detected in paddy grain (with husk), polished rice grain, husk, straw or in soil.

Suggestion: Approved

(Action: Residue Analyst, AINP-PR & C, Anand)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Dept. of Agronomy, CoA, JAU, Junagadh

22.2.2.9

Evaluation of low-cost natural farming in wheat + chickpea intercropping system

Information for Scientific community

The wheat + chickpea (8:2) cropping system under organic farming with application of FYM (5 t/ha) and vermicompost (2 t/ha) mix with biofertilizer (*Azotobactor* and *Rhizobium* 3 L/ha each) as basal, 3% Panchgavya spray at 30, 45 and 60 DAS. Need based plant protection measures (*Pheromone trap*, *Trichoderma*, *Beauveria*, *Metarhizium*, *NPV* etc.) as and when required to obtain higher net return (premium price of produce) and also improve the physical, chemical and biological properties of soil.

In natural farming, wheat + chickpea (4:1) intercropping system with application of *Ghanjeevamrut* (250 kg/ha) & FYM (250 kg/ha) as basal, seed treatment with *beejamrut* (300 ml/kg seed), *Jeevamrut* (500 L/ha) with irrigation at sowing time, 30, 60 and 90 DAS, Achhadan with wheat straw/live weed mulch (5 t/ha) and need based plant protection measures (*Agneeasra*, *Brahmastra*, *Neemastra* etc.) as and when required to obtain higher net return (premium price of produce) and improve the soil health.

	Suggestion: Approved (Action: Professor & Head, Department of Agronomy, CoA, JAU Junagadh)
Main Dry Farming Research Station, JAU, Targhadia	
22.2.2.10	Response of Bt cotton to foliar application of nano urea and urea under rainfed condition <u>Information for Scientific community</u> Apply 75% RDN (30 kg/ha as basal & 30 kg/ha as top dressing at 45 days after sowing) + foliar spray of nano urea 2ml/L at 30 and 60 days after sowing along with 10 t FYM/ha + 500 kg castor cake/ha as basal for obtaining higher yield as well as maximum net return. Suggestion: Approved (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
Main Oilseeds Research Station, JAU, Junagadh	
22.2.2.11	Effect of Nano Urea (liquid) on yield and various agronomic traits of castor <u>Information for Scientific community</u> Application of 100% recommended dose of 50 kg P ₂ O ₅ /ha, 50 kg K ₂ O/ha and 90 kg N/ha in four split i.e., 30 kg N/ha as basal, followed by 22 kg N/ha at 40 DAS, 22 kg N/ha at 70 DAS and 16 kg N/ha at 100 DAS along with Nano Urea (4% w/v) 4 ml/L as foliar spray at 40 and 80 DAS to irrigated castor for securing higher seed yield and net returns. Suggestion: Approved (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.2.12	Effect of nano urea (liquid) on yield and various agronomic traits of summer groundnut Suggestion: Dropped (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.2.13	Response of summer groundnut to foliar application of nano urea and urea phosphate <u>Information for Scientific community</u> Application of 7.5 t/ha FYM with 100 % RDF (25-50-50 N-P ₂ O ₅ -K ₂ O kg/ha) followed by Nano urea (4%) spray 2 ml/L of water + Urea phosphate (17:44:00) 10 g/L of water spray at flowering stage (25-30 DAS) to summer groundnut for obtaining higher groundnut yield and net return. Suggestion: Approved (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
Pearl millet Research Station, JAU, Jamnagar	
22.2.2.14	Response of summer pearl millet to foliar application of nano urea <u>Information for Scientific community</u> Application of 33.33% RDN (40 kg N/ha) as basal and 41.67% RDN (50 kg N/ha) at 25 DAS followed by foliar application of nano urea (4% w/v) 4 ml/L at 30 and 45 days after sowing to summer pearl millet gave higher grain and fodder yield. Suggestion: Approved (Action: Research Scientist (Pearl millet), Pearl millet Research Station, JAU, Jamnagar)
Dept. of Soil Science & Agri. Chem., COA, JAU, Junagadh	
22.2.2.15	Evaluation of the foliar application of nano nitrogen on the performance of wheat <u>Information for Scientific community</u> Application of 25% RDN at basal + 50% RDN at 20-25 DAS + two sprays of nano nitrogen 4 ml/L at 30 and 45 DAS for achieving higher yield of wheat. Approved with following Suggestions: 1. Delete nano nitrogen 6 ml/L from information and give only with nano nitrogen 4ml/L

	(Action: Professor and Head, Dept. of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)																																																																															
22.2.2.16	Evaluation of soil textural classes in the soils of different talukas of Bhavnagar district Information for Scientific community It was observed based on the survey that the overall soil textural class of Bhavnagar district was clay, determined from the mean proportions of sand (29.97%), silt (27.52%) and clay (42.94%). This textural class covered about 53% of the total area of the district. The range and mean values of individual soil separates (%) and the soil textural classes in different talukas of Bhavnagar district were presented in the table below. <table border="1"> <thead> <tr> <th rowspan="2">S.N.</th><th rowspan="2">Talukas of Bhavnagar</th><th colspan="3">Individual Soil Separates (%)</th><th rowspan="2">Soil Textural Class</th></tr> <tr> <th>Sand</th><th>Silt</th><th>Clay</th></tr> </thead> <tbody> <tr> <td>1</td><td>Bhavnagar</td><td>9.96-62.46 (27.95)</td><td>9.30-57.25 (28.71)</td><td>14.39-75.35 (43.94)</td><td>Clay</td></tr> <tr> <td>2</td><td>Gariyadhar</td><td>18.74-35.20 (25.62)</td><td>13.15-34.52 (24.11)</td><td>32.68-68.24 (50.36)</td><td>Clay</td></tr> <tr> <td>3</td><td>Ghogha</td><td>10.31-67.57 (28.71)</td><td>10.00-46.60 (31.33)</td><td>16.80-63.27 (39.04)</td><td>Clay Loam</td></tr> <tr> <td>4</td><td>Jeshar</td><td>11.24-62.46 (32.40)</td><td>9.30-55.00 (26.82)</td><td>15.00-72.00 (40.63)</td><td>Clay</td></tr> <tr> <td>5</td><td>Mahuva</td><td>12.23-57.78 (40.65)</td><td>15.55-39.91 (24.20)</td><td>16.38-53.16 (35.36)</td><td>Clay loam</td></tr> <tr> <td>6</td><td>Palitana</td><td>19.20-35.91 (25.99)</td><td>16.60-35.13 (22.46)</td><td>37.00-61.69 (51.41)</td><td>Clay</td></tr> <tr> <td>7</td><td>Sihor</td><td>11.28-64.70 (27.46)</td><td>6.48-51.50 (23.47)</td><td>16.24-75.43 (50.73)</td><td>Clay</td></tr> <tr> <td>8</td><td>Talaja</td><td>12.01-56.99 (31.24)</td><td>7.82-57.25 (31.12)</td><td>16.24-68.94 (37.53)</td><td>Silty clay loam</td></tr> <tr> <td>9</td><td>Umralla</td><td>9.50-45.36 (26.19)</td><td>10.62-47.10 (25.58)</td><td>20.90-69.99 (48.24)</td><td>Clay</td></tr> <tr> <td>10</td><td>Vallbhipur</td><td>12.07-44.89 (24.75)</td><td>12.45-47.20 (30.22)</td><td>12.34-66.21 (43.42)</td><td>Clay</td></tr> <tr> <td colspan="2">Overall</td><td>9.50-67.57 (29.97)</td><td>6.48-57.25 (27.52)</td><td>12.34-75.43 (42.94)</td><td>Clay</td></tr> </tbody> </table> Note: Soil texture was determined as per soil textural classification criteria given by ISSS. Approved with following Suggestions: 1. Remove para and write table 3 in recommendation text (Action: Professor and Head, Dept. of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)					S.N.	Talukas of Bhavnagar	Individual Soil Separates (%)			Soil Textural Class	Sand	Silt	Clay	1	Bhavnagar	9.96-62.46 (27.95)	9.30-57.25 (28.71)	14.39-75.35 (43.94)	Clay	2	Gariyadhar	18.74-35.20 (25.62)	13.15-34.52 (24.11)	32.68-68.24 (50.36)	Clay	3	Ghogha	10.31-67.57 (28.71)	10.00-46.60 (31.33)	16.80-63.27 (39.04)	Clay Loam	4	Jeshar	11.24-62.46 (32.40)	9.30-55.00 (26.82)	15.00-72.00 (40.63)	Clay	5	Mahuva	12.23-57.78 (40.65)	15.55-39.91 (24.20)	16.38-53.16 (35.36)	Clay loam	6	Palitana	19.20-35.91 (25.99)	16.60-35.13 (22.46)	37.00-61.69 (51.41)	Clay	7	Sihor	11.28-64.70 (27.46)	6.48-51.50 (23.47)	16.24-75.43 (50.73)	Clay	8	Talaja	12.01-56.99 (31.24)	7.82-57.25 (31.12)	16.24-68.94 (37.53)	Silty clay loam	9	Umralla	9.50-45.36 (26.19)	10.62-47.10 (25.58)	20.90-69.99 (48.24)	Clay	10	Vallbhipur	12.07-44.89 (24.75)	12.45-47.20 (30.22)	12.34-66.21 (43.42)	Clay	Overall		9.50-67.57 (29.97)	6.48-57.25 (27.52)	12.34-75.43 (42.94)	Clay
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22.2.2.17	Evaluation of the foliar application of nano urea on the performance of okra Information for Scientific community Application of 25 % RDN at basal + 50 % RDN at 20-25 DAS + nano nitrogen (4% w/v) 4 ml/L first spray at 30 and second at 45 DAS to okra for getting higher yield. Suggestions: Approved (Action: Research Scientist (G & O), Vegetable Res. Station, JAU, Junagadh)																																																																															

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

22.2.2.18	Study on nutrient release pattern of various organic nutrient sources in sugarcane <u>Information for Scientific community</u> The castor cake exhibited the fastest decomposition rate, highest decay constant (k), and shortest time required for 95% decomposition ($t_{0.95}$), resulting in superior major and micronutrient release, followed by biocompost, <i>ghanjeevamrit</i>, FYM, sugarcane trash and paddy straw, respectively. The release of N, P, K, Fe and Mn followed the order: castor cake > biocompost > <i>ghanjeevamrit</i> > FYM > sugarcane trash > paddy straw. The Zn release followed the order: <i>ghanjeevamrit</i> > castor cake > biocompost > FYM > sugarcane trash > paddy straw, while Cu release followed the order: <i>ghanjeevamrit</i> > biocompost > FYM > castor cake > sugarcane trash > paddy straw. Among major nutrients, potassium (K) release was highest, followed by nitrogen (N) and phosphorus (P). In the case of micronutrients, zinc (Zn) and copper (Cu) release was greater compared to iron (Fe) and manganese (Mn) across all organic nutrient sources. A strong positive correlation between weight loss and nutrient release, along with a significant negative relationship between C:N ratio and nutrient release, confirms that decomposition progression is a reliable indicator of nutrient availability from organic sources. Suggestion: Approved (Action: Prof. and Head, SSAC, NMCA, NAU, Navsari)
22.2.2.19	Integrated weed management in chickpea (<i>Cicer arietinum</i> L.) under south Gujarat condition <u>Information for Scientific community</u> Application of pendimethalin + imazethapyr (ready-mixed) 750 g a.i./ha pre-emergence followed by interculturing and hand weeding at 30 days after sowing for managing the weeds and obtaining economical yield of chickpea. Suggestion: Approved (Action: Professor and Head, Agronomy, NMCA, NAU, Navsari)

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar			
22.2.2.20	Evaluation of low cost natural farming in pearlmillet + greengram – wheat + chickpea cropping system <u>Information for Scientific community</u> Application of low cost natural farming module lower yield as compared to conventional farming. <table><tr><th>Module: Low Cost Natural Farming (LCNF)</th></tr><tr><td> Inter cropping: <i>Kharif</i>: Pearl millet + greengram (4:2 row ratio) <i>Rabi</i>: Wheat + chickpea (4:2 row ratio) Seed treatment: <i>Bijamrut</i> @ 200 ml/kg seed <i>Jivamrut</i> @ 500 L/ha with irrigation at sowing and then after at 30 and 60 DAS <i>Ghanjivamrut</i> @ 250 kg/ha + FYM @ 250 kg/ha as soil application at sowing <i>Achhadan</i> : Crop residue mulch @ 2.5 t/ha (25 DAS) Plant protection: <i>Agniashtra</i> (7 L/acre in 200 lit. water), <i>Nimashtra</i> (200 L/acre without water) and <i>Brahmashttra</i> (7 L/acre in 200 litre water) as and when required </td></tr></table> Approve with following Suggestions: 1. Add details module of LCNF	Module: Low Cost Natural Farming (LCNF)	Inter cropping: <i>Kharif</i>: Pearl millet + greengram (4:2 row ratio) <i>Rabi</i>: Wheat + chickpea (4:2 row ratio) Seed treatment: <i>Bijamrut</i> @ 200 ml/kg seed <i>Jivamrut</i> @ 500 L/ha with irrigation at sowing and then after at 30 and 60 DAS <i>Ghanjivamrut</i> @ 250 kg/ha + FYM @ 250 kg/ha as soil application at sowing <i>Achhadan</i> : Crop residue mulch @ 2.5 t/ha (25 DAS) Plant protection: <i>Agniashtra</i> (7 L/acre in 200 lit. water), <i>Nimashtra</i> (200 L/acre without water) and <i>Brahmashttra</i> (7 L/acre in 200 litre water) as and when required
Module: Low Cost Natural Farming (LCNF)			
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	2. Application of LCNF (Write full module) lower yield as compared to conventional farming (Action: Prof. and Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)																																																																																																				
22.2.2.21	Effect of weather on growth and seed yield of cumin (<i>Cuminum cyminum</i> L.) Suggestions: Dropped (Action: Prof. and Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)																																																																																																				
Agro-forestry Research Station, SDAU, Sardarkrushinagar																																																																																																					
22.2.2.22	Soil profile study of different afforested plots Information for Scientific community Multipurpose tree species (more than 12 years old plantation) viz., <i>Ardusa</i>, <i>Neem</i>, <i>Karanj</i> improved the physical-chemical properties of soil (pH, EC, BD, MWHC, Porosity) as well as increased Organic carbon, Available N, P₂O₅, K₂O, S, Exchangeable Ca, Mg and DTPA extractable Fe, Mn, Zn and Cu content in soil. Exchangeable Sodium (Na) was maximum in open field soil over soil under tree species. Effect of trees on pH, EC, MWHC, porosity and bulk density of soil <table><tr><th>Tree species</th><th>pH</th><th>EC (dSm⁻¹)</th><th>MWHC (%)</th><th>Porosity (%)</th><th>BD (gcc⁻¹)</th></tr><tr><td>Ardusa</td><td>7.39</td><td>0.049</td><td>25.68</td><td>34.21</td><td>1.626</td></tr><tr><td>Neem</td><td>7.15</td><td>0.040</td><td>27.76</td><td>35.62</td><td>1.604</td></tr><tr><td>Karanj</td><td>7.24</td><td>0.043</td><td>26.58</td><td>34.39</td><td>1.603</td></tr><tr><td>Open field</td><td>7.67</td><td>0.101</td><td>24.98</td><td>33.51</td><td>1.640</td></tr></table> Effect of trees on OC, Available N, P₂O₅, K₂O, S and exchangeable Ca and Mg of soil <table><tr><th>Treatments</th><th>OC (%)</th><th>Avai. N (kg/ha)</th><th>Avail. P₂O₅ (kg/ha)</th><th>Avail. K₂O (kg/ha)</th><th>Avail. S (ppm)</th><th>Ex. Ca [(cmol/kg)]</th><th>Ex. Mg [(cmol/kg)]</th></tr><tr><td>Ardusa</td><td>0.37</td><td>158.54</td><td>27.19</td><td>325.15</td><td>5.98</td><td>4.16</td><td>0.74</td></tr><tr><td>Neem</td><td>0.53</td><td>202.04</td><td>30.70</td><td>382.49</td><td>6.58</td><td>5.40</td><td>1.31</td></tr><tr><td>Karanj</td><td>0.44</td><td>182.76</td><td>28.68</td><td>363.43</td><td>6.00</td><td>4.78</td><td>0.85</td></tr><tr><td>Open field</td><td>0.16</td><td>134.52</td><td>24.98</td><td>240.60</td><td>4.94</td><td>3.68</td><td>0.70</td></tr></table> Effect of trees on Sodium (ppm), DTPA Ex. Fe, Mn, Zn, Cu (mg/kg) Micronutreints <table><tr><th>Treatments</th><th>Na (ppm)</th><th>DTPA Ex. Fe (mg/kg)</th><th>DTPA Ex. Mn (mg/kg)</th><th>DTPA Ex. Zn (mg/kg)</th><th>DTPA Ex. Cu (mg/kg)</th></tr><tr><td>Ardusa</td><td>0.58</td><td>4.41</td><td>9.88</td><td>1.30</td><td>0.86</td></tr><tr><td>Neem</td><td>0.28</td><td>4.69</td><td>10.21</td><td>1.34</td><td>0.90</td></tr><tr><td>Karanj</td><td>0.38</td><td>4.55</td><td>10.00</td><td>1.31</td><td>0.89</td></tr><tr><td>Open field</td><td>0.72</td><td>3.82</td><td>8.99</td><td>0.78</td><td>0.76</td></tr></table> Approve with following Suggestions: 1. Give short summary in tabular form (Action: Res. Sci., Agro forestry Research Station, SDAU, Sardarkrushinagar)	Tree species	pH	EC (dSm ⁻¹)	MWHC (%)	Porosity (%)	BD (gcc ⁻¹)	Ardusa	7.39	0.049	25.68	34.21	1.626	Neem	7.15	0.040	27.76	35.62	1.604	Karanj	7.24	0.043	26.58	34.39	1.603	Open field	7.67	0.101	24.98	33.51	1.640	Treatments	OC (%)	Avai. N (kg/ha)	Avail. P ₂ O ₅ (kg/ha)	Avail. K ₂ O (kg/ha)	Avail. S (ppm)	Ex. Ca [(cmol/kg)]	Ex. Mg [(cmol/kg)]	Ardusa	0.37	158.54	27.19	325.15	5.98	4.16	0.74	Neem	0.53	202.04	30.70	382.49	6.58	5.40	1.31	Karanj	0.44	182.76	28.68	363.43	6.00	4.78	0.85	Open field	0.16	134.52	24.98	240.60	4.94	3.68	0.70	Treatments	Na (ppm)	DTPA Ex. Fe (mg/kg)	DTPA Ex. Mn (mg/kg)	DTPA Ex. Zn (mg/kg)	DTPA Ex. Cu (mg/kg)	Ardusa	0.58	4.41	9.88	1.30	0.86	Neem	0.28	4.69	10.21	1.34	0.90	Karanj	0.38	4.55	10.00	1.31	0.89	Open field	0.72	3.82	8.99	0.78	0.76
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22.2.2.23	Management of broomrape (<i>Orobanche</i> Spp.) in <i>rustica</i> tobacco Information for Scientific community Application of imazethapyr 10 SL@ 200 gm a.i./ha with irrigation water at 60 days after transplanting is effective for management of broomrape in <i>rustica</i> tobacco. Suggestions: Approved (Action: Assoc. Res. Sci., Agricultural Research Station, SDAU, Ladol)																																																																																																				
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22.2.2.24	Response of potato (<i>Solanum tuberosum</i> L.) to nano urea Information for Scientific community Application of 75 % N of basal dose (104 kg N), 138 kg P₂O₅ and 275 kg K₂O/ha and 5 t FYM/ha as basal and two foliar sprays of nano urea (4% N w/v) @ 2 ml per litre of water at 30 and 50 days after planting, gave higher yield of potato. Approve with following Suggestions:																																																																																																				

	1. Write marketable yield data of pooled in economic table (Action: Assoc. Res. Sci., Potato Research Station, Deesa)
Agril. Research Station, SDAU, Aseda	
22.2.2.25	Management of <i>Orobanche</i> in cumin crop <u>Information for Scientific community</u> Application of imazethapyr 10 SL @ 50 g a.i./ha with irrigation water at 40 DAS found effective for control of <i>orobanche</i> in cumin. Suggestions: Approved (Action: Assoc. Res. Sci., Agril. Research Station, SDAU, Aseda)
Pulses Research Station, SDAU, Sardarkrushinagar	
22.2.2.26	Integrated crop management in chickpea <u>Information for Scientific community</u> Application of seed treatment with fungicide (Carboxin + Thirum @ 2 g/kg) and inoculate the seed with <i>Rhizobium</i> + PSB @30 g/kg after that application of Pendimethalin @ 0.75 kg a.i. PE fb by interculturing and hand weeding at 30 DAS. Apply 20 kg, N + 40 kg P ₂ O ₅ /ha as basal. Spraying of Prophenophos 40% + Cypermethrin 4% EC @ 20 ml/10 liter water for pest management as and when required for obtaining higher yield and net return. Approve with following Suggestions: 1. Module for IWM, INM, IPM specified in report 2. Shifted to scientific information and modified as per scientific writing 3. Mention dose of bio fertilizer (Action: Res. Sci., Pulses Research Station, SDAU, Sardarkrushinagar)

22.2.3 NEW TECHNICAL PROGRAMME

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY

Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar	
22.2.3.1	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on chickpea + grain amaranth cropping system under natural farming Approved with following Suggestions: 1. Note: <i>Jeevamrut</i> application 300 lit at 40 DAS and 500 lit. at 60 DAS in treatment J ₂ and J ₃ 2. Add observation of fresh and dry weight of nodules/plant 3. Write total bacterial count (cfu/g soil) instead of microbial count 4. Remove growth attribute and yield attribute observation in greengram 5. Soil status and bacterial count analysis at initial and after sequence (Action: Prof. and Head, Dept. of Agro., CPCA)
22.2.3.2	Response of barley to different levels of nitrogen and phosphorus Approved with following Suggestions: 1. Objective-3 remove word “if any” 2. Revise treatment as N ₁ : 60, N ₂ : 80, N ₃ : 100 kg/ha P ₁ :30, P ₂ : 40 and P ₃ : 50 kg/ha 3. Add word two equal split in noting section 4. In title remove “different level of” 5. Arrange control plot (No application plot) outside the experiment plot for the purpose of nutrient balance (Action: Prof. and Head, Dept. of Agro., CPCA)
22.2.3.3	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on rabi fennel + leafy fenugreek intercropping under natural farming Approved with following Suggestions:

	1. In leafy fenugreek observation add cutting wise yield (kg/ha) 2. Write bacterial count instead of microbial count in input analysis and in soil analysis 3. Write naturally converted fixed site instead of organically in noting section 5 4. Mention irrigation method used in experiment (Sprinkler) (Action: Prof. and Head, Dept. of Agro., CPCA)
22.2.3.4	Remote sensing based spatio-temporal assessment of growth dynamics and productivity of ardua tree Approved with following Suggestions: 1. Remove word “spatio” in title 2. Remove “spatio” word from objective 1 3. Remove “and generate actionable spatial outputs” in objective 3 4. Remove observation of spectral reflectance data 5. In design use descriptive statistics instead of CRD (Action: Prof. and Head, Dept. of Agro., CPCA)
Dept. of Soil Science, CPCA, SDAU, Sardarkrushinagar	
22.2.3.5	Impact of canal irrigation on physico-chemical properties of soils of Narmada canal command area of Patan and Vav-Tharad districts Approved with following Suggestions: 1. Add water analysis of borewell and canal 2. Soil sample depth 0-15 cm 3. Write “EC” instead of Ece in soil chemical observation 4. Write unit in all the observation 5. Add volume of water used in farmer questionnaire (Action: Prof. and Head, Dept. of Soil Sci., CPCA)
22.2.3.6	Evaluation of rate of decomposition and nutrient release pattern of different crop residues Approved with following Suggestions: 1. Add treatment T ₈ PROM 2. Initial weight of residue “100 g/bag” instead of 20 gm/bag 3. Use standard procedure for the nutrient release pattern 4. Moisture management as per standard cropping system pattern 5. Fixed the irrigation depth and schedule in methodology (Action: Prof. and Head, Dept. of Soil Sci., CPCA)
BRC, SDAU, Sardarkrushinagar	
22.2.3.7	Assessment of soil fertility status of Dantiwada taluka using remote sensing and GIS techniques Approved with following Suggestions: 1. Revise title “Assessment and delineation of soil fertility status of Dantiwada taluka using GIS” 2. Remove word “remote sensing” from entire text 3. Objective 2 remove word ‘techniques’ and remove objective 4 (Action: Head, BRC, SDAU, Sardarkrushinagar)
22.2.3.8	Effect of iron on grain amaranth Approved with following Suggestions: 1. Remove objective 4 2. Revise treatment as per T ₁ : 0 kg FeSO ₄ T ₂ : 10 kg FeSO ₄ T ₃ : 15 kg FeSO ₄ T ₄ : 20 kg FeSO ₄

	T₅: 0 kg Feso₄ + foliar spray of 0.5% FeSO₄ at 30 and 45 DAS T₆: 10 kg FeSO₄ + foliar spray of 0.5% FeSO₄ at 30 and 45 DAS T₇: 15 kg FeSO₄ + foliar spray of 0.5% FeSO₄ at 30 and 45 DAS T₈: 20 kg FeSO₄ + foliar spray of 0.5% FeSO₄ at 30 and 45 DAS T₉: Water spray 3. Use design RBD 4. Remove chemical analysis of Available N, P₂O₅ and K₂O after harvest of crop 5. Delete the observation yield/plant (gm) (Action: Head, BRC, SDAU, Sardarkrushinagar)
Centre for Research on IFS, SDAU, Sardarkrushinagar	
22.2.3.9	Effect of irrigation methods and mulching on groundnut + castor relay intercropping Approved with following Suggestions: 1. Remove note 7 2. Add groundnut equivalent yield 3. Add note for specify the sowing time for both crop and mulching application time 4. Write RDF as per N: P₂O₅: K₂O:S 5. Fertilizer application and seed rate will be applied as per area base of crop (Action: Res. Sci., Centre for IFS, Sardarkrushinagar)
CCI, SDAU, Sardarkrushinagar	
22.2.3.10	Weed management practices in grain amaranth (<i>Amaranthus hypochondriacus</i> L.) Approved with following Suggestions: 1. Write T₂ as Weed free (HW at 20 and 40 DAS) 2. Write T₃ and T₄ IC instead of interculture 3. In T₅ to T₈ write <i>fb</i> instead of + 4. In weed observation 1 remove “before application of herbicide” 5. In yield attributing and yield observation 5 remove composite word and write last year word in place of every year (Action: Assoc. Res. Sci., CCI, Sardarkrushinagar)
CNRM, SDAU, Sardarkrushinagar	
22.2.3.11	Performance of castor based intercropping systems under rainfed condition Approved with following Suggestions: 1. Write kalingada seed rate 2. In noting area-based seed and fertilizer application 3. Add initial soil status analysis (Action: Res. Sci., CNRM, SDAU, Sardarkrushinagar)
22.2.3.12	Effect of soil moisture conservation practices on pearl millet under rainfed condition Approved with following Suggestions: 1. Revise plot size as per compartmental bunding 2. Write pearl millet word in objective 1 3. Mention the broad bed furrow size 4. Use mustard straw mulch 5 t/ha (Action: Res. Sci., CNRM, SDAU, Sardarkrushinagar)
22.2.3.13	Response of groundnut + sesame intercropping to ghanjeevamrut and jeevamrut Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Use <i>beejamrut</i> @ 300 ml/kg seed 3. Add word summer in title 4. Use mustard straw mulch 7.5 t/ha 5. Estimation of heavy metals at initial and after completion of experiment 6. Experiment will be taken on fixed plot and fixed site (Action: Res. Sci., CNRM, SDAU, Sardarkrushinagar)

22.2.3.14	Evaluation of natural farming components in onion + leafy fenugreek intercropping Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Estimation of heavy metals at initial and after completion of experiment 3. Write unit in chemical properties of soil 4. Experiment will be taken on fixed plot and fixed site (Action: Res. Sci., CNRM, SDAU, Sardarkrushinagar)
Pulses Res. Station, SDAU, Sardarkrushinagar	
22.2.3.15	Effect of nipping and nutrient management on growth, yield and quality of chickpea Approved with following Suggestions: 1. Remove if any word from objective 3 2. Soil analysis before and after harvest (Action: Res. Sci., Pulses Res. Station, Sardarkrushinagar)
Centre for Oil Seed Res., SDAU, Sardarkrushinagar	
22.2.3.16	Effect of spacing and nitrogen levels on castor variety (GC 4) under irrigated condition Approved with following Suggestion: 1. Remove GC 4 word from title (Action: Res. Sci., Centre for Oil Seed Res., Sardarkrushinagar)
22.2.3.17	Effect of biochar on growth and yield of groundnut Approved with following Suggestions: 1. Revise title as “Effect of biochar on growth and yield of summer groundnut” 2. Revise treatment as below - T₁: 100% RDF - T₂: FYM 5 t/ha - T₃: Vermicompost 1 t/ha - T₄: <i>Ghanjeevamrut</i> 1 t/ha - T₅: 75% RDF + Biochar @ 1 t/ha - T₆: 75% RDF + Enriched biochar @ 1 t/ha - T₇: 75% RDF + FYM 5 t/ha + Biochar @ 1 t/ha - T₈: 75% RDF + Vermicompost 1 t/ha + Biochar @ 1 t/ha - T₉: 75% RDF + <i>Ghanjeevamrut</i> 1 t/ha + Biochar @ 1 t/ha - T₁₀: 75% RDF + FYM 5 t/ha + Enriched biochar @ 1 t/ha - T₁₁: 75% RDF + Vermicompost 1 t/ha + Enriched biochar @ 1 t/ha - T₁₂: 75% RDF + <i>Ghanjeevamrut</i> 1 t/ha + Enriched biochar @ 1 t/ha Note: 1. The experiment will be conducted on same site with fixed plots. 2. Biochar will be analyzed before application. 3. RDF will be 25-50-00-20 kg N-P₂O₅-K₂O-S/ha 4. Write “Biochar will be enriched with 0.2% iron (Fe) and 0.5% zinc (Zn), using FeO and ZnO as the source materials and NPK consortia 2 L/t biochar” in methodology 5. Spacing 45 cm instead of 30 cm (Action: Res. Sci., Centre for Oil Seed Res., Sardarkrushinagar)
22.2.3.18	Optimized use of Nano-DAP for enhancing groundnut productivity Approved with following Suggestions: 1. Revise title as “Effect of nano DAP on growth and yield of groundnut” 2. Revise treatment as below, - T₁: RDF (90:60:00 N: P₂O₅: K₂O kg/ha) - T₂: 50% RDF + Seed Treatment of nano DAP @ 5 ml / kg seeds - T₃: 75% RDF + Seed Treatment of nano DAP @ 5 ml / kg seeds - T₄: 50% RDF + Foliar spray of nano DAP @ 4 ml / L water at 35-40 and 50-55 DAS

	T₅: 75% RDF + Foliar spray of nano DAP @ 4 ml / L water at 35-40 and 50-55 DAS T₆: 50% RDF + Seed Treatment of nano DAP @ 5 ml / kg seeds+ Foliar spray of nano DAP @ 4 ml / L water at 35-40 and 50-55 DAS T₇: 75% RDF + Seed Treatment of nano DAP @ 5 ml / kg seeds+ Foliar spray of nano DAP @ 4 ml / L water at 35-40 and 50-55 DAS T₈: 50% RDF + Foliar spray of Urea phosphate @ 2% at 35-40 and 50-55 DAS T₉: 75% RDF + Foliar spray of Urea phosphate @ 2% at 35-40 and 50-55 DAS (Action: Res. Sci., Centre for Oil Seed Res., S.K.Nagar)
AFRS, SDAU, Sardarkrushinagar	
22.2.3.19	Productivity enhancement of castor and cotton in dryland through intercropping Approved with following Suggestions: 1. Write cotton equivalent yield kg/ha 2. Remove castor-based treatment T₁, T₆, T₇ and T₈ 3. Remove castor word and castor-based application from entire text of experiment (Action: Res. Sci., AFRS, SDAU, Sardarkrushinagar)
Seed Tech., SDAU, Sardarkrushinagar	
22.2.3.20	Effect of sowing methods and harvesting times on forage yield and quality of sweet sorghum Approved with following Suggestions: 1. Write treatment H₂: 10 DAS and H₃: 20 DAS (Action: Res. Sci., Seed Tech., Sardarkrushinagar)
22.2.3.21	Performance of forage sorghum with different forage legumes Approved with following Suggestions: 1. Add treatment as T₃: sole cluster bean and T₉: sorghum + cluster bean (2:1) and all other treatment is same as such (Total 9 treatment) 2. Write spacing 30 cm (Action: Res. Sci., Seed Tech., Sardarkrushinagar)
Seed Spices Res. Station, SDAU, Jagudan	
22.2.3.22	Effect of integrated nutrient management on growth and yield of coriander Approved with following Suggestions: 1. Add chemical analysis of source of input 2. Remove effect of integrated in title and objective (Action: Res. Sci., Seed Spices Res. Station, Jagudan)
College of Horticulture, SDAU, Jagudan	
22.2.3.23	Evaluation of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on vegetable cowpea and its residual effect on leafy coriander Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Estimation of heavy metals at initial and after completion of experiment 3. Add chemical analysis of source of input 4. Experiment will be taken on fixed plot and fixed site (Action: Principal, College of Horticulture, Jagudan)
Wheat Res. Station, SDAU, Vijapur	
22.2.3.24	Effect of nano DAP on growth and yield of wheat Suggestion/s: Approved (Action: Res. Sci., Wheat Res. Station, SDAU, Vijapur)
22.2.3.25 &	Weed management in irrigated wheat (<i>Triticum aestivum</i> L.) Approved with following Suggestions:

22.2.3.26	1. Split the experiment in two experiments, one with weed management practices under dry sowing and second experiment with weed management practices under wet sowing condition in RBD design 2. Total 10 weed management treatments in both experiments and as such 8 treatment as per NTP and add treatment T₉: metsulfuron methyl 1% wp + clodinofof propargyl 15% @ 60+4 g a.i/ha and T₁₀: sulfosulfuron 75% + metsulfuron methyl 5% WG @ a.i 30+2 g/ha 3. Add weed population of monocot/dicot/Phalaris minor observation 4. Remove bio assay test 5. Take Residual analysis and toxicity observation 6. Phytotoxicity scale (0 to 10) on wheat (Action: Res. Sci., Wheat Res. Station, SDAU, Vijapur)
ARS, SDAU, Ladol	
22.2.3.27	Integrated weed management in <i>rustica</i> tobacco Approved with following Suggestions: 1. Add dose in gram instead of kg in herbicide in treatment 2. In weed parameter observation remove dry weight at 30 DAS 3. For Bioassay study growing of 2 row each of sunhemp, fodder cowpea, greengram and pearl millet (Action: Assoc. Res. Sci., ARS, SDAU, Ladol)
CRS, SDAU, Talod	
22.2.3.28	Effect of Micronutrient application on growth, yield and quality of cotton Approved with following Suggestions: 1. Add treatment T₉: 100% RDF without FYM + MgSO₄ 50 kg/ha 2. Application of 1% instead of 3% in treatment T₈ 3. Remove common fertilizers FYM 5 t/ha from (7.8 column) 4. Add redning and wilting observation 5. Analysis of available Mg, S and Cu at initial and after harvest (Action: Assoc. Res. Sci., CRS, SDAU, Talod)
22.2.3.29	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on cotton + groundnut intercropping system under natural farming Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Experiment will be taken on fixed plot and fixed site 3. Add chemical analysis of source of input 4. <i>Jeevamrut</i> application 300 lit at 40 DAS and 500 lit. at 60 DAS, 80 DAS and 100 DAS respectively (Action: Assoc. Res. Sci., ARS, SDAU, Talod)
Potato Res. Station, SDAU, Deesa	
22.2.3.30	Response of potato to biochar enriched with biofertilizers, bioagents and micronutrient Approved with following Suggestions: 1. Remove common FYM 25 t/ha in column 7.8 manuring 2. Mention enrichment methodology (Action: Assoc. Res. Sci., Potato Res. Station, Deesa)
Centre for Millet Research, SDAU, Deesa	
22.2.3.31	Effect of nitrogen and phosphorus on growth and yield of barnyard millet (<i>Echinochloa frumentacea</i>) Suggestion: Approved (Action: Res. Sci., Centre for Millet Research, SDAU, Deesa)

ARS, SDAU, Aseda	
22.2.3.32	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on cumin + chickpea intercropping system Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Experiment will be taken on fixed plot and fixed site 3. Add chemical analysis of source of input (Action: Assoc. Res. Sci., ARS, Aseda)
DFRS, SDAU, Radhanpur	
22.2.3.33	Effect of irrigation scheduling and nitrogen levels on growth and yield of dillseed Approved with following Suggestion: 1. Add observation of water use and water saving (Action: Assoc. Res. Sci., DFRS, SDAU, Radhanpur)
22.2.3.34	Influence of spacing and nitrogen on castor under dry land agriculture Suggestion: Approved (Action: Assoc. Res. Sci., DFRS, SDAU, Radhanpur)
RRS, SDAU, Bhachau	
22.2.3.35	Influence of micronutrients on growth, yield, and quality of cumin (<i>Cuminum cyminum</i> L.) Suggestion: Approved (Action: Assoc. Res. Sci., RRS, SDAU, Bhachau)
22.2.3.36	Assessment of soil fertility status of Bhachau taluka using remote sensing and GIS techniques Approved with following Suggestions: 1. Revise title “Assessment and delineation of soil fertility status of Bhachau taluka using GIS” 2. Remove word “remote sensing” from entire text 3. Objective 2 remove word techniques and remove objective 4 (Action: Assoc. Res. Sci., RRS, SDAU, Bhachau)
22.2.3.37	Effect of subsurface drainage system on physico-chemical properties of salt affected soil in Kachchh Suggestion: Approved (Action: Assoc. Res. Sci., RRS, SDAU, Bhachau)
22.2.3.38	Evaluation of integrated farming system based on date palm plantation Approved with following Suggestion: 1. Remove control word from T₁ treatment (Action: Assoc. Res. Sci., RRS, SDAU, Bhachau)
COA, SDAU, Bhachau	
22.2.3.39	Response of summer groundnut (<i>Arachis hypogaea</i> L.) to irrigation scheduling and antitranspirant sprays Approved with following Suggestions: 1. Remove treatment A₂ and A₄ 2. Spraying at 30 DAS and 50 DAS (Action: Principal, COA, SDAU, Bhachau)
RRS, SDAU, Kothara	
22.2.3.40	Effect of spacing and <i>jeevamrut</i> on HDPS cotton under natural farming Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Foliar application of <i>jeevamrut</i> 300 lit/ha at 60 DAS and 500 lit/ha at 90 DAS in noting 3 3. Add chemical analysis of source of input

	4. Estimation of heavy metals at initial and after completion of experiment (Action: Asstt. Res. Sci., RRS, SDAU, Kothara)
KVK, SDAU, Tharad	
22.2.3.41	Effect of <i>ghanjeevamrut</i> and seedling transplanting on Castor (<i>Ricinus communis</i> L.) Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Experiment will be taken on fixed plot and fixed site 3. Add chemical analysis of source of input 4. Add observation of survival % up to 20 DAS (Action: Head & Senor Sci., KVK, SDAU, Tharad)
College of Agriculture, SDAU, Tharad	
22.2.3.42	Reclamation of salt affected soil through natural amendments Approved with following Suggestions: 1. Remove @ in treatments 2. Add observation green and dry biomass of sunhemp and dhaincha 3. Analysis of nutrients content in dhaincha and sunhemp on dry weight basis 4. Add observation of CaCO₃ analysis in soil (Action: Principal, College of Agriculture, SDAU, Tharad)
22.2.3.43	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on Dillseed + Fenugreek intercropping system under natural farming Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Experiment will be taken on fixed plot and fixed site 3. Add chemical analysis of source of input (Action: Principal, College of Agriculture, SDAU, Tharad)
22.2.3.44	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on grain amaranth + Fenugreek intercropping system under natural farming Approved with following Suggestions: 1. Write total bacterial count (cfu/g soil) instead of microbial count in observation 2. Experiment will be taken on fixed plot and fixed site 3. Add chemical analysis of source of input (Action: Principal, College of Agriculture, SDAU, Tharad)
Polytechnic in Agriculture, SDAU, Deesa	
22.2.3.45	Effect of spent mushroom substrate on germination, growth and yield of chilli Approved with following Suggestions: 1. Add observation of C: N ratio in SMS before application 2. NPK analysis of inputs (raw material) at initial (Action: Principal, Polytechnic in Agriculture, SDAU, Deesa)
22.2.3.46	Effect of spent mushroom substrate on germination, growth and yield of tomato Approved with following Suggestions: 1. Add observation of C: N ratio in SMS before application 2. NPK analysis of inputs (raw material) at initial (Action: Principal, Polytechnic in Agriculture, SDAU, Deesa)
Poly. in Agri., SDAU, Amirgadh	
22.2.3.47	Impact of organic inputs on productivity of <i>rabi</i> fennel Approved with following Suggestion: 1. Recast title with “Integrated nutrient management in <i>rabi</i> fennel” 2. Treatment T₅: Jeevamrut @ 1000 L/ha at sowing, 30 DAS and 60 DAS 3. Treatment T₆: Jeevamrut @ 1250 L/ha at sowing, 30 DAS and 60 DAS

	4. Remove T ₉ treatment 5. Add chemical analysis of source of input 6. Estimation of heavy metals at initial and after completion of experiment 7. Experiment will be taken on fixed site and fixed plot (Action: Principal, Poly. In Agri., SDAU, Amirgadh)
22.2.3.48	Effect of nutrient management on growth, yield and quality of Fenugreek (<i>Trigonella foenum grecum</i> L.) Suggestion: Approved (Action: Principal, Poly. in Agri., SDAU, Amirgadh)
Poly. in Agri., SDAU, Khedbramha	
22.2.3.49	Effect of spacing and seed rate on summer sesame Approved with following Suggestions: 1. Add in Note: No thinning in all the treatments (Action: Principal, Poly. In Agri., SDAU, Khedbramha)
22.2.3.50	Response of <i>ghanjeevamrut</i> and <i>jeevamrut</i> to soyabean + maize inter cropping and its residual effect on chickpea Approved with following Suggestions: 1. Add chemical analysis of source of input 2. Write total bacterial count (cfu/g soil) instead of microbial count in observation (Action: Principal, Poly. in Agri., SDAU, Khedbramha)
DOR, SDAU, Sardarkrushinagar	
22.2.3.51	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> in onion + leafy fenugreek intercropping under natural farming Approved with following Suggestions: 1. Add chemical analysis of source of input 2. Write total bacterial count (cfu/g soil) instead of microbial count in observation 3. Estimation of heavy metals at initial and after completion of experiment 4. Experiment will be taken on fixed site and fixed plot 5. Mention the row ratio in note (Action: Office of the DOR, SDAU, Sardarkrushinagar)
ARS, SDAU, Shihori	
22.2.3.52	Effect of <i>ghanjeevamrut</i> and <i>jeevamrut</i> on mustard-kalingada sequence under natural farming Approved with following Suggestions: 1. Add chemical analysis of source of input 2. Write total bacterial count (cfu/g soil) instead of microbial count in observation 3. Experiment will be taken on fixed site and fixed plot 4. Mention the row ratio in note (Action: Assist. Res. Sci., ARS, SDAU, Shihori)

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Soil & Water Management Research Unit, NAU, Navsari	
22.2.3.53	Effect of intercropping systems and irrigation levels on growth and yield of drip irrigated sugarcane Approved with following suggestions: 1. Add observation of Plant population (Initial and at harvest). 2. Write Sugarcane equivalent yield instead of crop equivalent yield. (Action: Res. Sci., SWMRU, NAU, Navsari)

22.2.3.54	Response of drip irrigated elephant foot yam to different planting geometry and irrigation regimes under South Gujarat conditions Approved with following suggestions: 1. Recast title as “Response of elephant foot yam to different planting spacing and irrigation regimes under drip irrigation”. 2. Sowing was done before XXII Combine AGRESCO although experiment found technically appropriate without any modification including treatment and design so accepted and current season sowing is considered. (Action: Res. Sci., SWMRU, NAU, Navsari)
22.2.3.55	Effect of drip irrigated relay intercropping of sugarcane in turmeric and elephant foot yam on system productivity under South Gujarat conditions Approved with following suggestions: 1. Recast title as “Effect of relay intercropping of sugarcane in turmeric and elephant foot yam on system productivity under drip irrigation” 2. Mention Year and Season of Tuber crop: summer 2027 and Sugarcane: Oct/Nov-2027 3. Irrigation treatments in main plot and relay intercropping system in sub plot 4. Design: split plot instead of RBD (factorial concept) 5. Add observation Plant population of all crop (initial and final) (Action: Res. Sci., SWMRU, NAU, Navsari)
22.2.3.56	Feasibility study of drip irrigation method in sugarcane under canal command area Approved with following suggestions: 1. Mention year and season 2026-27, Annual instead of 2025-26, Annual 2. Add Observation of plant population (initial and at harvest) (Action: Res. Sci., SWMRU, NAU, Navsari)
Coastal Soil Salinity Research Station, NAU, Danti-Ubharat	
22.2.3.57	Evaluation of varying levels of gypsum and pyroligneous solution on reclamation of coastal salt affected soil and its effect on drip irrigated <i>rabi</i> onion Suggestion: Approved (Action: Res. Sci., SWMRU, NAU, Navsari)
Main Rice Research Station, NAU, Navsari	
22.2.3.58	Response of rice cultivar to nitrogen and phosphorus management through conventional and nano fertilization Approved with following suggestions: 1. Use nano urea plus instead of nano urea 2. Modify plot size as per spacing 3. Add observation of plant population (initial and at harvest) (Action: Res. Sci., SWMRU, NAU, Navsari)
Pulses and Castor Research Station, NAU, Navsari	
22.2.3.59	Effect of nutrient management through foliar spray on pigeon pea under South Gujarat condition Approved with following suggestions: 1. Modified treatment as below: - T₁- Water spray - T₂- Urea 2 % at flowering and pod development stage - T₃- Pulse magic 1 % at flowering and pod development stage - T₄- 19:19:19 NPK 2 % at flowering and pod development stage - T₅- Nano urea plus 0.2 % at flowering and pod development stage - T₆- Nano DAP 0.2 % at flowering and pod development stage Note: Two sprays at flowering and pod development stage 2. Analysis of nutrient composition of pulse magic 3. Replication 4 instead of 3 (Action: Res. Sci., Pulse & Castor Res. Station, NAU, Navsari)

Regional Rice Research Station, Vyara	
22.23.60	SPAD based real time nitrogen management in transplanted rice (<i>Oryza sativa</i> L.) Approved with following suggestions: 1. In T₂ mention RDN instead of RDF 2. Apply basal nitrogen in treatment T₃ to T₇ (Action: Res. Sci. RRRS, NAU, Vyara)
AES, NAU, Paria	
22.2.3.61	Estimation of carbon and nutrient stock in mango orchard with advancement of age Approved with following suggestions: 1. Design CRD/ Descriptive statistics, which ever applicable 2. No. of plants per treatment: 2 3. Mention replication: 4 4. Total no. of tree: 48 5. Remove observation of soil carbon sequestration (Action: Res. Sci. AES, NAU, Paria)
MCRS, NAU, Surat	
22.2.3.62	Effect of different natural farming components on Cotton Approved with following suggestions: 1. Modified treatment of <i>ghanjeevamrut</i> as below G₁: <i>Ghanjeevamrut</i> @ 4 t/ha G₂: <i>Ghanjeevamrut</i> @5 t/ha G₃: <i>Ghanjeevamrut</i> @ 6 t/ha 2. Common application of 1250 lit/ha <i>jeevamrut</i> at 20, 40, 60 and 80 DAS 3. Add observation of plant population (initial and at harvest) (Action: Res. Sci. MCRS, NAU, Surat)
MSRS, NAU, Surat	
22.2.3.63	Weed management in sorghum Approved with following suggestions: 1. Modified T₁: Weed free check (HW at 20 and 40 DAS) 2. T₂ to T₁₀ as such 3. Modify treatment T₁₁: Tembotrione + Atrazine (90 g + 450g) as EPO (15 DAS) 4. Add treatment T₁₂: Mesotrione + Atrazine (625g) as EPO (15 DAS) (Action: Res. Sci. MSRS, NAU, Surat)
22.2.3.64	Effect of nano urea on sorghum Approved with following suggestions: 1. Add treatment T₁: Absolute control and modify T₁ to T₅ as T₂ to T₆ 2. Use nano urea plus instead of nano urea in treatments 3. No need to take control outside the experimental area 4. Add soil analysis before and after experiment 5. Add treatment T₁: Absolute control and modify T₁ to T₅ as T₂ to T₆ 6. Use nano urea plus instead of nano urea in treatments 7. No need to take control outside the experimental area 8. Add soil analysis before and after experiment (Action: Res. Sci. MSRS, NAU, Surat)
Cotton Research Sub Station, NAU, Achhalia	
22.2.3.65	Response of different sources of nutrient to turmeric Approved with following suggestions: 1. In treatment M₂ live mulch of sunhemp (cut the sunhemp at 40 to 45 DAS) 2. Modified treatment of <i>ghanjeevamrut</i> as below G₁: <i>Ghanjeevamrut</i> @ 4 t/ha G₂: <i>Ghanjeevamrut</i> @5 t/ha G₃: <i>Ghanjeevamrut</i> @ 6 t/ha 3. Common application of 1250 lit/ha <i>jeevamrut</i> at 20, 40, 60 and 80 DAS 4. Add observation of bacterial count (Action: Asstt. Res. Sci. CRSS, NAU, Achalia)

ARS, NAU, Mangrol	
22.2.3.66	Effect of ghan-jivamrut application on performance of sorghum-leafy vegetables intercropping Approved with following suggestions: - Factor A as cropping system instead of sole crop + inter crop - Mention row ratio in I₂ to T₄ - Modify treatment M₂: 4 t/ha <i>ghanjeevamrut</i> + one spray of <i>jeevamrut</i> 300 lit/ha at 30 DAS and M₃: 4 t/ha <i>ghanjeevamrut</i> + two spray of <i>jeevamrut</i> 300 lit/ha at 30 DAS and 500 lit/ha at 50 DAS - Remove point 1 and 3 from Note - Add observation of bacterial count and heavy metal analysis (Action: Asstt. Res. Sci. ARS, NAU, Mangrol)
CWBS, NAU, Hansot	
22.2.3.67	Response of rainfed cotton (<i>Gossypium hirsutum</i>) to organic nutrient sources Approved with following suggestions: - Recast title as “Nutrient management in rainfed cotton (<i>Gossypium hirsutum</i>)” - Modify the treatment as below - T₁: control - T₂: 100% RDF - T₃: 100 % RDN through FYM - T₄: 100% RDN through biocompost - T₅: 75 % RDN through FYM + 25 % RDN through castor cake - T₆: 75 % RDN through biocompost + 25 % RDN through castor cake - T₇: 75 % RDN through FYM + 25 % RDN through biocompost - Remove observation of fertilizer use efficiency (Action: Asst. Res. Sci., CWBS, NAU, Hansot)
Department of Agronomy, NMCA, NAU, Navsari	
22.2.3.68	Integrated weed management in cabbage under south Gujarat condition Approved with following suggestion: Add phytotoxicity observation (Action: Prof. & Head, Agronomy, NMCA, NAU, Navsari)
22.2.3.69	Effect of Iron and Zinc on yield and quality of fodder oat (<i>Avena sativa</i> L.) under South Gujarat condition Approved with following suggestion: Add Observation of plant population in meter row length (initial) (Action: Prof. & Head, Agronomy, NMCA, NAU, Navsari)
22.2.3.70	Identification of cropping systems module for different farming systems Approved with following suggestions: - Modify treatment T₁₁ as GM-Sugarcane + Spinach-Ratoon-Greengram - Specify variety of Spinach (Action: Prof. & Head, Agronomy, NMCA, NAU, Navsari)
Dept. of Soil Science & Ag. Chem., NMCA, NAU, Navsari	
22.2.3.71	Effect of isolated indigenous cellulolytic and lignolytic fungi for effective decomposition of 66ingo-cellulosic crop residues Suggestion: Approved (Action: Prof. & Head, SSAC, NMCA, NAU, Navsari)

Department of Meteorology, NMCA, NAU, Navsari	
22.2.3.72	Response of summer black gram varieties to different weather regimes Approved with following suggestions: 1. Modify treatments in main plot as below D₁: 5th SMW D₂: D₁ + 7days D₃: D₂ + 7days D₄: D₃ + 7days D₅: D₄ + 7days 2. Remove treatment V₁: GU 1 from subplot treatment 3. The experiment must be conducted over a minimum period of three years. (Action: Prof. & Head, Ag. Engg, NMCA, NAU, Navsari)
Department of NRM, ACH, NAU, Navsari	
22.2.3.73	Microbial degradation of dragon fruit cladode Approved with following suggestions: 1. Mention year and season 2026-27 instead of 2025-26 2. Add treatment C₀: control in factor 2 3. Remove periodic weight loss from methodology (Action: Prof. & Head, NRM, ACH, NAU, Navsari)
CoA, NAU, Waghai	
22.2.3.74	Evaluation of natural farming practices in finger millet (<i>Eleusine coracana</i>) Approved with following suggestions: 1. In module 1- natural farming mention <i>beejamrut</i> as seed treatment at 30 ml/kg seed 2. Give different module details 3. Add observation of bacterial count and heavy metals (Action: Prof. & Head, CoA, NAU, Waghai)
CoA, NAU, Bharuch	
22.2.3.75	Nutrient management in safflower (<i>Carthamus tinctorius</i>) Approved with following suggestions: 1. Modify treatment as below Nitrogen management (N) N₁: 0 kg N/ha N₂: 20 kg N/ha N₃: 40 kg N/ha In Phosphorus management write P₂O₅/ha instead of N/ha 2. Remove observation of no. of seed/capitulum (Action: Prof. & Head, CoA, NAU, Bharuch)
22.2.3.76	Importance of green manure crop on soil fertility and their residual effect on wheat (<i>Triticum aestivum</i>) Approved with following suggestions: Recast the title as “Effect of green manure crop on soil fertility and their residual effect on wheat (<i>Triticum aestivum</i>)” 1. In sub plot treatment mention Nitrogen level (N) instead of fertilizer level (F) and modify as below N₁: Control N₂: 75% RDN + Bio-priming (Azotobacter 10 ml/ kg seed) N₃: 75% RDN + nano urea foliar application N₄: 100% RDN N₅: LCC base nitrogen management (Basal dose of N applied) 2. Design split plot instead of strip plot (Action: Prof. & Head, CoA, NAU, Bharuch)

22.2.3.77	Comparative efficacy of diverse lignocellulosic biochars on the sorption, dissipation, and leaching dynamics of metribuzin in different soils Suggestion: Approved (Action: Prof. & Head, FQTL, NMCA, NAU, Navsari)
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Dept. of Agronomy, CoA, JAU, Junagadh	
22.2.3.78	Effect of biochar on yield of summer pearl millet and soil health under irrigation regimes Approved with following suggestions: 1. Take split plot design with three replications and correct plot size 2. Take irrigation regimes in main plot and biochar in sub-plot 3. Take experiment on fixed site and soil analysis at initial and end of the three years of experiment (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.79	Effect of sowing date and spacing on <i>Kalonji</i> Approved with following suggestions: 1. Take seed rate as per the spacing 2. Sowing should be done at fixed interval after first date of sowing 3. Design SPT (Strip Plot Design) (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.80	Response of maize to foliar spray of WSF by using drone Approved with following suggestions: 1. Write full form of WSF in title 2. Write compare instead of over in second objective 3. Add drone observations (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.81	Comparative evaluation of weed management strategies under natural, organic, conventional and integrated crop production systems in <i>kharif</i> groundnut Approved with following suggestions: 1. Correct the plot size 2. Add 5 t/ha organic mulch in organic module 3. In natural farming module, spray <i>Jeevamrut</i> 300 L/ha instead of 30% <i>Jeevamrut</i> (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.82	Floristic survey of <i>kharif</i> season weeds in Junagadh Agricultural University campus area Suggestion: Approved (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.83	Drone based herbicide application for weed management in wheat Approved with following suggestions: 1. Take weed dry weight at 25, 50 DAS and at harvest 2. Correct the plot size 3. For spraying efficiency, record time of spray and volume (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)

22.2.3.84	Effect of tillage and wheat residue management on growth and yield of summer groundnut Approved with following suggestions: 1. Correct the plot size (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.85	Impact of tillage systems and residue management on performance of soyabean-wheat based cropping sequence Approved with following suggestions: 1. Correct the plot size 2. Take soil samples from 0-20 cm depth 3. Calculate equivalent yield of any one crop (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
22.2.3.86	Calibration and validation of CROPGRO model for different cultivars of soyabean under different sowing time Approved with following suggestions: 1. Delete “under different sowing time” from the title 2. Check and correct fertilizer dose and seed rate 3. Delete soil temperature observations 4. Delete “district wise” word from analysis para 5. Take sowing from onset of monsoon and take total six sowing dates as treatments at 7 days interval as follow - D₁: Onset of monsoon - D₂: D₁ + 7 days - D₃: D₂ + 7 days - D₄: D₃ + 7 days - D₅: D₄ + 7 days - D₆: D₅ + 7 days 6. Delete any one variety (Action: Professor & Head, Department of Agronomy, CoA, JAU, Junagadh)
Main Dry Farming Research Station, JAU, Targhadia	
22.2.3.87	Cropping geometry of Bt. cotton with different intercrops for increasing productivity and rain water use efficiency under dry farming condition Approved with following suggestions: 1. Add units in observations 2. Mention the spacing for intercrops in 2:2 row ratio (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
22.2.3.88	Effect of sulphur levels and sources on growth, yield and quality of groundnut crop under dryland condition Suggestion/s: Approved (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
22.2.3.89	Evaluation of soyabean for natural farming under rainfed condition. Approved with following suggestions: 1. Add input analysis 2. Take row ratio of soyabean: maize as 4:2 3. Add details of maize crop and observations 4. Take soyabean equivalent yield (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
22.2.3.90	Effect of nano DAP on growth and yield of Bt cotton under conserved soil moisture condition under Bhal region Approved with following suggestions: 1. Write “of Bhal region” instead of “under Bhal region”

	2. Take variety GTHH 49 (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)
Main Oilseed Research Station, JAU, Junagadh	
22.2.3.91	Effect of nano DAP on performance of summer groundnut Approved with following suggestions: 1. Take RBD design and correct the plot size accordingly (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.3.92	Integrated nitrogen management in castor under irrigated condition Approved with following suggestions: 1. Delete natural farming treatment 2. Add two more treatments as T ₃ + NPK Consortium and T ₄ + NPK Consortium (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.3.93	Effect of different sources of biochar on growth and yield of castor Approved with following suggestions: 1. Correct second objective as effect of different levels of biochar 2. Add third objective as interaction effect (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.3.94	Wheat residue recycling and nitrogen management practices in <i>kharif</i> groundnut Approved with following suggestions: 1. Write RDN instead of RDFN 2. Revise title as “Wheat residue management in groundnut” (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
22.2.3.95	Role of biochar and fertilizer in enhancing productivity and soil health in <i>kharif</i> Groundnut Approved with following suggestions: 1. In title, delete <i>kharif</i> word 2. Delete treatment 50% of RDF (Action: Research Scientist (Groundnut), Main Oilseeds Research Station, JAU, Junagadh)
Agricultural Research Station, JAU, Amreli	
22.2.3.96	Assessment of natural farming practices for sesame under summer condition Approved with following suggestions: 1. Modify title as “Assessment of natural farming practices for summer sesame” 2. Add third objective of interaction effect of <i>Ghanjeevamrut</i> and <i>Jeevamrut</i> 3. Change experimental design as FRBD with two factors and three replications 4. Take Factor A as levels of <i>Ghanjeevamrut</i> as 2, 3, 4 t/ha 5. Take Factor B as levels of <i>Jeevamrut</i> as 1000, 1250 and 1500 L/ha with irrigation water at 30, 45 and 60 DAS 6. Add input analysis (Action: Research Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli)
22.2.3.97	Effect of different land configuration techniques for reducing water logging stress in <i>kharif</i> Sesame Approved with following suggestions: 1. Remove <i>kharif</i> word from the title (Action: Research Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli)
Dry Farming Research Station, JAU, Jamkhambhaliya	
22.2.3.98	Effect of spacing and variety on growth and yield of chickpea Approved with following suggestions: 1. Take four replications 2. Keep only 30, 45 and 60 cm in row spacing 3. Take seed rate as per spacing

	(Action: Assistant Research Scientist, Dry Farming Research Station, JAU, Jamkhambhaliya)
Pulse Research Station, JAU, Junagadh	
22.2.3.99	Weed Management in chickpea Approved with following suggestions: 1. Correct treatment T₆ as propaquizafop 10% EC 62.5 kg/ha as early post-emergence at 10-15 DAS <i>fb</i> by HW at 40 DAS 2. Spray all post-emergence at 25-30 DAS 3. Take T₁₁ as IC & HW at 20 and 40 DAS and remove word weed free 4. Take FYM 5 t/ha instead of 10 t/ha 5. Revise the plot size 6. Take group-wise weed dry weight at 25, 50 DAS and at harvest (Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)
Main Sugarcane Research Station, JAU, Kodinar	
22.2.3.100	Crop residue management and soil carbon sequestration in sugarcane – groundnut cropping system Approved with following suggestions: 1. Revise title as “Crop residue management in sugarcane - groundnut cropping system” 2. Add sugarcane equivalent yield in observations 3. Delete carbon sequestration rate observation 4. Remove <i>Madhyam</i> culture word from notes (Action: Research Scientist (Sugarcane), Main Sugarcane Res. Station, JAU, Kodinar)
22.2.3.101	Feasibility of mechanical harvesting of sugarcane in Saurashtra region Approved with following suggestions: 1. Modify title as “Feasibility of mechanical harvesting under various row spacing of sugarcane in Saurashtra region” 2. Take four replications 3. Remove Shaktiman details from notes 4. Add sugarcane equivalent yield 5. Mention cutting height from ground level (Action: Research Scientist (Sugarcane), Main Sugarcane Res. Station, JAU, Kodinar)
Dept. of Seed Sci. & Technology, CoA JAU, Junagadh	
22.2.3.102	Effect of date of sowing, plant growth regulators and fertilizers on seed yield in off season soyabean Approved with following suggestions: 1. Write “time of sowing” in title instead of “date of sowing” 2. In factor C treatments write “DAS” instead of “days” 3. Correct the plot size 4. Write split-spilt plot design 5. Take four replications (Action: Professor & Head, Department of Seed Sci. & Technology, CoA JAU, Junagadh)
Dept. of Soil Science & Agri. Chem. CoA, JAU, Junagadh	
22.2.3.103	Effect of saline irrigation water and soil amendments on growth and yield of wheat Approved with following suggestions: 1. Write units in all observations 2. Add microbial population in observation 3. Add analysis of sources of inputs and heavy metals 4. Write approximate in all EC range 5. Take observations of mortality (Action: Professor & Head, Dept. of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)

22.2.3.104	Effect of soil amendments on chickpea under saline-sodic soil Approved with following suggestions: 1. Remove T₂ treatment 2. Apply gypsum as per GR 3. Add input analysis 4. Add observations of microbial population and heavy metals <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
22.2.3.105	Effect of Sulphur on growth and yield of summer groundnut Approved with following suggestions: 1. Add plant population observation 2. Verify doses of SSP and Ammonium sulphate in T₄ & T₆ <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
22.2.3.106	Integrated nutrient management in semi-rabi pearl millet and its residual effect on summer black gram Approved with following suggestions: 1. Add input analysis of compost 2. Add heavy metal analysis 3. Correct the plot size for summer black gram <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
22.2.3.107	Effect of foliar application of water soluble fertilizers on growth, yield and nutrient uptake by groundnut Approved with following suggestion: 1. Write foliar spray at 30 & 60 DAS in note for treatments T₁ to T₈ <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
22.2.3.108	Evaluation of soil textural classes in the soils of different talukas of Amreli district Suggestion: Approved <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
22.2.3.109	Comparative evaluation of conventional and drone based spray for effective management of interveinal chlorosis in groundnut Approved with following suggestions: 1. Add leaf scorching effect observations 2. Delete economics from observations <i>(Action: Professor & Head, Department of Soil Sci. & Agril. Chem., CoA, JAU, Junagadh)</i>
Polytechnic in Agriculture, JAU, Halvad	
22.2.3.110	Effect of nano-DAP on growth, yield and quality of irrigated fennel Approved with following suggestions: 1. Take RBD design 2. Revise the plot size 3. Write units for all observations 4. Take NPK content and uptake for plant <i>(Action: Principal, Polytechnic in Agriculture, JAU, Halvad)</i>
Pearl millet Research Station, JAU, Jamnagar	
22.2.3.111	Effect of foliar spray of water soluble fertilizer on growth and yield of summer pearl millet Suggestion: Approved <i>(Action: Research Scientist (Pearl millet), Pearl millet Research Station, JAU, Jamnagar)</i>

Polytechnic in Agriculture, JAU, Sidsar	
22.2.3.112	Effects of seed priming and foliar application of nano Zn on wheat Approved with following suggestions: 1. Modify the title as “Effect of nano Zn on wheat” 2. Write seed soaking instead of seed priming in treatments T₂ & T₃ (Action: Principal, Polytechnic in Agriculture, JAU, Sidsar)
Vegetable Research Station, JAU, Junagadh	
22.2.3.113	Comparative evaluation of conventional and drone-based foliar spray of nutrients in rabi onion Approved with following suggestions: 1. Add plant population in observations 2. Add leaf scorching effect observations (Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)
Wheat Research Station, JAU, Junagadh	
22.2.3.114	Effect of foliar application of water-soluble fertilizers (N-P-K) on wheat Approved with following suggestions: 1. Remove (N-P-K) from the title 2. Write 1% before fertilizer grade (Action: Research Scientist, Wheat Research Station, JAU, Junagadh)

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College of Agriculture, AAU, Jabugam	
22.2.3.115	Impact of natural nutrient sources on growth and yield of fodder maize - pigeon pea – black gram cropping sequence Approved with following Suggestions: 1. Take 2000 t/ha <i>Ghanjeevamrut</i> instead of 1500 t/ha <i>Ghanjeevamrut</i> 2. Take 3000 t/ha <i>Ghanjeevamrut</i> instead of 2000 t/ha <i>Ghanjeevamrut</i> 3. First spray of <i>Jeevamrut</i> 300 l/ha and 500 L/ha subsequent spray 4. Add crop equivalent yield, Heavy metals analysis and Plant Population 5. Take bacterial count instead of microbial count (Action: Associate Professor & Head, Dept. of Agronomy, College of Agriculture, Jabugam)
22.2.3.116	Effect of sulphur and boron sources on yield and nutrient content of onion Approved with following Suggestions: 1. Take total uptake of N, P and K 2. Add bolting 3 Take plant population observation initial and at harvest 4. Keep replication three (Action: Associate Professor & Head, Dept. of Agronomy, College of Agriculture, Jabugam)
College of Agriculture, AAU, Vaso	
22.2.3.117	Effect of different natural nutrient sources in pearl millet-mustard cropping system Approved with following Suggestions: 1. First spray of <i>Jeevamrut</i> 300 l/ha and 500 L/ha subsequent spray 2. Take Bacterial Count instead of Microbial count 3. Add <i>Jeevamrut</i> 1250 L/ha in note 2 4. Mention 2 t/ha <i>Ghanjeevamrut</i> in note 3 for mustard crop (Action: Associate Professor & Head, Dept. of Agronomy, College of Agriculture, Vaso)
22.2.3.118	Crop-weather relationship of summer okra crop Approved with following Suggestion/s: 1. Remove crop word from title after okra 2. Take plant population observation initial and at harvest

	3. Picking wise yield 4. Average fruit length and girth observation (Action: Associate Professor and Head, Department of Meteorology, College of Agriculture, AAU, Vaso)
Agricultural Research Station, AAU, Derol	
22.2.3.119	Effect of different sowing time and spacing on growth, yield and quality of clusterbean Approved with following Suggestions: 1. In treatment time of sowing keep 10 days interval instead of 15 days 2. In spacing S ₁ : 30 cm and S ₂ : 45 cm 3. Calculate seed rate as per spacing 4. Add gum percentage observation (Action: Unit Head and Associate Research Scientist, ARS, AAU, Derol)
22.2.3.120	Effect of different sowing time and spacing on growth, yield and quality of clusterbean in summer season Approved with following Suggestions: 1. In spacing S ₁ : 30 cm and S ₂ : 45 cm 2. Calculate seed rate as per spacing 3. Add gum percentage observation (Action: Unit Head and Associate Research Scientist, ARS, AAU, Derol)
22.2.3.121	Effect of different level of nitrogen and phosphorus on growth, yield and quality of castor Approved with following Suggestions: 1. Remove note 2 2. Common application of 20 kg/ha Sulphur (Action: Unit Head and Associate Research Scientist, ARS, AAU, Derol)
Department of Agronomy, BACA, AAU, Anand	
22.2.3.122	Effect of nano DAP on growth and yield of summer pearl millet Suggestion: Approved (Action: Professor & Head, Dept. of Agronomy, BACA, AAU, Anand)
22.2.3.123	Effect of natural sources of nutrients on growth and yield of potato - pearl millet - groundnut cropping sequence Approved with following Suggestions: 1. In treatment, take 500 L/ha <i>Jeevamrut</i> as foliar spray 2. In note 4, First spray of <i>Jeevamrut</i> 300 l/ha and 500 L/ha subsequent spray 3. In pearl millet, First spray of <i>Jeevamrut</i> 300 l/ha and 500 L/ha subsequent spray 4. Verify plot size of both crop (Action: Professor & Head, Dept. of Agronomy, BACA, AAU, Anand)
22.2.3.124	Effect of natural sources of nutrients on growth and yield of turmeric Approved with following Suggestions: 1. First spray of <i>Jeevamrut</i> 300 l/ha at 20 DAS and 2 nd and 3 rd foliar spray of <i>Jeevamrut</i> 500 L/ha at 40 and 60 DAS (Action: Professor & Head, Dept. of Agronomy, BACA, AAU, Anand)

Medicinal & Aromatic Plants Research Station, AAU, Anand	
22.2.3.125	Nutrient management in Ashwagandha Suggestion: Approved (Action: Research Scientist, MAPRS, AAU, Anand)
22.2.3.126	Evaluation of growth, yield and quality of Kalmegh under natural farming Approved with following Suggestions: 1. Take 2000 t/ha <i>Ghanjeevamrut</i> instead of 1500 t/ha <i>Ghanjeevamrut</i> 2. Take 3000 t/ha <i>Ghanjeevamrut</i> instead of 2000 t/ha <i>Ghanjeevamrut</i> 3. First spray of <i>Jeevamrut</i> 300 L/ha and 500 L/ha subsequent spray (Action: Research Scientist, MAPRS, AAU, Anand)
Main Forage Research Station, ICAR Unit, AAU, Anand	
22.2.3.127	Effect of dates of sowing and Nano DAP application on yield and quality of lucerne Approved with following Suggestions: 1. Take observation of cut wise yield (Action: Research Scientist, MFRS, Anand)
22.2.3.128	Efficacy of Bio PROM on growth, green fodder yield and quality of lucerne-fodder maize cropping sequence Approved with following Suggestions: 1. Remove Bio from the title 2. Bio PROM content analysis 3. Design RBD 4. Add crop equivalent yield observation (Action: Research Scientist, MFRS, Anand)
Regional Research Station, AAU, Anand	
22.2.3.129	Effect of Paired-Row Spacing and Mulching on <i>rabi</i> pigeon pea under Drip Irrigation Approved with following Suggestions: 1. Revise plot size 2. Specify drip detail (Action: Research Scientist, RRS, AAU, Anand)
22.2.3.130	Evaluation of different natural nutrient sources in paddy – mustard cropping system Approved with following Suggestions: 1. First spray of <i>Jeevamrut</i> 300 L/ha at 20 DAS and 2nd and 3rd foliar spray of <i>Jeevamrut</i> 500 L/ha at 40 and 60 DAS 2. Take Bacterial Count instead of Microbial count 3. Add <i>Jeevamrut</i> 1250 L/ha in note 2 4. Common 2 t/ha <i>Ghanjeevamrut</i> in mustard crop 5. Add crop equivalent yield observation 6. Take observation of total number of siliquae per plant 7. Input analysis (Action: Research Scientist, RRS, AAU, Anand)
Regional Cotton Research Station, AAU, Viramgam	
22.2.3.131	Effect of mepiquat chloride and plant density on yield and fibre quality of desi cotton under rainfed condition Suggestion: Approved (Action: Research Scientist, Regional Cotton Research Station, AAU, Viramgam)
22.2.3.132	Assessment of crop management module in Desi cotton Approved with following Suggestions: 1. First spray of <i>Jeevamrut</i> 300 L/ha at 40 DAS and 2nd and 3rd foliar spray of <i>Jeevamrut</i> 500 L/ha at 60 and 80 DAS 2. Delete FYM note 3. Analysis of input and heavy metal analysis (Action: Research Scientist, Regional Cotton Research Station, AAU, Viramgam)

AICRP-Weed Management, BACA, AAU, Anand	
22.2.3.133	Bio-efficacy of ready-mix herbicides against complex weed flora in wheat Approved with following Suggestions: 1. Take total 10 treatments and delete T ₁ , T ₄ , T ₈ , T ₁₀ and T ₁₃ 2. Keep promising herbicide (Action: Agronomist & PI, AICRP-WM, BACA, AAU, Anand)
Department of SSAC, BACA, AAU, Anand	
22.2.3.134	Effect of Nano Urea plus application through drone on growth, yield and nutrient uptake of maize–wheat cropping system Approved with following Suggestions: 1. Write SOP of the drone 2. In treatment convert acre dose in hector basis 3. In T ₃ , take nano urea plus @ 800 mL/acre (Action: Prof.& Head, Dept. of Soil Sci. & Agril. Chem., BACA, AAU, Anand)
Micronutrient Research Project, ICAR Unit, AAU, Anand	
22.2.3.135	Effect of foliar application of Calcium, Iron and Boron on yield and quality of Chill Suggestion: Approved (Action: Research Scientist, Micronutrient Research Centre, AAU, Anand)
Main Rice Research Station, AAU, Nawagam	
22.2.3.136	Effect of azolla and organic manures on growth, yield, methane and nitrous oxide emission from rice Approved with following Suggestions: 1. Mention time of azolla application 2. Mention time interval methane and nitrous oxide emission 3. Analysis of FYM and Azolla (Action: Research Scientist, MRRS, Nawagam)
Agricultural Research Station, AAU, Dahod	
22.2.3.137	Assessment of N, P and K requirement in linseed Approved with following Suggestions: 1. Take seed rate 20 kg/ha 2. Take observation of NPK content and uptake from plant (Action: Research Scientist, ARS, Dahod)
Tribal Research Cum Training Centre, AAU, Devgadhbharia	
22.2.3.138	Evaluation of different Natural nutrient sources in Soyabean - Maize cropping system Approved with following Suggestions: 1. Verify plot size 2. First spray of Jeevamrut 300 L/ha at 20 DAS and 2 nd and 3 rd foliar spray of Jeevamrut 500 L/ha at 40 and 60 DAS 3. Take Bacterial Count at initial and end of sequence 4. Analysis of input and heavy metal analysis 5. Add equivalent yield observation (Action: Research Scientist, Agricultural Research Station, Devgadhbharia)
Main Maize Research Station, AAU, Godhra	
22.2.3.139	Effect of nitrogen and phosphorus on growth, yield and quality of hybrid maize Approved with following Suggestions: 1. N level: 140, 160, 180 and 200 2. P level: 40 and 60 3. Total 16 treatment combination (Action: Research Scientist, MMRS, AAU, Godhra)

Bidi Tobacco Research Station, AAU, Anand	
22.2.3.140	Bio-efficacy of herbicides against complex weed flora in <i>rustica</i> tobacco Suggestion: Approved (Action: Research Scientist, BTRS, AAU, Anand)
22.2.3.141	Effect of seed pelleting on seedling growth and yield of bidi tobacco Approved with following Suggestions: 1. Give the pellet size and method 2. Pellet contains analysis (Action: Research Scientist, BTRS, AAU, Anand)
Agriculture Research Station for Irrigated Crops, AAU, Thasra	
22.2.3.142	Effect of Integrated Nutrient Management on growth and yield of late sown irrigated wheat Suggestion: Approved (Action: Research Scientist, ARSIC, Thasra)
Agriculture and Horticulture Research Station, AAU, Khambholaj	
22.2.3.143	Effect of natural nutrient inputs with and without mulch on growth and yield of okra Approved with following Suggestions: 1. Remove with and without word from title 2. First spray of <i>Jeevamrut</i> 300 L/ha and 2nd and 3rd foliar spray of <i>jeevamrut</i> 500 L/ha 3. Add observation of picking wise yield data (Action: Research Scientist, Agricultural and Horticulture Research Station, Khambholaj)
Krishi Vigyan Kendra, AAU, Devataj	
22.2.3.144	Effect of dicyandiamide and nitrous oxide reducing bacterial consortium on growth, yield and N₂O emission in transplanted rice under integrated nitrogen management Approved with following Suggestions: 1. Add FUE 2. Add total N uptake in observation (Action: Scientist (Soil Science) KVK, AAU, Devataj)

General Suggestions

1. The AICRP experiments should be formally treated as state trials, contingent upon explicit approval from the respective AGRESCO Sub-committee and Combined AGRESCO. It is mandatory to provide a clear status of "**Approved**" or "**Not Approved**", strictly avoiding ambiguous terminology such as "noted" in the comments or remarks section. The experiment shall be officially categorized and treated as a new technical programme.
2. It is mandatory to include a slide featuring the **Action Taken Report (ATR)** at the beginning of each recommendation presentation. This must be presented as a **screenshot** of the official proceeding/document rather than a standard text write-up, providing visual proof that all suggestions from the Combined AGRESCO were incorporated during the field or laboratory execution of the research.
3. If any previous suggestions were not incorporated the **recommendation will be disqualified from presentation and formal consideration**. No arguments regarding it will be entertained during the meeting. In the event of a failure to comply with specific instructions, the scientist must instead submit a formal justification to the concerned officer responsible for the combined proceedings.
4. If any corrections or modifications are required for ongoing experiments, or found not possible to incorporate the suggestions from the Combined AGRESCO proceedings, scientists must **obtain official bilateral approval** from the relevant authorities. Any such deviations or updates should then be formally reported during the subsequent Combined AGRESCO meeting.

5. In cases of major modifications are necessary, such as changes in treatments, scientists are required to present these to the upcoming Combined AGRESCO for proper validation. This presentation must include a clear justification regarding the unsuitability of the original plan or specific issues encountered during the execution of the suggested treatments.
6. All research data must undergo scrutiny during pre AGRESCO and both the Subcommittee meet and Joint AGRESCO meetings. Presentations should be prepared using **pooled data** exclusively to ensure a comprehensive overview of the findings; however, the formal report must remain exhaustive, incorporating data from each individual year alongside the final pooled analysis.
7. To clearly demonstrate the impact of research, presentations **must include photographs that highlight significant differences between the experimental treatments**, the control and existing recommendations. Furthermore, general photographs of the experiment should be captured at the appropriate crop growth stages to provide a comprehensive and accurate visual representation of the entire study.
8. References should not be included in the reports for New Technical Programmes; these should be restricted to the respective AGRESCO sub-committee meetings only.
9. During report preparation, strict attention must be paid to grammatical tenses: all recommendations and results must be written in the **past tense**, while all New Technical Programmes must be written in the **future tense**.
10. Use common spelling of natural farming component viz, *Ghanjeevamrut, Jeevamrut, Beejamrut, Neemastra, Brahmastra, Agniastra and Dashparni ark*
11. Initial and final plant population observations will be included in experiments wherever required.
12. Add observation of bacterial count and heavy metals in all natural farming experiments.

22.3 PLANT PROTECTION

Date & venue: May 05-07, 2026 at NAU, Navsari

Chairman	Dr. T. R. Ahlawat, Hon'ble Vice Chancellor and Director of Research, NAU, Navsari
Co-Chairmen	Dr. P. S. Patel, Director of Extension Education, SDAU, Sardarkrushinagar
	Dr. R. G. Parmar, AAU, Anand
Rapporteurs	Dr. H. C. Patel, AAU, Anand
	Dr. J. B. Bhut, JAU, Junagadh
	Dr. K. D. Bisane, NAU, Gandevi
	Dr. M. B. Zala, SDAU, Tharad
Statistician	Dr. Alok Shrivastava, NAU, Navsari

Name of Conveners of SAUs

Sr. No.	Name	University
1	Dr. N. M. Gohel	AAU, Anand
2	Dr. D. M. Jethva	JAU, Junagadh
3	Dr. H. R. Desai	NAU, Navsari
4	Dr. B. G. Chaudhary	SDAU, Sardarkrushinagar

The meeting of 22nd Combined AGRESO of Plant Protection Sub Committee regarding “Recommendation for Farmers and Information to the Scientific Community as well as New Technical Programmes” was held during May 5-7, 2026 at Navsari Agricultural University, Navsari. Inaugural function of 22nd Combined AGRESO of Plant Protection Sub Committee was presided by Dr. T. R. Ahlawat, Hon'ble Vice Chancellor and Director of Research, Navsari Agricultural University, Navsari.

At the beginning, Dr. Hemant Sharma, DEE, NAU, Navsari welcomed Dr. T. R. Ahlawat, Hon'ble Vice Chancellor and Director of Research, NAU, Navsari; Co-Chairmen Dr. P. S. Patel, Director of Extension Education, SDAU, Sardarkrushinagar; Dr. D. S. Kelaiya, Principal, College of Agriculture, JAU, Amreli; Dr. R. G. Parmar, Professor and Head (Pl. Path.), AAU, Anand; Conveners; Rapporteurs and all the members of 22nd Combined AGRESO Plant Protection Sub Committee of SAUs. He appreciated the decision to organize the 22nd Combined AGRESO of PPSC at NAU, Navsari despite the multiple engagements of the authorities and members. He stated that the approved recommendations would be very helpful for farmers' welfare.

Dr. P. S. Patel pointed out that abiotic factors such as cyclones and irregular rainfall had affected various crops during last few years due to changing climatic conditions and the need to focus on that for crop losses. He stated that farmers mostly rely on pesticides which adversely affect the natural environment and stressed the need to adopt farmer-friendly IPM and IDM practices. He also highlighted the importance of integrating Artificial Intelligence (AI) with various components of pest and disease management to sustain crop production.

Dr. T. R. Ahlawat, Hon'ble Vice Chancellor and DR, NAU welcomed all the members and urged the members to have insightful discussions in a pleasant atmosphere. He also encouraged the group to deliberate further on the improvement of New Technical Programmes. He motivated scientists to work on drone technology for pest and disease management as well as on various components of natural farming. He also emphasized the utilization of Government schemes such as Rashtriya Krishi Vikas Yojana for formulating new research projects on drones. Furthermore, he inspired scientists to work on real-time monitoring of insect pests and diseases using remote sensing techniques. He also stressed the use of nano-molecules in pest management. In the end, he insightfully opined that research should be carried out with the aim of reducing chemical use and making farmers self-dependent on local inputs. Dr. Lalit Mahatma, ADR, NAU, Navsari proposed the Vote of Thanks.

At start of the plenary session, Dr. N. M. Gohel, AAU, Anand summarised the total approved recommendation and New Technical Programmes. Dr. P. S. Patel, DEE, SDAU, Sardarkrushinagar in his remarks furnished suggestions to consider the biopesticides and botanicals recommendation under farmers' community in spite of no CIBRC listing; verify CD of TxY interaction for extension of trial and strictly follow common methodology for recommendation preparation. Dr. T. R. Ahlawat, Hon'ble Vice Chancellor and DR, NAU, Navsari congratulated all the scientists for the recommendations and expressed happiness for the quality of New Technical Programmes by all the four SAUs to address the issues of farmers. He also advised to sort out the trials at university level to avoid recurrence of discussion on common point. Further, he advocated for watching New Technical Programme on natural farming and provides inputs for improvement in next Combined AGRESO. The meeting ended with the Vote of Thanks by Dr. H. R. Desai, Convener, PPSC, NAU, Navsari.

SUMMARY

Name of University	No. of Recommendations				No. of New Technical Programmes	
	Farmers/Entrepreneurs/ Industry		Scientific information		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	07	07	16	16	52	51
JAU	14	13	08	09*	28	25
NAU	08	08	15	16 [#]	13	13
SDAU	09	09	06	06	28	27
TOTAL	38	37	45	47	121	116

Name of University	Disciplines	No. of Recommendations				No. of New Technical Programmes	
		Farmers/Entrepreneurs/ Industry		Scientific information		Proposed	Approved
		Proposed	Approved	Proposed	Approved		
AAU	Entomology	03	03	11	11	39	39
	Pl. Path. & Nematology	04	04	05	05	13	12 (-1@)
JAU	Entomology	08	08	01	01	09	09
	Pl. Path.	06	05 (-1*)	07	08 (+1*)	19	16 (-3 ^{\$})
NAU	Entomology	04	04	13	14 (+1 [#])	07	07
	Pl. Path.	04	04	02	02	06	06 [^]
SDAU	Entomology	03	03	02	02	19	19
	Pl. Path. & Nematology	06	06	04	04	09	08 (-1@)
TOTAL		38	37	45	47	121	116

* Shifted from Farmers' Community to Scientific Information.

Additional Scientific Information.

\$ Noted as AICRP trial

@ Not Approved

^ 1 NTP from Basic science group of NAU for information to the house

22.3.1 RECOMMENDATIONS FOR FARMING COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

ENTOMOLOGY

22.3.1.1	Efficacy of bio-inputs against sweet potato weevil, <i>Cylas formicarius</i> (F.) Farmers of Gujarat cultivating sweet potato through vine cuttings are recommended to follow the below-mentioned schedule for effective management of sweet potato weevil: • Apply 250 kg of vermicompost enriched with 2.5 kg/ha either <i>Beauveria bassiana</i> 1.15% WP (1×10^8 cfu/g min.) or <i>Metarhizium anisopliae</i> 1.15% WP (1×10^8 cfu/g min.) one week prior to planting. • Before planting, treat the cuttings of vines with either <i>Beauveria bassiana</i> 1.15% WP (1×10^8 cfu/g min.) or <i>Metarhizium anisopliae</i> 1.15% WP (1×10^8 cfu/g min.) at 10 g/L of
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water for 30 minutes.

- Soil drenching with either *Beauveria bassiana* 1.15% WP (1×10^8 cfu/g min.) or *Metarhizium anisopliae* 1.15% WP (1×10^8 cfu/g min.) at 4 g/L of water (125 mL per plant) near the base of the vines at 30, 45, 60 and 75 days after planting.

CIBRC format:

Year	Crop	Pest	Pesticides with formulation	Dosage				Appl. schedule	Min. waiting period /PHI (Days)
				g a.i. /ha	Quantity of formulation per ha	cfu/ g	Dilution in water (10 L)		
2026	Sweet potato	Sweet potato weevil	1. <i>Beauveria bassiana</i> 1.15% WP or 2. <i>Metarhizium anisopliae</i> 1.15% WP	--	2.5+ 16 + 80	1×10^8	--	1. Soil application at one week prior to planting 2. Treat the cuttings of vines 30 min. before planting 3. Soil drenching at 30, 45, 60, and 75 days after planting	--

ગુજરાતમાં શક્કરીયાના વેલાના ટુકડાનો ઉપયોગ કરીને ખેતી કરતા ખેડૂતોને શક્કરીયાનાચાંચવાના અસરકારક વ્યવસ્થાપન માટે નીચે દર્શાવ્યા મુજબના પગલાંઓ અનુસરવાની ભલામણ કરવામાં આવે છે:

- શક્કરીયાની રોપણીના એક અઠવાડિયા પહેલાં ૨૫૦ કિ.ગ્રા. વર્મીકમ્પોસ્ટને ૨.૫ કિ.ગ્રા. બ્યુવેરીયા બાસીઆના ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) અથવા મેટારીઝીયમ એનીસોપ્લી ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) થી સંવર્ધિત કરીને જમીનમાં આપવું.
- રોપણી પહેલાં શક્કરીયાના વેલાના ટુકડાને બ્યુવેરીયા બાસીઆના ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) અથવા મેટારીઝીયમ એનીસોપ્લી ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) ૧૦ ગ્રામ પ્રતિ લિટર પાણીમાં ૩૦ મિનિટબોળી રાખ્યા બાદ રોપણી કરવી.
- રોપણી કર્યાના ૩૦, ૪૫, ૬૦ અને ૭૫ દિવસે બ્યુવેરીયા બાસીઆના ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) અથવા મેટારીઝીયમ એનીસોપ્લી ૧.૧૫% વે.પા. (1×10^8 સી.એફ.યુ./ગ્રામ ન્યૂનતમ) ૪ ગ્રામ પ્રતિ લિટર પાણી (૧૨૫ મિલિ પ્રતિ છોડ) મુજબ વેલાના થડની આજુબાજુ દરેડવું.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જૈવિક કીટનાશક	પ્રમાણ				છંટકાવ	પ્રતિક્ષા સમય/ દિવસ
				સ.ત. /હે (ગ્રામ)	જૈવિક કીટનાશક/ હે	સીએફયુ/ ગ્રામ	જરૂરીયાત (૧૦ લિ. પાણીમાં)		
૨૦૨૬	શક્કરીયા	ચાંચવું	1. બ્યુવેરીયા બાસીઆના ૧.૧૫% વે.પા. 2. મેટારીઝીયમ એનીસોપ્લી ૧.૧૫% વે.પા.	--	૨.૫+૧૬+ ૮૦	1×10^8	--	• રોપણીના એક અઠવાડિયા પહેલાં જમીનમાં આપવું • રોપણીની ૩૦ મિનિટ પહેલાંવેલાનાટુકડાને બોળી રાખવા • રોપણી કર્યાના ૩૦, ૪૫, ૬૦ અને ૭૫ દિવસે જમીનમા દરેડવું	--

Approved with following suggestion(s):

1.Mention T × Y interaction in ANOVA Tables

2.Correct as ‘બ્યુવેરીયા બાસીઆના’ instead of ‘બીવેરીયા બેઝીયાના’ in Gujarati version of recommendation

(Action: Principal Research Scientist, Biological Control Research Laboratory, AAU, Anand)

2026	Groundnut	Jassids, thrips, collar rot disease	Pyraclostrobin 3.5% + Thiram 15% + Clothianidin 22.5% FS	2.45 + 10.50 + 15.75	7 mL/kg seed	-	7 mL/kg seed	Seed treatment	NA	-
			Azoxystrobin 2.5% + Thiophanate methyl 11.25% + Thiamethoxam 25% FS	38.75	10 mL/kg seed	-	10 mL/kg seed	Seed treatment	NA	-

ગુજરાતમાં મગફળીની ખેતી કરતા ખેડૂતોને તડતડીયા, થ્રીપ્સ અને ઉગસુકના અસરકારક વ્યસ્થાપન માટે બીજને વાવણી પહેલા કીટનાશક અને ફૂગનાશકના તૈયાર મિશ્રણ પાયરોક્લોસ્ટ્રોબીન ૩.૫% + થાયરમ ૧૫% + ક્લોથીયાનીડીન ૨૨.૫% એફએસ (૭ મિલિ/કિ.ગ્રા. બીજ) અથવા એઝોક્સીસ્ટ્રોબિન ૨.૫% + થાયોફેનેટ મીથાઇલ ૧૧.૨૫%+ થાયામેથોક્ઝામ ૨૫ % એફએસ (૧૦ મિલિ/કિ.ગ્રા. બીજ)ની બીજ માવજત આપવાની ભલામણ કરવામા આવે છે.

નોંધ: બીજ માવજત માટે સરખા પ્રમાણમાં પાણી કીટનાશક અને ફૂગનાશકના તૈયાર મિશ્રણમાં ઉમેરવું અને રાતભર સૂકવીને વાવેતર કરવું.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	કીટનાશક અને તેનું ફોર્મુલેશન	માત્રા				છંટકાવનો સમય	સુરક્ષિત પ્રતિક્ષા સમયગાળો/ પીએચઆઇ (દિવસ)	રીમાર્ક
				ગ્રા.સ .ત/હે.	કીટનાશક ફોર્મુલેશનનું પ્રમાણ	સાંદ્રતા (%)	પાણીનો જથ્થો			
૨૦૨૬	મગફળી	તડતડીયા, થ્રીપ્સ, ઉગસુક	પાયરોક્લોસ્ટ્રોબીન ૩.૫% + થાયરમ૧૫% + ક્લોથીયાનીડીન ૨૨.૫% એફએસ	૨.૪૫ + ૧૦.૫૦ + ૧૫.૭૫	૭મિ.લિ./ કિ.ગ્રા.બીજ	-	૭મિ.લિ./ કિ.ગ્રા.બીજ	બીજ માવજત	-	-
			એઝોક્સીસ્ટ્રોબિન ૨.૫% + થાયોફેનેટ મીથાઇલ ૧૧.૨૫%+ થાયામેથોક્ઝામ ૨૫ % એફએસ	૩૮.૭૫	૧૦ મિ.લિ./ કિ.ગ્રા.બીજ	-	૧૦મિ.લિ./ કિ.ગ્રા.બીજ	બીજ માવજત	-	-

Approved with following suggestion(s):

1. Remove early leaf spot disease from recommendation text and CIBRC Table

2. Add word “before sowing” after “treat the seeds” in recommendation text

(Action: Professor & Head, Department of Plant Pathology, BACA, AAU, Anand & Professor & Head, Department of Entomology, BACA, AAU, Anand)

22.3.1.5	Evaluation of ready-mix fungicides for the management of major foliar diseases in Bt cotton
	For Alternaria leaf spot: The farmers of Gujarat growing Bt cotton are recommended to treat the seeds with carboxin 37.5% + thiram 37.5% WS, 3 g/kg seeds at the time of sowing and apply three sprays of ready-mix fungicides either azoxystrobin 18.2% + difenoconazole 11.4% SC, 0.03% (10 mL/ 10 litre of water) or fluxapyroxad 167 g/L + pyraclostrobin 333 g/l SC, 0.03% (6 mL/ 10 litre of water), first spray at the initiation of disease and subsequent two sprays at 10 days interval for the effective management of Alternaria leaf spot disease. For Corynespora leaf spot: The farmers of Gujarat growing Bt cotton are recommended to treat the seeds with carboxin 37.5% + thiram 37.5% WS, 3 g/kg seeds at the time of sowing and apply three sprays of ready-mix fungicide azoxystrobin 18.2% + difenoconazole 11.4% SC, 0.03% (10 mL/ 10

litre of water), first spray at the initiation of disease and subsequent two sprays at 10 days interval for the effective management of *Corynespora* leaf spot disease.
 Note: For seed treatment, prepare the solution by adding an equal quantity of water with ready-mix fungicide followed by shade drying.

CIBRC format:

Year	Crop	Disease	Pesticides with formulation	Dosage				Application Schedule	Waiting period/ PHI (days)	Remarks
				ga.i. /ha	Quantity of formulation	Conc. (%)	Dilution in water			
2026	Cotton	<i>Corynespora</i> and <i>Alternaria</i> leaf spot	Carboxin 37.5% + thiram 37.5% WS	-	3 g/kg seeds	-	-	Seed treatment	NA	---
		<i>Corynespora</i> leaf spot & <i>Alternaria</i> leaf spot	Azoxystrobin 18.2% + difenoconazole 11.4% SC	150	500 mL/ha	0.030	500 L	First spray at the initiation of disease and subsequent two sprays at 10 days interval	12	
		<i>Alternaria</i> leaf spot	Fluxapyroxad 167 g/L + pyraclostrobin 333g/l SC	150	300 mL/ha	0.030			03	

અલ્ટરનેરીયા પાનના ટપકાં માટે:

ગુજરાતમાં બીટી કપાસની ખેતી કરતા ખેડૂતોને અલ્ટરનેરીયા પાનના ટપકાં રોગના અસરકારક વ્યવસ્થાપન માટે વાવેતર પહેલા બીજને ફૂગનાશકના તૈયાર મિશ્રણ કાર્બોક્સીન ૩૭.૫ % + થાયરમ ૩૭.૫% (૩.૦ ગ્રામ/ કિગ્રા બીજ) મુજબ બીજ માવજત આપવા તેમજ ઉભા પાકમાં એઝોક્ષીસ્ટ્રોબીન ૧૮.૨% + ડાયફેનોકોનાઝોલ ૧૧.૪% એસસી (૧૦ મિલિ/૧૦ લિટર પાણી) અથવા ફ્લુક્ષાપાઈરોક્સાઈડ ૧૬૭ ગ્રામ/લિ + પાયરાક્લોસ્ટ્રોબીન ૩૩૩ ગ્રામ/લિ એસસી (૬ મિલિ/૧૦ લિટર પાણી) મુજબ ઉમેરી ત્રણ છંટકાવ કરવાની ભલામણ કરવામાં આવે છે જેમાં પહેલો છંટકાવ રોગની શરૂઆત થયેથી અને બાકીના બે છંટકાવ દસ દિવસના આંતરે કરવાં.

કોરેનોસ્પોરા પાનના ટપકાં માટે:

ગુજરાતમાં બીટી કપાસની ખેતી કરતા ખેડૂતોને કોરેનોસ્પોરા પાનના ટપકાં રોગના અસરકારક વ્યવસ્થાપન માટે વાવેતર પહેલા બીજને ફૂગનાશકના તૈયાર મિશ્રણ કાર્બોક્સીન ૩૭.૫% + થાયરમ ૩૭.૫% (૩.૦ ગ્રામ/કિગ્રા બીજ) મુજબ બીજ માવજત આપવા તેમજ ઉભા પાકમાં પાનના ટપકાં માટે એઝોક્ષીસ્ટ્રોબીન ૧૮.૨% + ડાયફેનોકોનાઝોલ ૧૧.૪% એસસી (૧૦ મિલિ/૧૦ લિટર પાણી) મુજબ ઉમેરી ત્રણ છંટકાવ કરવાની ભલામણ કરવામાં આવે છે જેમાં પહેલો છંટકાવ રોગની શરૂઆત થયેથી અને બાકીના બે છંટકાવ દસ દિવસના આંતરે કરવાં.

નોંધ: બીજ માવજત માટે સરખા પ્રમાણમાં પાણી ફૂગનાશકના તૈયાર મિશ્રણમાં ઉમેરવું અને છાયડામાં સૂકવીને વાવેતર કરવું.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	રોગ	ફૂગનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય/ દિવસ	રીમાર્ક
				ગ્રા. સ. ત./હે.	ફૂગનાશકનું પ્રમાણ	માત્રા (%)	પાણી			
૨૦૨૬	કપાસ	પાનનાં ટપકાં (કોરેનોસ્પોરા અને અલ્ટરનેરીયા)	કાર્બોક્સીન ૩૭.૫% + થાયરમ ૩૭.૫% ડબલ્યુ એસ	-	૩.૦ ગ્રામ/ કિગ્રા બીજ	-	-	બીજ માવજત	---	---
		પાનનાં ટપકાં (કોરેનોસ્પોરા) અને પાનનાં ટપકાં (અલ્ટરનેરીયા)	એઝોક્ષીસ્ટ્રોબીન ૧૮.૨% + ડાયફેનોકોનાઝોલ ૧૧.૪% એસસી	૧૫૦	૫૦૦ મિલિ/હે	૦.૦૩૦	૫૦૦ લિટર	પ્રથમ છંટકાવ રોગની શરૂઆત	૧૨ ૦૩	

			પાનનાં ટપકાં (અલ્ટરનેરીયા)	ફલુક્ષાપાઈરોક્સાઈડ ૧૬૭ ગ્રામ/લિ + પાથરાક્લોસ્ટ્રોબિન ૩૩૩ ગ્રામ/લિ	૧૫૦	૩૦૦ મિલિ/હે	૦.૦૩૦	થયે અને બાકી બે છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસ આંતરે કરવા		
Approved with following suggestion(s): 1. Add “first spray at the initiation of disease and subsequent two sprays at 10 days interval” after (10 litre of water) in both the diseases in English recommendation text 2. Write “કાર્બોક્સીન” instead of કાર્બોક્સીન in Gujarati recommendation text 3. Write “ફલુક્ષાપાઈરોક્સાઈડ” instead of ફલુક્ષાપાઈરોક્સાઈડ in Gujarati recommendation text 4. Write “એઝોક્સીસ્ટ્રોબીન” instead of એઝોક્સીસ્ટ્રોબીન in Gujarati recommendation text 5. Add Note: For seed treatment, prepare the solution by adding an equal quantity of water with ready-mix fungicide followed by shade drying in English recommendation text 6. Add- નોંધ: બીજ માવજત માટે સરખા પ્રમાણમાં પાણી ફૂગનાશકના તૈયાર મિશ્રણમાં ઉમેરવું અને છાયડામાં સૂકવીને વાવેતર કરવું in Gujarati recommendation text (Action: Professor & Head, Department of Plant Pathology, BACA, AAU, Anand & Asst. Professor & Head, Department of Plant Pathology, CoA, AAU, Jabugam)										
22.3.1.6	Effect of fungicidal seed treatment on leaf blast and brown spot in rice nursery									
	Farmers of Gujarat raising rice nursery for summer season are recommended to treat the seeds with ready-mix fungicide either carboxin 37.5% + thiram 37.5% WS at 3.0 g per kg seeds or penflufen 13.28% + trifloxystrobin 13.28% FS, 1.0 mL per kg seeds for the effective management of leaf blast and brown leaf spot. Note: For seed treatment, prepare the solution by adding 50 mL water/kg seeds with ready-mix fungicide followed by shade drying. ગુજરાતમાં ઉનાળુ ડાંગર માટે ધરૂવાડિયુ કરતા ખેડૂતોને પાનના કરમોડી અને ભૂખરાં ટપકાંના અસરકારક વ્યવસ્થાપન માટે બીજને ફૂગનાશકના તૈયાર મિશ્રણ કાર્બોક્સીન ૩૭.૫% + થાયરમ ૩૭.૫% ડબલ્યુએસ ૩.૦ ગ્રામ/કિ.ગ્રા. અથવા પેનફ્લુફેન ૧૩.૨૮% + ટ્રાઇફ્લોક્સીસ્ટ્રોબિન ૧૩.૨૮% એફએસ ૧.૦ મિલી/કિ.ગ્રા. બીજ માવજત આપવાની ભલામણ કરવામાં આવે છે. નોંધ: બીજ માવજત માટે ૫૦ મિલિ પાણી/કિગ્રા બીજ ફૂગનાશકના તૈયાર મિશ્રણમાં ઉમેરવું અને છાયડામાં સૂકવીને વાવેતર કરવું. Approved with following suggestion(s): 1. Write “ધરૂવાડિયુ” instead of ધરૂવાડિયુ in Gujarati recommendation text 2. Remove word “પૈકી કોઈ પણ એક” from Gujarati recommendation text 3. Add Note: For seed treatment, prepare the solution by adding 50 mL water/kg seeds with ready-mix fungicide followed by shade drying in English recommendation text. 4. Add નોંધ: બીજ માવજત માટે ૫૦ મિલિ પાણી/કિગ્રા બીજ ફૂગનાશકના તૈયાર મિશ્રણમાં ઉમેરવું અને છાયડામાં સૂકવીને વાવેતર કરવું in Gujarati recommendation text 5. Add CIBRC Table in English and Gujarati version of recommendation (Action: Research Scientist, MRRS, AAU, Nawagam)									

22.3.1.7	Evaluation of biocontrol agents against rhizome rot in ginger
	Ginger growers of Gujarat are recommended to apply <i>rhizome</i> dip treatment before planting with <i>Trichoderma viride</i> 1.5% WP (2×10^6 cfu/g min.) + <i>Pseudomonas fluorescens</i> 1% WP (1×10^8 cfu/g min.) each 25g/kg rhizome followed by soil application of <i>Trichoderma viride</i> 1.5% WP (2×10^6 cfu/g min.) 10 kg + <i>Pseudomonas fluorescens</i> 1% WP (1×10^8 cfu/g min.) 10 kg enriched with FYM (1 t/ha) applied in the furrow at the time of planting to reduce the rhizome rot in ginger. Note: For treatment of ginger rhizomes, take bio-control agent powder at 25g/kg rhizomes and mix it with an equal quantity of water to prepare slurry. Dip the rhizomes in slurry for 30 minutes, then shade dry them for 2 hours before planting. ગુજરાતના આદુની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે આદુના કોહવારાનો રોગ ઘટાડવા માટે આદુની ગાંઠોની રોપણી પહેલાં ટ્રાઇકોડર્મા વિરીડી ૧.૫% ડબલ્યુપી (2×10^6 સીએફયુ/ગ્રામ ન્યુનતમ) + સ્યુડોમોનાસ ફ્લુરોસેન્સ ૧.૦% ડબલ્યુપી (1×10^8 સીએફયુ/ગ્રામ ન્યુનતમ) દરેક ૨૫ ગ્રામ/કિગ્રા ગાંઠો મુજબ માવજત આપવી તે ઉપરાંત ટ્રાઇકોડર્મા વિરીડી ૧.૫% ડબલ્યુપી (2×10^6 સીએફયુ/ગ્રામ ન્યુનતમ) ૧૦કિગ્રા + સ્યુડોમોનાસ ફ્લુરોસેન્સ ૧.૦% ડબલ્યુપી (1×10^8 સીએફયુ/ગ્રામ ન્યુનતમ) ૧૦ કિગ્રા પ્રતિ ટન છાણીયું ખાતર/હેક્ટર મુજબ સંવર્ધિત કરી રોપણી વખતે યાસમાં આપવું. નોંધ: આદુના ગાંઠોની માવજત માટે જૈવ નિયંત્રકના પાઉડરને ૨૫ ગ્રામ/કિ.ગ્રા. આદુની ગાંઠો પ્રમાણે લઈ સપ્રમાણ માત્રામાં પાણી સાથે મિશ્ર કરી ગાઢ દ્રાવણ બનાવી તેમાં આદુની ગાંઠો અડધા કલાક સુધી ડુબાડવી ત્યાર બાદ ૨ કલાક સુધી છાંયડામાં સુકવી રોપણી કરવી. Approved with following suggestion(s): 1. Add min. after cfu/g in English recommendation text and ન્યુનતમ after સીએફયુ/ગ્રામ in Gujarati recommendation text (Action: Associate Research Scientist, TRTC, AAU, Devgad Baria)

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ENTOMOLOGY

22.3.1.8	Bio-efficacy of different biopesticides against <i>Helicoverpa armigera</i> (Hubner) in chickpea																																																				
Farmers of Gujarat growing chickpea are recommended to apply four sprays of <i>HaNPV</i> 2 AS (1×10⁹ POBs/ml min.) 0.006% (15 mL/10 L of water) or <i>Beauveria bassiana</i> 1.15 WP (1×10⁸ cfu/g min.) 0.009% (80 g/10 L of water) or <i>Bacillus thuringiensis</i> 5 WP (5×10⁷ spore/g min.) 0.0075% (15 g/10 L of water), first spray just before flowering and subsequent three sprays at 10 days intervalsof the first spray for the effective management of gram pod borer. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest</th><th rowspan="2">Pesticides with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Total quantity of chemical suspension required/ha</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th><th rowspan="2">Remark (s)</th></tr><tr><th>a.i./ ha</th><th>Quantity of formulation kg or ml/ha</th><th>Conc. (%)</th><th>Dilution in water (10 L)</th></tr><tr><td rowspan="3">2025-26</td><td rowspan="3">Chickpea</td><td rowspan="3">Gram pod borer</td><td><i>HaNPV</i> 2 AS (1×10⁹ POBs/ml min.)</td><td>15</td><td>0.75 L</td><td>0.006</td><td>15 mL</td><td rowspan="3">500 L</td><td rowspan="3">First spray just before flowering and subsequent three sprays at 10 days intervals of the first spray</td><td>-</td><td>-</td></tr><tr><td><i>Beauveria bassiana</i> 1.15 WP (1×10⁸ cfu/g min.)</td><td>46</td><td>4.0 kg</td><td>0.009</td><td>80 g</td><td>-</td><td>-</td></tr><tr><td><i>Bacillus thuringiensis</i> 5 WP (5×10⁷ spore/g min.)</td><td>37.50</td><td>0.75 kg</td><td>0.0075</td><td>15 g</td><td>-</td><td>-</td></tr></table>												Year	Crop	Pest	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ha	Application schedule	Waiting period/ PHI (days)	Remark (s)	a.i./ ha	Quantity of formulation kg or ml/ha	Conc. (%)	Dilution in water (10 L)	2025-26	Chickpea	Gram pod borer	<i>HaNPV</i> 2 AS (1×10 ⁹ POBs/ml min.)	15	0.75 L	0.006	15 mL	500 L	First spray just before flowering and subsequent three sprays at 10 days intervals of the first spray	-	-	<i>Beauveria bassiana</i> 1.15 WP (1×10 ⁸ cfu/g min.)	46	4.0 kg	0.009	80 g	-	-	<i>Bacillus thuringiensis</i> 5 WP (5×10 ⁷ spore/g min.)	37.50	0.75 kg	0.0075	15 g	-	-
Year	Crop	Pest	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ha	Application schedule	Waiting period/ PHI (days)	Remark (s)																																										
				a.i./ ha	Quantity of formulation kg or ml/ha	Conc. (%)	Dilution in water (10 L)																																														
2025-26	Chickpea	Gram pod borer	<i>HaNPV</i> 2 AS (1×10 ⁹ POBs/ml min.)	15	0.75 L	0.006	15 mL	500 L	First spray just before flowering and subsequent three sprays at 10 days intervals of the first spray	-	-																																										
			<i>Beauveria bassiana</i> 1.15 WP (1×10 ⁸ cfu/g min.)	46	4.0 kg	0.009	80 g			-	-																																										
			<i>Bacillus thuringiensis</i> 5 WP (5×10 ⁷ spore/g min.)	37.50	0.75 kg	0.0075	15 g			-	-																																										

ગુજરાતમાં ચણાની ખેતી કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ચણામાં લીલી ઇયળના અસરકારક વ્યવસ્થાપન માટે એચએએનપીવી ૨ એએસ (૧×૧૦^૯ પીઓબી/મિલિ ન્યુનતમ) ૦.૦૦૬% (૧૫ મિલિ/૧૦ લિ. પાણી) અથવા બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦^૯ સીએફ્યુ/ગ્રામ ન્યુનતમ) ૦.૦૦૬% (૮૦ ગ્રામ/૧૦ લિ. પાણી) અથવા બેસિલસ થુરિન્જિએન્સિસ ૫ વે.પા. (૫×૧૦^૯ સ્પોર/ગ્રામ ન્યુનતમ) ૦.૦૦૭૫% (૧૫ ગ્રામ/૧૦ લિ. પાણી) ના ચાર છંટકાવ, પ્રથમ છંટકાવ ફૂલ આવ્યા પહેલા અને ત્યારબાદ ત્રણ છંટકાવ, પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવા.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું કોમ્પ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણી નાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર (ગ્રામ/ હેક્ટર)	કોમ્પ્યુલેશન નીમાત્રા મિલિ, કિલો પ્રતિ હેક્ટર	સાંદ્રતા (%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫-૨૬	ચણા	લીલી ઇયળ	એચએએનપીવી ૨ એએસ (૧×૧૦ ^૯ પીઓબી/મિલિ ન્યુનતમ)	૧૫	૦.૭૫ લિ	૦.૦૦૬	૧૫ મિલિ	૫૦૦ લિ	પ્રથમ છંટકાવ ફૂલ આવ્યા પહેલા અને ત્યારબાદ ત્રણ છંટકાવ, પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવા	--	--
			બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦ ^૯ સીએફ્યુ/ગ્રામ ન્યુનતમ)	૪૬	૪.૦ કિગ્રા	૦.૦૦૬	૮૦ ગ્રામ			--	--
			બેસિલસ થુરિન્જિએન્સિસ ૫ વે.પા. (૫×૧૦ ^૯ સ્પોર/ગ્રામ ન્યુનતમ)	૩૭.૫૦	૦.૭૫ કિગ્રા	૦.૦૦૭૫	૧૫ ગ્રામ			--	--

Approved with following suggestion(s):

1. Recast the English recommendation text
2. Write “લીલી ઇયળ” instead of ડેડવા ખાનારી ઇયળ in Gujarati recommendation text and CIBRC Table
3. Remove word “અને અર્થક્ષમ” from Gujarati recommendation text
4. Recast the Gujarati recommendation text as “ગુજરાતમાં ચણાની ખેતી કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ચણામાં લીલી ઇયળના અસરકારક વ્યવસ્થાપન માટે એચએએનપીવી ૨ એએસ (૧×૧૦^૯ પીઓબી/મિલિ ન્યુનતમ) ૦.૦૦૬% (૧૫ મિલિ/૧૦ લિ. પાણી) અથવા બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦^૯ સીએફ્યુ/ગ્રામ ન્યુનતમ) ૦.૦૦૬% (૮૦ ગ્રામ/૧૦ લિ. પાણી) અથવા બેસિલસ થુરિન્જિએન્સિસ ૫ વે.પા. (૫×૧૦^૯ સ્પોર/ગ્રામ ન્યુનતમ) ૦.૦૦૭૫% (૧૫ ગ્રામ/૧૦ લિ. પાણી) ના ચાર છંટકાવ, પ્રથમ છંટકાવ ફૂલ આવ્યા પહેલા અને ત્યારબાદ ત્રણ છંટકાવ, પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવા”

(Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)

22.3.1.9

Bio-efficacy of different biopesticides against insect pests in mango

Farmers of Gujarat having mango orchards are recommended to apply three sprays of *Beauveria bassiana* 1.15 WP (1 × 10⁸ cfu/g min.) 0.009% (80 g/10 L of water) or *Metarhizium anisopliae* 1.15 WP (1 × 10⁸ cfu/g min.) 0.009% (80 g/10 L of water) or *Lecanicillium lecanii* 1.15 WP (1 × 10⁸ cfu/g min.) 0.009% (80 g/10 L of water) for effective management of mango hopper while for thrips, apply *Beauveria bassiana* 1.15 WP (1 × 10⁸ cfu/g min.) 0.009% (80 g/10 L of water) or *Lecanicillium lecanii* 1.15 WP (1 × 10⁸ cfu/g min.) 0.009% (80 g/10 L of water), first spray at the initiation of flowering and subsequent two sprays at 10 days interval after the first spray.

CIBRC format:

Year	Crop	Pest	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ha	Application schedule	Waiting period/ PHI (days)	Remark (s)
				a.i./ ha	Quantity of formulation (kg/ha)	Con. (%)	Dilution in water (g/10 L)				
2025-26	Mango	Hopper	<i>Beauveria bassiana</i> 1.15 WP (1 × 10 ⁸ cfu/g min.)	73.6	6.4	0.009	80	800 L	First spray at the initiation of flowering in the month of November and subsequent two sprays at 10 days interval after the first spray	-	-
			<i>Metarhizium anisopliae</i> 1.15 WP (1 × 10 ⁸ cfu/g min.)	73.6	6.4	0.009	80				-
			<i>Lecanicillium lecanii</i> 1.15 WP (1 × 10 ⁸ cfu/g min.)	73.6	6.4	0.009	80				-
		Thrips	<i>Beauveria bassiana</i> 1.15 WP (1 × 10 ⁸ cfu/g min.)	73.6	6.4	0.009	80				-
			<i>Lecanicillium lecanii</i> 1.15 WP (1 × 10 ⁸ cfu/g min.)	73.6	6.4	0.009	80				-
											-

ગુજરાતમાં આંબાવાડિયું ધરાવતા ખેડૂતોને મધીયાના અસરકારક વ્યવસ્થાપન માટે બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦^૮સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૯% (૮૦ ગ્રામ/૧૦ લિ. પાણી) અથવા મેટારીઝીયમ એનીસોપ્લી ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૯% (૮૦ ગ્રામ/૧૦લિ. પાણી) અથવા લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૯% (૮૦ ગ્રામ/૧૦ લિ.પાણી), તથા શ્રીપ્સનાં વ્યવસ્થાપન માટે બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૯% (૮૦ ગ્રામ/૧૦લિ. પાણી) અથવા લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૯% (૮૦ ગ્રામ/૧૦લિ. પાણી) નાં ત્રણ છંટકાવ કરવાં, પ્રથમ છંટકાવ મોર (ફૂલ) આવે ત્યારે તથા અન્ય બે છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવાંની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર (ગ્રામ/હેક્ટર)	ફોર્મ્યુલેશનની માત્રા કિગ્રા પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (ગ્રામ/૧૦ લિટર)				
૧	૨	૩	૪	૫	૬	૭	૮	૯	૧૦	૧૧	૧૨
૨૦૨૫-૨૬	આંબો	મધીયો	બ્યુવેરીયા બાસીઆના ૧.૧૫વે.પા. (૧×૧૦ ^૮ સીએફયુ /ગ્રામ ન્યુનતમ)	૭૩.૬	૬.૪	૦.૦૦૯	૮૦	૮૦૦ લિ.	પ્રથમ છંટકાવ મોર (ફૂલ) આવે ત્યારે અને ત્યાર બાદ બે છંટકાવ, પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવા	-	-
			મેટારીઝીયમ એનીસોપ્લી ૧.૧૫ વે.પા. (૧×૧૦ ^૮ સીએફયુ /ગ્રામ ન્યુનતમ)	૭૩.૬	૬.૪	૦.૦૦૯	૮૦				-
			લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧×૧૦ ^૮ સીએફયુ/ગ્રામ ન્યુનતમ)	૭૩.૬	૬.૪	૦.૦૦૯	૮૦				-
		શ્રીપ્સ	બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦ ^૮ સીએફયુ/ગ્રામ ન્યુનતમ)	૭૩.૬	૬.૪	૦.૦૦૯	૮૦				-
			લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧×૧૦ ^૮ સીએફયુ /ગ્રામ ન્યુનતમ)	૭૩.૬	૬.૪	૦.૦૦૯	૮૦				-
											-

Approved with following suggestion(s):

1. Correct as “thrips/inflorescence/tap” instead of thrips/inflorescence in English recommendation text
2. Remove word “in the month of November” from English recommendation text
3. Write “સીએફયુ” instead of સીએફયુ in Gujarati recommendation text
4. Write “આંબાવાડીયું” instead of આંબાનાબગીચા in Gujarati recommendation text

(Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)

22.3.1.10	Standardization of number of pheromone traps for <i>Helicoverpa armigera</i> (Hubner) in groundnut																																			
	Farmers of Gujarat growing groundnut are recommended to install 40 pheromone traps per hectare at 20 days after sowing with uniform spacing for effective management of <i>Helicoverpa armigera</i>. Note: The pheromone lures should be replaced 40 days after the installation of the pheromone trap. ગુજરાતમાં મગફળીની ખેતી કરતાં ખેડૂતોને લીલી ઈયળના અસરકારક વ્યવસ્થાપન માટે વાવણી કર્યાના ૨૦ દિવસે સમાન અંતરે ૪૦ ફેરોમોન ટ્રેપ પ્રતિ હેક્ટરે લગાવવાની ભલામણ કરવામાં આવે છે. નોંધ: ફેરોમોન ટ્રેપ લગાવ્યાના ૪૦ દિવસ બાદ એક વાર ફેરોમોન લ્યુર બદલાવવી. Approved with following suggestion(s): 1. Recast the English and Gujarati version of recommendation text 2. Add Note: The pheromone lures should be replaced 40 days after the installation of the pheromone traps. 3. Add નોંધ: ફેરોમોન ટ્રેપ લગાવ્યાના ૪૦ દિવસ બાદ એક વાર ફેરોમોન લ્યુર બદલાવવી (Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)																																			
22.3.1.11	Standardization of number of pheromone traps for fruit fly infesting banana																																			
	Farmers of South Saurashtra growing banana are recommended to install 30 fruit fly traps per hectare (1 to 1.5 m height) at bunch development stage with uniform spacing for effective management of fruit fly. Note: Size of the plywood block: 5 cm × 5 cm × 1 cm. દક્ષિણ સૌરાષ્ટ્ર ગુજરાતના કેળની ખેતી કરતા ખેડૂતોને ફળમાખી ના અસરકારક વ્યવસ્થાપન માટે લૂમની બંધારણ અવસ્થાએ સમાન અંતરે ૩૦ ફળમાખી ટ્રેપ પ્રતિ હેક્ટરે (૧ થી ૧.૫ મીટર ઊંચાઈએ) લગાવવાની ભલામણ કરવામાં આવે છે. નોંધ: પ્લાયવુડ બ્લોકના માપ: ૫ સે.મી. × ૫ સે.મી. × ૧ સે.મી. Approved with following suggestion(s): 1. Recast the English and Gujarati version of recommendation text 2. Add Note: Size of the plywood block: 5 cm × 5 cm × 1 cm. 3. Add નોંધ: પ્લાયવુડ બ્લોકના માપ: ૫ સે.મી. × ૫ સે.મી. × ૧ સે.મી. (Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)																																			
22.3.1.12	Evaluation of different biorationals against <i>Spodoptera litura</i> Fab. in soybean																																			
	Farmers of Gujarat growing soybean are recommended to apply three sprays of azadirachtin 1 EC 0.004% (40 mL/10 L of water) or <i>Beauveria bassiana</i> 1.15 WP (1×10⁸ cfu/g min.) 0.007% (60 g/10 L of water), first spray on pest initiation and subsequent two sprays at 10 days interval after first spray for effective management of <i>Spodoptera litura</i>. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest</th><th rowspan="2">Pesticides with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Total quantity of chemical suspension required/ ha</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th><th rowspan="2">Remark (s)</th></tr><tr><th>a.i./ ha</th><th>Quantity of formulation kg or L/ha</th><th>Conc . (%)</th><th>Dilution in water (10 L)</th></tr><tr><td rowspan="2">2025</td><td rowspan="2">Soybean</td><td rowspan="2"><i>Spodoptera litura</i></td><td>Azadirachtin 1 EC 0.004%</td><td>20</td><td>2.0 L</td><td>0.004</td><td>40mL</td><td rowspan="2">500 lit.</td><td rowspan="2">First spray on pest initiation and subsequent two sprays at 10 days interval after first spray</td><td>-</td><td>-</td></tr><tr><td><i>Beauveria bassiana</i> 1.15 WP (1×10⁸ cfu/g min.)</td><td>34.5</td><td>3.0 kg</td><td>0.007</td><td>60 g</td><td>-</td><td>-</td></tr></table>	Year	Crop	Pest	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remark (s)	a.i./ ha	Quantity of formulation kg or L/ha	Conc . (%)	Dilution in water (10 L)	2025	Soybean	<i>Spodoptera litura</i>	Azadirachtin 1 EC 0.004%	20	2.0 L	0.004	40mL	500 lit.	First spray on pest initiation and subsequent two sprays at 10 days interval after first spray	-	-	<i>Beauveria bassiana</i> 1.15 WP (1×10 ⁸ cfu/g min.)	34.5	3.0 kg	0.007	60 g	-	-
Year	Crop					Pest	Pesticides with formulation	Dosage						Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remark (s)																			
		a.i./ ha	Quantity of formulation kg or L/ha	Conc . (%)	Dilution in water (10 L)																															
2025	Soybean	<i>Spodoptera litura</i>	Azadirachtin 1 EC 0.004%	20	2.0 L	0.004	40mL	500 lit.	First spray on pest initiation and subsequent two sprays at 10 days interval after first spray	-	-																									
			<i>Beauveria bassiana</i> 1.15 WP (1×10 ⁸ cfu/g min.)	34.5	3.0 kg	0.007	60 g			-	-																									

ગુજરાતમાં સોયાબીનની ખેતી કરતા ખેડૂતોને લક્ષરી ઈયળના અસરકારક વ્યવસ્થાપન માટે એઝાડીરેક્ટીન ૧ ઇસી ૦.૦૦૪% (૪૦ મિલિ/૧૦ લિ. પાણી) અથવા બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧× ૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૭% (૬૦ ગ્રામ/૧૦ લિ. પાણી) નાં ત્રણ છંટકાવ, પ્રથમ છંટકાવ જીવાતના ઉપદ્રવની શરૂઆતે અને બીજા બે છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાનીપદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર (ગ્રામ/ હેક્ટર)	ફોર્મ્યુલેશન ની માત્રા લિ. / કિગ્રા પ્રતિ હેક્ટર	સંદ્રતા (%)	પાણી સાથે ડાયલ્યુશન (૧૦લિટર)				
૨૦૨૫	સોયાબીન	લક્ષરીઈયળ	એઝાડીરેક્ટીન ૧ ઇ.સી. ૦.૦૦૪ %	૨૦	૨૦.લિ.	૦.૦૦૪	૪૦મિલિ.	૫૦૦લિ.	પ્રથમ છંટકાવ જીવાતના ઉપદ્રવની શરૂઆતે અને બીજા બે છંટકાવ પ્રથમ છંટકાવના ૧૦ દિવસના આંતરે કરવા	--	--
			બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦ ^૮ સીએફયુ/ગ્રામ ન્યુનતમ)	૩૪.૫	૩૦.કિ.ગ્રા.	૦.૦૦૭	૬૦ગ્રામ			--	--

Approved with following suggestion(s):

1.Remove word “and economical” from English recommendation text

2.Recast the Gujarati recommendation text

(Action: Research Scientist (G’nut), Main Oilseeds Research Station, JAU, Junagadh)

22.3.1.13 Integrated pest management in cotton

Farmers of Gujarat growing cotton are recommended to implement the following Integrated Pest Management (IPM) module for the management of sucking pests and pink bollworm.

- 1) Timely sowing (15th June to 15th July).
- 2) Installation of yellow sticky trap @ 10/ha for whitefly and pheromone traps @ 10/ha for pink bollworm at 45 DAS and yellow sticky trap and lure to be changed four times at 25 days interval after installation.
- 3) One spray of neem-based formulation, azadirachtin 0.15 EC (50 mL/10 L of water) at 50-60 DAS.
- 4) For sucking pests, two sprays of insecticide viz., flonicamid 50 WG 0.02% (4.0 g/10 L of water) at 60-90 DAS.
- 5) Release of *Trichogramma bactrae* @1.5 lakh/ha (thrice at weekly intervals) at 90-110 DAS.
- 6) ETL (10% boll damage by pink bollworm) based application of recommended insecticidal spray of emamectin benzoate 5 SG 0.0025% (5 g/10 L of water) at 110-120 DAS.
- 7) Spray of lambda cyhalothrin 2.5 EC 0.0025% (10 mL/10 L of water) at 120-135 DAS and cypermethrin 10 EC 0.01% (10 mL/10 L of water) at 135-150 DAS.
- 8) Timely termination of crop at 180-190 DAS.

A minimum pre-harvest interval (PHI) of 25, 10, 21 and 7 days for flonicamid 50 WG 0.02%, emamectin benzoate 5 SG 0.0025%, lambda-cyhalothrin 2.5 EC 0.0025% and cypermethrin 10 EC 0.01% should be kept, respectively.

CIBRC format:

Year	Crop	Pest	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ha	Application schedule	Waiting period/ PHI (days)	Remark (s)
				a.i./ ha	Quantity of formulation g or ml/ha	Con. (%)	Dilution in water (10 L)				
2025	Cotton	Aphid, Jassid, Thrips and Whitefly	Flonicamid 50 WG	75	150	0.02	4 g	500L	First spray at pest appearance and subsequent threesprays at 15 days interval after first spray for effective management of sucking pests	25	-
		Pink bollworm	Emamectin benzoate 5 SG	9.5-11.0	190-220	0.0025	5 g		First spray at pink bollworm cross the ETL (10% damage in green boll) and second spray after 15 days of first spray for effective management of pink bollworm	10	-
			Lambda cyhalothrin 2.5 EC	15-25	300-500	0.0025	10 mL			21	-
			Cypermethrin 10 EC	50-70	550-760	0.01	10 mL			07	-

ગુજરાતમાં કપાસની ખેતી કરતા ખેડૂતોને યુસીયા જીવાતો અને ગુલાબી ઈયળના વ્યવસ્થાપન માટે નીચે મુજબની સંકલિત જીવાત વ્યવસ્થાપન પદ્ધતિઓની ભલામણ કરવામાં આવે છે.

૧. સમયસર વાવેતર કરવું (૧૫ જુન થી ૧૫ જુલાઈ).

૨. વાવેતરના ૪૫ દિવસ બાદ સફેદ માખીના વ્યવસ્થાપન માટે પીળા ચીકણા પીંજર (૧૦ નંગ/હે) અને ગુલાબી ઈયળના વ્યવસ્થાપન માટે ફેરોમોન ટ્રેપ (૧૦ નંગ/હે) લગાવવા અને ૨૫ દિવસના આંતરે પીળા ચીકણા પીંજર અને લ્યુર ચાર વખત બદલવા.

૩. વાવેતરના ૫૦-૬૦ દિવસ દરમિયાન એઝાડિરાક્ટીન ૦.૧૫ ઇસી (૫૦ મિ.લિ. /૧૦લિ. પાણી) નો એક છંટકાવ કરવો .

૪. વાવેતરના ૬૦-૮૦ દિવસ દરમિયાન યુસીયા પ્રકારની જીવાતોના વ્યવસ્થાપન માટે ફ્લોનીકામીડ ૫૦ ડબલ્યુજી ૦.૦૨% (૪ ગ્રામ/૧૦લિ. પાણી) ના બે છંટકાવ કરવા.

૫. વાવેતર ના ૮૦-૧૧૦ દિવસ દરમિયાન પરજીવી ભમરી ટ્રાઈકોગ્રામા બેક્ટરી @ ૧.૫ લાખ/હે. ત્રણ વખત અઠવાડિયાના આંતરે છોડવી.

૬. વાવેતરના ૧૧૦-૧૨૦ દિવસ દરમિયાન ગુલાબી ઈયળ જ્યારે આર્થિક ક્ષમ્ય માત્રા (૧૦ % જીંડવામાં નુકશાન) વટાવે ત્યારે એમામેક્ટીન બેન્ઝોએટ ૫ એસજી ૦.૦૦૨૫% (૫ ગ્રામ/૧૦લિ. પાણી) નો છંટકાવ કરવો.

૭. વાવેતરના ૧૨૦-૧૩૫ દિવસ દરમિયાન લેમ્ડાસાયહેલોથ્રીન ૨.૫ ઇસી ૦.૦૦૨૫% (૧૦ મિલિ/૧૦લિ. પાણી) અને ૧૩૫-૧૫૦ દિવસ દરમિયાન સાયપરમેથ્રીન ૧૦ ઇસી ૦.૦૧% (૧૦ મિલિ /૧૦ લિ. પાણી) નો છંટકાવ કરવો.

૮. વાવેતરના ૧૮૦-૧૯૦ દિવસે સમયસર પાકને પૂરો કરવો.

ફ્લોનીકામીડ ૫૦ ડબલ્યુપી ૦.૦૨%, એમામેક્ટીન બેન્ઝોએટ ૫ એસજી ૦.૦૦૨૫%, લેમ્ડા-સાયહેલોથ્રીન ૨.૫ ઇસી ૦.૦૦૨૫%, સાયપરમેથ્રીન ૧૦ ઇસી ૦.૦૧% ના છંટકાવ અને કાપણી વચ્ચેનો સમયગાળો અનુક્રમે ૨૫, ૧૦, ૨૧ અને ૭ દિવસનો રાખવો.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં પ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર (ગ્રામ/ હેક્ટર)	ફોર્મ્યુલેશન નીમાત્રા મિલિ / ગ્રામ પ્રતિ હેક્ટર	સાંદ્રતા (%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫	કપાસ	મોલોમ્બી, તડતડીયા, થ્રીપ્સ અને સફેદ માખી	ફ્લોનીકા માઈડ ૫૦ ડબલ્યુજી	૭૫	૧૫૦ ગ્રામ	૦.૦૨	૪ ગ્રામ	૫૦૦ લિ.	પ્રથમ છંટકાવ જીવાત દેખાવે અને બીજા ત્રણ છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસના આંતરે કરવો	૨૫	-
		ગુલાબી ઈયળ	એમામેક્ટીન બેન્ઝોએટ ૫ એસજી	૮.૫-૧૧.૦	૧૮૦-૨૨૦	૦.૦૦૨૫	૫ ગ્રામ		પ્રથમ છંટકાવ ગુલાબી ઈયળ ક્ષમ્ય માત્રાએ (૧૦ % લીલા	૧૦	-

			લેમ્બડા સાયહેલોથ્રીન ૨.૫ઈસી	૧૫-૨૫	૩૦૦-૫૦૦	૦.૦૦૨ ૫	૧૦ મિલિ		જીડવામાં નુકશાન અને ત્યાર બાદ ૧૫ દિવસ પછી બીજો છંટકાવ કરવો	૨૧	-
			સાથપરમેથ્રીન ૧૦ઈસી	૫૦-૭૦	૫૫૦-૭૬૦	૦.૦૧	૧૦ મિલિ			૦૭	-

Approved

1. Mention the number of yellow sticky traps used

(Action: Research Scientist (Cotton), CottonResearch Station, JAU, Junagadh)

22.3.1.14 Management of sucking pests in Bt cotton

Farmers of Gujarat growing Bt cotton are recommended to treat the seed with imidacloprid 600 FS @ 4 mL/kg of seed followed by schedule spraying of azadirachtin 0.15 EC 0.000075% (5.0 mL/10 L of water), *Beauveria bassiana* 1.15 WP (1x10⁸ cfu/g min.) 0.007 % (60 g/10 L of water), imidacloprid 17.8 SL 0.0053% (3.0 mL /10 L of water), diafenthiuron 50 WP 0.05% (10 g/10 L of water) and dinotefuran 20 SG 0.02% (3 g/10 L of water) for aphid and jassid while for whitefly and thrips, schedule spraying of *azadirachtin* 0.15 EC 0.000075% (5.0 mL/10 L of water), *Lecanicillium lecani* 1.15 WP (1x10⁸ cfu/g min.) 0.007% (60 g/10 L of water), thiamethoxam 25 WG 0.0075% (3g/10 L of water), flonicamid 50 WG 0.015% (3 g/10 L of water) and tolfenpyrad 15 EC 0.045% (30 mL/10 L of water) for effective management, first spray apply at 45 days after sowing and subsequent sprays at 15 days interval.

CIBRC format:

Year	Crop	Pest	Pesticides with formulation	Doses				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remark (s)
				a.i./ ha	Quantity of formulation Kg or ml/ha	Con. (%)	Dilution in water (10 L)				
2025	Cotton	Aphids, Thrips, Jassids and Whiteflies	Imidacloprid 600 FS	15	0.015	-	-	-	Seed treatment	NA	-
			(Dosage per 3 kg of seed)				-	500 L	First spray at the 45 days after sowing and subsequent schedule sprays after the 15 days of first spray.	-	-
			Azadirachtin 0.15 EC	0.37	0.25	0.000075	5.0		-	-	
			Beauveria bassiana 1.15 % WP	34.50	3.0	0.0069	60.0		-	-	
			Lecanicillium lecani 1.15 WP	34.50	3.0	0.0069	60.0		-	-	
			Diafenthiuron 50 WP	2.50	0.5	0.05	10.0		21	-	
			Imidacloprid 17.80 SL	2.67	0.15	0.0053	3.0		40	-	
			Dinotefuran 20 SG	3.00	0.15	0.02	10.0		15	-	
			Thiamethoxam 25 WG	3.75	0.15	0.0075	3.0		21	-	
			Fonicamid 50 WG	7.50	0.15	0.015	3.0		25	-	
			Tolfenpyrad 15 EC	22.5	1.5	0.045	30.0		26	-	

ગુજરાતમાં બીટી કપાસની ખેતી કરતા ખેડૂતોને બીજને ઇમીડાક્લોપ્રીડ ૬૦૦ એફએસ (૪ મિલિ/કિગ્રા બીજ) નો પટ આપી ત્યાર બાદ મોલોમશી અને તડતડીયાના અસરકારક વ્યવસ્થાપન માટે ક્રમાનુસાર દવાઓ જેવીકે એઝાડિરેક્ટીન ૦.૧૫ ઇસી ૦.૦૦૦૦૭૫% (૫.૦ મિલિ/૧૦લિ. પાણી), બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૭% (૬૦ ગ્રામ/૧૦ લિ. પાણી), ઇમિડાક્લોપ્રિડ ૧૭.૮ એસ.એલ. ૦.૦૦૫૩% (૩.૦ મિલિ/૧૦ લિ. પાણી), ડાયફેન્થ્યુરોન ૫૦ વે.પા. ૦.૦૫% (૧૦ ગ્રામ/૧૦ લિ. પાણી) અને ડાયનોટેફ્યુરાન ૨૦ એસ.જી ૦.૦૨% (૩ ગ્રામ/૧૦ લિ. પાણી) ના છંટકાવ કરવા જ્યારે સફેદમાખી અને થ્રીપ્સ માટે ક્રમાનુસાર દવાઓ જેવીકે એઝાડિરેક્ટીન ૦.૧૫ ઇસી ૦.૦૦૦૦૭૫% (૫.૦ મિલિ/૧૦લિ. પાણી),

લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા. (૧×૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૦.૦૦૭% (૬૦ ગ્રામ/૧૦ લિ. પાણી), થાયામેથોક્ઝામ ૨૫ ડબલ્યુજી ૦.૦૦૭૫% (૩ ગ્રામ/૧૦ લિ. પાણી), ફ્લોનીકામિડ ૫૦ ડબલ્યુજી ૦.૦૧૫% (૩ ગ્રામ/૧૦ લિ. પાણી) અને ટોલ્ફેનપાયરાડ ૧૫ ઇસી ૦.૦૪૫% (૩૦ મિલિ/૧૦લિ. પાણી) ના છંટકાવ કરવા, પહેલો છંટકાવ વાવણીના ૪૫ દિવસે અને ત્યાર બાદના છંટકાવો પ્રથમ છંટકાવના ૧૫ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં બ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ. આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫	કપાસ	મોલો મઝી શીપ્સ, તડતડીયા અને સફેદ માખી	ઈમીડાક્લોપ્રીડ ૬૦૦ એફએસ	૧૫	૦.૦૧૫		-	૫૦૦ લિ.	બીજ માવજત	-	-
			એઝાડિરેક્ટીન ૦.૧૫ ઇસી	૦.૩૭	૦.૨૫	૦.૦૦૦૦૭૫	૫.૦			-	-
			બ્યુવેરીયા બાસીઆના ૧.૧૫ વે.પા.	૩૪.૫૦	૩.૦	૦.૦૦૬૯	૬૦.૦			-	-
			લેકાનીસીલીયમ લેકાની ૧.૧૫ વે.પા.	૩૪.૫૦	૩.૦	૦.૦૦૬૯	૬૦.૦			-	-
			ઇમિડાક્લોપ્રીડ ૧૭.૮ એસ.એલ.	૨.૫૦	૦.૫	૦.૦૫	૧૦.૦			૨૧	-
			ડાયફેન્થ્યુરોન ૫૦ વે.પા.	૨.૬૭	૦.૧૫	૦.૦૦૫૩	૩.૦			૪૦	-
			ડાયનોટેફ્થુરોન ૨૦ એસજી.	૩.૦૦	૦.૧૫	૦.૦૨	૧૦.૦			૧૫	-
			થાયામેથોક્ઝામ ૨૫ ડબલ્યુજી	૩.૭૫	૦.૧૫	૦.૦૦૭૫	૩.૦			૨૧	-
			ફ્લોનીકામિડ ૫૦ ડબલ્યુજી	૭.૫૦	૦.૧૫	૦.૦૧૫	૩.૦			૨૫	-
			ટોલ્ફેનપાયરાડ ૧૫ ઇસી	૨૨.૫	૧.૫	૦.૦૪૫	૩૦.૦			૨૬	-

Approved with following suggestion(s):

1. Check Azadirachtin dose
2. Verify the interaction data of natural enemies
3. Remove word “and economical” from English recommendation text
4. Remove word “અને અર્થક્ષમ” from Gujarati recommendation text
5. Verify ICBR Table

(Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)

22.3.1.15 Evaluation of natural inputs against sucking pests of soybean under rainfed condition

Farmers of Gujarat growing soybean under natural farming are recommended to apply twosprays of *Brahmastra* 3.0% (300 mL/ 10 L of water) or *Dasparni ark* 3.0% (300 mL in 10 L of water), first spray at pest initiation and second spray after 10 days for effective management of aphid, jassid, thrips and whitefly.

CIBRC format:

Year	Crop	Pest	Pesticides with formulation	Doses				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remark (s)
				a.i./ ha	Quantity of formulation kg or mL/ha	Con. (%)	Dilution in water (10 L)				
2025	Soybean	Aphids, Jassids, Thrips, and Whiteflies	<i>Brahmastra</i>	-	-	3.0	300 mL	500 L	First spray on pest infestation and subsequent second or third sprays at 10 days interval after first spray	-	-
			<i>Dasparni ark</i>	-	-	3.0	300 mL			-	-

ગુજરાતમાં સોયાબીનની પ્રાકૃતિક ખેતી કરતા ખેડૂતોને મોલોમશી, તડતડીયા, શિપ્સ અને સફેદમાખીના અસરકારક વ્યવસ્થાપન માટે બ્રહ્માસ્ત્ર ૩.૦% (૩૦૦ મિલિ/૧૦લિ. પાણી) અથવા દસપર્ણી અર્ક ૩.૦% (૩૦૦

મિલિ/૧૦લિ. પાણી) નો પ્રથમ છંટકાવ જીવાતનો ઉપદ્રવ થાય ત્યારે અને ત્યાર બાદનો બીજો છંટકાવ ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા (%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫	સોયાબીન	મોલોમશી, તડતડીયા, ક્ષિપ્ત અને સફેદમાખી	બ્રહ્મસ	-	-	-	૩૦૦ મિલિ	૫૦૦લિ.	પ્રથમ છંટકાવ જીવાતનો ઉપદ્રવ થાય ત્યારે અને ત્યાર બાદનો બીજો છંટકાવ ૧૦ દિવસના આંતરે કરવો	-	-
		દસપણી અકું		-	-	૦.૩	૩૦૦ મિલિ			-	-

Approved with following suggestion(s):

1. Remove word “and economical” from English recommendation text
2. Remove word “અને અર્થક્ષમ” from Gujarati recommendation text
3. Verify the economics Table
4. Remove the treatment NSKE 5% from the recommendation

(Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, JAU, Targhadia)

PLANT PATHOLOGY

22.3.1.16 Eco-friendly management of soil borne diseases complex of chickpea

Farmers of Gujarat are recommended to apply *Trichoderma harzianum* 1.0 WP (2×10^6 cfu/g min.) @ 1.250 kg/ha + *Pseudomonas fluorescens* 1.0 WP (1×10^8 cfu/g min.) @ 1.250 kg/ha twice, first with FYM 500 kg/ha at the time of sowing in furrows and second at 30 days after sowing along with 100 kg/ha sand followed by irrigation for effective management of wilt and root rot diseases in chickpea.

CIBRC format:

Year	Crop	Disease	Pesticides with formulation	Dosage				Total Quantity of Chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remark (s)
				a.i./ ha	Quantity of formulation Kg or ml/ha	Con. (%)	Dilution in water (10 L)				
2025	Chickpea	Wilt and root rot disease complex	<i>Trichoderma harzianum</i> 1.0 WP + <i>Pseudomonas fluorescens</i> 1.0 WP	--	2.5 kg/ha + 2.5 kg/ha	2×10^6 cfu/g min. + 1×10^8 cfu/g min.	--	500 kg FYM	Soil application: half dose at the time of sowing and remaining half dose at 30 Day after sowing	-	<i>Trichoderma harzianum</i> is registered in CIB & RC for the chickpea. Whereas, <i>Pseudomonas fluorescens</i> is not registered for chickpea.

ગુજરાતના ચણા વાવતા ખેડૂતોને સુકારા અને મૂળના કોહવારા રોગના અસરકારક વ્યવસ્થાપન માટે ટ્રાઈકોડર્મા હાર્ઝીયાનમ ૧.૦ વે.પા. (2×10^6 સીએફયુ/ગ્રામ ન્યૂનતમ) ૧.૨૫૦ કિ.ગ્રા./હે. + સ્યુડોમોનાસ ફ્લુસ્કેન્સ ૧.૦% વે.પા. (1×10^8 સીએફયુ/ગ્રામ ન્યૂનતમ) ૧.૨૫૦ કિ.ગ્રા./હે. પ્રમાણે પ્રથમ માવજત ૫૦૦ કિ.ગ્રા./હે. છાણીયા ખાતરમાં ભેળવી વાવેતર સમયે ચાસમાં અને બીજી માવજત તેટલાજ જથ્થા સાથે વાવેતરના ૩૦ દિવસ બાદ ૧૦૦ કિ.ગ્રા./હે રેતી સાથે મિશ્ર કરી ચાસમાં આપી પિયત આપવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં બ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ. આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સંક્રાંતિ(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫	ચણા	મૂળનો સડોઅ નેસુકારો	ટ્રાઈકોડર્મા હાર્ઝીયાનમ ૧.૦ વે.પા. + સ્પુડોમોનાસ ફલ્વુરોસન્સ ૧.૦ વે.પા.	--	૨.૫ કિ.ગ્રા./ હે. + ૨.૫ કિ.ગ્રા./ હે.	૨x૧૦ ^૬ સીએફયુ/ ગ્રામ, ન્યૂનતમ + ૧x ૧૦ ^૬ સીએફયુ /ગ્રામ, ન્યૂનતમ	--	૫૦૦ કિલો છાણીયુ ખાતર	પ્રથમ માવજત ૫૦૦ કિ.ગ્રા. /હે. છાણીયા ખાતરમાં ભેળવી વાવેતર સમયે ચાસમાં અને બીજી માવજત તેટલાજ જથ્થા સાથે વાવેતરના ૩૦ દિવસ બાદ ૧૦૦ કિ.ગ્રા. /હે. રેતી સાથે મિશ્ર કરી ચાસમાં આપવું	-	ટ્રાઈકોડર્મા હાર્ઝીયાનમ સીઆઈબીઆર સીમાં ચણા માટે નોંધાયેલ છે. પરંતુ સ્પુડોમોનાસ ફલ્વુરોસન્સ માટે નોંધાયેલ નથી

Approved with following suggestion:

1. Recast the English and Gujarati recommendation text

(Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)

22.3.1.17 Eco-friendly management of blast in pearl millet

Farmers of Gujarat growing *kharif* pearl millet are recommended to apply two sprays of *Trichoderma harzianum* 1.0WP (2×10⁶ cfu/g min.) @ 50 g/10 L of water, first spray at initiation of blast disease and second at 15 days after first spray for non-chemical based management of disease whereas, foliar application of *Jeevamrut* 3% (300 mL/10 L of water) first spray at initiation of disease and second at 15 days after first spray for effective management of blast disease in natural farming.

CIBRC format:

Year	Crop	Disease	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remarks
				a.i./ ha	Quantity of formulation kg or L/ha	Con. (%)	Dilution in water (10 L)				
2025	Pearl millet (Bajra)	Blast	<i>Trichoderma harzianum</i>	-	2.5 kg	2 × 10 ⁶ cfu/g	50 g	-	first spray at initiation of disease and second spray at 15 DAS of first spray	-	-
			<i>Jeevamrut</i>	-	15.0 lit.	3.0%	300 mL	-		-	-

ગુજરાતમાં ચોમાસુ બાજરી ઉગાડતા ખેડૂતોને કરમોડી રોગના બિન-રાસાયણિક ઢબે અસરકારક વ્યવસ્થાપન માટે ટ્રાઈકોડર્મા હાર્ઝીયાનમ ૧.૦ વે.પા. (૨ × ૧૦^૬ સીએફયુ/ગ્રામ ન્યૂનતમ) ૫૦ ગ્રામ/૧૦લિ. પાણીના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થાય ત્યારે અને બીજો છંટકાવ પ્રથમ છંટકાવનાં ૧૫ દિવસ બાદ કરવો. જ્યારે પ્રાકૃતિક કૃષિમાં કરમોડી રોગના રોગના બિન-રાસાયણિક રીતે અસરકારક વ્યવસ્થાપન માટે જીવામૃત ૩% (૩૦૦ મિલિ/૧૦લિ.પાણી) ના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થાય ત્યારે અને બીજો છંટકાવ પ્રથમ છંટકાવનાં ૧૫ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે.

સીઆઈબીઆરસી ફોર્મેટ:

૪	૪	૪	૪	૪	જંતુનાશક	પ્રમાણ	જંતુનાશક	વાપરવાની	વેઈટીંગ	૪
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				દવા અને તેનું ફોર્મ્યુલેશન	સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)	દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	પધ્ધતિ	પીરીયડ/ પી.એચ.આઈ. (દિવસ)	
૨૦૨૫	બાજરી	પાનનાંટપેકા	ટ્રાઈકોડર્મા હર્જીયાનમ	-	૨.૫ કી.ગ્રા.	૨ × ૧૦ ^૬ સીએફયુ/ગ્રામ	૫૦ ગ્રામ	-	પ્રથમ છંટકાવ રોગ દેખાય ત્યારે અને બીજો છંટકાવ પ્રથમ છંટકાવનાં ૧૫ દિવસ બાદ કરવો	-	-	
			જીવામૃત	-	૧૫.૦ લિ..	૩.૦%	૩૦૦ મિલિ	-		-		

Approved with following suggestion(s):
1.Remove *Pseudomonas fluorescens* & *Bacillus subtilis* from the recommendation text and CIB&RC Table
2. Modify the recommendation as per non-chemical and natural farming approach
(Action: Research Scientist (Pearl millet), Pearl Millet Research Station, JAU, Jamnagar)

22.3.1.18	Wilt management of chickpea under field condition											
Farmers of Gujarat growing chickpea are recommended to treat the seeds with prochloraz 5.7 + tebuconazole 1.4 ES @ 0.3 mL/kg of seeds (Dilute in 8 mL of water) at the time of sowing for the managementof wilt disease. CIBRC format:												
Year	Crop	Disease	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remarks	
				a.i./ ha	Quantity of formulation	Con. (%)	Dilution in water					
2025-26	Chickpea	Wilt	Prochloraz 5.7 + Tebuconazole 1.4 ES	1.49	0.3 mL/kg seeds	-	8 mL	-	Seed treatment atthe time of sowing	-	-	

ગુજરાતમાં ચણાની ખેતી કરતા ખેડૂતોને સુકારા રોગના વ્યવસ્થાપન માટે વાવણી સમયે બીજને પ્રોક્લોરાઝ ૫.૭+ ટેબુકોનાઝોલ ૧.૪ ઈ.એસ. ૦.૩ મિલિ/કિ.ગ્રા. પ્રમાણે (૮ મિલિ પાણીમાં ભેળવીને) બીજ માવજત આપવાની ભલામણ કરવામાં આવે છે.
સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પધ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા (%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫-૨૬ ૨૦૨૫-૨૬	ચણા	સુકારો	પ્રોક્લોરાઝ ૫.૭ + ટેબુકોનાઝોલ ૧.૪ ઈ. એસ.	૧.૪૯	૦.૩ મિલિ/કિગ્રા બીજ	-	૮.૦ મિલિ	-	વાવેતર સમયે બીજ માવજત તરીકે	-	-

Approved with following suggestion(s):
1. Write “treat the seeds with” instead of “give seed treatment of” in English version of recommendation
2. Recast the Gujarati version of recommendation
(Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)

22.3.1.19	Integrated management of foliar fungal diseases of mungbean																																																																																		
	Farmers of Gujarat are recommended to treat mungbean seed with carbendazim 25 + mancozeb 50 WS @ 2 g/kg of seeds at the time of sowing and apply two foliar sprays of metiram 55 + pyraclostrobin 5 WG 0.18% (30 g/10 L of water), first at the initiation of disease and second spray at 15 days after the first spray for effective management of anthracnose and powdery mildew diseases. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Disease</th><th rowspan="2">Pesticides with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Total quantity of chemical suspension required/ ha</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th><th rowspan="2">Remarks</th></tr><tr><th>a.i./ ha</th><th>Quantity of formulation kg or mL/ha</th><th>Con. (%)</th><th>Dilution in water (10 L)</th></tr><tr><td rowspan="2">2025</td><td rowspan="2">Mungbean</td><td rowspan="2">Anthracnose and Powdery mildew</td><td>Carbendazim 25 + Mancozeb 50 WS</td><td>22.5</td><td>0.03</td><td>0.15</td><td>2 g/kg seeds</td><td>-</td><td>Seed treatment at the time of sowing</td><td>-</td><td rowspan="2">-</td></tr><tr><td>Metiram 55 + Pyraclostrobin 25 WG</td><td>900</td><td>1.5</td><td>0.18</td><td>30 g</td><td>500 L</td><td>First spray at the time of initiation of disease and second spray at 15 days after first spray.</td><td>18</td></tr></table> ગુજરાતમાં મગની ખેતી કરતા ખેડૂતોને કાલવણ અને ભુકી છારા રોગોના અસરકારક વ્યવસ્થાપન માટે વાવણી સમયે બીજને કાર્બેન્ડાઝીમ ૨૫ + મેન્કોઝેબ ૫૦ ડબલ્યુ. એસ. ૨ ગ્રામ/કિ.ગ્રા. પ્રમાણે બીજ માવજત આપવી અને મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ.જી ૦.૧૮% (૩૦ ગ્રામ/૧૦ લિ. પાણી) ના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">રોગ</th><th rowspan="2">જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન</th><th colspan="4">પ્રમાણ</th><th rowspan="2">જંતુનાશક દવા અને પાણીનાં બ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર</th><th rowspan="2">વાપરવાની પદ્ધતિ</th><th rowspan="2">વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)</th><th rowspan="2">રીમાર્ક્સ</th></tr><tr><th>સક્રિય તત્વ પ્રતિ હેક્ટર</th><th>ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર</th><th>સાંદ્રતા(%)</th><th>પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)</th></tr><tr><td rowspan="2">૨૦૨૫</td><td rowspan="2">મગ</td><td rowspan="2">કાલવણ અને ભુકી છારો</td><td>કાર્બેન્ડાઝીમ ૨૫ + મેનકોઝેબ ૫૦ ડબલ્યુ. એસ.</td><td>૨૨.૫</td><td>૦.૦૩</td><td>૦.૧૫</td><td>૨ ગ્રામ/કિગ્રા બીજ</td><td>-</td><td>વાવેતર સમયે બીજ માવજત તરીકે</td><td>-</td><td rowspan="2">-</td></tr><tr><td>મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ.જી</td><td>૯૦૦</td><td>૧.૫</td><td>૦.૧૮</td><td>૩૦ ગ્રામ</td><td>૫૦૦ લિ.</td><td>રોગની શરૂઆત થયે પ્રથમ છંટકાવ તેમજ બીજો છંટકાવ પ્રથમ છંટકાવના પંદર દિવસ બાદ કરવો</td><td>૧૮</td></tr></table> Approved with following suggestion(s): 1. Recast English and Gujarati version of recommendation (Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)											Year	Crop	Disease	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remarks	a.i./ ha	Quantity of formulation kg or mL/ha	Con. (%)	Dilution in water (10 L)	2025	Mungbean	Anthracnose and Powdery mildew	Carbendazim 25 + Mancozeb 50 WS	22.5	0.03	0.15	2 g/kg seeds	-	Seed treatment at the time of sowing	-	-	Metiram 55 + Pyraclostrobin 25 WG	900	1.5	0.18	30 g	500 L	First spray at the time of initiation of disease and second spray at 15 days after first spray.	18	વર્ષ	પાક	રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં બ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ	સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)	૨૦૨૫	મગ	કાલવણ અને ભુકી છારો	કાર્બેન્ડાઝીમ ૨૫ + મેનકોઝેબ ૫૦ ડબલ્યુ. એસ.	૨૨.૫	૦.૦૩	૦.૧૫	૨ ગ્રામ/કિગ્રા બીજ	-	વાવેતર સમયે બીજ માવજત તરીકે	-	-	મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ.જી	૯૦૦	૧.૫	૦.૧૮	૩૦ ગ્રામ	૫૦૦ લિ.	રોગની શરૂઆત થયે પ્રથમ છંટકાવ તેમજ બીજો છંટકાવ પ્રથમ છંટકાવના પંદર દિવસ બાદ કરવો	૧૮
Year	Crop	Disease	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remarks																																																																								
				a.i./ ha	Quantity of formulation kg or mL/ha	Con. (%)	Dilution in water (10 L)																																																																												
2025	Mungbean	Anthracnose and Powdery mildew	Carbendazim 25 + Mancozeb 50 WS	22.5	0.03	0.15	2 g/kg seeds	-	Seed treatment at the time of sowing	-	-																																																																								
			Metiram 55 + Pyraclostrobin 25 WG	900	1.5	0.18	30 g	500 L	First spray at the time of initiation of disease and second spray at 15 days after first spray.	18																																																																									
વર્ષ	પાક	રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં બ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ																																																																								
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)																																																																												
૨૦૨૫	મગ	કાલવણ અને ભુકી છારો	કાર્બેન્ડાઝીમ ૨૫ + મેનકોઝેબ ૫૦ ડબલ્યુ. એસ.	૨૨.૫	૦.૦૩	૦.૧૫	૨ ગ્રામ/કિગ્રા બીજ	-	વાવેતર સમયે બીજ માવજત તરીકે	-	-																																																																								
			મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ.જી	૯૦૦	૧.૫	૦.૧૮	૩૦ ગ્રામ	૫૦૦ લિ.	રોગની શરૂઆત થયે પ્રથમ છંટકાવ તેમજ બીજો છંટકાવ પ્રથમ છંટકાવના પંદર દિવસ બાદ કરવો	૧૮																																																																									
22.3.1.20	Integrated management of foliar fungal diseases of urdbean																																																																																		
	Farmers of Gujarat are recommended to treat urdbean seeds with carbendazim 25 + mancozeb 50 WS @ 2 g/kg of seeds at the time of sowing and apply two foliar sprays of metiram 55 + pyraclostrobin 5 WG0.18% (30 g/10 L of water), first at the initiation of disease and second spray at 15 days after the first spray for effective management of anthracnose and powdery mildew diseases.																																																																																		

CIBRC format:

Year	Crop	Disease	Pesticides with formulation	Dosage				Total quantity of chemical suspension required/ ha	Application schedule	Waiting period/ PHI (days)	Remarks
				a.i./ ha	Quantity of formulation kg or mL/ha	Con. (%)	Dilution in water (10 L)				
2025	Urdbean	Anthracnose and Powdery mildew	Carbendazim 25 + Mancozeb 50 WS	22.5	0.03	0.15	2 g/kg seeds	-	Seed treatment at the time of sowing	-	-
			Metiram 55 + Pyraclostrobin 25 WG	900	1.5	0.18	30 g	500 L	First spray at the time of initiation of disease and second spray at 15 days after first spray.	32	

ગુજરાતમાં અડદની ખેતી કરતા ખેડૂતોને કાલવણ અને ભુકી છારા રોગોના અસરકારક વ્યવસ્થાપન માટે વાવણી સમયે બીજને કાર્બેન્ડાઝીમ ૨૫ + મેન્કોઝેબ ૫૦ ડબલ્યુ.એસ. ૨ ગ્રામ/કિગ્રા પ્રમાણે બીજ માવજત આપવી અને મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ.જી ૦.૧૮% (૩૦ ગ્રામ/૧૦ લિ. પાણી) ના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				જંતુનાશક દવા અને પાણીનાં દ્રાવણની કુલ જરૂરીયાત પ્રતિ હેક્ટર	વાપરવાની પદ્ધતિ	વેઈટિંગ પીરીયડ/ પી.એચ.આઈ. (દિવસ)	રીમાર્ક્સ
				સક્રિય તત્વ પ્રતિ હેક્ટર	ફોર્મ્યુલેશનની માત્રા મિલી, કીલો પ્રતિ હેક્ટર	સાંદ્રતા(%)	પાણી સાથે ડાયલ્યુશન (૧૦ લિટર)				
૨૦૨૫	અડદ	કાલવણ અને ભુકી છારો	કાર્બેન્ડાઝીમ ૨૫ + મેનકોઝેબ ૫૦ ડબલ્યુ. એસ.	૨૨.૫	૦.૦૩	૦.૧૫	૨ ગ્રામ/કિગ્રા બીજ	-	વાવેતર સમયે બીજ માવજત તરીકે	-	-
			મેટીરામ ૫૫ + પાયરેકલોસ્ટ્રોબિન ૫ ડબલ્યુ. જી	૯૦૦	૧.૫	૦.૧૮	૩૦ ગ્રામ	૫૦૦ લી.	રોગની શરૂઆત થયે પ્રથમ છંટકાવ તેમજ બીજો છંટકાવ પ્રથમ છંટકાવના પંદર દિવસ બાદ કરવો	૩૨	

Approved with following suggestion(s):

1. Recast English and Gujarati version of recommendation

(Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI**ENTOMOLOGY**

22.3.1.21	Efficacy of insecticides against rice bloodworm, <i>Chironomus temperi</i> Skuse										
	Paddy growers of Gujarat are recommended to apply chlorpyrifos 50 + cypermethrin 5 EC, 500 mL/ha (mixed with sand at 25 kg/ha) twice in soil, first application at 20 days after transplanting (DAT) and second application at 15 days after first application for effective management of rice bloodworm.										
	CIBRC format:										
Year	Crop	Pest	Pesticides/ Biopesticides with formulation	Dosage				Quantity of suspension/ Soil amendment s required (kg or L/ha)	Application schedule	Waiting period/ PHI (days)	Remark(s)
				a.i. (g/ ha)	Quantity of formulation g or mL/kg seed, kg or L/ha	Conc. (%)	Quantity of formulation in 10 L of water (g or mL)				

	2026	Rice	Rice bloodworm	Chlorpyrifos 50 + cypermethrin 5 EC (Soil application)	275	500mL/ha	-	-	Mixed with sand at 25 kg/ ha	The first application at 20 days after transplanting and the second at 15 days after first application	15 As per CIB	BQL (Below Quantification Limit)																												
ગુજરાતમાં ડાંગરની ખેતી કરતા ખેડૂતોને અળસી (બ્લડવોર્મ) ના અસરકારક નિયંત્રણ માટે ક્લોરપાયરીફોસ ૫૦ + સાયપરમેથ્રીન ૫ ઇસી, ૫૦૦ મિલિ પ્રતિ હેક્ટર (૨૫ કિ.ગ્રા. પ્રતિ હેક્ટર રેતી સાથે ભેળવી) જમીનમાં બે વખત, પ્રથમ માવજત ડાંગરની ફેર રોપણી પછી ૨૦ દિવસે અને બીજી માવજત પ્રથમ માવજતના ૧૫ દિવસ બાદ આપવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">જીવાત</th><th rowspan="2">જંતુનાશકનું ફોર્મ્યુલેશન</th><th colspan="4">પ્રમાણ</th><th rowspan="2">દ્રાવણનો જથ્થો/ જમીન સુધારકોની જરૂરિયાત</th><th rowspan="2">વાપરવાની પદ્ધતિ</th><th rowspan="2">વેઈટિંગ પેરિયડ / પી. એચ. આઇ. (દિવસ)</th><th rowspan="2">નોંધ</th></tr><tr><th>ગ્રા. સ. ત./હે.</th><th>ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે</th><th>સાંદ્રતા (%)</th><th>૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો (મિલિ)</th></tr><tr><td>૨૦૨૬</td><td>ડાંગર</td><td>ડાંગરની અળસી</td><td>ક્લોરપાયરીફોસ ૫૦ + સાયપરમેથ્રીન ૫ ઇસી</td><td>૨૭૫</td><td>૫૦૦ મિલિ/હે</td><td>-</td><td>-</td><td>૨૫ કિગ્રા પ્રતિ હેક્ટર રેતી સાથે ભેળવવું</td><td>પ્રથમ માવજત ડાંગરની ફેર રોપણી પછી ૨૦ દિવસે અને બીજી માવજત પ્રથમ માવજતના ૧૫ દિવસ બાદ આપવી</td><td>૧૫</td><td>ક્વોન્ટીફિકેશન મર્યાદાની નીચે</td></tr></table> Approved with following suggestion(s): 1. Remove “and to harvest higher yield, need based and should be done” from English recommendation text 2. Recast English and Gujarati version of recommendation (Action: Research Scientist (Paddy), MRRC, NAU Navsari)													વર્ષ	પાક	જીવાત	જંતુનાશકનું ફોર્મ્યુલેશન	પ્રમાણ				દ્રાવણનો જથ્થો/ જમીન સુધારકોની જરૂરિયાત	વાપરવાની પદ્ધતિ	વેઈટિંગ પેરિયડ / પી. એચ. આઇ. (દિવસ)	નોંધ	ગ્રા. સ. ત./હે.	ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો (મિલિ)	૨૦૨૬	ડાંગર	ડાંગરની અળસી	ક્લોરપાયરીફોસ ૫૦ + સાયપરમેથ્રીન ૫ ઇસી	૨૭૫	૫૦૦ મિલિ/હે	-	-	૨૫ કિગ્રા પ્રતિ હેક્ટર રેતી સાથે ભેળવવું	પ્રથમ માવજત ડાંગરની ફેર રોપણી પછી ૨૦ દિવસે અને બીજી માવજત પ્રથમ માવજતના ૧૫ દિવસ બાદ આપવી	૧૫	ક્વોન્ટીફિકેશન મર્યાદાની નીચે
વર્ષ	પાક	જીવાત	જંતુનાશકનું ફોર્મ્યુલેશન	પ્રમાણ				દ્રાવણનો જથ્થો/ જમીન સુધારકોની જરૂરિયાત	વાપરવાની પદ્ધતિ	વેઈટિંગ પેરિયડ / પી. એચ. આઇ. (દિવસ)	નોંધ																													
				ગ્રા. સ. ત./હે.	ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો (મિલિ)																																	
૨૦૨૬	ડાંગર	ડાંગરની અળસી	ક્લોરપાયરીફોસ ૫૦ + સાયપરમેથ્રીન ૫ ઇસી	૨૭૫	૫૦૦ મિલિ/હે	-	-	૨૫ કિગ્રા પ્રતિ હેક્ટર રેતી સાથે ભેળવવું	પ્રથમ માવજત ડાંગરની ફેર રોપણી પછી ૨૦ દિવસે અને બીજી માવજત પ્રથમ માવજતના ૧૫ દિવસ બાદ આપવી	૧૫	ક્વોન્ટીફિકેશન મર્યાદાની નીચે																													
22.3.1.22	Evaluation of biopesticides against rice ear head bug, <i>Leptocorisa acuta</i> Thunberg in rice																																							
Paddy growers of Gujarat are recommended to apply two sprays of <i>Lecanicillium lecanii</i> 1.15% WP (1 x 10⁸ cfu /g min.) 100 g/10 L of water, first spray apply at the initiation of the pest and the second spray at 10 days of the first spray for the effective management of earhead bug. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest</th><th rowspan="2">Pesticides/ Biopesticides with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Quantity of suspension/ Soil amendments required (kg or L/ha)</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period / PHI (days)</th><th rowspan="2">Remark(s)</th></tr><tr><th>a.i. (g/ ha)</th><th>Quantity of formulation g or ml/kg seed, kg or L/ha</th><th>Conc. (%)</th><th>Quantity of formulation in 10 L of water (g or mL)</th></tr><tr><td>2026</td><td>Rice</td><td>Earhead bug</td><td><i>Lecanicillium lecanii</i> 1.15% WP (1 x 10⁸ cfu/g min.)</td><td>57.50 g/ha</td><td>5000 g/ha</td><td>0.0115</td><td>100 g</td><td>500 L water</td><td>The first spray at the initiation of the pest and the second at 10 days after the first spray.</td><td>-</td><td>-</td></tr></table> ગુજરાતમાં ડાંગરની ખેતી કરતા ખેડૂતોને કંટીનાં ચૂસીયાનાં અસરકારક નિયંત્રણ માટે લેકાની સીલીયમ લેકાની ૧.૧૫ વેપા (૧x૧૦^૮ સીએફયુ/ગ્રામ ન્યુનતમ) ૧૦૦ ગ્રામ પ્રતિ ૧૦ લિટર પાણી મુજબ બે છંટકાવ, પ્રથમ છંટકાવ જીવાતનાં ઉપદ્રવની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવનાં ૧૦ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે.													Year	Crop	Pest	Pesticides/ Biopesticides with formulation	Dosage				Quantity of suspension/ Soil amendments required (kg or L/ha)	Application schedule	Waiting period / PHI (days)	Remark(s)	a.i. (g/ ha)	Quantity of formulation g or ml/kg seed, kg or L/ha	Conc. (%)	Quantity of formulation in 10 L of water (g or mL)	2026	Rice	Earhead bug	<i>Lecanicillium lecanii</i> 1.15% WP (1 x 10 ⁸ cfu/g min.)	57.50 g/ha	5000 g/ha	0.0115	100 g	500 L water	The first spray at the initiation of the pest and the second at 10 days after the first spray.	-	-
Year	Crop	Pest	Pesticides/ Biopesticides with formulation	Dosage				Quantity of suspension/ Soil amendments required (kg or L/ha)	Application schedule	Waiting period / PHI (days)	Remark(s)																													
				a.i. (g/ ha)	Quantity of formulation g or ml/kg seed, kg or L/ha	Conc. (%)	Quantity of formulation in 10 L of water (g or mL)																																	
2026	Rice	Earhead bug	<i>Lecanicillium lecanii</i> 1.15% WP (1 x 10 ⁸ cfu/g min.)	57.50 g/ha	5000 g/ha	0.0115	100 g	500 L water	The first spray at the initiation of the pest and the second at 10 days after the first spray.	-	-																													

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક / જૈવિક જંતુનાશકનું ફોર્મ્યુલેશન	પ્રમાણ				દ્રાવણનો જથ્થો / જમીન સુધારકોની જરૂરિયાત	વાપરવાની પદ્ધતિ	વેઈટીંગ પિરિયડ / પી. એચ. આઈ. (દિવસ)	નોંધ
				સક્રિય તત્વ (ગ્રામ/હે)	ફોર્મ્યુલેશનનો અથવા મિલિ/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો અથવા મિલિ				
1	2	3	4	5	6	7	8	9	10	11	12
૨૦૨૬	ડાંગર	ડાંગરની કંટીનાંચુ સીયા	લેકાનીસીલીયમ લેકાની ૧.૧૫ વેપા (૧x૧૦ ^૮ સીએફયુ/ગ્રામ ન્યુનતમ)	૫૭.૫૦ ગ્રામ/ હે.	૫૦૦૦ ગ્રામ/હે	૦.૦૧૧૫	૧૦૦ગ્રામ	૫૦૦લિટર પાણી	પહેલો છંટકાવ જીવાતનાં ઉપદ્રવની શરૂવાતમાં અને બીજો છંટકાવ પહેલાં છંટકાવનાં ૧૦ દિવસ બાદ કરવો.	-	-

Approved with following suggestion(s):

1. Recast English and Gujarati version of recommendation

2. Frame a new scientific information of effective treatment *Lecanicillium saksenae* 1.15% WP (1 x 10⁷ cfu /g min.) 100 g/10 L of water for management of earhead bug

(Action: Research Scientist (Paddy), MRRC, NAU, Navsari)

22.3.1.23

Evaluation of different oils for the management of rice weevil, *Sitophilus oryzae* (Linnaeus) in stored sorghum

It is recommended to treat sorghum grains with any one of the oils viz., castor oil, mustard oil, groundnut oil, sunflower oil or linseed oil, 5.0 mL/kg of grains for effective management of rice weevil up to six months.

સંગ્રહિત જુવારમાં ચોખાના ચાંચવાના છ મહિના સુધી અસરકારક નિયંત્રણ માટે જુવારના દાણાને દિવેલ, રાયડાનું તેલ, સિંગતેલ, સુર્યમુખીનું તેલ અથવા અળસીનું તેલ પૈકી કોઈપણ એક તેલ ૫ મિલિ પ્રતિ કિગ્રા દાણા મુજબ પટ આપવાની ભલામણ કરવામાં આવે છે.

Approved with following suggestion(s):

1. Add duration “up to six months” in English and Gujarati version of recommendation

(Action: Research Scientist (Sorghum), MSRS, NAU, Surat)

22.3.1.24

Effect of different pesticides on pollen germination and fruit set in mango

Mango growers of the Gujarat are recommended to take necessary care for the application of pesticides during flowering season to avoid detrimental effect on pollen germination and fruit setting. The effect of commonly used pesticides during full bloom stage on pollen germination and fruit setting in mango as mentioned in Annexure.

Sr. No.	Pesticides category	Technical name of pesticide	Formulation type	Concentration	Dose	Effect	Recommendation at full bloom stage (Yes/No)
1.	Insecticides (Recommended Dose)	Imidacloprid 17.8 SL	Liquid	0.005	0.28 ml	+	Yes
2.		Deltamethrin 2.8 EC	Liquid	0.0008	0.28 ml	+	Yes
3.		Lambda-cyhalothrin 5 EC	Liquid	0.003	0.6 ml	+	Yes
4.		Thiamethoxam 25 WG	Granular	0.08	0.32 g	+	Yes
5.	Insecticides (Double Dose)	Imidacloprid 17.8 SL	Liquid	0.01	0.56 mL	-	No
6.		Deltamethrin 2.8 EC	Liquid	0.0016	0.57 mL	-	No
7.		Lambda-cyhalothrin 5 EC	Liquid	0.006	1.2 mL	- -	No
8.		Thiamethoxam 25 WG	Granular	0.16	0.64 g	-	No
9.	Fungicide (Recommended dose)	Wettable Sulphur 80 WP	Powder	0.2	2.5 g	-	No
10.		Azoxystrobin 23 SC	Liquid	0.025	1.0 mL	-	No
11.		Copper Oxychloride 50% WP	Powder	0.15	3.0 g	+	Yes
12.		Hexaconazole 5% SC	Liquid	0.005	1.0 mL	+	Yes

13		Carbendazim 50% WP	Powder	0.05	1.0 g	-	No
14		Wettable Sulphur 80 WP	Powder	0.4	5.0 g	--	No
15		Azoxystrobin 23 SC	Liquid	0.05	2.0 mL	--	No
16	Fungicide (Double dose)	Copper Oxychloride 50% WP	Powder	0.3	6 g	--	No
17		Hexaconazole 5% SC	Liquid	0.01	2.0 mL	--	No
18		Carbendazim 50 WP	Powder	0.1	2.0 g	--	No

-- Detrimental effect; -Adverse effect; + Relatively safe; ++ safe

Guidelines for application of pesticide in mango during flowering:

- **Follow Recommended dose:** Adhere strictly to label rates of pesticides to avoid excessive powdery residue accumulation on reproductive parts of the flower.
- **Avoid spraying during full bloom stage:** To minimize negative effects on mango pollination, avoid applying fungicides (viz., wettable sulphur 80 WP, azoxystrobin 23 SC and carbendazim 50 WP) during the peak flowering period. Apply powder formulated fungicides at pre-bloom or try to delay for as long as possible during bloom.

ગુજરાતના આંબાવાડીયુ ધરાવતા ખેડૂતોને મોર અવસ્થાએ જંતુનાશકોના ઉપયોગ માટે જરૂરી કાળજી લેવાની ભલામણ કરવામાં આવે છે જેથી પરાગ અંકુરણ અને ફળ બેસવા પર આડ અસરન થાય. સંપૂર્ણ મોર ખીલેલ તબક્કા દરમિયાન સામાન્ય રીતે ઉપયોગમાં લેવાતા જંતુનાશકોની કેરીમાં પરાગ અંકુરણ અને ફળ બેસવા પર થતી અસર પરિશિષ્ટમાં દર્શાવેલ છે.

અ. નં.	જંતુનાશક શ્રેણી	જંતુનાશકનું તકનીકી નામ	ફોર્મ્યુલેશન પ્રકાર	સાંદ્રતા	માત્રા (મીલી અથવા ગ્રામ)	અસર	સંપૂર્ણ મોર ખીલેલ તબક્કામાં ભલામણ (હા/ના)
૧	કિટનાશક (ભલામણ મુજબ માત્રા)	ઇમિડાક્લોપ્રિડ ૧૭.૮ એસએલ	પ્રવાહી	૦.૦૦૫	૦.૨૮ મિલિ	+	હા
૨		ડેલ્ટામેથ્રિન ૨.૮ ઇસી	પ્રવાહી	૦.૦૦૦૮	૦.૨૮ મિલિ	+	હા
૩		લેમ્બડાસાયહેલોથ્રીન ૫ ઇસી	પ્રવાહી	૦.૦૦૩	૦.૬ મિલિ	+	હા
૪		થાયોમેથોક્સામ ૨૫ ડબલ્યુપી	દાણાદાર	૦.૦૮	૦.૩૨ ગ્રામ	+	હા
૫	કિટનાશક (ડબલ માત્રા)	ઇમિડાક્લોપ્રિડ ૧૭.૮ એસએલ.	પ્રવાહી	૦.૦૧	૦.૫૬ મિલિ	-	ના
૬		ડેલ્ટામેથ્રિન ૨.૮ ઇસી.	પ્રવાહી	૦.૦૧૬	૦.૫૭ મિલિ	-	ના
૭		લેમ્બડાસાયહેલોથ્રીન ૫ ઇસી	પ્રવાહી	૦.૦૦૬	૧.૨ મિલિ	--	ના
૮		થાયોમેથોક્સામ ૨૫ ડબલ્યુપી	દાણાદાર	૦.૧૬	૦.૬૪ ગ્રામ	-	ના
૯	ફૂગનાશક (ભલામણ મુજબ માત્રા)	વેટેબલ સલ્ફર ૮૦ ડબલ્યુપી	પાવડર	૦.૦૨	૨.૫ ગ્રામ	-	ના
૧૦		એઝોક્સિસ્ટ્રોબિન ૨૩ એસસી	પ્રવાહી	૦.૦૨૫	૧.૦ મિલિ	-	ના
૧૧		કોપર ઓક્સીક્લોરાઇડ ૫૦ ડબલ્યુપી %	પાવડર	૦.૧૫	૩ ગ્રામ	+	હા
૧૨		હેક્સાકોનાઝોલ ૫% એસસી	પ્રવાહી	૦.૦૦૫	૧.૦ મિલિ	+	હા
૧૩	ફૂગનાશક (ડબલ માત્રા)	કાર્બેન્ડાઝીમ ૫૦ ડબલ્યુપી %	પાવડર	૦.૦૫	૧.૦ ગ્રામ	-	ના
૧૪		વેટેબલ સલ્ફર ૮૦% ડબલ્યુપી	પાવડર	૦.૪	૫.૦ ગ્રામ	--	ના
૧૫		એઝોક્સિસ્ટ્રોબિન ૨૩% એસસી	પ્રવાહી	૦.૦૫	૨.૦ મિલિ	--	ના
૧૬		કોપર ઓક્સીક્લોરાઇડ ૫૦ ડબલ્યુપી %	પાવડર	૦.૩	૬ ગ્રામ	--	ના
૧૭		હેક્સાકોનાઝોલ ૫% એસસી	પ્રવાહી	૦.૦૧	૨ મિલિ	--	ના
૧૮		કાર્બેન્ડાઝીમ ૫૦ ડબલ્યુપી %	પાવડર	૦.૧	૨ ગ્રામ	--	ના

-- હાનિકારક અસર; - પ્રતિકૂળ અસર; + પ્રમાણમાં સલામત; ++ સલામત

આંબામાં મોર અવસ્થાએ જંતુનાશકોના ઉપયોગ માટેની માર્ગદર્શિકા:

- ભલામણ કરેલ માત્રાનું પાલન કરો : ફૂલના પ્રજનન ભાગો પર વધુ પડતા પાવડરી અવશેષોના સંચયને ટાળવા માટે જંતુનાશકોના યોગ્ય માત્રાનું સખતપણે કડક પાલન કરો.
- સંપૂર્ણ મોર ખીલેલ તબક્કામાં છંટકાવ ટાળો : કેરીના પરાગનયન પર નકારાત્મક અસરો ઘટાડવા માટે, સંપૂર્ણ મોર ખીલેલ તબક્કામાં ફૂગનાશકોનો (જેવીકે વેટેબલ સલ્ફર ૮૦ ડબલ્યુપી, એઝોક્સિસ્ટ્રોબિન ૨૩ એસસી અને કાર્બેન્ડાઝીમ ૫૦% ડબલ્યુપી) ઉપયોગ કરવાનું ટાળો. મોર ખીલતા પહેલા પાવડર ફોર્મ્યુલેટેડ ફૂગનાશકોનો ઉપયોગ કરો અથવા મોર અવસ્થાએ શક્ય તેટલા લાંબા સમય સુધી વિલંબ કરવાનો પ્રયાસ કરો.

Suggestion: Approved

(Action: Research Scientist (Hort.), AES, NAU, Paria)

PLANT PATHOLOGY

22.3.1.25 Evaluation of fungicides against the sheath rot of rice

Paddy growers of Gujarat are recommended to apply two sprays of picoxystrobin 7.05% + propiconazole 11.7% (18.75% SC) at 0.04% (20 mL/10 L water) or azoxystrobin 18.2% + difenoconazole 11.4% (29.6% SC) at 0.03% (10 mL/10 L water), first spray apply at initiation of disease and second spray at booting stage for effective management of sheath rot.

CIBRC format:

Year	Crop	Pest	Pesticides/ Biopesticides with formulation	Dosage			Quantity of suspension/ Soil amendment s required (kg or L/ha)	Applicatio n schedule	Waitin g period/ PHI (days)	Remark (s)	
				a.i. (g/ ha)	Quantity of formatio n g or mL/kg seed, kg or L/ha	Conc . (%)					Quantity of formatio n in 10 L of water (g or mL)
2026	Rice	Sheat h rot	Picoxystrobin 7.05% + Propiconazole 11.7% (18.75% SC)	200 g/ ha	1000 mL/ ha	0.04	20 mL	500 L of water	The first spray at initiation of disease and second spray at booting stage.	24	-
			Azoxystrobin 18.2% + Difenoconazol e 11.4% (29.6% SC)	150 g/ ha	500 mL/ ha	0.03	10 mL	500 L of water		31	-

ગુજરાતમાં ડાંગરની ખેતી કરતા ખેડૂતોને પર્ણચ્છેદનો કોહવારો (શીથરોટ) રોગના અસરકારક નિયંત્રણ માટે પિકોક્સિસ્ટ્રોબિન ૭.૦૫% + પ્રોપિકોનાઝોલ ૧૧.૭% (૧૮.૭૫% એસસી) ૦.૦૪% (૨૦ મિલિ પ્રતિ ૧૦ લિટર પાણી) અથવા એઝોક્સીસ્ટ્રોબીન ૧૮.૨% + ડાઇફેનકોનાઝોલ ૧૧.૪% (૨૯.૬% એસસી) ૦.૦૩% (૧૦ મિલિ પ્રતિ ૧૦ લિટર પાણી) ના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થાય ત્યારે અને બીજો છંટકાવ ધ્વજ પર્ણદંડ (બુટ લીફ સ્ટેજ) અવસ્થાએ કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત	જંતુનાશક/ જૈવિક જંતુનાશકનું ફોર્મ્યુલેશન	પ્રમાણ				દ્રાવણનો જથ્થો / જમીન સુધારકો ની જરૂરિયાત (કિગ્રા અથવા લીટર)	વાપરવાની પદ્ધતિ	વેઈટીંગ પરિચય / પી. એચ. આઈ. (દિવસ)	નોંધ
				સક્રિય તત્વ (ગ્રામ/હે)	ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલિ/ કિગ્રા બીજ, કિગ્રા અથવા લિટર	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલિ				
૨૦૨૬	ડાંગર	પર્ણચ્છેદ નો કોહવારો	પિકોક્સિસ્ટ્રોબિન ૭.૦૫% + પ્રોપિકોનાઝોલ ૧૧.૭% (૧૮.૭૫% એસસી)	૨૦૦ મિલિ/હે	૧૦૦૦ મિલિ/હે	૦.૦૪	૨૦ મિલિ	૫૦૦ લિ પાણી	પ્રથમ છંટકાવ રોગની શરૂઆત થાય ત્યારે અને બીજો છંટકાવ ધ્વજ પર્ણદંડ (બુટ લીફ સ્ટેજ) અવસ્થાએ કરવો.	૨૪	-
			એઝોક્સીસ્ટ્રોબીન ૧૮.૨% + ડાઇફેનકોનાઝોલ ૧૧.૪% (૨૯.૬% એસસી)	૧૫૦ મિલિ/હે	૫૦૦ મિલિ/હે	૦.૦૩	૧૦ મિલિ	૫૦૦ લિ પાણી		૩૧	-

Approved with following suggestion(s):

1. Recast English and Gujarati version of recommendation

(Action: Research Scientist (Paddy), MRRC, NAU, Navsari)

22.3.1.26 Studies on production potential of different *Pleurotus* spp.

Oyster mushroom growers are recommended to cultivate blue oyster mushroom (*Pleurotus ostreatus*) to get higher yield and maximum economic return among four cultivated oyster mushroom viz., Grey oyster (*Pleurotus sajor caju*), White oyster (*Pleurotus*

	florida), blue oyster (<i>Pleurotus ostreatus</i>) and Pink oyster (<i>Pleurotus djmor</i>). મશરૂમની ખેતી કરતા ખેડૂતોને વધુ ઉત્પાદન અને આવક મેળવવા માટે ચાર મુખ્ય ઢીંગરી મશરૂમની પ્રજાતિઓ જેવીકે, ગ્રે ઓઈસ્ટર (પ્લુરોટસ સાજોર કાજુ), સફેદ ઓઈસ્ટર (પ્લુરોટસ ફ્લોરિડા), બ્લૂ ઓઈસ્ટર (પ્લુરોટસ ઓસ્ટ્રિઆટસ) અને ગુલાબી ઓઈસ્ટર (પ્લુરોટસ ડીમોર) માંથી બ્લૂ ઓઈસ્ટર મશરૂમ (પ્લુરોટસ ઓસ્ટ્રિઆટસ) જાતનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Principal, CoA, NAU, Waghai)																																																						
22.3.1.27	Impact of different level of Calcium Carbonate (CaCO₃) on Growth and yield of Oyster Mushroom (<i>Pleurotus</i> Sp.) Oyster mushroom growers are recommended to add 400 g calcium carbonate per 100 litres of water along with 7.5 g carbendazim 50 WP and 125 mL formalin (37.0% w/v) during straw sterilization process for early harvest and higher yield. ઢીંગરી મશરૂમ ઉત્પાદકોને મશરૂમની વહેલી લણણી અને મહત્તમ ઉત્પાદન મેળવવા માટે પરાળના નિર્જીવીકરણની પ્રક્રિયા દરમિયાન ૧૦૦ લિટર પાણીમાં ૭.૫ ગ્રામ કાર્બેન્ડાઝીમ ૫૦ વેપા અને ૧૨૫ મિલિ ફોર્મેલીન (૩૭.૦% w/v) સાથે ૪૦૦ ગ્રામ કેલ્શિયમ કાર્બોનેટ ઉમેરવાની ભલામણ કરવામાં આવે છે. Suggestion: Approved (Action: Principal, CoA, NAU, Waghai)																																																						
22.3.1.28	Evaluation of fungicides against mango powdery mildew Mango growers of Gujarat are recommended to apply two sprays of penconazole 10 EC, 5 mL/10 L of water, first spray at initiation of the disease and second spray after 15 days of first spray for the effective management of powdery mildew. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest</th><th rowspan="2">Pesticides/ Biopesticides with formulation</th><th colspan="3">Dosage</th><th rowspan="2">Quantity of suspension/ Soil amendments required (kg or L/ha)</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th><th rowspan="2">Remark</th></tr><tr><th>g.a.i/ha</th><th>Quantity of formulation g or mL/kg seed, kg or L/ha</th><th>Conc. (%)</th></tr><tr><td>2026</td><td>Mango</td><td>Powdery mildew</td><td>Penconazole 10 EC</td><td>-</td><td>50 mL/ 100 L of water</td><td>0.005</td><td>-</td><td>10 L water per tree</td><td>The first spray at initiation of the disease and second spray after 15 days of first spray.</td><td>30</td><td>Residue result of insecticide is awaited.</td></tr></table> ગુજરાતના આંબાવાડીયુ ધરાવતા ખેડૂતોને ભુકીછારો રોગના અસરકારક નિયંત્રણ માટે પેન્કોનાઝોલ ૧૦ ઇ.સી., ૫ મિલિ પ્રતિ ૧૦ લિ. પાણી મુજબ બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">જીવાત</th><th rowspan="2">જંતુનાશક/ જૈવિકજંતુનાશક નું ફોર્મ્યુલેશન</th><th colspan="4">પ્રમાણ</th><th rowspan="2">દ્રાવણનો જથ્થો / જમીન સુધારકોની જરૂરિયાત (કિગ્રા અથવા લીટ્રે)</th><th rowspan="2">વાપરવાની પદ્ધતિ</th><th rowspan="2">વેઈટીંગ પીરિયડ / પી. એચ. આઇ. (દિવસ)</th><th rowspan="2">નોંધ</th></tr><tr><th>સક્રિય તત્વ (ગ્રામ/હે)</th><th>ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે</th><th>સાંદ્રતા (%)</th><th>૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલિ</th></tr><tr><td>૨૦૨૬</td><td>આંબા</td><td>ભુકીછારા</td><td>પેન્કોનાઝોલ ૧૦ ઇ.સી.</td><td>-</td><td>૫૦ મિલિ/૧૦૦ લિ. પાણી</td><td>૦.૦૦૫%</td><td>-</td><td>૧૦ લિ પાણી પ્રતિ ઝાડ</td><td>પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવો.</td><td>૩૦</td><td>પરિણામ આવવાનું બાકી છે.</td></tr></table> Approved with following suggestion(s): 1. Recast English and Gujarati version of recommendation (Action: Research Scientist (Hort.), AES, NAU, Paria)	Year	Crop	Pest	Pesticides/ Biopesticides with formulation	Dosage			Quantity of suspension/ Soil amendments required (kg or L/ha)	Application schedule	Waiting period/ PHI (days)	Remark	g.a.i/ha	Quantity of formulation g or mL/kg seed, kg or L/ha	Conc. (%)	2026	Mango	Powdery mildew	Penconazole 10 EC	-	50 mL/ 100 L of water	0.005	-	10 L water per tree	The first spray at initiation of the disease and second spray after 15 days of first spray.	30	Residue result of insecticide is awaited.	વર્ષ	પાક	જીવાત	જંતુનાશક/ જૈવિકજંતુનાશક નું ફોર્મ્યુલેશન	પ્રમાણ				દ્રાવણનો જથ્થો / જમીન સુધારકોની જરૂરિયાત (કિગ્રા અથવા લીટ્રે)	વાપરવાની પદ્ધતિ	વેઈટીંગ પીરિયડ / પી. એચ. આઇ. (દિવસ)	નોંધ	સક્રિય તત્વ (ગ્રામ/હે)	ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલિ	૨૦૨૬	આંબા	ભુકીછારા	પેન્કોનાઝોલ ૧૦ ઇ.સી.	-	૫૦ મિલિ/૧૦૦ લિ. પાણી	૦.૦૦૫%	-	૧૦ લિ પાણી પ્રતિ ઝાડ	પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવો.	૩૦	પરિણામ આવવાનું બાકી છે.
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				સક્રિય તત્વ (ગ્રામ/હે)	ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલી/કિગ્રા બીજ, કિગ્રા અથવા લિ/હે	સાંદ્રતા (%)	૧૦ લિટર પાણીમાં ફોર્મ્યુલેશનનો જથ્થો ગ્રામ અથવા મિલિ																																																
૨૦૨૬	આંબા	ભુકીછારા	પેન્કોનાઝોલ ૧૦ ઇ.સી.	-	૫૦ મિલિ/૧૦૦ લિ. પાણી	૦.૦૦૫%	-	૧૦ લિ પાણી પ્રતિ ઝાડ	પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવો.	૩૦	પરિણામ આવવાનું બાકી છે.																																												

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22.3.1.29	Management of pomegranate thrips through botanicals																																						
The farmers of Gujarat growing pomegranate are recommended to apply three foliar sprays of neem leaf extract or ipomoea leaf extract 10 per cent (1000 mL/ 10 L of water), first at appearance of pest and subsequent two sprays at 10 days interval for effective management of thrips. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest</th><th rowspan="2">Pesticides</th><th colspan="4">Dosage</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th></tr><tr><th>Conc. (%)</th><th>Dose mL/10 L</th><th>Qty. of formulation (L/ha)</th><th>Dilution in water (L/ha)</th></tr><tr><td rowspan="2">2025-26</td><td rowspan="2">Pomegranate</td><td rowspan="2">Thrips</td><td>Neem leaf extract</td><td>10</td><td>1000</td><td>100</td><td rowspan="2">1000</td><td rowspan="3">First spray on pest initiation and subsequent two sprays at 10 days interval</td><td>-</td></tr><tr><td>Ipomoea leaf extract</td><td>10</td><td>1000</td><td>100</td><td>-</td></tr></table>											Year	Crop	Pest	Pesticides	Dosage				Application schedule	Waiting period/ PHI (days)	Conc. (%)	Dose mL/10 L	Qty. of formulation (L/ha)	Dilution in water (L/ha)	2025-26	Pomegranate	Thrips	Neem leaf extract	10	1000	100	1000	First spray on pest initiation and subsequent two sprays at 10 days interval	-	Ipomoea leaf extract	10	1000	100	-
Year	Crop	Pest	Pesticides	Dosage				Application schedule	Waiting period/ PHI (days)																														
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2025-26	Pomegranate	Thrips	Neem leaf extract	10	1000	100	1000	First spray on pest initiation and subsequent two sprays at 10 days interval	-																														
			Ipomoea leaf extract	10	1000	100			-																														
ગુજરાતમાં દાડમની ખેતી કરતા ખેડૂતોને થ્રીપ્સના અસરકારક અનુકૂળ વ્યવસ્થાપન માટે લીમડાના પર્ણનો અર્ક અથવા નફ્ટીયાના પર્ણનો અર્ક ૧૦% (૧૦૦૦ મિલિ/૧૦ લિટર પાણી) પ્રમાણે ત્રણ છંટકાવ, પ્રથમ છંટકાવ જીવાતના ઉપદ્રવની શરૂઆત થયે અને ત્યાર બાદ બે છંટકાવ ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">જીવાત</th><th rowspan="2">કીટનાશક</th><th colspan="4">પ્રમાણ</th><th rowspan="2">છંટકાવનો સમય</th><th rowspan="2">પ્રતીક્ષા સમય (દિવસ)</th></tr><tr><th>સાંદ્રતા (%)</th><th>માત્રા મિલિ/ ૧૦ લિટર પાણી</th><th>ફોર્મ્યુલેશનની માત્રા (લિટર/હે.)</th><th>પાણી સાથે મિશ્રણ (લિટર/હે.)</th></tr><tr><td rowspan="2">૨૦૨૫-૨૬</td><td rowspan="2">દાડમ</td><td rowspan="2">થ્રીપ્સ</td><td>લીમડાના પર્ણનો અર્ક</td><td>૧૦</td><td>૧૦૦૦</td><td>૧૦૦</td><td rowspan="2">૧૦૦૦</td><td rowspan="3">પ્રથમ છંટકાવ જીવાત ઉપદ્રવની શરૂઆતે અને ત્યાર બાદ બે છંટકાવ ૧૦ દિવસના આંતરે કરવા</td><td>-</td></tr><tr><td>નફ્ટીયાના પર્ણનો અર્ક</td><td>૧૦</td><td>૧૦૦૦</td><td>૧૦૦</td><td>-</td></tr></table>											વર્ષ	પાક	જીવાત	કીટનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય (દિવસ)	સાંદ્રતા (%)	માત્રા મિલિ/ ૧૦ લિટર પાણી	ફોર્મ્યુલેશનની માત્રા (લિટર/હે.)	પાણી સાથે મિશ્રણ (લિટર/હે.)	૨૦૨૫-૨૬	દાડમ	થ્રીપ્સ	લીમડાના પર્ણનો અર્ક	૧૦	૧૦૦૦	૧૦૦	૧૦૦૦	પ્રથમ છંટકાવ જીવાત ઉપદ્રવની શરૂઆતે અને ત્યાર બાદ બે છંટકાવ ૧૦ દિવસના આંતરે કરવા	-	નફ્ટીયાના પર્ણનો અર્ક	૧૦	૧૦૦૦	૧૦૦	-
વર્ષ	પાક	જીવાત	કીટનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય (દિવસ)																														
				સાંદ્રતા (%)	માત્રા મિલિ/ ૧૦ લિટર પાણી	ફોર્મ્યુલેશનની માત્રા (લિટર/હે.)	પાણી સાથે મિશ્રણ (લિટર/હે.)																																
૨૦૨૫-૨૬	દાડમ	થ્રીપ્સ	લીમડાના પર્ણનો અર્ક	૧૦	૧૦૦૦	૧૦૦	૧૦૦૦	પ્રથમ છંટકાવ જીવાત ઉપદ્રવની શરૂઆતે અને ત્યાર બાદ બે છંટકાવ ૧૦ દિવસના આંતરે કરવા	-																														
			નફ્ટીયાના પર્ણનો અર્ક	૧૦	૧૦૦૦	૧૦૦			-																														
Approved with following suggestion(s): 1. Remove Azadirachtin from English and Gujarati recommendation text 2. Recast Gujarati text as “ગુજરાતમાં દાડમની ખેતી કરતા ખેડૂતોને થ્રીપ્સના અસરકારક અને પર્યાવરણીય અનુકૂળ વ્યવસ્થાપન માટે લીમડાના પર્ણનો અર્ક અથવા નફ્ટીયાના પર્ણનો અર્ક ૧૦% (૧૦૦૦ મિલિ/૧૦ લિટર પાણી) પ્રમાણે ત્રણ છંટકાવ, પ્રથમ છંટકાવ જીવાતના ઉપદ્રવની શરૂઆત થયે અને ત્યાર બાદ બે છંટકાવ ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે”. (Action: Professor & Head, Department of Entomology, CPCA, SDAU, Sardarkrushinagar)																																							
22.3.1.30	Influence of honey bee attractant in enhancing the seed yield of coriander																																						
Farmers of Gujarat growing coriander for seed production are recommended to apply two sprays of Jaggery solution 15% (1.5 kg/10 L water) first at 10 per cent flowering stage and second at 50 per cent flowering stage as a random application at various spot (10% area) for maximum attraction of honeybees and higher seed yield. ગુજરાતમાં બીજ ઉત્પાદન માટે ધાણા ઉગાડતા ખેડૂતોને મધમાખીઓના મહત્તમ આકર્ષણ અને વધુ ઉત્પાદન માટે ૧૫ ટકા ગોળના દ્રાવણ (૧.૫ કિ.ગ્રા./૧૦ લિટર પાણી) ના બે છંટકાવ કરવાની ભલામણ કરવામાં																																							

	આવે છે. પ્રથમ છંટકાવ ૧૦% ફૂલ આવવાની અવસ્થાએ અને બીજો છંટકાવ ૫૦% ફૂલ આવવાની અવસ્થાએ જુદી જુદી જગ્યાએ સ્પોટ એપ્લીકેશન રૂપે (૧૦% વિસ્તારમાં) કરવો.																																																																																			
	Suggestion: Approved (Action: Head, Dept. of Plant Protection, CoH, SDAU, Jagudan)																																																																																			
22.3.1.31	Eco-friendly management of aphid in pomegranate																																																																																			
	Farmers of Gujarat growing pomegranate are recommended to apply three sprays of uplencer 1% (100 mL/ 10 L of water), first at appearance of the pest and subsequent two sprays at 10 days interval for effective management of aphid and thrips. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Insect</th><th rowspan="2">Pesticide</th><th colspan="4">Dosage</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period (days)</th></tr><tr><th>Conc. (%)</th><th>Dose mL/ 10 L</th><th>Qty. of formulation (L/ha)</th><th>Dilution in water (L/ha)</th></tr><tr><td>2025-26</td><td>Pomegranate</td><td>Aphid</td><td rowspan="2">Uplencer</td><td rowspan="2">1</td><td rowspan="2">100</td><td rowspan="2">10</td><td rowspan="2">1000</td><td rowspan="2">First spray on pest initiation and subsequent two sprays at 10 days interval</td><td rowspan="2">--</td></tr><tr><td></td><td></td><td>Thrips</td></tr></table> Preparation method of Uplencer: Take 500 g of tobacco leaves powder and soak it in 5 L of water for two days. Grind 1 kg green chilli and 1 kg of garlic cloves soak it in solution for 24 hours. Prepare the extract by squeezing soaked cloves. Grind 500 g of ginger and soak it in 1 L of water for 24 hours. Then mix all the extracts properly. Add 1 L of neem oil and 50 g of soap in this mixture. Prepare a total 10 L solution by adding 3 L of three days old cow urine. (Note: Use a freshly prepared extract for the spraying) <table><tr><th>Sr. No.</th><th>Ingredients</th><th>Quantity</th></tr><tr><td>1</td><td>Tobacco leaves powder</td><td>500 g</td></tr><tr><td>2</td><td>Green chilli</td><td>1 kg</td></tr><tr><td>3</td><td>Garlic cloves</td><td>1 kg</td></tr><tr><td>4</td><td>Ginger</td><td>500 g</td></tr><tr><td>5</td><td>Neem oil</td><td>1 L</td></tr><tr><td>6</td><td>Cow urine</td><td>3 L</td></tr></table> ગુજરાતમાં દાડમની ખેતી કરતા ખેડૂતોને મોલો અને થ્રીપ્સના અસરકારક વ્યવસ્થાપન માટે ઉપલેન્ચર ૧% (૧૦૦ મિલિ/૧૦ લિ. પાણી) પ્રમાણે ત્રણ છંટકાવ, પ્રથમ છંટકાવ જીવાતના ઉપદ્રવની શરૂઆત થાય ત્યારે અને અનુક્રમે બે છંટકાવ ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">જીવાત</th><th rowspan="2">કીટનાશક</th><th colspan="4">પ્રમાણ</th><th rowspan="2">છંટકાવનો સમય</th><th rowspan="2">પ્રતીક્ષા સમય (દિવસ)</th></tr><tr><th>સાંદ્રતા (%)</th><th>માત્રા (મિલિ/૧૦ લિટર પાણી)</th><th>ફોર્મ્યુલેશનની માત્રા (લિ./હે.)</th><th>પાણી સાથે મિશ્રણ (લિ./હે.)</th></tr><tr><td>૨૦૨૫-૨૬</td><td>દાડમ</td><td>મોલો</td><td rowspan="2">ઉપલેન્ચર</td><td rowspan="2">૧</td><td rowspan="2">૧૦૦</td><td rowspan="2">૧૦</td><td rowspan="2">૧૦૦૦</td><td rowspan="2">પ્રથમ છંટકાવ જીવાતની ઉપદ્રવની શરૂઆતે અને અનુક્રમે બે છંટકાવ ૧૦ દિવસના આંતરે કરવા</td><td rowspan="2">--</td></tr><tr><td></td><td></td><td>થ્રીપ્સ</td></tr></table> ઉપલેન્ચરની બનાવટ:									Year	Crop	Insect	Pesticide	Dosage				Application schedule	Waiting period (days)	Conc. (%)	Dose mL/ 10 L	Qty. of formulation (L/ha)	Dilution in water (L/ha)	2025-26	Pomegranate	Aphid	Uplencer	1	100	10	1000	First spray on pest initiation and subsequent two sprays at 10 days interval	--			Thrips	Sr. No.	Ingredients	Quantity	1	Tobacco leaves powder	500 g	2	Green chilli	1 kg	3	Garlic cloves	1 kg	4	Ginger	500 g	5	Neem oil	1 L	6	Cow urine	3 L	વર્ષ	પાક	જીવાત	કીટનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય (દિવસ)	સાંદ્રતા (%)	માત્રા (મિલિ/૧૦ લિટર પાણી)	ફોર્મ્યુલેશનની માત્રા (લિ./હે.)	પાણી સાથે મિશ્રણ (લિ./હે.)	૨૦૨૫-૨૬	દાડમ	મોલો	ઉપલેન્ચર	૧	૧૦૦	૧૦	૧૦૦૦	પ્રથમ છંટકાવ જીવાતની ઉપદ્રવની શરૂઆતે અને અનુક્રમે બે છંટકાવ ૧૦ દિવસના આંતરે કરવા	--			થ્રીપ્સ
Year	Crop	Insect	Pesticide	Dosage				Application schedule	Waiting period (days)																																																																											
				Conc. (%)	Dose mL/ 10 L	Qty. of formulation (L/ha)	Dilution in water (L/ha)																																																																													
2025-26	Pomegranate	Aphid	Uplencer	1	100	10	1000	First spray on pest initiation and subsequent two sprays at 10 days interval	--																																																																											
		Thrips																																																																																		
Sr. No.	Ingredients	Quantity																																																																																		
1	Tobacco leaves powder	500 g																																																																																		
2	Green chilli	1 kg																																																																																		
3	Garlic cloves	1 kg																																																																																		
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5	Neem oil	1 L																																																																																		
6	Cow urine	3 L																																																																																		
વર્ષ	પાક	જીવાત	કીટનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય (દિવસ)																																																																											
				સાંદ્રતા (%)	માત્રા (મિલિ/૧૦ લિટર પાણી)	ફોર્મ્યુલેશનની માત્રા (લિ./હે.)	પાણી સાથે મિશ્રણ (લિ./હે.)																																																																													
૨૦૨૫-૨૬	દાડમ	મોલો	ઉપલેન્ચર	૧	૧૦૦	૧૦	૧૦૦૦	પ્રથમ છંટકાવ જીવાતની ઉપદ્રવની શરૂઆતે અને અનુક્રમે બે છંટકાવ ૧૦ દિવસના આંતરે કરવા	--																																																																											
		થ્રીપ્સ																																																																																		

તમાકુના પાનનો ૫૦૦ ગ્રામ ભૂકો ૫ લિટર પાણીમાં બે દિવસ સુધી પલાળી રાખવો. ૧ કિગ્રા લીલા મરચાં તથા ૧ કિગ્રા લસણની કળીઓ ગ્રાઇન્ડરમાં પીસીને ૨૪ કલાક સુધી દ્રાવણમાં પલાળી રાખવી. ૫૦૦ ગ્રામ આદુને મિક્સરમાં પીસીને ૧ લિટર પાણીમાં ૨૪ કલાક સુધી પલાળવું. ઉપર મુજબના બધા અર્કનું સારી રીતે મિશ્રણ કરવું. આ મિશ્રણમાં ૧ લિટર લીંબોળીનું તેલ તથા ૫૦ ગ્રામ દેશી સાબુનો છીણ ઉમેરવો. આ મિશ્રણનો કુલ જથ્થો ૧૦ લિટર થાય તે મુજબ ત્રણ દિવસ જૂનું ૩ લિટર ગૌમૂત્ર ઉમેરવું. (નોંધ: છંટકાવ માટે તાજું બનાવેલ મિશ્રણનો વપરાશ કરવો)		
અ.નં	જરૂરીવસ્તુઓ	પ્રમાણ
૧	તમાકુના પાનનો ભૂકો	૫૦૦ ગ્રામ
૨	લીલા મરચાં	૧ કિગ્રા
૩	લસણની કળીઓ	૧ કિગ્રા
૪	આદુ	૫૦૦ ગ્રામ
૫	લીંબોળીનું તેલ	૧ લિટર
૬	ગૌમૂત્ર	૩ લિટર

Approved with following suggestion(s):

1. Recast Gujarati version of recommendation

(Action: Head, Dept. of Plant Protection, CoH, SDAU, Jagudan)

PLANT PATHOLOGY & NEMATOLOGY

22.3.1.32

Evaluation of fungicides against leaf spot and fruit spot diseases in pomegranate (*Punica granatum* L.)

Farmers of Gujarat growing pomegranate are recommended to apply two foliar sprays of Metiram 55% + Pyraclostrobin 5% 60 WG 0.09% (15.0 g/10 L water), first spray at initiation of disease and second at 15 days after the first spray for effective management of fungal leaf spot and fruit spot diseases.

CIBRC format:

Year	Crop	Pest/ Disease	Pesticide with formulation	Dosage				Dilution in water (L/ha)	Application Schedule	Waiting period/ PHI (days)
				g a.i./ ha	Conc . (%)	Quantity of Formulation n/ ha)	Dose /10 L			
2025-26	Pomegranate	Leaf spot and fruit spot diseases	Metiram 55 % + Pyraclostrobin 5 % 60WG	1125	0.09	1875 g	15 g	1250	First spray at initiation of disease and second spray at 15 days after first spray	67

ગુજરાતમાં દાડમની ખેતી કરતા ખેડૂતોને દાડમ પાકમાં ફૂગથી થતા પાન તથા ફળના ટપકાના રોગના અસરકારક વ્યવસ્થાપન માટે મેટીરામ ૫૫% + પાયરાક્લોસ્ટ્રોબિન ૫% ૬૦ ડબલ્યુજી, ૦.૦૯% (૧૫.૦ ગ્રામ/૧૦ લિટર પાણી) ના બે છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવના ૧૫ દિવસ બાદ કરવાની ભલામણ કરવામાં આવે છે.

સીઆઇબીઆરસી ફોર્મેટ:

વર્ષ	પાક	જીવાત/ રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				પાણીના દ્રાવણની કુલ જરૂરીયાત (લિટર/ હેક્ટર)	વાપરવાની પદ્ધતી	પ્રતીક્ષા સમય (દિવસ)
				સક્રીય તત્વ (ગ્રામ/ હેક્ટર)	સાંદ્રતા (%)	ફોર્મ્યુલેશન ની માત્રા પ્રતિ હેક્ટર	૧૦ લિટર પાણીમાં જથ્થો			
૨૦૨૫-	દાડમ	ફળ અને	મેટીરામ ૫૫% +	૧૧૨૫	૦.૦૯	૧૮૭૫ ગ્રામ	૧૫ ગ્રામ	૧૨૫૦	પ્રથમ છંટકાવ	૬૭

	૨૬	પાનનાં ટપકાંનો રોગ	પાયરાક્લોસ્ટ્રોબિન ૫% ૬૦ ડબલ્યુજી						રોગની શરૂઆત થયે અને બીજો છંટકાવ પ્રથમ છંટકાવ પછી પંદર દિવસે આપવો																																																					
Approved with following suggestion(s): 1. Recast English and Gujarati version of recommendation 2. Write exact g.a.i/ha instead of range in CIBRC Table (Action: Assoc. Res. Sci. (Patho.), Agroforestry Res. Station, SDAU, Sardarkrushinagar)																																																														
22.3.1.33	Evaluation of different substrates for the cultivation of cordyceps mushroom																																																													
	Farmers of Gujarat growing cordyceps mushroom (<i>Cordyceps militaris</i>) are recommended to use brown rice as a substrate to get higher yield. ગુજરાતમાં કોર્ડીસેપ્સ મશરૂમ (કોર્ડીસેપ્સ મિલિટારિસ) ઉગાડતા ખેડૂતોને વધુ ઉત્પાદન મેળવવા માટે બ્રાઉન રાઈસ સબસ્ટ્રેટ તરીકે વાપરવાની ભલામણ કરવામાં આવે છે. Approved with following suggestion(s): 1. Mention scientific name of mushroom species (Action: Asstt. Res. Scientist (Pl. Patho.), Wheat Research Station, SDAU, Vijapur)																																																													
22.3.1.34	Management of mango malformation																																																													
	Farmers of Gujarat having mango orchards are recommended to remove malformed plant parts from 30 cm below the affected portion and apply Bordeaux paste on the cut surfaces immediately for effective management of mango malformation. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Pest/ Disease</th><th rowspan="2">Pesticide with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Dilution in water (L/ha)</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period/ PHI (days)</th></tr><tr><th>g a.i./ ha</th><th>Conc. (%)</th><th>Quantity of Formulation/ ha</th><th>Dose /10L</th></tr><tr><td>2025- 26</td><td>Mango</td><td>Malformation</td><td>Bordeaux paste</td><td>-</td><td>1</td><td>10 L</td><td>1 kg</td><td>1:1:10</td><td>Remove malformed plant parts from 30 cm below the affected portion and apply Bordeaux paste on the cut surfaces immediately</td><td>-</td></tr></table> ગુજરાતના આંબાવાડીયું ધરાવતા ખેડૂતોને મોરની વિકૃતિના નિયંત્રણ માટે મોર આવ્યા બાદ વિકૃતિથી ૩૦ સે.મી. સુધીની તંદુરસ્ત ડાળીને કાપી તરતજ બોર્ડેક્ષ પેસ્ટ લગાડવાની ભલામણ કરવામાં આવે છે. સીઆઈબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">જીવાત/ રોગ</th><th rowspan="2">જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન</th><th colspan="4">પ્રમાણ</th><th rowspan="2">પાણીના દ્રાવણની કુલ જરૂરીયાત (લિટર/હેક્ટર)</th><th rowspan="2">વાપરવાની પદ્ધતિ</th><th rowspan="2">પ્રતીક્ષા સમય (દિવસ)</th></tr><tr><th>સક્રિય તત્વ (ગ્રામ/ હેક્ટર)</th><th>સાંદ્ર તા (%)</th><th>ફોર્મ્યુલેશનની માત્રા પ્રતિ હેક્ટર</th><th>૧૦ લિટર પાણીમાં જથ્થો</th></tr><tr><td>૨૦૨૫- ૨૬</td><td>કેરી</td><td>માલફોર્મેશન</td><td>બોર્ડેક્ષ પેસ્ટ</td><td>-</td><td>૧</td><td>૧૦ લિ.</td><td>૧ કિ.ગ્રા.</td><td>૧:૧:૧૦</td><td>વિકૃતિથી ૩૦ સે.મી. સુધીની તંદુરસ્ત ડાળીને કાપી તરતજ બોર્ડેક્ષ પેસ્ટ લગાવવી</td><td>-</td></tr></table> Approved with following suggestion(s): 1. Recast English and Gujarati version of recommendation (Action: Prof. & Head, Department of Pl. Pathology, CPCA, SDAU, Sardarkrushinagar)										Year	Crop	Pest/ Disease	Pesticide with formulation	Dosage				Dilution in water (L/ha)	Application schedule	Waiting period/ PHI (days)	g a.i./ ha	Conc. (%)	Quantity of Formulation/ ha	Dose /10L	2025- 26	Mango	Malformation	Bordeaux paste	-	1	10 L	1 kg	1:1:10	Remove malformed plant parts from 30 cm below the affected portion and apply Bordeaux paste on the cut surfaces immediately	-	વર્ષ	પાક	જીવાત/ રોગ	જંતુનાશક દવા અને તેનું ફોર્મ્યુલેશન	પ્રમાણ				પાણીના દ્રાવણની કુલ જરૂરીયાત (લિટર/હેક્ટર)	વાપરવાની પદ્ધતિ	પ્રતીક્ષા સમય (દિવસ)	સક્રિય તત્વ (ગ્રામ/ હેક્ટર)	સાંદ્ર તા (%)	ફોર્મ્યુલેશનની માત્રા પ્રતિ હેક્ટર	૧૦ લિટર પાણીમાં જથ્થો	૨૦૨૫- ૨૬	કેરી	માલફોર્મેશન	બોર્ડેક્ષ પેસ્ટ	-	૧	૧૦ લિ.	૧ કિ.ગ્રા.	૧:૧:૧૦	વિકૃતિથી ૩૦ સે.મી. સુધીની તંદુરસ્ત ડાળીને કાપી તરતજ બોર્ડેક્ષ પેસ્ટ લગાવવી	-
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૨૦૨૫- ૨૬	કેરી	માલફોર્મેશન	બોર્ડેક્ષ પેસ્ટ	-	૧	૧૦ લિ.	૧ કિ.ગ્રા.	૧:૧:૧૦	વિકૃતિથી ૩૦ સે.મી. સુધીની તંદુરસ્ત ડાળીને કાપી તરતજ બોર્ડેક્ષ પેસ્ટ લગાવવી	-																																																				
22.3.1.35	Evaluation of different botanicals against Alternaria leaf spot of broccoli																																																													
	Farmers of Gujarat growing broccoli are recommended to apply three sprays of garlic bulb extract or neem leaf extract 10 % (1 kg/10 L water), first spray at initiation of disease and subsequent two sprays at 10 days interval for management of Alternaria leaf spot.																																																													

	ગુજરાતમાં બ્રોકોલીની ખેતી કરતા ખેડૂતોને અલ્ટરનેરિયા પાનના ટપકા રોગના અસરકારક નિયંત્રણ માટે લસણની કળીનો અર્ક અથવા લીમડાના પાનનો અર્ક ૧૦% (૧ કિ.ગ્રા. અર્ક / ૧૦ લિટર પાણી) ના ત્રણ છંટકાવ, પ્રથમ છંટકાવ રોગની શરૂઆતે અને અનુક્રમે બે છંટકાવ ૧૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે. Approved with following suggestion(s): 1. Recast English and Gujarati version of recommendation (Action: Prof. & Head, Department of Pl. Pathology, CPCA, SDAU, Sardarkrushinagar)																																																
22.3.1.36	Evaluation of ecofriendly inputs against root-knot nematode (<i>Meloidogyne</i> spp.) in tomato under field condition Farmers of Gujarat growing tomato are recommended to apply poultry manure 2.5 t/ha before 15 days of transplanting for effective management of root-knot nematode. ગુજરાતના ટામેટાની ખેતી કરતા ખેડૂતોને ગંઠવા કૃમિના અસરકારક નિયંત્રણ માટે મરઘાંનું ખાતર ૨.૫ ટન/હેક્ટર જમીનમાં ફેરોપણીના ૧૫ દિવસ અગાઉ આપવાની ભલામણ કરવામાં આવે છે. Approved with following suggestion(s): 1. Remove “well decomposed” from English version of recommendation 2. Remove “સારૂકોહવાયેલું” from Gujarati version of recommendation (Action: Asstt. Professor, Dept. of Nematology, CPCA, SDAU, Sardarkrushinagar)																																																
22.3.1.37	Integrated disease management of citrus canker Farmers of Gujarat cultivating acid lime are recommended to prune citrus canker infected twigs during May month followed by four foliar sprays of streptomycin sulphate 90% + tetracycline hydrochloride 10% SP, 1 g and copper oxychloride 50 WP, 25 g in 10 L of water, first spray immediately after pruning of diseased twigs, second spray at 20 days after first spray and subsequent two sprays at 30 days interval for effective management of citrus canker disease. CIBRC format: <table><tr><th rowspan="2">Year</th><th rowspan="2">Crop</th><th rowspan="2">Disease</th><th rowspan="2">Pesticide with formulation</th><th colspan="4">Dosage</th><th rowspan="2">Application schedule</th><th rowspan="2">Waiting period</th></tr><tr><th>Conc. (%)</th><th>Dose g/10 L</th><th>Quantity of formulation/ha</th><th>Dilution in water (ha)</th></tr><tr><td>2025-26</td><td>Acid lime</td><td>Citrus Canker</td><td>Streptomycin sulphate 90% + tetracycline hydrochloride 10% SP and Copper oxychloride 50% WP</td><td>90% + 10%</td><td>1 g and 25 g</td><td>0.14 kg and 3.46 kg</td><td>10 L</td><td>First spray immediately after pruning of diseased twigs, second spray at 20 days after first spray and subsequent two sprays at 30 days interval</td><td>-</td></tr></table> ગુજરાતમાં લીંબુની ખેતી કરતાં ખેડૂતોને લીંબુના બળીયા ટપકાના અસરકારક નિયંત્રણ માટે મે મહિનામાં રોગિષ્ટ ડાળીઓની છટણી કર્યા પછી સ્ટ્રેપ્ટોમાયસીન સલ્ફેટ ૯૦% + ટેટ્રાસાયક્લીન હાઇડ્રોક્લોરાઇડ ૧૦% એસપી, ૧ ગ્રામ અને કોપર ઓક્સીક્લોરાઇડ ૫૦ ડબલ્યુપી, ૨૫ ગ્રામ ૧૦ લિટર પાણીમાં ભેળવીને ચાર છંટકાવ, પ્રથમ છંટકાવ રોગિષ્ટ ડાળીઓની છટણી કર્યા પછી તરત જ કરવો તથા બીજો છંટકાવ પ્રથમ છંટકાવના ૨૦ દિવસ પછી અને અનુક્રમે બે છંટકાવ ૩૦ દિવસના આંતરે કરવાની ભલામણ કરવામાં આવે છે. સીઆઇબીઆરસી ફોર્મેટ: <table><tr><th rowspan="2">વર્ષ</th><th rowspan="2">પાક</th><th rowspan="2">રોગ</th><th rowspan="2">કીટનાશક</th><th colspan="4">પ્રમાણ</th><th rowspan="2">છંટકાવનો સમય</th><th rowspan="2">પ્રતીક્ષા સમય (દિવસ)</th></tr><tr><th>સાંદ્રતા (%)</th><th>માત્રા/૧૦ લિટર પાણી</th><th>ફોર્મ્યુલેશનની માત્રા પ્રતિ હેક્ટર</th><th>પાણી સાથે મિશ્રણ</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Year	Crop	Disease	Pesticide with formulation	Dosage				Application schedule	Waiting period	Conc. (%)	Dose g/10 L	Quantity of formulation/ha	Dilution in water (ha)	2025-26	Acid lime	Citrus Canker	Streptomycin sulphate 90% + tetracycline hydrochloride 10% SP and Copper oxychloride 50% WP	90% + 10%	1 g and 25 g	0.14 kg and 3.46 kg	10 L	First spray immediately after pruning of diseased twigs, second spray at 20 days after first spray and subsequent two sprays at 30 days interval	-	વર્ષ	પાક	રોગ	કીટનાશક	પ્રમાણ				છંટકાવનો સમય	પ્રતીક્ષા સમય (દિવસ)	સાંદ્રતા (%)	માત્રા/૧૦ લિટર પાણી	ફોર્મ્યુલેશનની માત્રા પ્રતિ હેક્ટર	પાણી સાથે મિશ્રણ										
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							(લિ./હે.)		
૨૦૨૫-૨૬	લીંબુ	બળિયા ટપકા	સ્ટ્રેપ્ટોમાયસીન સલ્ફેટ ૯૦% + ટેટ્રાસાયક્લીન હાઇડ્રોક્લોરાઇડ ૧૦% એસપી અને કોપર ઓક્સીકલોરાઇડ ૫૦% ડબલ્યુ પી	૯૦% +૧૦%	૧ ગ્રામ અને ૨૫ ગ્રામ	૦.૧૪ કિગ્રા અને ૩.૪૬ કિગ્રા	૧૦	પ્રથમ છંટકાવ રોગિષ્ટ ડાળીઓની છટણી કર્યા પછી તરત જ કરવો તથા બીજો છંટકાવ પ્રથમ છંટકાવના ૨૦ દિવસ પછી અને અનુક્રમે બે છંટકાવ ૩૦ દિવસના આંતરે કરવા	-

Approved with following suggestion(s):

1. Recast English and Gujarati version of recommendation

(Action: Head, Department of Pl. Protection, CoH, SDAU, Jagudan)

22.3.2 INFORMATION FOR SCIENTIFIC COMMUNITY

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ENTOMOLOGY

22.3.2.1	Foraging behaviour of pollinators fauna in coriander <i>Apis florea</i> and <i>Trigona</i> spp. were the dominant pollinators in coriander, showing the highest relative abundances of 19.57% and 16.91%, respectively. Peak foraging activity occurred between 12.00-14.00 h, while no activity was observed during 06.00-08.00 h. Non-bee pollinators were less abundant. Approved with following suggestion: 1. Remove “indicating that bees are the primary contributors in pollination to coriander crop” from recommendation text (Action: Professor and Head, Department of Entomology, BACA, AAU, Anand)
22.3.2.2	Effect of chitosan in combination with microbial biopesticides against spotted pod borer, <i>Maruca vitrata</i> (Fab.) infesting Indian bean Foliar application of chitosan oligosaccharide 0.05% (5 g/10 L of water) along with <i>Bacillus thuringiensis</i> 0.5% WP 1×10^8 cfu/g min. (20 g/10 L of water) at initiation of incidence of spotted pod borer, <i>Maruca vitrata</i> and gram pod borer, <i>Helicoverpa armigera</i> followed by two sprays at 10 days interval were found effective in Indian bean. Approved with following suggestion: 1. Mention cfu of <i>Bacillus thuringiensis</i> (Action: Principal Research Scientist, Biological Control Research Laboratory, AAU, Anand)
22.3.2.3	Residue and persistence study of fipronil 0.6% GR in chilli Single application of fipronil 0.6% GR, 75 g a.i./ha applied near the base of chilli plants after transplanting, residues of fipronil in green chilli fruits were found below the FSSAI maximum residue limit (MRL) of 0.01 mg/kg, 63 days after application, whereas the residues in red chilli fruits (dry) were observed below the FSSAI MRL of 0.1 mg/kg at 144 days after application. So, the pre-harvest intervals (PHIs) of 63 days for green chilli fruits and 144 days for red chilli fruits (dry) are suggested. Further, the residues of fipronil in soil were 0.027 mg/kg 144 days after application. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.4	Residue and persistence study of spirotetramat 150 g/L OD in pomegranate

	Three foliar applications of spirotetramat 150 g/L OD, 15 g a.i. /ha, applied at 10-day intervals beginning at the fruiting stage in pomegranate orchard, residues of spirotetramat and its metabolites in mature pomegranate fruits, arils, juice and soil were found below the CODEX Maximum Residue Limit (MRL) of 0.7 mg /kg at 15 days after the last application. So, a pre-harvest interval (PHI) of 15 days is suggested for mature pomegranate fruits, arils and juice. Residue pattern of spirotetramat and its metabolites in immature pomegranate fruits followed a monophasic kinetic pattern with the calculated half-life values were 1.70, 1.54, 1.40, 1.88 and 1.71 days for spirotetramat, spirotetramat-enol, spirotetramat-ketohydroxy, spirotetramat-monohydroxy and spirotetramat-enol glucoside, respectively. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.5	Residue and persistence study of chlorantraniliprole 4.3%+ abamectin 1.7% SC in cotton
	Three foliar applications of chlorantraniliprole 4.3% + abamectin 1.7% SC, 37.5 g a.i./ha, applied at 10-day intervals starting 60 days after sowing in <i>Bt</i> cotton crop, residues of chlorantraniliprole and abamectin in cotton seed, lint, oil and cake were found below the FSSAI Maximum residue limit (MRL) of 0.3 mg/kg for chlorantraniliprole and CODEX MRL of 0.01 mg/kg for abamectin at 111 days after the last application. So, a pre-harvest interval (PHI) of 111 days is suggested for cotton seed, cotton lint, cotton cake and cotton oil. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.6	Residues and persistence of beta-cyfluthrin, imidacloprid, fluopicolide and propamocarb hydrochloride in pomegranate
	Three foliar applications of beta-cyfluthrin 90 g/L+ imidacloprid 210 g/L OD, 5.625 + 13.125 g a.i. /100 L water at 10-day intervals starting from the fruit development stage in pomegranate orchard, the residues of beta-cyfluthrin and imidacloprid in mature pomegranate fruits were 0.21 and 0.02 mg/kg, respectively, whereas the residues of respective active ingredients in aril and juice were observed below the limit of quantification of 0.01 mg/kg at 15 days after the last application. So, a pre-harvest interval (PHI) of 15 days is suggested for pomegranate arils and juice. Residue pattern of beta-cyfluthrin and imidacloprid in immature pomegranate fruits followed a monophasic kinetic pattern with the calculated half-life values were 5.9 and 7.8 days, respectively. Further, the initial residues of beta-cyfluthrin and imidacloprid in soil were 0.02 and 0.012 mg/kg which was found below the limit of quantification on 3 and 1 day after the last application, respectively, while it was below the limit of quantification when sampled at harvest. Three foliar applications of fluopicolide 62.5% + propamocarb hydrochloride 625 g/L SC, 9.37 + 93.75 g a.i. /100 L water at 10-day intervals starting from the fruit development stage in pomegranate orchard, the residues of fluopicolide and propamocarb hydrochloride in mature pomegranate fruits were 0.082 and 0.015 mg/kg, respectively, whereas the residues of respective active ingredients in aril and juice were observed below the limit of quantification (LOQ) of 0.01 mg/kg at 15 days after the last application. So, a pre-harvest interval (PHI) of 15 days is suggested for pomegranate arils and juice. Residue pattern of fluopicolide and propamocarb hydrochloride in immature pomegranate fruits

	followed a monophasic kinetic pattern with the calculated half-life values were 13.9 and 6.7 days, respectively. Further, the initial residues of fluopicolide and propamocarb hydrochloride in soil were 0.011 and 0.012 mg/kg which was found below the limit of quantification on 1 day after the last application, for both the compounds, while it was below the limit of quantification when sampled at harvest. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.7	Evaluation of post-harvest processing techniques for minimization of the pesticide residues in cumin seeds
	Ozone gas treatment for 20 minutes exposure was found effective as post-harvest processing method for reducing pesticide residues in cumin seeds. All studied pesticides - acetamiprid, thiamethoxam, azoxystrobin, carbendazim, mancozeb, kresoxim-methyl and picoxystrobin, ozone treatment 2 ppm/min particularly at 20 minutes exposure, found effective which reduced by 15.57% (acetamiprid), 16.55% (thiamethoxam), 11.85% (azoxystrobin), 13.71% (carbendazim), 11.75% (mancozeb), 20.73% (kresoxim-methyl) and 18.02% (picoxystrobin). Therefore, ozone treatment at 2 ppm/min for 20 minutes is suggested an effective and practical post-harvest intervention for minimizing multi-residue contamination in cumin seeds. Approved with following suggestion: 1. Remove “Among all pesticides studied” from recommendation text (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.8	Residues and persistence of propiconazole, difenoconazole and pydiflumetofen in black gram
	Two foliar applications of propiconazole 13.9% + difenoconazole 13.9% EC, 75 + 75 g a.i./ha, applied at 15-day intervals starting pod filling stage in black gram crop, residues of propiconazole and difenoconazole in mature pods (with seeds) and mature seeds were found below the FSSAI maximum residue limit (MRL) of 0.3 mg /kg for propiconazole and CODEX MRL of 0.7 mg/kg for difenoconazole at 22 days after the last application. So, a pre-harvest interval (PHI) of 22 days is suggested for mature pods (with seeds) and mature seeds. In straw the residues of propiconazole and difenoconazole were 0.18 and 0.57 mg/kg, respectively while the respective residues in soil were 0.11 and 0.33 mg/kg. Two foliar applications of pydiflumetofen 6.89% + difenoconazole 11.49% SC, 30 + 50 g a.i./ha, applied at 15-day intervals starting pod filling stage in black gram crop, residues of pydiflumetofen and difenoconazole in mature pods (with seeds) and mature seeds were found below the CODEX MRL of 0.7 mg /kg for both the compounds at 22 days after the last application. So, a pre-harvest interval (PHI) of 22 days is suggested for mature pods (with seeds) and mature seeds. In straw the residues of pydiflumetofen and difenoconazole were 1.90 and 3.11 mg/kg, respectively while the respective residues in soil were found below the LOQ of 0.01 mg/kg. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.9	Residues and persistence of metalaxyl-M, chlorothalonil and oxathiapiprolin in citrus
	Single soil drench application of metalaxyl-M 3.3% + chlorothalonil 33.1% w/w SC, 6.6 + 66.2 g a.i. /ha and oxathiapiprolin 3% + metalaxyl-M 18% w/w DC, 7.5 + 45 g a.i./ha, applied at fruiting stage in citrus, residues of metalaxyl, chlorothalonil,

	oxathiapiprolin and metalaxyl in mature citrus fruits (with peel), pulp (without peel), citrus fruit juice and soil were found below the LOQ of 0.01 mg/kg at 51 days after the application. So, a pre-harvest interval (PHI) of 51 days is suggested for mature citrus fruits (with peel), pulp (without peel) and citrus fruit juice. Suggestion: Approved (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.2.10	Efficacy of different insecticides against stem borer infesting wheat Seed treatment of thiamethoxam 30 FS or imidacloprid 600 FS, 8 mL/kg seeds, soil application of fipronil 0.3 GR, 17.5 kg/ha mixed with 125 kg sand at 20 DAS, and foliar spray of chlorantraniliprole 18.5 SC 0.006% (30 g a.i./ha; 3 mL/10 L of water) found effective against stem borer infesting wheat. Suggestion: Approved (Action: Research Scientist (PP), KVK, AAU, Arnej)
22.3.2.11	Evaluation of insecticides for the control of castor capsule borer, <i>Dichocrosis punctiferalis</i> Guenee Two sprays of chlorpyrifos 50% + cypermethrin 5% EC (25 mL/10 L of water) or flubendiamide 19.92% + thiacloprid 19.92% SC (6 mL/10 L of water) first at 10% capsule damage and second at 15 days after first spray were found effective against capsule borer infesting castor. Suggestion: Approved (Action: Associate Research Scientist, ARS, AAU, Sansoli)

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22.3.2.12	Evaluation of ready-mix fungicides for the management of major foliar diseases in <i>Bt</i> cotton Seed treatment with carboxin 37.5% + thiram 37.5% WS, 3 g/kg seeds at the time of sowing and three foliar sprays of tebuconazole 50% + trifloxystrobin 25% WG 0.075% first at the appearance of the disease followed by second and third spray at 10 days interval of each spray found effective against Alternaria leaf spot disease of cotton. Suggestion: Approved (Action: Professor & Head, Dept. of Plant Pathology, BACA, AAU, Anand & Asst. Professor & Head, Dept. of Plant Pathology, CoA, AAU, Jabugam)
22.3.2.13	Evaluation of natural inputs against root-knot nematode, <i>Meloidogyne incognita</i> under <i>in-vitro</i> condition <i>Agniastra</i>, 10 per cent was found effective against root-knot nematode, <i>Meloidogyne incognita</i> indicating the highest egg hatching inhibition (82.42%) and juvenile mortality (68.00%) under <i>in vitro</i> condition. However, the ascending order of the natural inputs based on egg hatching inhibition is <i>Agniastra</i> without green chilli, 76.09 % > <i>Agniastra</i> without garlic, 71.97 % > <i>Agniastra</i> without tobacco dust, 65.47 % and <i>Agniastra</i> without neem leaves, 58.38 %; while based on juvenile mortality it is <i>Agniastra</i> without green chilli, 46.00 % > <i>Agniastra</i> without garlic, 45.00 % > <i>Agniastra</i> without tobacco dust, 31.00 % and <i>Agniastra</i> without neem leaves, 17.00 %. Suggestion: Approved (Action: Professor and Head, Department of Nematology, BACA, AAU, Anand)

22.3.2.14	Efficacy of nano-fungicides against powdery mildew of coriander Two foliar sprays of sulphur nano particle (SNPs), 0.1% + Hexaconazole 5 SC 0.005% (5 mL + 5 mL/10 L of water) first at initiation of disease and second at 15 days after first spray were found effective against powdery mildew of coriander. Approved with following suggestion(s): 1. Correct as “sulphur nano particle (SNPs), 0.1% + Hexaconazole 5 SC 0.005% (5 mL + 5 mL /10 L of water) instead of sulphur nano particle (SNPs), 0.1% + Hexaconazole 5 SC 0.005% (1 mL + 1 mL /10 L of water) (Action: Assistant Professor & Head, Department of Plant Protection, CoH, AAU, Anand)
22.3.2.15	Evaluation of fungicides against frog-eye leaf spot and Alternaria leaf spot in bidi tobacco Two foliar applications of azoxystrobin 11% + tebuconazole 18.3% SC 0.04395% (15 mL per 10 L of water) or zineb 68% + hexaconazole 4% WP 0.144% (20 g per 10 L of water) were found effective in managing frog-eye leaf spot and Alternaria leaf spot in bidi tobacco. The first spray was applied at the initiation of disease symptoms and second spray 15 days after the first application. Approved with following suggestion: 1. Mention concentration of fungicides (Action: Research Scientist, Bidi Tobacco Research Station, AAU, Anand)
22.3.2.16	Bioefficacy of fungicides against powdery mildew disease of cluster bean Two sprays of tebuconazole 50 % + trifloxystrobin 25% WG 0.038%(125 + 62.5 g a.i. /ha, 5 mL /10 L of water) or sulphur 80% WDG 0.2%(1000 g a.i. /ha, 25 g /10 L of water) first at appearance of disease and second at 15 days after first spray were found effective against powdery mildew of cluster bean. Approved with following suggestion: 1. Mention concentration of fungicides (Action: Associate Professor, Dept. of Plant Pathology, CoA, AAU, Vaso)

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22.3.2.17	Management of branch gall midge infesting mango Four sprays of spinetoram 11.7% SC 0.005% (4.20 mL/ 10 L of water) at 15-day intervals, initiated at the onset of infestation, in combination with soil application of either fipronil 0.3 GR, 16.67 kg/ha or carbosulfan 6 GR, 16.70 kg/ha were found effective for the management of mango branch gall midge (<i>Procontarinia</i> sp.). Approved with following suggestion: 1. Mention scientific name of mango branch gall midge (Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)
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PLANT PATHOLOGY

22.3.2.18	Effect of fungicidal spray on yield losses caused by fungal foliar diseases of cotton Foliar applications of fluxapyroxad 167 g/L + pyraclostrobin 333 g/L SC0.0375 % (7.5 mL/10 L of water) five times i.e. first spray at initiation of diseases and subsequent four
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	sprays at an interval of 15 days after first spray reduced 19.03% yield loss due to fungal foliar diseases (Phoma blight, corynespora leaf spot, alternaria leaf spot and grey mildew) in cotton. Approved with following suggestion: 1. Shifted to Scientific information from recommendation for Farming community 2. Recast the recommendation text accordingly (Action: Research Scientist (Cotton), CottonResearch Station, JAU, Junagadh)
22.3.2.19	Morpho-cultural and pathogenic variability present among the isolates of <i>Sclerotium rolfsii</i>- causal agent of stem rot of groundnut in saurashtra region
	Among the 108 isolates of <i>Sclerotium rolfsii</i>, JMR-2 from Jamnagar was found as highly virulent isolate for screening of groundnut entries against stem and pod rot or for preparation of sick plot. Approved with following suggestion: 1. Recast the recommendation text (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.2.20	Morpho-cultural and pathogenic variability present among the isolates of <i>Macrophomina phaseolina</i> and <i>Fusarium oxysporum</i> F. Sp. <i>Ricini</i> causal agent of root rot and wilt of castor in saurashtra region
	Among the 30 isolates each of <i>Fusarium oxysporum</i> f. sp. <i>ricini</i> and <i>Macrophomina phaseolina</i>, FOR-7 and MP-7 can be utilized for screening of castor entries against wilt and root rot of castor, respectively. These isolates can also be used for preparation of sick plot for screening of castor entries against wilt and root rot, respectively. Approved with following suggestion: 1. Recast the recommendation text (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.2.21	Morpho-cultural and antagonistic variability present among the isolates of <i>Trichoderma</i> SP. and <i>Pseudomonas</i> Sp. in saurashtra region
	Among the 108 isolates of <i>Trichoderma</i>, T₁₃, T₁₈, T₂₆, T₂₇ and T₃₀ were identified as highly antagonistic and can be used for the management soil borne pathogens viz., <i>Sclerotium rolfsii</i>, <i>Macrophomina phaseolina</i>, and <i>Fusarium</i> spp. These isolates were found compatible with agrochemicals like carbendazim 25% + Mancozeb 50% 70 WS, Carbofuran 3% CG and Imazethapyr 10% SL. Among the 60 isolates of <i>Pseudomonas fluorescens</i>, Pf24 can be used for the management of collar rot, stem rot and pod rot of groundnut, root rot of castor and wilt of chickpea. These isolates were found compatible with agrochemicals like carbendazim 50% WP, fipronil 2.92% EC and pendimethalin 30% EC. Approved with following suggestion(s): 1. Recast the recommendation text 2. Add compatibility information (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.2.22	Bio-control of root knot nematode (<i>Meloidogyne incognita</i>) infesting pomegranate under nursery condition
	Soil application of enriched neem cake with <i>Pochonia chlamydosporia</i> 1.5 WP, 15 g culture mixed in 0.5 kg neem cake per pot (2 × 10⁶ cfu/g min.), one week after transplanting was found effective for the management of root-knot nematode, <i>Meloidogyne incognita</i> infesting pomegranate under pot (28 cm diameter and height) condition.

	Approved with following suggestion: 1. Mention scientific name of root knot nematode (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.2.23	Management of root knot nematode (<i>Meloidogyne incognita</i>) infesting pomegranate using different nematicides under nursery condition
	Soil application of fluopyram 400% SC, 2.90 mL in 1.0 L water per pot, one week after transplanting was found effective for the management of root-knot nematode, <i>Meloidogyne incognita</i> infesting pomegranate under pot (28 cm diameter and height) condition. Approved with following suggestion: 1. Mention scientific name of root knot nematode (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.2.24	Integrated management of foliar fungal diseases of mungbean
	Seed treatment of mungbean with carbendazim 25% + mancozeb 50% WS, 2 g/kg of seed before sowing followed by foliar spray of tebuconazole 50% + trifloxystrobin 25% WG 0.05% (7 g/10 L of water) at the initiation of disease and second spray at 15 days after the first spray were found effective for the management of anthracnose and powdery mildew diseases for higher seed yield and net returns. Suggestion: Approved (Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)
22.3.2.25	Integrated management of foliar fungal diseases of urdbean
	Seed treatment of urdbean with carbendazim 25% + mancozeb 50% WS, 2 g/kg of seed before sowing followed by foliar spray of tebuconazole 50% + trifloxystrobin 25% WG 0.05% (7 g/10 L of water) at the initiation of disease and second spray at 15 days after the first spray were found effective for the management of anthracnose and powdery mildew diseases for higher seed yield and net returns. Suggestion: Approved (Action: Research Scientist (Chickpea), Pulses Research Station, JAU, Junagadh)

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22.3.2.26	Estimation of crop loss due to spider mite on okra in field condition
	Spider mite, <i>Tetranychus</i> spp. infestation caused 12.62 to 16.35 per cent yield loss in okra under field conditions. Suggestion: Approved (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)
22.3.2.27	Damage potential of yellow mite, <i>Polyphagotarsonemus latus</i> (Banks) on capsicum under protected cultivation
	Broad mite, <i>Polyphagotarsonemus latus</i> (Banks) infestation caused 13.83 to 30.51 percent yield loss in capsicum under protected cultivation. Suggestion: Approved (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)
22.3.2.28	Management of rice sheath mite using acarо-fungal pathogen
	Two sprays of <i>Hirsutella thompsonii</i> 1.15% WP (1×10^8 cfu/g min.), 2.0kg/ha, first at flag leaf initiation and second at 15days after the first spray were found effective against sheath mite, <i>Steneotarsonemus spinki</i> Smiley in rice. Suggestion: Approved (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)

22.3.2.29	Monitoring of mite pest status in organic vegetable growing system vis-a-vis non-organic system in brinjal and okra crops																																		
	Spider mite, <i>Tetranychus</i> spp. population was found higher during 12th SMW in okra in organic as well as non-organic systems whereas in brinjal, maximum activity was found during 16th SMW inorganic and 15th SMW in non-organic cropping system. Approved with following suggestion: 1. Recast the recommendation text (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)																																		
22.3.2.30	Management of spider mite in marigold																																		
	Two sprays of etoxazole 10 SC (8.0 mL/10 L of water), first at initiation of spider mite infestation and second at 15 days after the first spray was found effective against spider mite, <i>Tetranychus</i> spp. infesting marigold. Suggestion: Approved (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)																																		
22.3.2.31	Population dynamics of mites infesting marigold																																		
	The population of spider mite (<i>Tetranychus</i> spp.) in marigold was observed maximum during the early crop stages (33rd - 35th SMW). The mite population exhibited a positive correlation with relative humidity and minimum temperature whereas negative correlation with bright sunshine hours and maximum temperature. Approved with following suggestion: 1. Mention other contributing weather parameters in recommendation text (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)																																		
22.3.2.32	Multilocation survey on natural enemies of <i>Spodoptera frugiperda</i> (J. E. Smith)																																		
	The eggs of <i>Spodoptera frugiperda</i> (J. E. Smith) (Lepidoptera: Noctuidae) were found parasitized by two egg parasitoids and two larval parasitoids. The predator was also reported on eggs and neonate larvae of <i>S. frugiperda</i> (Annexure I). These natural enemies were widely distributed and their activity was more pronounced during the <i>kharif</i> and <i>rabi</i> seasons of maize crop under South Gujarat condition. <table border="1"><thead><tr><th colspan="5">Annexure-I: Natural enemy fauna of <i>Spodoptera frugiperda</i> under South Gujarat condition</th></tr><tr><th rowspan="2">Type parasitism</th><th colspan="4"><i>S. frugiperda</i> natural enemies (District wise)</th></tr><tr><th>Navsari</th><th>Surat</th><th>Valsad</th><th>Tapi</th></tr></thead><tbody><tr><td>Egg parasitoids (<i>Telenomus</i> sp. and <i>Trichogramma</i> spp.)</td><td>3.93 % (0.14 - 10.19 %)</td><td>3.32 % (1.79 - 12.86 %)</td><td>3.86 % (1.79 - 11.61 %)</td><td>2.93 % (1.54 - 9.62 %)</td></tr><tr><td>Larval parasitoid (<i>Apanteles</i> sp.)</td><td>3.61 % (0.88 - 9.25 %)</td><td>3.80 % (1.67 - 8.35 %)</td><td>3.74 % (1.55 - 8.60 %)</td><td>--</td></tr><tr><td>Larval parasitoid (<i>Exorista</i> sp.)</td><td>2.16 % (0.88 - 6.15 %)</td><td>2.02 % (1.92 - 6.93 %)</td><td>1.85 % (1.67 - 6.35 %)</td><td>--</td></tr><tr><td>Predator (<i>Chrysoperla</i> sp.)</td><td>0.34 (0.05 - 0.63)</td><td>0.38 (0.09 - 0.63)</td><td>0.35 (0.08 - 0.62)</td><td>--</td></tr></tbody></table> Suggestion(s): Approved (Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)	Annexure-I: Natural enemy fauna of <i>Spodoptera frugiperda</i> under South Gujarat condition					Type parasitism	<i>S. frugiperda</i> natural enemies (District wise)				Navsari	Surat	Valsad	Tapi	Egg parasitoids (<i>Telenomus</i> sp. and <i>Trichogramma</i> spp.)	3.93 % (0.14 - 10.19 %)	3.32 % (1.79 - 12.86 %)	3.86 % (1.79 - 11.61 %)	2.93 % (1.54 - 9.62 %)	Larval parasitoid (<i>Apanteles</i> sp.)	3.61 % (0.88 - 9.25 %)	3.80 % (1.67 - 8.35 %)	3.74 % (1.55 - 8.60 %)	--	Larval parasitoid (<i>Exorista</i> sp.)	2.16 % (0.88 - 6.15 %)	2.02 % (1.92 - 6.93 %)	1.85 % (1.67 - 6.35 %)	--	Predator (<i>Chrysoperla</i> sp.)	0.34 (0.05 - 0.63)	0.38 (0.09 - 0.63)	0.35 (0.08 - 0.62)	--
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22.3.2.33	Study of pollinators diversity in mango under Middle and South Gujarat condition																																		
	The diversity of pollinators/flower visitors consists of thirteen species of Diptera belong to nine families followed by thirteen species of Hymenoptera belonging to four families, three species of Coleoptera belong to three families, two species of Lepidoptera belong to two families and one species of Hemiptera in south Gujarat while ten species of Diptera belong to seven families, seven species of Hymenoptera belong to three families and two species each of Coleoptera and Lepidoptera belong to two families and one species of Hemiptera in middle Gujarat (as per Appendix I).																																		

Appendix I: Biodiversity of insect visitors in mango flower

No.	Name of Insect pollinators		Navsari	Anand
I	Diptera			
1	<i>Eristalinus arvorum</i> (Fabricius)	Syrphidae	✓	✓
2	<i>Eristalinus megacephalus</i> (Rossi)		✓	✓
3	<i>Episyrphus balteatus</i> (DeGeer)		✓	✓
4	<i>Chrysomya megacephala</i> (Fabricius)	Calliphoridae	✓	✓
5	<i>Lucilia sericata</i> (Meigen)		✓	✓
6	<i>Amblypsilopus</i> sp. (Bigot)	Dolichopodidae	✓	✓
7	<i>Condylostylus</i> sp. (Bigot)		✓	
8	<i>Gerops</i> (Meigen)	Bombyliidae	✓	
9	<i>Muscadomestica</i> (Linnaeus)	Muscidae	✓	✓
10	<i>Oscinella</i> sp. (Becker)	Chloropidae	✓	
11	<i>Physiphora alceae</i> (Preysler)	Uliidae	✓	✓
12	<i>Sarcophaga carnaria</i> (Linnaeus)	Sarcophagidae	✓	✓
13	<i>Stomoxys</i> sp. (Rondani)	Rhiniidae	✓	✓
II	Hymenoptera			
1	<i>Bracon apicicornis</i> (Cameron)	Apidae	✓	
2	<i>Tetragonia iridipennis</i> (Smith)		✓	✓
3	<i>Ceratinocerella</i> (H.S. Smith)		✓	
4	<i>Ceratinasmaragdula</i> (Fabricius)		✓	
5	<i>Apis florea</i> (Fabricius)		✓	✓
6	<i>Apis cerana</i> (Fabricius)		✓	✓
7	<i>Ropalid marginata</i> (LePeletier)	Vespidae	✓	
8	<i>Euodynerus</i> sp. (Dalla Torre)		✓	
9	<i>Metapolybia dactylis</i> (Richards)		✓	
10	<i>Camponotus</i> sp. (Mayr)	Formicidae	✓	
11	<i>Oecophylla smaragdina</i> (Fabricius)		✓	✓
12	<i>Tapinoma melanocephalum</i> (Fabricius)		✓	✓
13	<i>Pseudapis oxybeloides</i> (Smith)	Halictidae	✓	
14	<i>Ceratinocerella</i> (H.S. Smith)	Xylocopidae		✓
15	<i>Ceratinasmaragdula</i> (Fabricius)			✓
III	Coleoptera			
1	<i>Anthrenus diffilis</i> (Hava)	Dermestidae	✓	✓
2	<i>Cheilonesses maculata</i> (Fabricius)	Coccinellidae	✓	✓
3	<i>Monolepta</i> sp. (Chevrolat and Dejean)	Chrysomelidae	✓	
IV	Lepidoptera			
1	<i>Amata cyssea</i> (Stoll)	Arctiidae	✓	✓
2	<i>Danaus genutia</i> (Cramer)	Nymphalidae	✓	✓
V	Hemiptera			
1	<i>Graptostethus servus</i> (Fabricius, 1987)	Lygaeidae	✓	✓

Approved with following suggestion(s):

1. Add pollinators/flower visitors instead of flower visitors in recommendation text
2. Add “south Gujarat” instead of “Navsari” in recommendation text
3. Add middle Gujarat instead of Anand in recommendation text

(Action: Professor and Head, Dept. of Ento., NMCA, NAU, Navsari)

22.3.2.34 Slow release pheromone formulation for the management of fruit fly in mango

Nauroji Stonehouse fruit fly trap and Gir Sawaj fruit fly trap were found more effective against mango fruit fly in terms of adult male catches and fruit damage as compared to fruit fly trap with slow release pheromone formulation.

Suggestion: Approved

(Action: Research Scientist (Hort.), AES, NAU, Paria)

22.3.2.35 Population dynamics of mango hopper and its natural enemies under Ultra High-Density Plantation

Based on the mean four years (2022-25) data of population dynamics of mango hopper and its natural enemies under Ultra High-Density plantation (cv. Amrapali, 3m x 2m) in south Gujarat, following status was noticed during the investigation.

Sr. No	Name of insect pest/ natural enemy	Peak activity Period (SMW)	Max. population	Max. Temp.	Min. Temp.	Morn. RH	Evng. RH	Rain-fall	Sunshine	Evaporation
1	Hopper	12 to 14 th	14.44 to 14.70 hoppers/ panicle	+	NS	-	-	-	+	+
2	Coccinellid	11 to 13 th	1.68 to 1.85 GPA /panicle	+	NS	-	-	-	+	+
3	Spider	11 to 13 th	1.90 to 2.10	+	NS	-	-	-	+	+

			NA/panicle																																													
4	Chrysopids	10 to 12 th	1.26 to 1.30 GPA /panicle	+	-	-	-	-	+	+																																						
GPA - grubs, pupae and adults; NA - Nymph & adult population; + Positive correlation; - Negative correlation, NS- Non Significant. Approved with following suggestion: 1.Recast the recommendation text (Action: Research Scientist (Hort.), AES, NAU, Paria)																																																
22.3.2.36	Foraging activity of honeybees in muskmelon																																															
	The higher foraging activity of honeybees was observed during 12:00 to 14:00 hrs in muskmelon. Approved with following suggestion: 1. Change the time as “12:00 to 14:00 hrs” instead of 11:00 to 14:00 hrs (Action: Principal, Polytechnic in Horticulture, NAU, Paria)																																															
22.3.2.37	Varietal performance of sapota against major insect pests under high density plantation																																															
	The following varieties/hybrids were found resistant or susceptible to the major pests of sapota in critical month of infestation with morphological and biochemical contents under high-density plantation at 5 m × 5 m spacing. <table><tr><th rowspan="2">Insect pest name</th><th rowspan="2">Resistant</th><th rowspan="2">Susceptible</th><th rowspan="2">Month of peak infestation</th><th colspan="2">Factor responsible for Resistant</th></tr><tr><th>Morphological</th><th>Biochemical/ nutritional</th></tr><tr><td>Bud borer, <i>Anarsia achrasella</i> Bradley</td><td>PKM-1 & CO-3</td><td>Kalipatti</td><td>May-June</td><td>Low bud diameter</td><td>High Carbohydrate in bud</td></tr><tr><td>Chiku moth, <i>Nephopteryx eugraphella</i> (Ragonot)</td><td>PKM-1 & CO-3</td><td>Kalipatti</td><td>May-June & December-January</td><td>Low bud diameter</td><td>High Carbohydrate and Non-Reducing Sugar in bud</td></tr><tr><td>Seed borer, <i>Trymalitis margarias</i> Meyrick</td><td>PKM-1 & CO-3</td><td>Kalipatti& DHS-2</td><td>February-March</td><td>Low seed length</td><td>--</td></tr><tr><td>Fruit fly, <i>Bactrocera</i>spp.</td><td>CO-3</td><td>DHS-1</td><td>May-June</td><td>--</td><td>Low TSS</td></tr><tr><td>Midrib folder, <i>Banisiamyrsusaleselealaralis</i>(Walker)</td><td>PKM-1 & Cricket ball</td><td>Kalipatti& DHS-1</td><td>May & December</td><td>--</td><td>High Potassium (K₂O) in leaf</td></tr></table> Approved with following suggestion(s): 1.Add “(5 × 5 m)” after plantation in recommendation text 2. Write “Month of peak infestation” instead of “Critical month of infestation” in recommendation Table (Action: Associate Research Sceintist (Hort.), FRS, NAU, Gandevi)										Insect pest name	Resistant	Susceptible	Month of peak infestation	Factor responsible for Resistant		Morphological	Biochemical/ nutritional	Bud borer, <i>Anarsia achrasella</i> Bradley	PKM-1 & CO-3	Kalipatti	May-June	Low bud diameter	High Carbohydrate in bud	Chiku moth, <i>Nephopteryx eugraphella</i> (Ragonot)	PKM-1 & CO-3	Kalipatti	May-June & December-January	Low bud diameter	High Carbohydrate and Non-Reducing Sugar in bud	Seed borer, <i>Trymalitis margarias</i> Meyrick	PKM-1 & CO-3	Kalipatti& DHS-2	February-March	Low seed length	--	Fruit fly, <i>Bactrocera</i> spp.	CO-3	DHS-1	May-June	--	Low TSS	Midrib folder, <i>Banisiamyrsusaleselealaralis</i> (Walker)	PKM-1 & Cricket ball	Kalipatti& DHS-1	May & December	--	High Potassium (K ₂ O) in leaf
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22.3.2.38	Survey of major insect pests of pigeonpea in tribal belt of Surat district																																															
	The higher larval population (0.35-0.71 larva/plant) of <i>Helicoverpa armigera</i> in pigeonpea was found during month of November to January. The higher infestation (10.40 to 16.50% pod damage) of pod borers (<i>Helicoverpa armigera</i> , <i>Exelastis atomosa</i> and <i>Maruca vitrata</i>) and pod fly, <i>Melanagromyza obtusa</i> (8.60 to 14.85% seed damage) were found during second fortnight of December to firstfortnight of February. Among natural enemies, the higher population of lady bird beetle (0.46 to 1.12 LBB/plant)was found during the month of November and December whereas, spider (0.28 to 0.74 spider/plant)was found during the month of December and January in tribal belt of Surat district.																																															

	Approved with following suggestion (s): 1. Mention incidence/ population of pests and natural enemies in recommendation text 2. Recast the recommendation text (Action: Senior Scientist & Head, KVK, NAU, Surat)
22.3.2.39	Evaluation of biopesticides against rice ear head bug, <i>Leptocorisa acuta</i> Thunberg in rice Two sprays of <i>Lecanicillium saksenae</i> 1.15% WP (1 x 10⁷ cfu/g min.) 100 g/10 L of water, first spray apply at the initiation of the pest and the second spray at 10 days of the first spray was found effective for the management of earhead bug infesting rice. Suggestion: Approved (Action: Research Scientist (Paddy), MRRC, NAU, Navsari)

PLANT PATHOLOGY & NEMATOLOGY

22.3.2.40	Evaluation of sugarcane zonal varieties for resistance to Pokkahboeng																																								
	Sugarcane accessions viz., Co 18002, Co 18009, Co 18012, Co 18013, CoN 18071, CoN 18072, CoVSI 18121, Co 17001 Co 17003, Co 17005, Co17006, Co 17010, Co17012, Co 17013, CoVC 17061, CoN 17071, CoN 17072, CoVSI 17121, Co 16010, Co 16017, Co 16018, CoVC 16061, CoN 16071, CoM 16081, CoVSI 16121, PI 16131, CoR 16141, CoR 16142, Co 11015, Co 14005, Co 15002, Co 15005, Co 15006, Co 15007, Co 15010, Co 15018, CoSnk 15101, CoSnk 15103, CoSnk 15104, CoVSI 15121, CoN 15071, CoN 15072, CoVC 15062, CoVC 15063, PI 15132, VSI 15122, Co 14002, Co 14004, Co 14012, Co 14027, Co 14030, CoN 14073, CoSnk 14103, CoT 14367, CoTI 14111, CoVC 14062, MS 14081, 2017 N 14, 2017 N 35, 2017 N 42, 2017 N 73, 2017 N 99, 2017 N 112, 2017 N 149, 2017 N 184, 2017 N 201, 2017 N 236, 2017 N 238, 2017 N 264 and 2017 N 276 were found free from Pokkahboeng disease under natural conditions. Approved with following suggestion(s): 1. Incorporate methodology in appropriate format in report. 2. Add “under natural conditions” after Pokkahboeng disease in recommendation text (Action: Research Scientist (Sugarcane), MSRS, NAU, Navsari)																																								
22.3.2.41	Nutritional analysis of cultivated and naturally available edible mushrooms from the Dang district of South Gujarat																																								
	Natural (Vasarta oyster and Arim mushroom) and cultivated (pink, grey, white, blue oysters and milky mushroom) mushroom species recorded different nutritional parameters as per table given below <table><tr><th>Parameter</th><th>Mean</th><th>Range</th><th>Maximum</th><th>Minimum</th></tr><tr><td>Moisture %</td><td>88.84</td><td>87.69 – 89.91</td><td>89.91 (White oyster , <i>P. florida</i>)</td><td>87.69 (Milky, <i>C. indica</i>)</td></tr><tr><td>Carbohydrate %</td><td>3.64</td><td>2.58 – 4.46</td><td>4.46 (Milky, <i>C. indica</i>)</td><td>2.58 (White oyster , <i>P. florida</i>)</td></tr><tr><td>Fat %</td><td>0.61</td><td>0.35 – 0.88</td><td>0.88 (Arim, <i>Termitomyces</i> sp.)</td><td>0.35 (Blue oyster, <i>P. ostreatus</i>)</td></tr><tr><td>Crude Fiber %</td><td>2.07</td><td>1.60 – 2.64</td><td>2.64 (Grey oyster, <i>P. sajor caju</i>)</td><td>1.60 (Vasarta, <i>Pleurotus</i> sp.)</td></tr><tr><td>Crude Protein %</td><td>3.06</td><td>2.28 – 3.50</td><td>3.50 (Arim, <i>Termitomyces</i> sp.)</td><td>2.28 (White oyster , <i>P. florida</i>)</td></tr><tr><td>Ash %</td><td>3.08</td><td>2.25-3.83</td><td>3.83 (White oyster , <i>P. florida</i>)</td><td>2.25 (Arim, <i>Termitomyces</i> sp.)</td></tr><tr><td>Energy (Kcal)</td><td>33.65</td><td>25.28 – 40.23</td><td>40.23 (Milky, <i>C. indica</i>)</td><td>25.28 (White oyster , <i>P. florida</i>)</td></tr></table> Suggestion: Approved (Action: Principal, CoA, NAU, Waghai)	Parameter	Mean	Range	Maximum	Minimum	Moisture %	88.84	87.69 – 89.91	89.91 (White oyster , <i>P. florida</i>)	87.69 (Milky, <i>C. indica</i>)	Carbohydrate %	3.64	2.58 – 4.46	4.46 (Milky, <i>C. indica</i>)	2.58 (White oyster , <i>P. florida</i>)	Fat %	0.61	0.35 – 0.88	0.88 (Arim, <i>Termitomyces</i> sp.)	0.35 (Blue oyster, <i>P. ostreatus</i>)	Crude Fiber %	2.07	1.60 – 2.64	2.64 (Grey oyster, <i>P. sajor caju</i>)	1.60 (Vasarta, <i>Pleurotus</i> sp.)	Crude Protein %	3.06	2.28 – 3.50	3.50 (Arim, <i>Termitomyces</i> sp.)	2.28 (White oyster , <i>P. florida</i>)	Ash %	3.08	2.25-3.83	3.83 (White oyster , <i>P. florida</i>)	2.25 (Arim, <i>Termitomyces</i> sp.)	Energy (Kcal)	33.65	25.28 – 40.23	40.23 (Milky, <i>C. indica</i>)	25.28 (White oyster , <i>P. florida</i>)
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ENTOMOLOGY

22.3.2.42	Impact of sowing periods against insect-pests in groundnut
	There was no significant difference found in the incidence/population of insect-pests and natural enemies of groundnut viz., leaf hoppers, thrips, tobacco caterpillar and coccinellids except white grub among the different dates of sowing. The white grub incidence was observed lower in groundnut crop sowing four weeks after first rain. Approved with following suggestion: 1. Recast the recommendation text (Action: Asstt. Res. Sci., Centre for Oilseeds Research, SDAU, Sardarkrushinagar)
22.3.2.43	Efficacy of insecticides for management of mustard aphid
	Application of two foliar sprays of flupyradifurone 200% SL, 0.05% (25 mL per 10 L of water) or afidopyropen 50% g/L DC 0.01% (20 mL per 10 L of water) or flonicamid 50% WG 0.015% (3 g per 10 L of water), first when the pest crosses the ETL (1.5 aphid index per plant) and second at 15 days after first spray were found effective for the management of mustard aphid. Keep minimum pre-harvest interval (PHI) of 25 days. Approved with following suggestion: 1. Correct the concentration/dose of insecticides (Action: Assoc. Professor, Polytechnic in Agriculture, SDAU, Khedbrahma)

PLANT PATHOLOGY & NEMATOLOGY

22.3.2.44	Evaluation of fungicides against leaf spot and fruit spot diseases in pomegranate (<i>Punica granatum</i> L.)																								
	Apply two foliar sprays of tebuconazole 50% + trifloxystrobin 25% 75 WG 0.094% (12.5 g/10 L of water), first spray at initiation of diseases and second at 15 days after the first spray was found effective for the management of fungal leaf spot and fruit spot disease in pomegranate. Keep minimum pre-harvest interval (PHI) of 128 days. Approved with following suggestion: 1. Add the Pre-harvest interval (PHI) in recommendation text (Action: Assoc. Res. Sci. (Patho.), Agroforestry Res. Station, SDAU, Sardarkrushinagar)																								
22.3.2.45	Survey of major diseases of pomegranate in Lakhani taluka																								
	The status of major diseases of pomegranate observed in orchards of Lakhani taluka are shown in the following table. 1. Leaf & Fruit Spot (<i>Cercospora punicae</i>, <i>Alternaria alternata</i> and <i>Colletotrichum gleosporioides</i>) <table><tr><th>Sr. No.</th><th>Disease Range (%)</th><th>Category</th><th>Villages</th></tr><tr><td>1</td><td>> 25</td><td>High</td><td>Dera, Ganta, Monaki</td></tr><tr><td>2</td><td>18 – 25</td><td>Moderate</td><td>Chalva, Lakhani, Amarpur goliya, Kesarsing goliya, Limbau, Madal, Lavana</td></tr><tr><td>3</td><td>< 18</td><td>Low</td><td>Jalodara, Agathala, Sarkari goliya, Bhimaji goliya, Kuda, Gela, Bhimgadh, Matu, Achhavadiya</td></tr></table> 2. Wilt (<i>Fusarium oxysporum</i> and <i>Ceratocystis fimbriata</i>) <table><tr><th>Sr. No.</th><th>Disease Range (%)</th><th>Category</th><th>Villages</th></tr><tr><td>1</td><td>> 10</td><td>High</td><td>Dera, Monaki, Jalodara, Chalva</td></tr></table>	Sr. No.	Disease Range (%)	Category	Villages	1	> 25	High	Dera, Ganta, Monaki	2	18 – 25	Moderate	Chalva, Lakhani, Amarpur goliya, Kesarsing goliya, Limbau, Madal, Lavana	3	< 18	Low	Jalodara, Agathala, Sarkari goliya, Bhimaji goliya, Kuda, Gela, Bhimgadh, Matu, Achhavadiya	Sr. No.	Disease Range (%)	Category	Villages	1	> 10	High	Dera, Monaki, Jalodara, Chalva
Sr. No.	Disease Range (%)	Category	Villages																						
1	> 25	High	Dera, Ganta, Monaki																						
2	18 – 25	Moderate	Chalva, Lakhani, Amarpur goliya, Kesarsing goliya, Limbau, Madal, Lavana																						
3	< 18	Low	Jalodara, Agathala, Sarkari goliya, Bhimaji goliya, Kuda, Gela, Bhimgadh, Matu, Achhavadiya																						
Sr. No.	Disease Range (%)	Category	Villages																						
1	> 10	High	Dera, Monaki, Jalodara, Chalva																						

	2	5 – 10	Moderate	Lakhani, Ganta, Bhimgadh
	3	< 5	Low	Amarpur goliya, Kotada, Kuda, Madal, Achhavadiya, Lavana
	4	0	Disease Free	Agathala, Sarkari goliya, Bhimaji goliya, Limbau, Gela, Matu
	Approved with following suggestion(s): 1. Recast the recommendation text and add causal organism of diseases in recommendation text 2. Mention the information regarding nematode incidence in result (Action: Principal, College of Agriculture, SDAU, Tharad)			
22.3.2.46	Survey of major diseases of date palm in Tharad taluka			
	The status of <i>Graphiola</i> leaf spot (<i>Graphiola phoenicis</i>) disease of date palm observed in orchards of Tharad taluka are shown in the following table.			
	Sr. No.	Disease intensity Range (%)	Category	Villages
	1	> 20	High	Pepar, Mota Mesara, Changda, Vaghasan
	2	10 – 20	Moderate	Jadara, Budhanpur, Ghesda, Gagana, Vantadau
	3	< 10	Low	Mangrol, Dudhava, Pathamda, Khoda, Valadar, Nana Meshra, Bevata, Bhordu, Kesargam, Jandla
	4	0	Disease Free	Miyal
	Approved with following suggestion(s): 1. Recast the recommendation text and add causal organism of disease in recommendation text (Action: Principal, College of Agriculture, SDAU, Tharad)			
22.3.2.47	Survey and identification of pests and diseases in strawberry			
	In strawberry, the incidence of thrips (2-9 thrips/plant) and leaf eating caterpillar (up to 11.25% leaf damage) were observed. Among the diseases observed, root rot (10-45% PDI) emerged as the predominant biotic constraint whereas, comparatively lower incidence of powdery mildew (up to 35% PDI) and grey mold (up to 25% PDI) were observed in Sabarkantha, Mehsana and Kachchh district.			
	Approved with following suggestion(s): 1. Recast the recommendation text (Action: Head, Department of Plant Protection, CoH, SDAU, Jagudan)			

22.3.3 NEW TECHNICAL PROGRAMMES

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title	Suggestion(s) and Action
ENTOMOLOGY		
22.3.3.1	Evaluation of natural inputs against mite infesting <i>Dodi</i> , <i>Leptadenia reticulata</i> (Ret.)	Approved with following suggestions: 1. Write “spider mite” instead of “mite” 2. Record observations on natural enemies (Action: Training Associate (PP), DoEE, AAU, Anand)
22.3.3.2	Evaluation of natural inputs against gram pod borer, <i>Helicoverpa armigera</i> (Hubner) Hardwick infesting lucerne	Approved with following suggestions: 1. Remove scientific name from title 2. Add straw yield (Action: Professor & Head, Dept. of Entomology, BACA, AAU, Anand)

22.3.3.3	Bio-efficacy of insecticides against aphid, <i>Rhopalosiphum</i> sp. infesting isabgol	Suggestion: Approved (Action: Professor & Head, Dept. of Entomology, BACA, AAU, Anand)
22.3.3.4	Evaluation of different modules for the management of brinjal shoot and fruit borer	Approved with following suggestions: 1. Write “Marketable fruit yield” instead of “fruit yield” 2. Change dose of <i>Beauveria bassiana</i> 1.15% WP (1×10^8 cfu/g min.) as 60 g/10 L of water 3. Mention “lure will be changed at 21 days interval throughout season” (Action: Assistant Professor & Head, Dept. of Plant Protection CoH, AAU, Anand)
22.3.3.5	Evaluation of deterrents for managing wild boar in banana crop	Approved with following suggestion: 1. In T ₃ , use <i>Jeevamrut</i> 200 L/ha instead of 100 L/ha (Action: Head of Office, AINP on VPM: Agricultural Ornithology, AAU, Anand)
22.3.3.6	Evaluation of different visual frightening bird repellents in maize	Approved with following suggestions: 1. Mention colour of reflective ribbons and its installation height 2. Mention distance between fields (Action: Head of Office, AINP on VPM: Agricultural Ornithology, AAU, Anand)
22.3.3.7	Residue and persistence of spidoxamat 9.6% + spinetoram 12% WG in pomegranate	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.8	Residue and persistence of spidoxamat 36% g/L + abamectin 18% g/L OD in chilli	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.9	Residue and persistence spidoxamat 36% g/L + abamectin 18% g/L OD in tomato	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.10	Residue and persistence spidoxamat 36% g/L + abamectin 18% g/L OD in brinjal	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.11	Residue and persistence of spidoxamat 36% g/L + abamectin 18% g/L OD in rose	Approved with following suggestions: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.12	Residue and persistence of spidoxamat 36% g/L + abamectin 18% g/L OD in cucumber	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.13	Residue and persistence of pyrifluquinazon 20% WG in chilli	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.14	Residue and persistence of penflufen 154 g/L + trifloxystrobin 154 g/L FS in onion	Approved with following suggestions: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)

22.3.3.15	Residue and persistence of penflufen 154 g/L + trifloxystrobin 154 g/L FS in chilli	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.16	Residue and persistence of penflufen 154 g/L + trifloxystrobin 154 g/L FS in tomato	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.17	Residue and persistence of fluopicolide 13.9% w/w + mandipropamid 26.1% w/w SC in tomato	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.18	Residue and persistence of fluopicolide 13.9% w/w + mandipropamid 26.1% w/w SC in potato	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.19	Residue and persistence of difenoconazole 13.75% + fluxapyroxad 9.17% SC in chilli	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.20	Residue and persistence of difenoconazole 13.75% + fluxapyroxad 9.17% SC in paddy	Approved with following suggestions: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.21	Residue and persistence of azoxystrobin 25% + boscalid 35% WG in banana fruits as post-harvest application	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.22	Residue and persistence of azoxystrobin 25% + boscalid 35% WG in citrus (rough lemon) fruits	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.23	Residue and persistence of fluopyram 250 g/L (21.37 w/w) + trifloxystrobin 250 g/L (21.37% w/w) SC in rose	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.24	Residue and persistence of indaziflam 20 g/L (1.65% w/w) + glyphosate isopropyl ammonium (IPA) 540 g/L (44.63% w/w) SC in pomegranate	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.25	Residue and persistence of bentazone 480 g/L SL in groundnut	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.26	Residue and persistence of icafolin methyl 200 g/L (20%) SC in pomegranate	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.27	Residue and persistence of icafolin methyl 200 g/L (20%) SC in citrus	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)

22.3.3.28	Residue and persistence of cyclanilide 22.3 g/L (2.10% w/w) + mepiquat chloride 88.2 g/L (8.40% w/w) – 110 SC in black gram	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.29	Dissipation study of fluopyram 34.48% w/w SC in capsicum fruits under open and protected conditions as soil drenching	Approved with following suggestion: 1. Use design: Descriptive statistics (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.30	Assessment of pesticide and heavy metals in ground and surface water	Approved with following suggestion: 1. Mention stratified random sampling method in methodology (Action: Residue Analyst, AINP on Pesticide Residues & Contaminants, AAU, Anand)
22.3.3.31	Biorational management of tur pod fly in vegetable pigeon pea	Approved with following suggestion: 1. Correct dose of T ₁ and T ₂ treatments as 60 g/ 10 L of water (Action: Research Scientist, Main Vegetable Research Station, AAU, Anand)
22.3.3.32	Evaluation of IPM modules for management of lepidopteran pests infesting tobacco	Approved with following suggestion: 1. Correct dose of <i>Metarhizium anisopliae</i> as 60 g/10 L of water 2. Mention formulation of <i>Metarhizium anisopliae</i> 3. Mention cfu of <i>Bt</i> 4. Write 'installation' instead of 'Erection' in M ₁ 5. Change plot size (Action: Research Scientist, Bidi Tobacco Research Station, AAU, Anand)
22.3.3.33	Bio-efficacy of insecticides against sucking pests infesting tobacco	Approved with following suggestions: 1. Verify and correct the dose of insecticides 2. Record the number of whitefly/leaf 3. Record observations of natural enemies (Action: Research Scientist, Bidi Tobacco Research Station, AAU, Anand)
22.3.3.34	Evaluation of natural inputs in blackgram-isabgol cropping sequence against insect-pests and diseases under natural farming conditions	Approved with following suggestions: 1. Remove T ₅ treatment 2. Record observations at 5 and 9 days after spray 3. Record observations of whitefly/plant 4. Record observations of natural enemies in both crops (Action: Assistant Professor (Ento.)/ Principal, College of AIT, AAU, Anand)
22.3.3.35	Bio-efficacy of natural inputs against sapota midrib folder, <i>Banisiomyrsus aliselearalis</i> Walker	Approved with following suggestions: 1. Correct the dose of Cow urine as 20% 2. Record ancillary observations on other insect pests 3. Record fruit yield (Action: Associate Professor & Head, Dept. of Entomology, CoA, AAU, Vaso)
22.3.3.36	Evaluation of natural inputs against sucking pests of okra	Approved with following suggestions: 1. Correct the dose of Cow urine as 10% 2. Apply minimum four sprays of natural inputs (Action: Associate Professor & Head, Dept. of Entomology, CoA, AAU, Vaso)

22.3.3.37	Evaluation of natural inputs against major sucking pests and diseases of green gram	Approved with following suggestions: 1. Mention the name of sucking pests in observations to be recorded 2. Remove 'vein' from observation number 2 3. Remove observation number 4 (Action: Assistant Professor and Head, Dept. of Entomology, CoA, AAU, Jabugam)
22.3.3.38	Evaluation of different bio-pesticides against major insect-pests of rice	Approved with following suggestions: 1. Correct the dose of T ₁ to T ₄ as 50 g/10 L of water 2. Remove strains from the treatments 3. Mention common cfu/g in treatments T ₁ to T ₄ and add the concentration 0.002 in T ₅ 4. Mention formulation as 1.15% WP in T ₁ and T ₄ (Action: Research Scientist, Main Rice Research Station, AAU, Nawagam)
22.3.3.39	Management of sucking insect-pests infesting soybean through natural inputs	Approved with following suggestions: 1. Remove 'sucking' from title 2. Record observation of <i>Spodoptera litura</i> and natural enemies (Action: Scientist (PP), Krishi Vigyan Kendra, AAU, Dahod)
<u>PLANT PATHOLOGY & NEMATOTOLOGY</u>		
22.3.3.40	Evaluation of different modules against root rot and wilt complex in chickpea	Approved with following suggestion: 1. Add deep ploughing during summer season in all modules (Action: Professor & Head, Department of Plant Pathology. BACA, AAU, Anand)
22.3.3.41	Evaluation of natural inputs against fungal foliar diseases in maize	Approved (Action: Professor & Head, Department of Plant Pathology. BACA, AAU, Anand)
22.3.3.42	Evaluation of ready-mix fungicides against fungal foliar diseases in maize	Approved (Action: Professor & Head, Department of Plant Pathology. BACA, AAU, Anand)
22.3.3.43	Effect of plant growth hormones on the growth and yield of oyster mushroom (<i>Pleurotus sajor-caju</i>)	Approved with following suggestion: 1. Add observations of nutritional parameters viz., carbohydrate, fat, crude fiber, crude protein, and ash (Action: Professor & Head, Department of Plant Pathology. BACA, AAU, Anand)
22.3.3.44	Evaluation of botanicals against root-knot nematode in brinjal under nursery	Approved with following suggestion: 1. Write 'Naffatia' instead of 'parthenium' in T ₁ and T ₂ (Action: Professor & Head, Department of Nematology, BACA, AAU, Anand)
22.3.3.45	Assessment of bioagents against root-knot disease in soybean	Approved with following suggestion: 1. Add new treatment as <i>Pochonia chlamydosporia</i> 2. Correct the cfu in treatments T ₁ to T ₅ (Action: Professor & Head, Department of Nematology, BACA, AAU, Anand)

22.3.3.46	Comparison of natural farming and conventional farming in wheat + chickpea system against chickpea wilt complex	Approved with following suggestion: 1. Correct the cfu in treatments T ₁ to T ₅ 2. Repetitions: 09 3. Remove low cost from Module 1 (Action: Head of Office, AINP on VPM: Agricultural Ornithology, AAU, Anand)
22.3.3.47	Efficacy of natural inputs against fungal foliar diseases of tomato	Approved with following suggestion: 1. Specify the disease along with rating scale (Action: Research Scientist, Main Vegetable Research Station, AAU, Anand)
22.3.3.48	Efficacy of ready-mix fungicides against damping-off disease in tobacco nursery	Approved with following suggestion: 1. Write correct dose of T ₁ 2. Mention standard methodology (Action: Research Scientist, Bidi Tobacco Research Station, AAU, Anand)
22.3.3.49	Effect of biochar on efficacy of <i>Trichoderma viride</i> against soil-borne diseases of chickpea	Not approved (Action: Principal, SMC Polytechnic in Agriculture, BACA, AAU, Anand)
22.3.3.50	Evaluation of eco-friendly inputs against powdery mildew of okra	Approved with following suggestion: 1. Correct the dose of cow urine to 10% and remove 'desi'. 2. Correct the cfu of T ₁ to T ₄ (Action: Principal, SMC Polytechnic in Agriculture, BACA, AAU, Anand)
22.3.3.51	Evaluation of natural inputs against diseases and pest of black gram	Approved with following suggestion(s): 1. Correct the dose of cow urine to 15% 2. Write 'number of aphid, jassids, whitefly and thrips' instead of 'pest occurrence' (Action: Assistant Professor and Head, Dept. of Plant Pathology, CoA, AAU, Jabugam)
22.3.3.52	Evaluation of bioagents against bacterial leaf blight of rice	Approved with following suggestion: 1. Correct the cfu of T ₁ to T ₆ (Action: Research Scientist, Main Rice Research Station, AAU, Nawagam)

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Sr. No.	Title	Suggestion(s)
<u>ENTOMOLOGY</u>		
22.3.3.53	Bio-efficacy of natural inputs and biopesticides against rugose spiralling whitefly [<i>Aleurodicus rugioperculatus</i> (Martin)] in coconut	Approved with following suggestion: 1. Remove g.a.i/ha from T ₆ (Action: Professor & Head, Department of Entomology, CoA, JAU, Junagadh)
22.3.3.54	Evaluation of different ready- mixed insecticides against serpentine leaf miner [<i>Liriomyza trifolii</i> (Burgess)] on castor (State trial)	Approved with following suggestions: 1. Revise title as 'Evaluation of ready-mix insecticides against serpentine leaf miner on castor' 2. For recording leaf miner observations, follow IIOR guidelines for castor experiments. (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)

22.3.3.55	Bio-efficacy of different insecticides against groundnut defoliators(State trial)	Approved with following suggestions: 1. Remove ‘different’ and ‘state trial’ from title 2. Remove ‘economic’ from objective 3. Verify the dose of all insecticidal treatments (Action: Research Scientist (G’nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.3.56	Evaluation of different bio-pesticides against okra fruit borer [<i>Helicoverpa armigera</i> (Hubner)]	Approved with following suggestions: 1. Recast title as ‘Evaluation of bio-pesticides against borers in okra 2. Change the objective as per title 3. Verify the dose of all insecticidal treatments and write as per standard 4. Change the methodology as per the title in concern with Professor & Head (Ento.), JAU, Junagadh 5. Record number of larva/plant 6. Record shoot and fruit borer damage (Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)
22.3.3.57	Management of pod borer complex in cowpea	Approved with following suggestions: 1. Remove treatment T₉ 2. Verify the dose of all insecticidal treatments and write as per standard 3. Number of webs/plant 4. Write ‘seed yield’ instead of ‘grain yield’ 5. Mention the periods of recording observations in methodology 6. Mention ‘Number of webs will be recorded from 10 plants’ in methodology (Action: Research Scientist (Dry Farming), Main Dry Farming Research Station, Targhadia, Rajkot)
22.3.3.58	Efficacy of different ready-mixed insecticides against whitefly in summer sesame	Approved with following suggestions: 1. Revise title as ‘Efficacy of ready-mix insecticides against whitefly in summer sesame 2. Change objective according to the title 3. Mention ‘two sprays in methodology’ (Action: Research Scientist (Pl. Breeding), Agril. Research Station, JAU, Amreli)
22.3.3.59	Bio-efficacy of insecticides for management of gram pod borer [<i>Helicoverpa armigera</i> (Hubner)] in chickpea	Approved with following suggestions: 1. Remove scientific name from title 2. Recast the objective as per title 3. Remove treatment T₉ 4. Mention ‘two sprays in methodology’ and record observations at before, 3, 7, 10 and 14 days after spray 5. Verify the dose of all insecticidal treatments and write as per standard 6. Analysis of pesticide residue of effective treatment(s) should be carried out (Action: Principal, College of Agriculture, JAU, Mota Bhandariya, Amreli)

22.3.3.60	Efficacy of different insecticides against sucking pests infesting cumin	Approved with following suggestions: 1. Remove 'different' from title 2. Mention 'two sprays in methodology' and remove 'need base' 3. Write method of recording observations of thrips in methodology 4. Analysis of pesticide residue of effective treatment(s) should be carried out (Action: Principal, ASPEE College of Agriculture, JAU, Khapat, Porbandar)
22.3.3.61	Effect of different sequence based natural inputs sprays against pod borer [<i>Helicoverpa armigera</i> (Hubner)] in chickpea	Approved with following suggestions: 1. Revise title as 'Evaluation of sequence based natural inputs against pod borer in chickpea' 2. Change the objective as per title 3. Remove last column from treatment table 4. Mention 'first spray will be applied at 20 days of germination and subsequent sprays will be applied at 10 days interval of first spray' in methodology 5. Record observation 'at 5 and 9 days' instead of '3, 7 and 9 days after spray' 6. Mention 'number of larva/plant' and 'per cent pod damage' (Action: Principal, Polytech. in Agri., JAU, Halvad)
<u>PLANT PATHOLOGY</u>		
22.3.3.62	Integrated management of root rot of castor	Approved with following suggestions: 1. Remove 'Integrated' from title 2. Mention strain of <i>A. niger</i> in T₁₀ 3. Remove foot note from treatment Table 4. Mention the dose/ha in treatment Table (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.3.63	Evaluation of integrated pest and disease management module (IPDM) in castor (AICRP trial)	Noted as AICRP trial (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.3.64	Effect of herbicides on microflora in groundnut	Approved with following suggestion(s): 1. Take observations at before spray as well as 7 and 15 days after spray (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.3.65	Effect of herbicides on microflora in soybean	Approved with following suggestion: 1. Take observations at before spray as well as 7 and 15 days after spray (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)
22.3.3.66	Management of pod rot complex in groundnut	Approved with following suggestions: 1. Correct the seed rate 2. Write 'Root Knot Index' instead of infestation of nematode 3. Record per cent pod damage (Action: Research Scientist (G'nut), Main Oilseeds Research Station, JAU, Junagadh)

22.3.3.67	Management of boll rot in cotton high density planting system	Approved with following suggestions: 1. Remove sucking pests from modules 1 & 2 2. In module 1: Install pheromone traps after 40 days of sowing and apply spray when 8 adults of bollworms trapped/pheromone trap during continuous three days 3. In module 2 & 3: Replace 'copper oxychloride 50% WP' with 'mancozeb 12% + 63% WP' 4. Recast the methodology as per revised set of treatments. (Action: Research Scientist (Cotton), Cotton Research Station, JAU, Junagadh)
22.3.3.68	Integrated management of viral and phytoplasma diseases in brinjal	Noted as AICRP trial (Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)
22.3.3.69	An eco-friendly sequential application of bio agents for management of <i>Alternaria</i> blight of tomato	Noted as AICRP trial (Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)
22.3.3.70	Sustainable management of bud rot disease in coconut nursery	Approved with following suggestions: 1. Remove 'Sustainable' from title 2. Remove T ₁ to T ₄ treatments 3. Add new treatment as 'Oxathiapiprolin 4.61%w/w + Amisulbrom 23.08 w/w SE' 4. Recast the methodology as per revised set of treatments 5. Mention 'nut dipping up to 6 hours before sowing followed by three applications as mentioned in methodology' (Action: Research Scientist (Horti.), Agril. Research Station (FC), JAU, Mahuva)
22.3.3.71	Management of leaf rust of wheat	Approved (Action: Principal, ASPEE College of Agriculture, JAU, Khapat, Porbandar)
22.3.3.72	Evaluation of different fungicides against dieback disease of mango	Approved with following suggestions: 1. Revise title as "Evaluation of fungicides against mango dieback disease in nursery" 2. Add new treatment as 'Carbendazim 50% WP' 3. Drenching and spraying of inoculum of pathogen at the time of planting 4. Apply three drenching and sprays of treatments at two month interval (3 times) 5. Record ancillary observations of mango malformation (Action: Principal & Dean, College of Horticulture, JAU, Junagadh)
22.3.3.73	Chemical control of stem canker of dragon fruit	Approved with following suggestions: 1. Revise title as 'Evaluation of fungicides against stem canker of dragon fruit' 2. Mention 'two sprays in methodology' and remove 'need base' (Action: Principal & Dean, College of Horticulture, JAU, Junagadh)
22.3.3.74	Management of gummy stem blight disease of watermelon	Approved with following suggestions: 1. Mention 'two sprays in methodology' and remove 'need

		base' 2. Remove 'residue analysis' from the observations and mention in methodology 3. Correct year: Summer, 2027 (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.75	Management of Alternaria leaf blight disease of muskmelon	Approved with following suggestions: 1. Remove treatment T₂, T₄, T₆ and T₇ 2. Replication should be 04 instead of 03 3. Mention 'three sprays at 10 days interval in methodology' and remove 'need base' (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.76	Management of Alternaria leaf blight disease of coriander	Approved with following suggestions: 1. Remove 'residue analysis' from the observations and mention in methodology 2. Remove 'and yield of coriander' from objective (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.77	Management of bud rot disease of coconut	Approved with following suggestions: 1. Remove 'residue analysis' from the observations and mention in methodology 2. Mention age of coconut plant as 2-5 years (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.78	Comparative bio-efficacy of fungicides for the management of fruit rot of chilli	Approved with following suggestions: 1. Remove 'Comparative' from the title (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.79	Impact of natural components on purple blotch and stemphylium leaf blight diseases of onion	Approved with following suggestions: 1. Revise title as "Evaluation of natural inputs against purple blotch and stemphylium leaf blight of onion" 2. Correct concentration of T₂ as 100%. 3. Replace 'Fermented' with 'Sour'. 4. Add wheat straw mulch @ 5 t/ha instead of 5 kg/m² (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)
22.3.3.80	Efficacy of natural inputs on powdery mildew of fenugreek	Approved with following suggestions: 1. Correct concentration of T₁ and T₅ as 100% 2. Change concentration of cow urine as 10% 3. Apply four sprays of natural inputs 4. Record observations at before spray, 5 and 9 days after each spray for insect pests 5. Mention period of recording observations of disease <i>i.e.</i> Per cent disease intensity will be recorded at seven days after last spray. (Action: Professor & Head, Department of Plant Pathology, CoA, JAU, Junagadh)

Sr. No.	Title	Suggestion(s) and Action
<u>ENTOMOLOGY</u>		
22.3.3.81	Bio-efficacy of natural input formulations against red spider mite (<i>Tetranychus urticae</i> Koch) in Okra	Approved with following suggestions: 1. Revise title as 'Bio-efficacy of natural inputs against pests and diseases of okra' 2. Correct the location of the experiment 3. Correct year: Summer, 2027 4. Correct the doses of natural inputs 5. Apply four sprays of natural inputs 6. Record observations at before spray and at 5 and 9 days after each spray 7. Record 'mobile stage of mite per 1 cm² area 8. Mention observations and methodology to be followed for diseases (Action: HoD, Dept. of Ento, NMCA, NAU, Navsari)
22.3.3.82	Bio-efficacy of different acaricides against red spider mite (<i>Tetranychus urticae</i> Koch) in Okra	Approved with following suggestions: 1. Remove 'different and scientific name' from the title 2. Correct the location of experiment 3. Correct year: Summer, 2027 4. Record 'mobile stage of mite per 1 cm² area 5. Mention dose of acaricides per 10 L of water in treatment Table 6. Replace 'Dimethoate 3.0 EC' with 'Propergite 57 EC (check)' 7. Mention 'spray will be applied at the initiation of the pest' instead of ETL in methodology 8. Record observations of natural enemies (Action: HoD, Deptt. of Ento, NMCA, NAU, Navsari)
22.3.3.83	Evaluation of natural farming inputs against shoot and fruit borer in Brinjal	Approved with following suggestions: 1. Revise title as "Evaluation of natural inputs against pests and diseases in Brinjal" 2. Apply four sprays of natural inputs 3. Record pest observations at before spray and at 5 and 9 days after each spray 4. Mention observations and methodology to be followed for pests and diseases as per standard procedure (Action: Dept. Pl. Protection, ACH, NAU, Navsari)
22.3.3.84	Efficacy of ready-mix insecticides against rice yellow stem borer, <i>Scirpophaga incertulas</i> (Walker)	Approved with following suggestions: 1. Remove scientific name from title 2. Record ancillary observations of other pests as per standard methodology (Action: Res. Sci. (Paddy), MRRS, NAU, Navsari)
22.3.3.85	Evaluation of natural farming components against major insect pests and diseases of mango under South Gujarat condition	Approved with following suggestions: 1. Revise title as 'Evaluation of natural inputs against major pests and diseases in mango' 2. Use design: CRD 3. Mention observations and methodology to be followed for pests and diseases as per standard procedure 4. Apply minimum four sprays of natural inputs (Action: Research Scientist (Horticulture), AES, NAU, Paria)

22.3.3.86	Evaluation of natural farming components against major insect pests and diseases of cashew under South Gujarat condition	Approved with following suggestions: 1. Revise title as ‘Evaluation of natural inputs against major pests and diseases in cashew’ 2. Use design: CRD (Action: Research Scientist(Horticulture), AES, NAU, Paria))
22.3.3.87	Bio-efficacy of natural input formulations against major insect pests and diseases of sorghum under south Gujarat condition	Approved with following suggestions: 1. Revise title as ‘Evaluation of natural inputs against major pests and diseases in sorghum’ 2. Apply six schedule sprays of natural inputs at 7, 17, 35, 45, 70 and 80 days after emergence of crop 3. Record pest observations at before spray and at 5 and 9 days after each spray (Action: Research Scientist (Sorghum), MSRS, NAU, Surat))
<u>PLANT PATHOLOGY</u>		
22.3.3.88	Evaluation of natural farming components against coriander wilt	Approved with following suggestions: 1. Revise title as ‘Evaluation of natural inputs against coriander wilt’ 2. Correct concentration of treatment T ₁ as 100% 3. Observations will be recorded at 15 days interval of each application and at the time of harvest (Action: HoD, Dept. of Plant Patho, NMCA, NAU, Navsari))
22.3.3.89	Management of coriander wilt caused by <i>Fusarium oxysporum</i> f. sp. <i>corianderii</i>	Approved with following suggestions: 1. Remove treatments T3, T4, T7 and T8 2. Add new treatments as Azoxystrobin 18.2% + Difenconazole 11.4% SC and Tebuconazole 50% + Trifloxystrobin 25% WG 3. Observations will be recorded at 15 days interval of each application and at the time of harvest (Action: HoD, Dept. of Plant Patho, NMCA, NAU, Navsari))
22.3.3.90	Evaluation of different natural farming inputs for the management of leaf spot and leaf blotch diseases in turmeric	Approved with following suggestions: 1. Remove ‘different and farming’ from title 2. Correct concentration of treatment T ₁ as 100% (Action: HoD, Dept. of Plant Patho, NMCA, NAU, Navsari))
22.3.3.91	Assessment of natural farming components against red rot of sugarcane	Approved with following suggestions: 1. Revise title as ‘Evaluation of natural inputs against red rot of sugarcane’ 2. Revise treatment as T1: Suthastra 100% T2: Sour buttermilk 5% T3: Sour buttermilk 10% T4: Indigenous cow urine 10% T5: Indigenous cow urine 20%

		T6: Control 3. Use design: Large Plot Technique 4. Mention replications: 04 5. Mention observations and methodology to be followed for diseases as per standard procedure according to set of treatments (Action: HoD, Dept. of Plant Patho, NMCA, NAU, Navsari)
22.3.3.92	Assessment of natural farming components against smut of sugarcane	Approved with following suggestions: 1. Revise title as “Evaluation of natural inputs against smut of sugarcane” 2. Revise treatments as T1: Suthastra 100% T2: Sour buttermilk 5% T3: Sour buttermilk 10% T4: Indigenous cow urine 10% T5: Indigenous cow urine 20% T6: Control 3. Use design: Large Plot Technique 4. Mention replications: 04 5. Mention observations and methodology to be followed for diseases as per standard procedure according to set of treatments (Action: Res. Sci. (Sugarcane), MSRS, NAU, Navsari)
22.3.3.93	Evaluation of biochars against <i>Fusarium</i> causing wilt of Pigeon pea	Approved with following suggestion: 1. Revise title as “Evaluation of biochars against <i>Fusarium udum</i> causing wilt in pigeon pea” (Action: Res. Sci. (Sugarcane), MSRS, NAU, Navsari)
*	Biochemical profiling of plant defense mechanisms against <i>Spodoptera frugiperda</i> (J.E. Smith) in sorghum genotypes under South Gujarat region	Presented for information to the house (Action: Principal, ASABI, NAU, Surat)

* Basic science group

**SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY,
SARDARKRUSHINAGAR**

Sr. No.	Title	Suggestion(s) and Action
<u>ENTOMOLOGY</u>		
22.3.3.94	Evaluation of eco-friendly biorationals for the management of spotted pod borer in cowpea	Approved with following suggestion: 1. Change dose of <i>Beauveria bassiana</i> 1.15% WP as 60 g/10 L of water (Action: Asst. Res. Scientist, (ENT.), Pulse Research Station, SDAU, Sardarkrushinagar)
22.3.3.95	Evaluation of eco-friendly biorationals for the management of leaf webber in sesame	Approved (Action: Asst. Res. Scientist, (Ento.), Centre for Oilseeds Research, SDAU, Sardarkrushinagar)
22.3.3.96	Evaluation of biorationals for the management of potato aphid under natural farming	Approved with following suggestions: 1. Correct the dose of Ghanjivamrut 2. Remove “under natural farming” from title (Action: Asst. Res. Scientist, Potato Research Station, SDAU, Deesa)

22.3.3.97	Evaluation of biorationals for the management of coriander aphid under natural farming	Approved with following suggestions: 1. Remove “under natural farming” from title 2. Change dose of T ₁ , T ₂ and T ₃ as 60 g/10 L of water (Action: Res. Sci. (Ento.), Seed Spices Research Station, SDAU, Jagudan)
22.3.3.98	Effect of seed treatments and biorationals on sorghum shoot fly	Approved with following suggestions: 1. Change dose of <i>Beauveria bassiana</i> 1.15%WP as 60 g/10 L of water 2. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm (Action: Asst. Res. Sci. (Ento.) Agricultural Research Station, SDAU, Ladol)
22.3.3.99	Evaluation of biorationals for the management of mustard aphid	Approved with following suggestions: 1. Change dose of T ₂ and T ₃ as 60 g/10 L of water 2. Correct as “initiation of the pest” instead of “1.5 aphid index” in methodology (Action: Asst. Res. Sci. (Ento.) Maize Research Station, SDAU, Bhiloda)
22.3.3.100	Evaluation of insecticides against date palm leaf miner (<i>Javeta pallida</i> Baly)	Approved (Action: Assistant Res. Sci. (Ento.), Date Palm Research Station, SDAU, Mundra)
22.3.3.101	Evaluation of biorationals for the management of date palm leaf miner (<i>Javeta pallida</i> Baly)	Approved with following suggestions: 1. Change dose of T ₆ as 60 g/10 L of water 2. Add new treatment as <i>Beauveria bassiana</i> 1.15% WP as 60 g/10 L of water 3. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm (Action: Assistant Res. Sci. (Ento.), Date Palm Research Station, SDAU, Mundra)
22.3.3.102	Evaluation of biorationals against fenugreek aphid under natural farming	Approved with following suggestions: 1. Recast the title as “Evaluation of biorationals against aphid infesting fenugreek” 2. Remove under natural farming from objective 3. Change dose of <i>Beauveria bassiana</i> 1.15%WP as 60 g/10 L of water 4. Change dose of <i>Lecanicilium lecanii</i> 1.15%WP as 60 g/10 L of water 5. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm 6. Remove the observations of compatibility of biorationals (Action: Assistant Professor (Ento.), Krushi Vigyan Kendra, SDAU, Tharad)
22.3.3.103	Evaluation of biorationals for the management of mango hoppers	Approved with following suggestions: 1. Add new treatment as <i>Metarhizium anisopliae</i> 1.15% WP as 60 g/10 L of water 2. Change dose of T ₅ and T ₆ as 60 g/10 L of water 3. Write fruit yield instead of marketable fruit yield (Action: Scientist (Plant Protection), Krishi Vigyan Kendra, SDAU, Khedbrahma)

22.3.3.104	Evaluation of different modules for the management of serpentine leaf miner in watermelon	Approved with following suggestions: 1. In M ₁ , mention the time of covering and removal of cover 2. In M ₂ , mention concentration of cyantraniliprole (Action: Asst. Prof., Department of Entomology, CPCA, SDAU, Sardarkrushinagar)
22.3.3.105	Evaluation of biorationals against aphid in cumin under natural farming	Approved with following suggestions: 1. Remove “under natural farming” from title and objective 2. Change dose of <i>Beauveria bassiana</i> 1.15% WP as 60 g/10 L of water 3. Change dose of <i>Lecanicilium lecanii</i> 1.15% WP as 60 g/10 L of water 4. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm 5. Remove the observations of compatibility of biorationals, volatile oil content and test weight (Action: Associate Professor (Ento.), College of Agriculture, SDAU, Tharad)
22.3.3.106	Evaluation of biorationals against aphid in coriander under natural farming	Approved with following suggestions: 1. Remove “under natural farming” from title and objective 2. Change dose of <i>Beauveria bassiana</i> 1.15%WP as 60 g/10 L of water 3. Change dose of <i>Lecanicilium lecanii</i> 1.15% WP as 60 g/10 L of water 4. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm 5. Remove the observations of compatibility of biorationals and test weight (Action: Assistant Professor (Ento.), College of Agriculture, SDAU, Tharad)
22.3.3.107	Evaluation of application techniques of pesticides against aphid and foliar diseases in mustard	Approved with following suggestions: 1. Add observations of natural enemies 2. Correct the word “Downey” as Downy 3. Use the same quantity of water for insecticide & fungicide in drone spray (Action: Associate Professor (Ento.), College of Agriculture, SDAU, Tharad)
22.3.3.108	Ecofriendly management of root beetle (<i>Protaetia terrosa</i> Gori & Percheron) in cluster bean	Approved with following suggestion: 1. Remove observation “number of beetles/m/3 rows and also remove from methodology part (Action: Assistant Professor (Ento.), College of Agriculture, SDAU, Bhuj)
22.3.3.109	Eco-friendly management of seed wasp infesting coriander	Approved with following suggestions: 1. Remove observation on number of honeybee/1m ² /2 minutes (Action: Assistant Professor (Ento.), College of Horticulture, SDAU, Jagudan)
22.3.3.110	Evaluation of biorationals for the management of aphid in Indian bean	Approved with following suggestions: 1. Change dose of <i>Beauveria bassiana</i> 1.15%WP as 60 g/10 L of water

		2. Change dose of <i>Lecanicilium lecanii</i> 1.15% WP as 60 g/10 L of water 3. Write Azadirachtin 1 EC instead of Azadirachtin 10000 ppm 4. Write “pod yield” instead of “seed yield” (Action: Assistant Professor (Ento.), Vanbandhu Agriculture Polytechnic, S.D.A.U., Amirgadh)
22.3.3.111	Evaluation of insecticides against fall armyworm infesting maize	Approved with following suggestions: 1. Add new treatment as Emaxectin benzoate 5% + Lufenuron 40% WG 2. Spinetoram 11.7% SC as check (Action: Assoc. Prof (Ento.) Agri. Polytechnic, SDAU, Khedbrahma)
22.3.3.112	Evaluation of biorationals for the management of pod borer in chickpea under natural farming	Approved with following suggestions: 1. Remove “under natural farming” from title and objective 2. Change location as ARS, Talod and also change Co-PI accordingly (Action: Assoc. Prof (Ento.) Agri. Polytechnic, SDAU, Khedbrahma)
<u>PLANT PATHOLOGY</u>		
22.3.3.113	Evaluation of eco-friendly management strategies against major foliar diseases of mungbean	Approved with following suggestions: 1. Revise title as “Eco-friendly management of insect pests and major foliar diseases in mungbean 2. Change objective according to the title 3. Add reference in disease rating scale 4. Write “sour buttermilk” instead of fermented buttermilk 5. Use word “leaves (200 g) will be collected and crushed” in methodology 6. Record observations on insect pests and number of YVMV infected plants 7. Record observation on “Plant population/m row length at 20 DAS 8. Apply four spray of respective treatments (Action: Asst. Res. Scientist, (Pl. Path.), Pulse Research station, SDAU, Sardarkrushinagar)
22.3.3.114	Evaluation of natural inputs for the management of white rust disease of mustard	Approved with following suggestions: 1. Revise title as ‘Evaluation of natural inputs against white rust disease of mustard’ 2. Apply minimum four sprays of natural inputs 3. Record observation on “Plant population/m row length at 20 DAS (Action: Asst. Res. Scientist, (Pl. Path.), Centre for Oilseeds Research, SDAU, Sardarkrushinagar)
22.3.3.115	Evaluation of natural inputs for the management of foliar diseases of turmeric under natural farming	Approved with following suggestions: 1. Correct the spacing and plot size 2. Mention number of plants per gross and net plot in experimental details 3. Add the ancillary observations of insect pests and natural enemies and change the methodology accordingly (Action: Asst. Res. Scientist, (Pl. Path.), CNRM, SDAU, Sardarkrushinagar)

22.3.3.116	Evaluation of natural inputs for the management of foliar fungal diseases of potato under natural farming	Approved with following suggestions: 1. Verify the spacing and plot size 2. Change variety as “Pukharaj” 3. Correct the dose of Ghanjivamrut (Action: Asst. Res. Scientist, (Pl. Path.), CNRM, SDAU, Sardarkrushinagar)
22.3.3.117	Evaluation of different substrates for the production of Oyster mushroom (<i>Pleurotus</i> spp.)	Approved with following suggestions: 1. Remove <i>rabi</i> season from season of experiment 2. Record observations on biological efficiency 3. Record pileus diameter of mushroom (Action: Asst. Res. Scientist, (Pl. Path.), Regional Research Station, SDAU, Bhachau)
22.3.3.118	Evaluation of seed dressing fungicides for the management of soil borne diseases of groundnut	Approved with following suggestions: 1. In title replace “soil borne” with “seed borne” 2. Change variety as GG 20 and modify spacing as 60 x 10 cm 3. Keep T₁ as check 4. Remove T₂ treatment 5. Replace T₉ treatment with “Carboxin 37.5% + Thiram 37.5% WS” (Action: Scientist (Pl. Path.), Krishi Vigyan Kendra, SDAU, Deesa)
22.3.3.119	Ecofriendly management of foliar diseases of brinjal	Not Approved (Action: Asst. Prof., (Pl. Path.), Dept. of Plant Pathology, CPCA, SDAU, Sardarkrushinagar)
22.3.3.120	Evaluation of fungicides against Downy mildew disease of watermelon	Approved with following suggestions: 1. Revise the treatments as: T1: Chlorothalonil 75% WP T2: Mandipropamid 23.4% SC T3: Zineb 75% WP T4: Azoxystrobin 4.8% w/w + chlorothalonil 40% w/w SC T5: Cymoxanil 8% + mancozeb 64% WP T6: Dimethomorph 12% + pyraclostrobin 6.7% WG T7: Control (Action: Prof. & Head, Dept. of Plant Pathology, CPCA, SDAU, Sardarkrushinagar)
22.3.3.121	Evaluation of natural inputs for the management of leaf curl in chilli under natural farming	Approved with following suggestions: 1. Remove “under natural farming” from title 2. Follow common methodology for preparation of natural inputs (Action: Asst. Prof., (Pl. Path.), Agri. Polytechnic, SDAU, Amirgadh)

General Suggestions:

- Organic inputs/pesticides based recommendations should be considered for farming community recommendations.
- Use common standard abbreviations for quantity of insecticide or water in liter as 'L', dose of insecticide in milliliter per liter as 'mL' and seed rate in kilogram as 'kg/ha', etc.
- Follow common style of writing name of natural inputs as: *Jeevamrut*, *Ghanjeevamrut*, *Beejamrut*, *Neemastra*, *Agniastra*, *Brahmastra* and *Dashparni ark*.
- Write fertilizer dose as 'N: P₂O₅: K₂O kg/ha' instead of NPK kg/ha.
- Write quantity of tons / hectare as 't/ha'.
- Always subscript the treatment numbers as T₁, T₂....
- Write plot size as: Width x Length.
- Write name of recommended insecticide with concentration and dose as "Azadirachtin 1 EC at 0.003 % (30 mL /10 L)" instead of mentioning g a.i./ha.
- Keep year wise pooled Tables as well as mention CD values of individual parameters and Interactions in Tables.
- Suggestions of approved New Technical Programme(s) from Plant Protection Sub-Committee and Combined AGRESCO proceeding should be kept in Report of AGRESCO and PPT presentation (scan photocopy).
- Always keep approved NTP number and suggestions made during concerned PPSC and CA as first page/slide (Report and PPT) while bringing FR/SI in the house.
- Background information and appropriate methodology should be mentioned as per proper format in all the New Technical Programme(s) and recommendations.
- All the members of PPSC are strictly instructed to critically go through the proceedings of Combined AGRESCO of last three years.
- The label claimed information should be given as per CIB & RC format and ensure whether waiting period or post- harvest interval in the concerned FR.
- General points suggested during 20th and 21st combined AGRESCO should also be followed.

Common protocol for biorationals/natural inputs:

- **Seed treatment with *Beejamrut*:** Soft seed should be kept for 6-7 hrs, whereas hard seed should be kept for 12-14 hrs for seed treatment and then shade dried for sowing.
- **Dose:** *Jeevamrut*: 100%, *Neemastra*: 100%, *Agniastra*: 4%, *Brahmastra*: 4%, *Dashparni ark*: 4% and *Ghanjeevamrut*: 3.5 t/ha (modify as per crop requirements).
- **Number of sprays of natural inputs:** Minimum 4 nos. and subsequent as per need of crop and pest intensity.
- **Time of observations:** One day before spray and subsequently 5 and 9 days after each spray (Modify in particular case of insect pests and diseases).
- **Spray interval:** 10 days.
- **Microbial count and organic carbon:** Pre- and post- experimtn status microbes and carbon contents should be analysed.
- If possible, try to keep same layout of the experiment at same location for three years.
- Auxiliary observations: Natural enemies
- Preparation of natural inputs: Follow common guidelines at all SUAs.

Statistical suggestions:

- **Alignment of title, objectives, and methodology:** The methodology should be properly aligned with the title and objectives of the NTP so that the experiment remains scientifically focused, logically structured, and outcome oriented.
- **Clear and specific methodology for each objective:** A separate and clearly defined methodology should be mentioned for each objective to avoid ambiguity and to ensure better understanding and interpretation of the results.
- **Systematic recording of observations:** Observations should be recorded in a systematic manner by clearly mentioning what is to be observed, when and from where observations will be taken, along with the frequency, season, scale and units of measurement. This helps in maintaining uniformity and accuracy in data collection.
- **Mentioning units and measurement scale:** Proper units and scales of measurement must be specified for every parameter to maintain scientific validity, reproducibility and ease of statistical analysis.
- **Statistical reasoning and recommendations:** Proper statistical reasoning, suitable experimental design and appropriate recommendations for data analysis should also be incorporated and supported as circulated earlier in AGRESCO guidelines, so that the experiment remains scientifically sound and statistically valid.

22.4 HORTICULTURE & FORESTRY

Date & Venue: 5-7 May, 2026 at AAU, Anand

Chairman	Dr. N. I. Shah, Hon. Vice Chancellor, AAU, Anand
Co-Chairman	(1) Dr. Piyush Verma, Dean (Horti.), SDAU, Sardarkrushinagar (2) Dr. Alka Singh, Dean (Horti.), NAU, Navsari
Rapporteurs	(1) Dr. J. S. Patel, AAU, Anand (2) Dr. D. R. Pardva, JAU, Junagadh (3) Dr. Pankaj Bhalerao, NAU, Navsari (4) Dr.S.K.Acharya, SDAU, Sardarkrushinagar
Statistician	Dr. Priti Kumari, AAU, Anand

The 22nd meeting of Combined AGRESO of SAUs for Horticulture & Forestry to be held on 5-7 May, 2026 at AAU, Anand at Yagnvalkya Hall, University Bhavan, AAU, Anand at the outset, Dr. S. N. Shah, Director of Research & Dean, P.G. Studies, AAU, Anand welcomed Chairman and Hon'ble Vice Chancellor of AAU, Anand Dr. N. I. Shah, Co-Chairman's, Conveners from different SAUs, Rapporteurs and all the members of the Combined AGRESO of SAUs of Gujarat and offered a flower bouquet to respected Chairperson Dr. N. I. Shah.

Dr. S. N. Shah, Director of Research & Dean P G Studies presented detailed account of research resume highlighting different milestones and achievements achieved by scientists

Dr. N. I. Shah, Hon'ble Vice-Chancellor, AAU, Anand. In his introductory remarks highlighted the focus on natural and organic farming and research areas for fruit, vegetable and flower crops. He mentioned about the need of horticultural research in context to the climate resilient agriculture. He also emphasized on crop biodiversity and improving soil health by adopting natural farming practices in various horticultural crops. Also congratulated to all the scientists for fruitful and healthy discussion for finalization of recommendations and new technical programs in respective.

The inaugural programme concluded with a vote of thanks delivered by Dr. B. N. Satodia, Professor, College of Horticulture, AAU, Anand. The finalized proceedings and recommendations are organized in the tabular format below:

DATE: 5-7/05/2026 Summary

Name of University	No. of Recommendations				New Technical Programs	
	Farmers/Entrepreneurs/		Scientific		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
NAU (Hort) (Forest)	14	14	03	02+01*	26	22+04*
	01	01	03	03	06	06
JAU	05	04	00	01#	11	09+01## +02*
SDAU	07	07+01@	02	01	29	23+06*
AAU	04	04	02	02	17	17
Total	31	30+01@	10	09+01*	89	77+01##+12*

* Not Approved **Only for confirmation

Recommendation shifted from farmer to scientific information

@ Recommendation shifted from scientific information to farmer

NTP shifted from AET/AIT/PHT/FPTBE Subcommittee to this group

22.4.1 RECOMMENDATIONS FARMING COMMUNITY

NAVSARI AGRICULTURE UNIVERSITY (HORTICULTURE), NAVSARI

Item No.	Recommendations for Farmers Community
22.4.1.1	Effect of heading back and pruning on growth and yield of high density planting orchard of mango cv. Kesar Recommendation for farming community: The farmers of South Gujarat are recommended to head back overcrowded HDP (5 m x 5 m) mango cv. Kesar orchard at five to seven feet (5 to 7 ft) height from ground level to get higher yield and net return. Note: • Maintain 4 to 6 newly emerged shoots per branch and prune it at 10 to 30 cm length. • Rejuvenation should be done after completion of monsoon (in month of October-November). • For rejuvenation slant cut should be made with the help of sharp axes and cut portion should be treated with paste of copper oxychloride fungicide (100 g/L) and frequently visit to rejuvenated orchard for controlling mango stem borer. ભલામણ: દક્ષિણ ગુજરાતના ખેડૂતોને ભલામણ કરવામાં આવે છે કે કેસર આંબાની ગીચ થયેલ ઘનિષ્ઠ વાવેતર પદ્ધતિથી (૫ મી. x ૫ મી.) રોપેલ વાડીને જમીનના લેવલથી પાંચ થી સાત ફૂટ ઉંચાઈથી છંટણી કરવાથી વધુ ઉત્પાદન અને વળતર મેળવી શકાય છે. નોંધ: • ડાળી દીઠ ૪ થી ૬ નવી નિકળેલ કુંપણોને ૧૦ થી ૩૦ સે. મી. રાખી છંટણી કરવી. • નવીનીકરણ ચોમાસું પૂર્ણ થયા પછી કરવું (ઓક્ટોબર-નવેમ્બર માસમાં) • નવીનીકરણ માટે ધારદાર કુહાડીથી ત્રાસો કાપ મૂકી કપાયેલા ભાગ ઉપર કોપર ઓક્સીકલોરાઈડ ફૂગનાશકની પેસ્ટ લગાવવી (૧૦૦ ગ્રામ/લિ.) અને નવીનીકરણ કરેલ આંબાવાડીમાં આંબાના મેઢનાં નિયંત્રણ માટે નિયમિત મુલાકાત લેતા રહેવું. Recommendation approved as such (Action: Research Scientist, RHRS, ACH, NAU, Navsari)
22.4.1.2	Response of silicon on flowering, yield and quality of Sapota cv. Kalipatti Recommendation for farming community: Farmers of South Gujarat growing Sapota cv. Kalipatti are recommended to apply three foliar sprays of Potassium silicate @ 8 g/L at the end of January, February and March month in addition to recommended dose of fertilizers for obtaining higher fruit set, yield and net return. ખેડૂતોપયોગી ભલામણ: દક્ષિણ ગુજરાતના ચીકુની કાલીપત્તી જાત ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ભલામણ કરેલ ખાતરના જથ્થા ઉપરાંત ચીકુમાં ૮ ગ્રા/લી. પોટાશિયમ સિલિકેટના ત્રણ છંટકાવ જાન્યુઆરી, ફેબ્રુઆરી અને માર્ચ માસના અંતે કરવાથી વધુ ફળધારણ, ઉત્પાદન અને વળતર મેળવી શકાય છે. Recommendation approved as such (Action: Research Scientist, RHRS, ACH, NAU, Navsari)

22.4.1.3	Optimization of nitrogen and potash fertilizer in dragon fruit Recommendation for farming community: Dragon fruit (<i>Kamalam</i>) growing farmers of South Gujarat are recommended to apply 550g nitrogen and 350g potash nutrient along with 720 g phosphorus per pole (4 plants) in four equal splits at three month interval starting from November month and 10 kg FYM per pole applied after final harvest in three years old dragon fruit orchard for obtaining higher yield and net return. ખેડૂતોપયોગી ભલામણ: દક્ષિણ ગુજરાતમાં ડ્રેગન ફ્રુટ (કમલમ) ની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ત્રણ વર્ષ જૂની વાડીમાં ૫૫૦ ગ્રામ નાઈટ્રોજન અને ૩૫૦ ગ્રામ પોટાશ પોષક તત્વો સાથે ૭૨૦ ગ્રામ ફોસ્ફરસ પ્રતિ થાંભલે (૪ છોડ) નવેમ્બર માસથી ચાર સરખા હપ્તામાં ત્રણ મહિનાના અંતરે અને ૧૦ કિ.ગ્રા. છાણીયું ખાતર પ્રતિ થાંભલે અંતિમ લણણી બાદ આપવાથી વધુ ઉત્પાદન અને વળતર મેળવી શકાય. Recommendation approved as such <i>(Action: Research Scientist, RHRS, ACH, NAU, Navsari)</i>
22.4.1.4	Effect of epicotyl thinning and spray of GA₃ on growth of polyembryonic mango genotypes Recommendation for farming community: For raising Polyembryonic mango seedlings, nurserymen are recommended to do thinning of epicotyl to retain the most vigorous one at 60 days after sowing of stones in combination with spray of GA₃ 100 ppm at 60, 90 and 120 days after sowing to obtain the quality seedlings suitable for softwood grafting in six months. ખેડૂતોપયોગી ભલામણ: નર્સરીધારકોને ભલામણ કરવામાં આવે છે કે આંબાની બહુભુણીય (પોલીએમ્બ્રીઓનીક) જાતના રોપા ઉછેર માટે ગોટલા રોપ્યા પછી ૬૦ દિવસે અંકુરિત થયેલા રોપમાંથી સૌથી જુસ્સાદાર એક રોપ રાખી બાકીના કાપી કાઢવા અને સાથે ૬૦, ૯૦ અને ૧૨૦ દિવસે જીબ્રેલીક એસીડ ૧૦૦ મિ.ગ્રા./લીટર નો છંટકાવ કરવાથી છ મહિનામાં નુતન કલમ માટે સારા રોપા તૈયાર થાય છે. Recommendation approved as such <i>(Action: Research Scientist, AES, NAU, Paria)</i>
22.4.1.5	Effect of age of rootstock on success of saddle grafting in Mango (<i>Mangifera indica</i> L.) Recommendation for farming community: Nursery owners of South Gujarat preparing mango grafts are recommended to use 4-month-old rootstock for saddle approach grafting in the month of October for getting higher survival of grafts with net return. ખેડૂતોપયોગી ભલામણ: દક્ષિણ ગુજરાતના આંબા કલમ બનાવતા નર્સરીધારકોને ભલામણ કરવામાં આવે છે કે સેડલ ભેટ કલમ બનાવવા માટે ૪ મહિનાની ઉંમર ધરાવતો મુલકાંડ વાપરી ઓક્ટોબર મહિનામાં જો કલમ બનાવવાથી વધુ જીવંત કલમો સાથે વળતર મેળવી શકાય છે. Recommendation approved with following suggestion: 1. Mention the observational units in table wherever necessary. <i>(Action: Associate Research Scientist, FRS, NAU, Gandevi)</i>

22.4.1.6	Effect of different organic inputs in banana Recommendation for farming community: The farmers of Gujarat cultivating banana cv. Grand Nain are recommended to apply 7.5 kg FYM and 225-67.5-150 NPK g per plant (75% RDF) in soil along with three foliar sprays of Novel organic liquid nutrients @ 2% (3rd and 5th month after planting on plant and after denavelling on bunch) for getting maximum yield and higher net return with 25% saving of fertilizers. ખેડૂતોપયોગી ભલામણ: ગુજરાતમાં ગ્રાન્ડ નૈન કેળની ખેતી કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે ૭.૫ કિ.ગ્રા. છાણિયું ખાતર સાથે પ્રતિ છોડ ૨૨૫ ગ્રામ નાઇટ્રોજન, ૬૭.૫ ગ્રામ ફોસ્ફોરસ અને ૧૫૦ ગ્રામ પોટાશ જમીનમાં આપવું (ભલામણના ૭૫%) સાથે ૨% નોવેલ ઓર્ગેનિક લિક્વિડ ન્યુટ્રીયન્ટ્સનાં ત્રણ છંટકાવ (છોડ ઉપર રોપણીના ત્રીજા અને પાંચમાં મહિને અને લૂમ ઉપર ડોડો તોડ્યા બાદ) કરવાથી વધુ ઉત્પાદન અને વળતર સાથે ૨૫% ખાતરની બચત થાય છે. Recommendation approved as such (Action: Associate Research Scientist, FRS, NAU, Gandevi)
22.4.1.7	Evaluation of Arka Microbial Consortium (AMC) in papaya Recommendation for farming community: The papaya growers of Gujarat are recommended to apply 10 kg FYM at the time of planting and 75% RDF (150:150:187.5 g nitrogen, phosphorus and potash/plant) apply in four equal splits at 2nd, 4th, 6th and 8th month after planting and Arka Microbial Consortium(11g/plant) along with 1 kg FYM in two equal splits (at the time of planting and 6 month after planting) to increase the yield and net return as well as enhance the nutrient status of soil in papaya. ખેડૂતોપયોગી ભલામણ: ગુજરાતમાં પપૈયાની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે પપૈયામાં રોપણી સમયે ૧૦ કિ.ગ્રા. છાણિયું ખાતર અને ભલામણ કરેલ રસાયણિક ખાતરોનું ૭૫ ટકા જથ્થો (૧૫૦:૧૫૦:૧૮૭.૫ ગ્રામ/છોડ નાઇટ્રોજન, ફોસ્ફોરસ અને પોટાશ) ચાર સરખા હપ્તામાં ૨, ૪, ૬, અને ૮ માં મહિનામાં રોપણી પછી અને અર્કા માઈક્રોબિયલ કોન્સોર્ટિયમ (૧૧ ગ્રામ/છોડ) ૧ કિ.ગ્રા. છાણિયું ખાતર સાથે બે સરખા ભાગમાં (રોપણી વખતે અને રોપણીના ૬ મહિના પછી) આપવાથી વધારે ઉત્પાદન અને વળતર મેળવવાની સાથે જમીનમાં પોષકતત્વોનું પ્રમાણ વધે છે. Recommendation approved with following suggestion 1.Remove the Table No. 8 (Action: Associate Research Scientist, FRS, NAU, Gandevi)
22.4.1.8	Effect of organic liquids on growth and yield of turmeric Recommendation for farming community: The farmers of South Gujarat growing turmeric cv. GNT-2 are recommended to apply three foliar sprays of Novel organic liquid nutrients @ 2% at 60, 120 and 180 days after planting with recommended dose of fertilizers (20 t/ha FYM and 60:60:60 NPK kg/ha) for obtaining higher yield along with net return. ખેડૂતોપયોગી ભલામણ:

	દક્ષિણ ગુજરાતમાં હળદરની જી એન ટી -૨ જાત ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, હળદર વાવેતરના ૬૦, ૧૨૦ અને ૧૮૦ દિવસ પછી ૨% નોવેલ ઓર્ગેનિક લિક્વિડ ન્યુટ્રીયન્ટસનાં કુલ ત્રણ છંટકાવ કરવા સાથે ભલામણ મુજબ ખાતર (૨૦ ટન/હે હાણિયું ખાતર અને ૬૦:૬૦:૬૦ નાઇટ્રોજન:ફોસ્ફોરસ:પોટાશ કિલો/હે) આપવાથી વધુ ઉત્પાદન તેમજ વળતર મેળવી શકાય છે. Recommendation approved as such (Action: Professor & Head, PSMA, ACH, NAU, Navsari)
22.4.1.9	Influence of micronutrients on growth and yield of turmeric Recommendation for farming community: The farmers of South Gujarat growing turmeric cv. GNT-2 are recommended to apply three foliar sprays of EDTA Fe- 0.5% + EDTA Zn-0.5% + Boron (OBTH) -0.5% at 60, 120 and 180 days after planting with recommended dose of fertilizers (20 t/ha FYM and 60:60:60 NPK kg/ha) for obtaining higher yield, better curcumin content along with net return. ખેડૂતોપયોગી ભલામણ: દક્ષિણ ગુજરાતમાં હળદરની જી એન ટી - ૨ જાત ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, હળદર વાવેતરના ૬૦, ૧૨૦ અને ૧૮૦ દિવસ પછી ચીલેટેડ ફેરસ-૦.૫% + ચીલેટેડ ઝીંક-૦.૫% + બોરોન (ઓબીટીએચ)-૦.૫% ના કુલ ત્રણ છંટકાવ કરવા સાથે ભલામણ મુજબ ખાતર (૨૦ ટન/હે હાણિયું ખાતર અને ૬૦:૬૦:૬૦ નાઇટ્રોજન:ફોસ્ફોરસ:પોટાશ કિ.ગ્રા./હે) આપવાથી વધુ ઉત્પાદન, સારું કર્કુમીન અને વધારે વળતર મેળવી શકાય છે. Recommendation approved as such (Action: Professor & Head, PSMA, ACH, NAU, Navsari)
22.4.1.10	Effect of foliar application of liquid organic nutrients on growth, yield and quality of elephant foot yam var. Swagata Recommendation for farming community: The farmers of South Gujarat growing Elephant foot yam are recommended to apply three foliar sprays of Novel organic liquid nutrients @ 1.0 % (10 mL per liter of water) at 60, 90 and 120 DAP for enhancing yield and net return. ખેડૂતોપયોગી ભલામણ: દક્ષિણ ગુજરાતમાં સુરણની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નોવેલ ઓર્ગેનિક લીક્વિડ ન્યુટ્રીયન્ટસનો ૧% (૧૦ મિલી પ્રતિ લિટર પાણીમાં) ના દરે વાવેતર પછીના ૬૦, ૯૦ અને ૧૨૦ દિવસે કુલ ત્રણ છંટકાવ કરવાથી સારી ઉપજ અને વળતર મેળવી શકાય છે. Recommendation approved as such (Action: Associate Research Scientist, HMRS, NAU, Waghai)
22.4.1.11	Standardization of growing media for seed germination of pansy (Viola x wittrockiana) Recommendation for farming community: Farmers and nursery owners are recommended to sow pansy seeds in plug trays with media combination of coco peat: peat moss: perlite @ 2:1:1 v/v for getting maximum survival percentage and quality seedlings. Note:-

	1. Sow the seeds of pansy in plug tray with 104 cells at 0.5 cm depth under poly tunnel. 2. The seedling should be fertilized with 19:19:19 @ 50 ppm twice @ 15 and 25 days after germination. 3. After germination the seedlings should be placed in UV stabilized rain shelter/poly house for establishment. 4. Give light irrigation to the seedling twice in a day with spray-pump. 5. The accurate pH correction and electrical conductivity (salinity) management by washing the media three (03) times with non-saline water before sowing are essential for attaining uniform and exceptional seedling performance. ખેડૂતોપયોગી ભલામણ: ખેડૂતો અને નર્સરીધારકોને ભલામણ કરવામાં આવે છે કે પેન્સીના ધરુ તૈયાર કરવા માટે પ્લગ ટ્રેમાં કોકોપીટ: પીટ મોશ: પરલાઈટના ૨:૧:૧ કદ મુજબના મીડિયા મિશ્રણમાં પેન્સીના બીજ વાવવાથી સારી ગુણવત્તાવાળાવધુ ધરુ મેળવી શકાય છે. નોંધ:- ૧. પેન્સીના બીજને ૧૦૪ ખાનાવાળી પ્લગ-ટ્રેમાં ૦.૫ સેમી. ઊંડાઈએ પોલીટનેલમાં વાવણી કરવી. ૨. ધરુને અંકુરણ બાદ ૫૦ પીપીએમ મુજબ ૧૯:૧૯:૧૯ એનપીકે ખાતરના મિશ્રણનો અનુક્રમે ૧૫ અને ૨૫ દિવસે છંટકાવ કરવો. ૩. બીજના અંકુરણ બાદ તેમને યુવી સ્ટેબીલાઈઝડ રેઇન શેલ્ટરમાં/પોલી હાઉસમાં રાખવા. ૪. ધરુને દરરોજ બે-વાર હલકુ પિયત સ્પ્રે-પંપથી આપવું. ૫. માધ્યમને ખારાશ વગરના પાણીથી ત્રણ (૦૩) વાર ધોઈને સચોટ પીએચ સુધારણા અને વિદ્યુત વાહકતા (ખારાશ) વ્યવસ્થાપન એકસમાન અને સારા બીજના અંકુરણ પ્રાપ્ત કરવા માટે ખુબજ જરૂરી છે. Recommendation approved as such (Action: Professor & Head, FLA, ACH, NAU, Navsari)
22.4.1.12	Effect of different media on leaf propagation in <i>Echeveria</i> succulent plant Recommendation for farming community: Nurserymen of Gujarat are recommended to propagate <i>Echeveria hagai</i> and <i>Echeveria hybrida</i> by placing of healthy mature leaf (including petiole) in media comprising of cocopeat + sand @ 2:1 v/v under polyhouse condition for production of more number of plantlets with better rooting and higher survival rate. Note: Foliar application of NPK 00-52-34 @ 20 g/L at 1st and 3rd week as well as NPK 19:19:19 @ 20 g/L at 2nd and 4th week of every month. ખેડૂતોપયોગી ભલામણ: ગુજરાતનાં નર્સરી ધારકોને ભલામણ કરવામાં આવે છે કે, પોલીહાઉસમાં એચિવેરિયા હગાઈ અને એચિવેરિયા હાઇબ્રીડનાં સ્વસ્થ- પુખ્ત પર્ણદંડ સાથેનાં પાનને કોકોપીટ + રેતીનાં ૨:૧ કદ આધારિત માધ્યમમાં રોપવાથી વધુ માત્રામાં મૂળો ધરાવતા છોડ ઉત્પાદિત કરી ઊંચો જીવંત દર પ્રાપ્ત કરી શકાય છે. નોંધ: મહિનાના પ્રથમ અને ત્રીજા અઠવાડિયે ૦૦:૫૨:૩૪ ના. ફો. પો. ૨૦ ગ્રામ/લિ નો સ્પ્રે તથા બીજા અને ચોથા અઠવાડિયે ૧૯:૧૯:૧૯ ના. ફો. પો. ૨૦ ગ્રામ/લિ નો સ્પ્રે દર મહિને કરવો. Recommendation approved as such (Action: Professor & Head, FLA, ACH, NAU, Navsari)

22.4.1.13	Effect of different growing media for ZZ plant Recommendation for farming community: Nursery owners of Gujarat are recommended to use Cocopeat + Sand + Biochar @ 3:1:1 v/v potting media for growing attractive quality ZZ plants under indoor condition. Note: Pot size: Top diameter 10 cm and height 10 cm with 500 ml volume capacity. Drenching with 19:19:19 NPK @ 250 mg/L of 50 mL/plant once in a month. ખેડૂતોપયોગી ભલામણ: ગુજરાતનાં નર્સરીધારકોને આંતરિક પરિસ્થિતિવાળા સ્થળ પર આકર્ષક અને સારા વિકાસ ધરાવતા ઝીઝી છોડને ઉછેરવા માટે કોકોપીટ + રેતી + બાયોચાર @ ૩:૧:૧ કદ આધારિત માધ્યમમાં રોપવાની ભલામણ કરવામાં આવે છે. નોંધ : કુંડાનું કદ ૧૦ સે.મી ટોચનો વ્યાસ અને ૧૦ સે.મી. ઉંચાઈ અને ૫૦૦ મીલી ક્ષમતા. ૨૫૦ મી. ગ્રા./લિ. ૧૯:૧૯:૧૯ ના. ફો. પો. ૫૦ મીલી છોડ દીઠ મહિનામાં એક વાર આપવું. Recommendation approved as such (Action: Professor & Head, FLA, ACH, NAU, Navsari)
22.4.1.14	Standardization of process for freeze drying of baby corn slices Recommendation for farming community: Processors and entrepreneurs are recommended to prepare freeze dried baby corn slices by cutting them into 6 mm slices and blanching at 85±2°C temperature for 2 minutes followed by cooling. Freeze drying should be done by freezing the slices at -18 °C followed by vacuum drying at 60°C and packed in aluminium laminated bags (380 gauges). The freeze dried baby corn slices have storage stability for 6 months at ambient temperature with retention of nutritional and sensory properties. ખેડૂતોપયોગી ભલામણ: પ્રોસેસરો અને ઉદ્યોગસાહસિકોને ભલામણ કરવામાં આવે છે કે, ફ્રીઝ ડ્રાય બેબી કોર્ન ચિપ્સ બનાવવા માટે બેબી કોર્નને ૬ મિલીમીટર સ્લાઇસમાં કાપી ૮૫±૨°સે. તાપમાને ૨ મીનીટ સુધી ગરમ કરી ઠંડી પાડવી. ત્યારબાદ આ ચિપ્સને -૧૮°સે. તાપમાને ફ્રીઝ કરી ૬૦°સે. તાપમાને વેક્યુમ ડ્રાય કરવી અને એલ્યુમીનીયમ લેમીનેટેડ પાઉચ (૩૮૦ ગેજ) માં પેક કરવી. આ રીતે પેક કરેલ ફ્રીઝ ડ્રાય બેબી કોર્ન ચિપ્સને ગુણવત્તા અને પોષકતત્વો સાથેક માસ સુધી સામાન્ય તાપમાને સંગ્રહ કરી શકાય છે. Recommendation approved with following suggestion 1. Add individual factors in the Tables. (Action: Professor & Head, PHT, ACH, NAU, Navsari)

NAVSARI AGRICULTURE UNIVERSITY (FORESTRY), NAVSARI

Item no.	Recommendations for farming Community
22.4.1.15	Dormancy and germination investigations in <i>Melia dubia</i> Cav. Recommendation for farming community: Nurserymen and foresters are recommended to sow four months stored <i>Melia dubia</i> seeds soaked in water for 24 hours for getting higher germination. ખેડૂતોપયોગી ભલામણ: નર્સરીધારકો અને વનપાલોને ભલામણ કરવામાં આવે છે. કે મેલિયા ડુબિયાના ચાર મહિના સુધી સંગ્રહિત બીજ ને ૨૪ કલાક પાણીમાં પલાળીને વાવવાથી વધુ અંકુરણ મેળવી શકાય છે. Recommendation approved as such (Action: PI & HoD, FBTI, College of Forestry, NAU, Navsari)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Item no.	Recommendations for Farmers Community
22.4.1.16	Effect of different pollination methods on fruit set and yield in custard apple (<i>Annona squamosa</i> L.) cv. Sindhan Recommendation for farming community: The farmers of South Saurashtra growing custard apple are recommended to use 80% pollen suspension (Pollen suspension i.e. 480 mg pollen in 1 litre water) + 200 mL of 1 % corn starch solution for spraying on flower three times weekly interval during June flush of flowering period for obtaining higher yield and net returns. <u>Procedure to collect pollen:</u> Collect flowers with slightly open petals a day before pollination during evening time between 5.00 to 6.00 pm. Remove the petals and keep the flowers overnight for drying at room temperature in petri dish. Collect the pollens from the dried flowers. ખેડૂત ઉપયોગી ભલામણ: દક્ષિણ સૌરાષ્ટ્ર વિસ્તારમાં સીતાફળનું વાવેતર કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ૮૦ ટકા પરાગરજ દ્રાવણ (પરાગરજ દ્રાવણ: ૪૮૦ મી.ગ્રા. પરાગરજ પ્રતિ ૧ લી. પાણી) + ૧ ટકા કોર્ન સ્ટાર્ચ સોલ્યુશન ધરવતા ૨૦૦ મિલી દ્રાવણનું મિશ્રણ કરી તેનો ફૂલ અવસ્થાએ અઠવાડિયા ના અંતર ત્રણ વખત જુન માસ ના ફૂલો પર છંટકાવ કરવાથી વધુ ઉત્પાદન અને ચોખ્ખો નફો મળે છે. <u>પરાગરજ એકત્રિત કરવાની પ્રક્રિયા:</u> પરાગનયનના એક દિવસ પહેલા સાંજે ૫.૦૦ થી ૬.૦૦ વાગ્યા દરમિયાન થોડી ખુલ્લી પાંખડીઓવાળા ફૂલો એકત્રિત કરવા. આ ફૂલોની પાંખડીઓ દૂર કરી અને પેટ્રી ડીશમાં રાત્રિ દરમિયાન સામાન્ય તાપમાને સૂકવવા માટે રાખવા ત્યારબાદ આ સૂકા ફૂલોમાંથી પરાગ એકત્રિત કરવા. Approved with following Suggestion/s 1. Mention flowering time in recommendation 2. Recalculate economic

	(Action: Principal & Dean, CoH, J.A.U., Junagadh)
22.4.1.17	Nutrient management in leafy coriander cv. GDLC 1
	Recommendation for farming community: The farmers of South Saurashtra growing green leafy coriander during <i>rabi</i> season are recommended to apply 50 kg/ha Nitrogen in three splits (25 kg/ha as basal, 12.5 kg/ha after first cutting and 12.5 kg/ha after second cutting) along with basal fertilizer dose of 30 kg/ha P₂O₅ and 20 kg/ha K₂O for getting higher yield and net returns. ખેડૂત ઉપયોગી ભલામણ: દક્ષિણ સૌરાષ્ટ્ર વિસ્તારમાં રવિ ઋતુમાં કોથમીરનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નાઈટ્રોજન ૫૦ કિ.ગ્રા./હે. ત્રણ હપ્તામાં (૨૫ કિ.ગ્રા./હે. પાયામાં અને ૧૨.૫ કિ.ગ્રા./હે. પ્રથમ અને બીજી કાપણી પછી) સાથે પાયાના ખાતર તરીકે ફોસ્ફરસ ૩૦ કિગ્રા/હે. અને પોટાશ ૨૦ કિ.ગ્રા./હે. આપવાથી વધુ ઉત્પાદન અને વળતર મળે છે. Approved with following Suggestion/s 1. Mention fertilizer dose as per methodology 2. Add economics appendix in Report (Action: Principal & Dean, CoH, J.A.U., Junagadh)
22.4.1.18	High Density Planting of Sapota under saline soil
	Recommendation for farming community: The farmers of South Saurashtra growing sapota on saline soil are recommended to adopt high density planting in sapota at the spacing of 4m x 4m for obtaining higher yield and net returns. Note: Pruning should done to remove the branches that touched the braches of adjacent trees during October month ખેડૂત ઉપયોગી ભલામણ: દક્ષિણ સૌરાષ્ટ્ર વિસ્તારમાં ક્ષારીય જમીનમાં ચીકુની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ચીકુનું ઘનિષ્ટ પદ્ધતિથી વાવેતર ૪ મી. x ૪ મી. ના અંતરે કરવાથી વધુ ઉત્પાદન અને વળતર મળે છે. નોંધ: ઓક્ટોબર મહિનામાં બાજુના વૃક્ષોની ડાળીઓને સ્પર્શતી ડાળીઓ દૂર કરવા માટે કાપણી કરવી જોઈએ. Approved with following Suggestion/s 1. Add Note : mention time of pruning 2. Add saline condition in recommendation text (Action: Research Scientist (Horti.), ARS (Fruit Crops), JAU, Mahuva)
22.4.1.19	Effect of NPK on growth, flower yield, quality and corm/cormel production of gladiolus (<i>Gladiolus grandiflorus</i> L.)
	Recommendation for farming community: Farmers of South Saurashtra growing gladiolus are recommended to apply nitrogen 300 kg/ha (150 kg/ha as basal and 150 kg/ha after one month of planting) phosphorus 75 kg/ha and potash 150 kg/ha both as basal for getting higher yield and net returns. ખેડૂત ઉપયોગી ભલામણ: દક્ષિણ સૌરાષ્ટ્ર વિસ્તારમાં ગ્લેડીયોલસની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે નાઈટ્રોજન ૩૦૦ કિ.ગ્રા./હે. (૧૫૦ કિ.ગ્રા./હે પાયામાં અને ૧૫૦ કિ.ગ્રા./હે. વાવેતરના એક

	માસ બાદ), પાયાના ખાતર તરીકે ફોસ્ફરસ ૭૫ કિ.ગ્રા./હે. અને પોટાશ ૧૫૦ કિ.ગ્રા./હે. આપવાથી વધુ ઉત્પાદન અને વળતર મળે છે. Approved with following Suggestion/s 1. Recheck the interaction effect in table. 2. Calculate the economics again. (Action: Principal & Dean, CoH, J.A.U., Junagadh)
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SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S. K. NAGAR

22.4.1.20	Effect of storage conditions and packaging materials on shelf life of phalsa (<i>Grewia asiatica</i> L.) fruit Recommendation for entrepreneurs and farming community: Processors and entrepreneurs are recommended that phalsa fruits can be stored for one year in deep freeze at $-19^{\circ}\text{C} \pm 1$ temperature. ખેડૂત ઉપયોગી ભલામણ: પ્રોસેસર્સ અને ઉદ્યોગસાહસિકોને ભલામણ કરવામાં આવે છે કે ફાલસાના ફળોને એક વર્ષ સુધી ડીપ ફ્રીઝમાં $-19^{\circ}\text{C} \pm 1$ તાપમાને સંગ્રહિત કરી શકાય છે Approved with following Suggestion/s: 1. Write stored instead of store in English version of recommendation 2. Write deep freeze at $-19^{\circ}\text{C} \pm 1$ temperature instead of deep freezer at -20°C to -18°C temperature in both English and Gujarati version of recommendation (Action: Professor & Head, Dept. of Horticulture, CPCA, S. K. Nagar)
22.4.1.21	Effect of top end plugs on rooting of cuttings of different ornamental shrubs Recommendation for farming community: Farmers and nurserymen propagating hibiscus and croton through hardwood cuttings in fan and pad poly house condition are recommended to use cow dung as top end plugs on the cuttings to get better growth and higher survival rate. ખેડૂત ઉપયોગી ભલામણ: ફેન અને પેડ સિસ્ટમ ધરાવતા પોલીહાઉસમાં જાસૂદ અને ક્રોટોનનું કાષ્ઠમય કટકાથી પ્રસર્જન કરતા ખેડૂતો અને નર્સરી ધારકોને ભલામણ કરવામાં આવે છે કે, કટકાઓના ઉપરના ભાગમાં ગાયના છાણનું પ્લગ લગાવવાથી સારી વૃદ્ધિવાળી મહત્તમ સફળ કટકા કલમો મળે છે. Approved with following Suggestion/s: 1. Write hardwood cutting instead of stem cutting in English version of recommendation 2. Add the word કાષ્ઠમય before કટકાથી 3. Add word કટકા before કલમો મળે છે (Action: Professor & Head, Dept. of Horticulture, CPCA, S. K. Nagar)

22.4.1.22	Crop cover, time and method of sowing in muskmelon for early production
	Recommendation for farming community: The farmers of North Gujarat growing muskmelon are recommended to adopt non-woven polypropylene white or blue crop cover up to initiation of female flower and transplant seedling at the 2 to 4 true leaf stage on 15th January to achieve higher, yield, early crop maturity and net return. ખેડૂત ઉપયોગી ભલામણ: ઉત્તર ગુજરાતમાં શક્કરટેટીની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ૨ થી ૪ પાન અવસ્થાના રોપાની ફેરોપણી ૧૫ જાન્યુઆરીએ નોન-વૂવન પોલીપ્રોપીલિન સફેદ અથવા વાદળી કોપકવરને માદા ફૂલ નીકળવા સુધી અપનાવવાથી વધુ ઉત્પાદન, વહેલી પાકપરિપક્વતા અને વધુ નફો મેળવી શકાય છે. Approved with following Suggestion/s: 1. Recast the recommendation (Action: Senior Scientist & Head, KVK, Banaskantha I, Deesa)
22.4.1.23	Effect of covering materials of low tunnel and time of planting on watermelon production
	Recommendation for farming community: The farmers of North Gujarat growing watermelon are recommended to adopt non-woven polypropylene white or blue crop cover up to initiation of female flower and transplant seedling at the 2 to 4 true leaf stage from 3rd week of January to 1st week of February to achieve higher yield, early crop maturity and net return. ખેડૂત ઉપયોગી ભલામણ: ઉત્તર ગુજરાતમાં તડબૂચની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, ૨ થી ૪ પાન અવસ્થાના રોપાની ફેરોપણી જાન્યુઆરી માસના ત્રીજા અઠવાડિયાથી ફેબ્રુઆરી માસના પ્રથમ અઠવાડિયા સુધી નોન-વૂવન પોલીપ્રોપીલિન સફેદ અથવા વાદળી કોપ કવરને માદા ફૂલ નીકળવા સુધી અપનાવવાથી વધુ ઉત્પાદન, વહેલી પાક પરિપક્વતા અને વળતર મેળવી શકાય છે. Approved with following Suggestion/s: 1. Recast the recommendation (Action: Senior Scientist & Head, KVK, Banaskantha I, Deesa)

22.4.1.24	Response of organic manures and bio-enhancer on growth, yield and quality of Cabbage (<i>Brassica oleracea</i> var. <i>capitata</i>) Recommendation for farming community: The farmers of North Gujarat growing cabbage practicing organic farming are recommended to apply vermicompost @ 7.5 t/ha as basal dose and two sprays of <i>Panchgavya</i> @ 3 % (30 mL/litre of water) at 20 and 40 days after transplanting for getting higher yield and net return. ખેડૂત ઉપયોગી ભલામણ: ઉત્તર ગુજરાતમાં કોબીજની સેદ્રિય ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે અળસિયાનું ખાતર ૭.૫ ટન પ્રતિ હેક્ટર પાયાના ખાતર તરીકે આપવું તથા ફેરોપણીના ૨૦ અને ૪૦ દિવસે પંચગવ્ય ૩% (૩૦ મિલી/લિટર પાણી) નો છંટકાવ કરવાથી વધુ ઉત્પાદન અને વળતર મળે છે. Approved with following Suggestion/s: 1. Add practicing word in English version of recommendation Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.1.25	Effect of growing condition and growing media on survivability of air layers in pomegranate (<i>Punica granatum</i> L.) Recommendation for farming community: Pomegranate growers and nurserymen of Gujarat are recommended to propagate by air layering in growing media comprising of soil + sand + vermicompost or FYM (1:1:1 v/v/v) for getting higher survival percentage. ખેડૂત ઉપયોગી ભલામણ: ગુજરાતના દાડમની ગુટી કલમ તૈયાર કરતા ખેડૂતો અને નર્સરી ધારકોને ભલામણ કરવામાં આવે છે કે મીડિયા તરીકે બેગમાં માટી+રેતી+ વર્મિકમ્પોસ્ટ અથવા છાણીયું ખાતર (૧:૧:૧ v/v/v) ભરી તેમાં ગુટી કલમ રોપતા કલમની જીવંત ટકાવારી વધુ મળે છે. Approved with following Suggestion/s: 1. Recast the recommendation (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)

22.4.1.26	Effect of different times and severity of pruning on growth, yield and quality of phalsa cv. Local Recommendation for farming community: Farmers of North Gujarat growing phalsa are recommended to carry out pruning at 120 cm height from ground level during the last week of December to obtain higher yield, improved fruit quality and higher net return. ખેડૂત ઉપયોગી ભલામણ: ઉત્તર ગુજરાતમાં ફાલસાની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ડીસેમ્બર માસના છેલ્લા અઠવાડિયામાં જમીન સપાટીથી ૧૨૦ સે.મી. ઊંચાઈ એ છટણી કરવાથી વધુ ઉત્પાદન તથા સારી ગુણવત્તા વાળા ફળ અને વધુ વળતર મળે છે. Recommendation approved as such (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan and ARS, Fruit Research Station, SDAU, Dehgam)
22.4.1.27	Productivity of annual crops under boundary plantation based Agroforestry system Recommendation for farming community: The farmers of North Gujarat growing crops under boundary plantation of tree are recommended to boundary plantation on North and South sides of <i>neem</i> and <i>ardusa</i> alternately generated more additional annual income. ખેડૂત ઉપયોગી ભલામણ: ઉત્તર ગુજરાતમાં ખેતરની સીમાની ફરતે વૃક્ષોનું વાવેતર કરી પાક ઉગાડતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ખેતરની ઉત્તર અને દક્ષિણ બાજુએ લીમડા અને અરડુસાનું વારાફરતી વાવેતર કરીને કરવાથી વધુ વધારાની વાર્ષિક આવક મળે છે. (Action: Research Scientist, ARS, SDAU, Sardarkrushinagar) Approved with following Suggestion/s: 1. Recast the recommendation and convert it into farmers recommendation as above

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.4.1.28	Nutrient management in Dragon fruit Recommendation for farming community: The farmers of middle Gujarat growing dragon fruit crop as four plants per pole are recommended to apply 10 kg FYM during June month and after 15 days 700-200-400 g NPK (per pole) in four equal splits in the month of June, September, November and April for getting higher yield and net returns. ખેડૂત ઉપયોગી ભલામણ: મધ્ય ગુજરાત વિસ્તારમાં ડ્રેગન ફ્રુટનું પ્રતિ થાંભલાએ ચાર છોડનું વાવેતર કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે જુન માસમાં ૧૦ કિ.ગ્રા. છાણીયુ ખાતર આપી ત્યાર પછી ૧૫ દિવસે ૭૦૦-૨૦૦-૪૦૦ ગ્રામ ના. ફો. પો. (પ્રતિ થાંભલાએ) ચાર સરખા હપ્તામાં જુન, સપ્ટેમ્બર, નવેમ્બર અને એપ્રિલ મહિનામાં આપવાથી વધુ ઉત્પાદન અને વળતર મળે છે. Recommendation approved as such (Action: HOD, Department of Horticulture, BACA, AAU, Anand)
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22.4.1.29	Effect of time and length of pruning on yield and quality of Custard apple under middle Gujarat conditions Recommendation for farming community: The farmers of middle Gujarat having custard apple orchard are recommended to prune the end shoots to the length of 15 to 30 cm. during the last week of December to last week of January for getting higher yield with better quality fruits and net return. ખેડૂત ઉપયોગી ભલામણ: મધ્ય ગુજરાત વિસ્તારમાં સીતાફળની વાડી ધરાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે, સીતાફળની ડાળીઓના છેડેથી ૧૫ થી ૩૦ સેમી. ની લંબાઈ સુધી છંટણી, ડિસેમ્બરના છેલ્લા અઠવાડિયા થી જાન્યુઆરીના છેલ્લા અઠવાડિયા દરમિયાન કરવાથી ફળોનું વધુ ઉત્પાદન સાથે સારી ગુણવત્તાયુક્ત ફળો અને વળતર મેળવી શકાય છે. Recommendation approved with following suggestion Approved with adding word net returns in the text on the basis of economics (Action: HOD, Dept. of Fruit Science, College of Horticulture, Anand)
22.4.1.30	Effect of N, P and K application on yield of Okra Recommendation for farming community: The farmers of middle Gujarat growing <i>summer</i> okra hybrid cultivar Anand Kranti are recommended to apply 125:50:50 NPK kg/ha, of which 31.25 kg N, 50 kg P₂O₅ and 50 kg K₂O/ha as basal, while remaining 93.75 kg N should be applied in three equal splits at 30, 50 and 70 DAS for getting higher yield and net return. ખેડૂત ઉપયોગી ભલામણ: મધ્ય ગુજરાત વિસ્તારમાં ઉનાળુ ભીંડાની સંકર જાત આણંદ ક્રાંતિની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે ભીંડાના પાકમાં ૧૨૫:૫૦:૫૦ ના:ફો:પો કિ.ગ્રા. પ્રતિ હેક્ટરે આપવો, જે પૈકી ૩૧.૨૫ કિ.ગ્રા. નાઇટ્રોજન, ૫૦ કિ.ગ્રા. ફોસ્ફરસ અને ૫૦ કિ.ગ્રા. પોટાશ/હે. પાયામા જ્યારે બાકીનો ૯૩.૭૫ કિ.ગ્રા. નાઇટ્રોજન/હે વાવણીના ૩૦, ૫૦ અને ૭૦ દિવસે ત્રણ સરખા હપ્તામા આપવાથી વધુ ઉત્પાદન અને વળતર મળે છે. Recommendation approved as such (Action: HOD, Department of Horticulture, CoA, AAU, Jabugam)
22.4.1.31	Evaluation of different Gladiolus genotypes for yield and growth parameters Recommendation for farming community: The farmers of middle Gujarat growing gladiolus are recommended to grow IIHR, Bengaluru developed variety Arka Amar for obtaining higher numbers of cut flower spikes, corms with cormels yield and higher returns. ખેડૂત ઉપયોગી ભલામણ: મધ્ય ગુજરાત વિસ્તારમાં ગ્લેડિયોલસની ખેતી કરતાં ખેડૂતોને ભલામણ કરવામાં આવે છે કે આઈ.આઈ.એચ.આર., બેંગલુરુ દ્વારા વિકસાવેલ અર્કા અમર જાતનું વાવેતર કરવાથી વધુ ફૂલ દાંડી, કોર્મ્સ અને કોર્મેલ્સનું ઉત્પાદન અને વળતર મળે છે. Recommendation approved as such (Action: Unit Head, SDMPH, AAU, Vadodara)

22.4.2 INFORMATION FOR SCIENTIFIC COMMUNITY

NAVSARI AGRICULTURE UNIVERSITY (HORTICULTURE), NAVSARI

Sr. No.	Information for Scientific Community
22.4.2.1	Performance of strawberry cultivars under Navsari conditions Scientific information: Winter Dawn, Sweet Sensation and Flaviea varieties grown in October month performed better as compared to Camerosa, Nabila, Vivara, San Andreas and Flaminia varieties in Navsari conditions. Recommendation approved as such <i>(Action: Research Scientist, RHRS, ACH, NAU, Navsari)</i>
22.4.2.2	Evaluation of different germplasm in Hibiscus rich in biochemical for edible use Scientific information: Hibiscus NH-11 bearing red coloured flowers has been found to be rich in antioxidants and anthocyanin content with lower oxalate content along with highest flower yield. Moreover, NH-9 bearing vivid reddish orange coloured flowers are rich in iron content and NH-7 bearing brilliant orange coloured flowers are rich in carotenoid content. Recommendation approved as such <i>(Action: Professor & Head, FLA, ACH, NAU, Navsari)</i>
22.4.2.3	Evaluation of new crosses in Adenium for profuse flowering habit Experiment was concluded for future breeding programs. <i>(Action: Professor & Head, FLA, ACH, NAU, Navsari)</i>

NAVSARI AGRICULTURE UNIVERSITY (FORESTRY), NAVSARI

Information for Scientific Community	
22.4.2.4	Evaluation of <i>Eucalyptus</i> germplasm for growth and biomass Scientific information: Among the seventy-five individuals of <i>Eucalyptus camaldulensis</i> evaluated at the age of six years at Navsari Agricultural University, Navsari, the individual trees viz., F19-T1, F1-T2, F32-T1, F15-T6, F6-T3 and F35-T4 exhibited superior performance for growth and biomass, with a genetic gain of 42.24 per cent. Recommendation approved as such <i>(Action: PI & HoD, FBTI, College of Forestry, NAU, Navsari)</i>
22.4.2.5	Biodiversity of Navsari city Scientific information: The biodiversity of Navsari includes 1119 species. This includes 543 herbs, 109 shrubs, 111 trees, and 61 species of climbers. It also has 26 species of mammals, 341 species of birds and 28 species of reptiles. The Shannon–Wiener Diversity Index (H') for vertebrates is 0.46, and for plants it is 1.005, indicating a moderate level of diversity. Recommendation approved as such <i>(Action: PI & HoD, Wildlife Sciences, College of Forestry, NAU, Navsari)</i>

22.4.2.6	Dormancy and germination investigations in <i>Melia dubia</i> Cav. Scientific information: Seed coat/endocarp of <i>Melia dubia</i> was found to be water permeable. Therefore, dormancy in <i>M. dubia</i> is not purely physical. Future research should be focused on understanding physiological mechanisms underlying seed dormancy. Recommendation approved as such <i>(Action: PI & HoD, FBTL, College of Forestry, NAU, Navsari)</i>
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JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.4.2.7	Effect of supplementary pollination methods on fruit set and fruit drop in mango cv. Kesar Scientific information: In mango orchards use 100 % pollen suspension (20 mg flower in 1.0 lit. of water) for spraying on flower three times during the flowering period for obtaining higher fruit set and yield. <u>Procedure to make pollen suspension solution:</u> Collect freshly open flowers in early morning and sundry for 2-3 hours. Pour this flowers @ 20 mg in 1000 ml bottle containing 1 % starch solution. Shake it vigorously for a 10-15 minutes. Prepare the solution, after sieving the pollens through fine mesh (75 micron). Approved with following Suggestion/s 1. Recommendation convert from farming to scientific community 2. Recast recommendation text <i>(Action: Principal & Dean, CoH, J.A.U., Junagadh)</i>
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SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S. K. NAGAR

22.4.2.8	Evaluations of <i>Melia</i> varieties under agroforestry system for biomass production under North Gujarat conditions Scientific information: After 9 years of experimentation, it is concluded that, 50 % survival was observed in local species of <i>Melia azedarach</i>, while other species viz., MD 01, MD 05 and Navsari collection survived only 20.83, 29.17 and 33.33 per cent, respectively under rainfed condition. Approved with following Suggestion/s: 1. Correct the draft (Action: Research Scientist, ARS, SDAU, Sardarkrushinagar)
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22.4.2.9	Effect of nano nitrogen on yield and quality of Mango Information for Scientific community: Application of 50 % of recommended dose of nitrogen <i>i.e.</i> 375 g/tree (187.5 g N/tree and full dose of P and K at onset of monsoon and remaining 187.5 g N/tree at pea stage) with foliar spray of nano nitrogen 4 mL/L, each at onset of monsoon and pea stage on mango gives highest yield per tree. Note: Recommended dose of fertilizer dose for mango is 750-160-750 NPK g/tree Recommendation approved as such (Unit Head, SDMPH, Model Farm, AAU, Vadodara)
22.4.2.10	Effect of nano Zn and Fe on yield and quality of acid lime cv. Kagzi lime Information for Scientific community: Application of recommended dose of fertilizer (900-750-500 NPK g/tree + FYM 50 kg/tree) followed by two foliar spray of neutralize 0.5 % ZnSO_4 + 0.5 % FeSO_4 OR two foliar spray of nano Fe 100 ppm + nano Zn 100 ppm (First spray at flowering stage and second at one month after first spray) on acid lime cv. Kagzi lime gives higher fruit yield. Note: 1. To neutralize the ZnSO_4 at 0.5 % and FeSO_4 at 0.5 % solution, lime water 10 mL/L was added 2. Apply full dose of FYM (50 kg/tree) and half dose of N and K with full dose of P (450-750-250 NPK g/tree) after withdrawal of monsoon while remaining half dose of N and K (450-0-250 NPK g/tree) apply on March-April. Recommendation approved as such (Unit Head, SDMPH, Model Farm, AAU, Vadodara)

22.4.3 NEW TECHNICAL PROGRAMS

NAVSARI AGRICULTURE UNIVERSITY (HORTICULTURE), NAVSARI

22.4.3.1	Effect of Fe and Zn on antioxidants content and yield of banana
	Approved with following suggestions: 1. Add control treatment as AAU, Anand recommendation 2. Use FeSO₄ 0.5 % and ZnSO₄ 0.5 % instead of nano Fe 0.25 % and nano Zn 0.25 % in treatment T₄ and T₅, respectively. 3. Change the objectives and methodology as per treatments. (Action: Research Scientist, RHRS, ACH, NAU, Navsari)
22.4.3.2	Effect of pre-harvest calcium chloride (CaCl₂) spray and post-harvest hexanal treatment on shelf life and quality of sapota (<i>Manilkara acharas</i> L) fruits
	Approved with following suggestions: 1. Keep the fruits in cold storage (12 °C) after dipping treatments instead of ambient temperature. 2. Observations should be taken at 0, 10, 20, 30 and 40 days during storage. (Action: Research Scientist, RHRS, ACH, NAU, Navsari)
22.4.3.3	Seasonal dynamics of sex expression, hermaphrodite flower stability and sex reversal tendencies in dioecious and gynodioecious papaya under south Gujarat condition
	Approved with following suggestions: 1. Observations should be taken fortnight instead of monthly interval 2. Take the observation on conversion of male to female and hermaphrodite flowers. 3. Check statistically' test also. (Action: Research Scientist, RHRS, ACH, NAU, Navsari)
22.4.3.4	Effect of application of potash fertilizers on growth, yield and quality of Elakki banana
	Approved with following suggestions: 1. Add observations on total sugars, reducing sugars and non-reducing sugars. (Action: Principal, HP, ACH, NAU, Paria)
22.4.3.5	Effect of biosynthesised nano boron, zinc and silicon on hormonal regulation and pollen viability of mango
	Approved with following suggestions: 1. Take observations of leaf Zn, B, Si concentrations (mg g⁻¹), physiological & stress markers and hormonal assays at initial, fruit set, marble stage and harvest. 2. Leaf nutrient analysis of Zn, B, Si concentrations (mg g⁻¹) should be done at flowering, fruit set, marble stage and harvest. (Action: Principal, AP, NMCA, NAU, Vyara)
22.4.3.6	Performance of strawberry under natural farming systems (<i>Fragaria</i> × <i>ananassa</i> Duch.)
	Approved with following suggestions: 1. Change the title “Effect of natural farming practices on performance of strawberry (<i>Fragaria</i> × <i>ananassa</i> Duch.)” 2. Remove the control treatment. 3. Increase one replication. 4. Foliar spray of <i>Jeevamurt</i> should be done at 15, 45 and 75 DAP instead of 30, 60 and 90 DAP. 5. Use of straw mulch instead of plastic mulch. (Action: Principal, CoA, NAU, Waghai)

22.4.3.7	Optimization of organic nutrient regimes for improved runner production in strawberry
	Approved with following suggestions: 1. Remove the observation of plant height 2. Take the observation on number of leaves at 90 DAP only 3. Mention the quantity of organic inputs (t/ha) in treatments instead of percentage. <i>(Action: Sr. Scientist & Head, KVK, NAU, Waghai)</i>
22.4.3.8	Natural farming in mango
	Approved with following suggestions: 1. Change the title as “Natural nutrient management in mango” 2. Add observations on total sugars, reducing sugars and non-reducing sugars. <i>(Action: Research Scientist, RHRS, AES, NAU, Paria)</i>
22.4.3.9	MLT (VI) of Banana selections / Introduced hybrid (a) NRCB Selection 16
	Approved with following suggestions: 1. Add observations on total sugars, reducing sugars and non-reducing sugars. <i>(Action: Associate Research Scientist, FRS, NAU, Gandevi)</i>
22.4.3.10	MLT (VI) of Banana selections / Introduced hybrid (b) Anand Vaaman
	Approved with following suggestions: 1. Add observations on total sugars, reducing sugars and non-reducing sugars. <i>(Action: Associate Research Scientist, FRS, NAU, Gandevi)</i>
22.4.3.11	Response of water soluble nutrients on growth, yield and quality of long pepper grown under coconut garden
	Approved with following suggestions: 1. Approved as such <i>(Action: Professor & Head, PSMA, ACH, NAU, Navsari)</i>
22.4.3.12	Impact of organic manures and biostimulants on growth, yield and quality of shatavari (<i>Asparagus racemosus</i>)
	Approved with following suggestions: 1. Analysis the heavy metals from soil and root after completion of experiment. <i>(Action: Professor & Head, PSMA, ACH, NAU, Navsari)</i>
22.4.3.13	Study of planting geometry and date of transplanting on growth and yield of tomato (<i>Solanum lycopersicum</i> L.) under south Gujarat condition
	Approved with following suggestions: 1. Change the treatments as T ₁ : 90cm x 45 cm, T ₂ : 90cm x 60 cm, T ₃ : 90cm x 90 cm, T ₄ : 120cm x 45cm, T ₅ : 120 cm x 60 cm, T ₆ : (60cm x 120 cm) x 45 cm, T ₇ : (60 cm x 120 cm) x 60 cm, T ₈ : (60 cm x 120 cm) x 90 cm. 2. Use RBD design. 3. Plant height (cm) should be taken at final harvest only. 4. Correct the gross and net plot as per the treatments. <i>(Action: Professor & Head, Vegetable Science, ACH, NAU, Navsari)</i>
22.4.3.14	Effect of biochar and mulching on summer okra
	Approved with following suggestions: 1. Reduce the dose of biochar as 0.5 t/ha, 0.75 t/ha and 1 t/ha instead of 2 t/ha, 4 t/ha and 6 t/ha. 2. Plant height (cm) should be taken at final harvest only. 3. Use the variety GO-11 for experiment. <i>(Action: Professor & Head, Vegetable Science, ACH, NAU, Navsari)</i>

22.4.3.15	Effect of crop cover and sowing method on growth, yield and quality of watermelon under south Gujarat conditions
	Approved with following suggestions: 1. Change the crop as bitter guard instead of watermelon. 2. Remove the observation of number of branches per vine. <i>(Action: Assistant Research Scientist, ARS, NAU, Bardoli)</i>
22.4.3.16	Effect of seed treatment and shading on growth and yield of microgreens
	Not approved <i>(Action: Sr. Scientist & Head, KVK, NAU, Surat)</i>
22.4.3.17	Influence of cladding material and sowing time on off season vegetable cowpea
	Approved with following suggestions: 1. Remove the crop cover at the time of initiation of flowering instead of 45 DAS. 2. Change the spacing as 45 cm x 30 cm instead of 45 cm x 15 cm. 3. Take the observation of days to flower initiation instead of days to 50% flowering. <i>(Action: Associate Research Scientist, ARS, NAU, Tanchha)</i>
22.4.3.18	Nutrient management in elephant foot yam varieties under natural farming system
	Approved with following suggestions: 1. Change the title as “Nutrient management in elephant foot yam under natural farming system”. 2. Apply <i>Ghanjeevamrut</i> @ 4 t/ha and 6 t/ha instead of 2 t/ha and 4 t/ha. 3. Keep only Swagata variety common for the experiment (remove Dangi Suran). 4. Take four replications. 5. Spraying of <i>Jeevamrut</i> @ 10 % instead of 2% 6. Soil drenching of <i>Jeevamrut</i> at 45, 75 and 105 DAP. 7. Use RBD design. 8. Remove the name of Dangi Suran variety from first objective. <i>(Action: Associate Research Scientist, HMRS, NAU, Waghai)</i>
22.4.3.19	Effect of planting geometry and crop cover on growth, yield and quality of watermelon
	Approved with following suggestions: 1. Change the title as “Effect of planting geometry on growth, yield and quality of watermelon” 2. Common crop cover is used for all treatments and it should be removed at the time of initiation of flowering. 3. Add one treatment of 180cm x 45cm x 30cm as recommended from SDAU, Dantiwada. 4. Change the objectives as per the treatments. <i>(Action: Principal, HP, NAU, Paria)</i>
22.4.3.20	Effect of media and foliar nutrient application on raising seedling of Tomato, Brinjal and Chilli
	Approved with following suggestions: 1. Replace the red soil with cocopeat. 2. Apply the foliar spray of <i>Jeevamrut</i> @ 5 % instead of 1 %. 3. Remove the observation of earliness of seedlings for transplanting. <i>(Action: Principal, CoA, NAU, Waghai)</i>
22.4.3.21	Assessment of African marigold genotypes
	Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not approved <i>(Action: Professor & Head, FLA, ACH, NAU, Navsari)</i>

22.4.3.22	Evaluation of gaillardia (<i>Gaillardia</i> spp.) genotypes for the South Gujarat Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not approved (Action: Professor & Head, FLA, ACH, NAU, Navsari)
22.4.3.23	Assessment of packaging techniques for transportation of variegated pothos Approved with following suggestions: 1. Change the title as “Standardization of media and packaging material for transportation of variegated pothos”. 2. Observations should be recorded at before and after completion of experiments instead of 5, 10 and 15 days intervals. (Action: Professor & Head, FLA, ACH, NAU, Navsari)
22.4.3.24	Effect of packaging material for freshness and shelf life of <i>Jasminum sambac</i> Not approved (Action: Professor & Head, Hort., NMCA, NAU, Navsari)
22.4.3.25	Development of processing technology for blended Gulkand Approved with following suggestions: 1. Take the observations up to 9 months of storage (0, 3, 6 and 9 MAS). (Action: Professor & Head (Hort.), CoA, NAU, Bharuch)
22.4.3.26	Standardization of processing technology for dried cluster bean (<i>Cyamopsis tetragonoloba</i> L.) Approved with following suggestions: 1. Add treatment of without salt + 8 hr buttermilk dipping as a control (S ₀) in Factor I. 2. Take the observations up to 9 months of storage (0, 3, 6 and 9 MAS) (Action: Professor & Head (Hort.), CoA, NAU, Bharuch)

NAVSARI AGRICULTURE UNIVERSITY (FORESTRY), NAVSARI

22.4.3.27	Development of volumetric equation for Mahogany (<i>Swietenia</i> sp.) Approved as such (Action: PI & HoD, SAF, College of Forestry, NAU, Navsari)
22.4.3.28	Feasibility of growing turmeric varieties under agroforestry system in South Gujarat Approved with following suggestions: 1. Change the title as “Feasibility of medicinal and aromatic crops under agroforestry system in South Gujarat”. 2. Change the Factor II crops as Japanese Mint, Brahmi and Pandanus. 3. Modify the objectives as per the treatments. 4. Take the incremental observations of main crops. (Action: PI & HoD, SAF, College of Forestry, NAU Navsari)
22.4.3.29	Effect of fertilizers on growth and development of young plantation of Red Sander (<i>Pterocarpus santalinus</i> Linn. f.) Approved with following suggestions: 1. Change the title as “Effect of fertilizers and spacing on growth and development of young plantation of Red Sander (<i>Pterocarpus santalinus</i> Linn. f.). 2. Mention the incremental dose of NPK per year. (Action: PI & HoD, SAF, College of Forestry, NAU, Navsari)

22.4.3.30	Seed desiccation tolerance and storage behaviour confirmation study in Umbh [<i>Miliusatomentosa</i> (Roxb.) Finet & Gagnep.]
	Approved with following suggestions: 1. From experiment two-Factor-I: keep the best three treatments from experiment one for further findings. (Action: PI & HoD, FBTI, College of Forestry, NAU, Navsari)
22.4.3.31	Status of the Striped Hyaena (<i>Hyaenahyaena</i>) in South Gujarat
	Approved as such (Action: PI & HoD, Wildlife Sciences, College of Forestry, NAU, Navsari)
22.4.3.32	Assessment of Rodent diversity in the NAU campus
	Approved with following suggestions: 1. Remove the agricultural crops. 2. Experiment should be conducted on the basis of location. (Action: PI & HoD, Wildlife Sciences, College of Forestry, NAU, Navsari)

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title	Suggestion/s and Action
22.4.3.33	Effect of different time and propagation methods in bael	Suggestions: 1. Scion use Goma yashi variety 2. Use 1 st fort night of September instead of 1 st fort night of May in treatment factor B 3. In notes: mention bag size, media used, nursery condition 4. Add observation sprout length at 180 days (Action: Principal & Dean, CoH, JAU, Junagadh)
22.4.3.34	Evaluate the effect of different physical pre-sowing techniques and irrigation scheduling on germination performance of coconut (<i>Cocos nucifera</i> L.) seedling	Suggestions: 1. Reframe experiment title: Effect of different physical pre-sowing techniques and irrigation scheduling on germination and growth performance of coconut (<i>Cocos nucifera</i> L.) seednut 2. Remove treatment S ₁ : :Slicing the both ends (apical and basal) of nut 3. Factor B: Remove word 1.0 IW:CPE level 4. Observation no. 3 to 5 take in after one year 5. Observation add survival (%) 6. Mention time of sowing: June-July (Action: Asstt. Research Scientist, FRS, JAU, Mangrol)
22.4.3.35	Response of gladiolus corms under different conditions of storage	Suggestions:
		1. Reframe treatment
		T1 Cold storage at 3–5°C (Standard check)
		T2 Hanging in leno bags at room temperature (Absolute control)
		T3 Storage in paper bags at room temperature
		T4 Dried neem leaf powder (100%)
		T5 Wood ash (100%)
		T6 Sealcoat (100%)
		T7 Wood ash + river sand (50:50 v/v)
		T8 Dried neem leaf powder + wood ash (50:50 v/v)
		T9 Dried neem leaf powder + river sand (50: 0 v/v)
		T10 Sealcoat + river sand (50:50 v/v)
		2. Add observation success rate (%) 3. Remove observation mortality (%) 4. In notes: mansion bag size (Action: Principal & Dean, CoH, JAU, Junagadh)

22.4.3.36	Standardization of IBA and time of propagation on stem cuttings of Thuja (<i>Thuja orientalis</i> L.)	Suggestions: 1. Treatment M ₁ :1 st week of September instead of 1 st week of May 2. Remove mortality percentage (Action: Principal & Dean, CoH, JAU, Junagadh)																
22.4.3.37	Influence of IBA and season of cutting on propagation of hardwood cutting of Pride of India (<i>Lagerstroemia speciosa</i> L.)	Suggestions: 1. Add Factor A Treatment I ₀ : Control (00 ppm IBA) 2. In notes: mention bag size 3. Add observation No. of leave per plant, new sprout height (cm) (Action: Principal & Dean, CoH, JAU, Junagadh)																
22.4.3.38	Effect of Integrated Nutrient Management and pinching on growth, flowering and yield of African Marigold (<i>Tagetes erecta</i> L.)	Suggestions: 1. Factor-A, Treatment N ₁ : 100 % RDF (control) 2. Factor-B, Treatment P ₁ :Control remove pinching word 3. Remove observation leaf area 4. Note: Remove:15 t/ha FYM 5. Note: Add: Biofertilizer root dip treatment. (Action: Principal, ASPEE CoA, JAU, Khapat, Porbandar)																
22.4.3.39	Effect of time of transplanting and spacing on growth, yield and quality of broccoli (<i>Brassica oleracea</i> var. <i>italica</i> L) in Saurashtra region	Suggestions: 1. Take variety Palam samruddhi 2. Factor-A, Treatment T ₁ : 3 rd week of October T ₂ : T ₁ + 15 day, T ₃ : T ₁ + 30 day, T ₄ : T ₁ + 45 day 3. Factor-B, Treatment S ₁ : 30 x 30 cm remove 4. Prepare seedling one month before planting (Action: Principal & Dean, CoH, JAU, Junagadh)																
22.4.3.40	Standardization of raw mango appetizer	Suggestions: 1. Reframe treatment <table><tr><td>Factor 1 (Pulp %)</td><td>Factor 2 (TSS)</td></tr><tr><td>25</td><td>40 °Brix</td></tr><tr><td>30</td><td>45 °Brix</td></tr><tr><td>35</td><td>50 °Brix</td></tr></table> 2. Observation take -0,2,4,6 month after preparation 3. Design: CRD (Factorial) (Action: Principal & Dean, CoH, JAU, Junagadh)	Factor 1 (Pulp %)	Factor 2 (TSS)	25	40 °Brix	30	45 °Brix	35	50 °Brix								
Factor 1 (Pulp %)	Factor 2 (TSS)																	
25	40 °Brix																	
30	45 °Brix																	
35	50 °Brix																	
22.4.3.41	Development of bottle gourd powder using pre-treatments under cabinet drying	Suggestions: 1. Reframe treatment <table><tr><td>Treatment code</td><td>Treatment Details</td></tr><tr><td>T₁</td><td>Control (no pretreatment)</td></tr><tr><td>T₂</td><td>Blanching (85 °C, 3 min)</td></tr><tr><td>T₃</td><td>500 ppm citric acid dip (5 min)</td></tr><tr><td>T₄</td><td>1000 ppm KMS dip (5 min)</td></tr><tr><td>T₅</td><td>Blanching + 500 ppm citric acid</td></tr><tr><td>T₆</td><td>Blanching + 1000 ppm KMS</td></tr><tr><td>T₇</td><td>Blanching + 500 ppm citric acid+ 1000 KMS</td></tr></table> All samples will be dried at 60 °C Cabinet Drying	Treatment code	Treatment Details	T ₁	Control (no pretreatment)	T ₂	Blanching (85 °C, 3 min)	T ₃	500 ppm citric acid dip (5 min)	T ₄	1000 ppm KMS dip (5 min)	T ₅	Blanching + 500 ppm citric acid	T ₆	Blanching + 1000 ppm KMS	T ₇	Blanching + 500 ppm citric acid+ 1000 KMS
Treatment code	Treatment Details																	
T ₁	Control (no pretreatment)																	
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T ₅	Blanching + 500 ppm citric acid																	
T ₆	Blanching + 1000 ppm KMS																	
T ₇	Blanching + 500 ppm citric acid+ 1000 KMS																	

		2. Observation take -0,2,4,6 month after preparation 3. Observation add: Iron (ppm) Zinc content (ppm) Manganese content (ppm) Calcium content (ppm) (Action: Principal & Dean, CoH, JAU, Junagadh)
22.4.3.42	Evaluation of different fungicides against dieback disease of mango	Suggestions: Shifted to PPSC (Action: Principal & Dean, CoH, JAU, Junagadh)
22.4.3.43	Chemical control of stem canker of dragon fruit	Suggestions: Shifted to PPSC (Action: Principal & Dean, CoH, JAU, Junagadh)
22.4.3.44	Evaluate the effect of different pre-sowing slicing / dehusking techniques and irrigation scheduling on germination performance of coconut (<i>Cocos nucifera</i> L.) seedling	Suggestions: House approved the NTP with shift to Horticulture Subcommittee group from AET/AIT/PHT/FPTBE group [Action: PI & Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, S. K. NAGAR

Sr. No.	Title	Suggestion/s and Action
22.4.3.45	Effect of IBA and <i>Beejamrut</i> on rooting of dwarf tagar (<i>Tabernaemontana divaricata</i> L.)	Approved with following suggestion/s: 1. Add previous recommendation of SDAU as control 2. Take media as sand, cocopeat and vermicompost in 1:1:1 ratio on volume basis instead of sand only (Action: Professor & Head, Dept. of Horticulture, CPCA, S. K. Nagar)
22.4.3.46	Response of Phalsa (<i>Grewia subinaequalis</i> L.) with respect to growth, yield and quality under natural farming practices	Approved with following suggestion/s: 1. Add pruning at 120 cm height on 15 th December as common practice (Action: Professor & Head, Dept. of Horticulture, CPCA, S. K. Nagar)
22.4.3.47	Effect of different time of transplanting and <i>Ghanjeevamrut</i> on growth, flowering and yield of African marigold	Approved with following suggestion/s: 1. Change the sub plot treatment- <i>Ghanjeevamrut</i> level 4 t/ha, 6 t/ha & 8 t/ha instead of 2 t/ha, 4 t/ha & 6 t/ha 2. Add observation on yield per plant (Action: Professor & Head, Dept. of Horticulture, CPCA, S. K. Nagar)

22.4.3.48	Effect of sowing time and different organic inputs on growth, yield and quality of cowpea (<i>Vigna unguiculata</i> L.) under low tunnel	Approved with following suggestion/s: 1. Change the factor I as Grow cover i.e. G₁-White and G₂-Blue and factor II as time of sowing 2. As per the factor I & II reframe the treatment combination 3. Change the title as “Effect of grows cover and sowing times on growth, yield and quality of vegetable cowpea (<i>Vigna unguiculata</i> L.)” Change the Objectives as ● To identify the suitable grow cover for growth, yield and quality ● To find out the suitable time of sowing for growth, yield and quality ● To assess the interaction if any between the grow cover and time of sowing for growth, yield and quality 4. In note-add -cover remove before initiation of flowering 5. Common application of <i>Ghanjeevamrut</i> 4 t/ha (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.49	Effect of <i>Ghanjeevamrut</i> and <i>Jeevamrut</i> on growth, yield and quality of onion (<i>Allium cepa</i> L.)	Approved with following suggestion/s: 1. Approved as such (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.50	Response of turmeric to different growing media and planting density under protected condition in grow bag	Approved with following suggestion/s: 1. Mention number of bag per repetition 2. Add the soil in the treatment M₂ to M₅ as M₂-Cocopeat+ FYM+Soil (2:1:1 v/v) M₃- Cocopeat + <i>Ghanjeevamrut</i>+Soil (2:1:1 v/v) M₄-Cocopeat + vermicompost+Soil (2:1:1 v/v) M₅-Cocopeat + neem cake+Soil (2:1:1 v/v) 3. Mention mother rhizome weight as 25-50 g in note 4. Add No. of mother rhizome in observation 5. In note <i>Jeevamrut</i> drenching will be started 30 DAP and spray will be applied 45 DAP 6. Take Survival (%) instead of Survival (%) per sq m (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.51	Influence of vegetable cropping module on growth and yield under rooftop solar panel	Approved with following suggestion/s: 1. Take 30 bag per treatment per repetition 2. Check and rectify the observation No. 1 & 2 of yield parameters 3. Take per day productivity (kg) per treatment instead of per day productivity (kg/sq m) (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)

22.4.3.52	Integrated <i>orobanche</i> management and its effect on growth and yield of <i>Kharif</i> tomato (<i>Solanum lycopersicum</i> L.)	Approved with following suggestion/s: 1. Approved as such (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.53	Effect of antitranspirants and integrated nutrient management on growth, yield and quality of <i>Kamalam</i> [<i>Hylocereus costaricensis</i> Syn. <i>H. polyrhizus</i>] cv. Red flesh	Approved with following suggestion/s: 1. Reframe the treatment T₃ to T₆ as T₃- 50 % RDF + 50 % RDN through vermicompost + Kaolin 5 % +lime 5% T₄- 50 % RDF + 50 % RDN through vermicompost + chitosan @ 300ppm T₅- 50 % RDF + 50 % RDN through <i>Ghanjeevamrut</i> + Kaolin 5 % +lime 5% T₆- 50 % RDF + 50 % RDN through <i>Ghanjeevamrut</i> + chitosan @ 300ppm 2. In note-Application of antitranspirants will be done in the last week of February only (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.54	Effect of mulching and time of planting on growth, yield and quality of strawberry	Approved with following suggestion/s: 1. Remove the M₃ and M₄ from Factor 1 2. Quantify the dose of mulch material in Factor 1 3. Add the P₃ as 3rd week of November 4. Reframe the treatment combination accordingly 5. Remove the observation - Available micronutrients (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.55	Standardization of budding time and environmental conditions in aonla	Approved with following suggestion/s: 1. Revise the Factor A (Budding time) as T₁- Third week of May T₂- Third week of June T₃- Third week of July T₄- Third week of August T₅- Third week of September Factor B (Growing conditions) 2. Change the title as Standardization of budding time and growing conditions in aonla 3. Change the objectives as per the title 4. No. of plants /treatment will be 20 instead of 10 (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.56	Standardization of wedge grafting time and environmental conditions in aonla	Approved with following suggestion/s: 1. Add observation on incremental scion height 2. Change the title as Standardization of wedge grafting time and growing conditions in aonla 3. Change the objectives as per the title 4. No. of plants /treatment will be 20 instead of 10 (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)

22.4.3.57	Evaluation of different genotypes of <i>Adenium obesum</i> for pot culture under North Gujarat condition	Approved with following suggestion/s: 1. Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not approved (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.58	Evaluation of Rose (<i>Rosa</i> spp.) varieties for growth, yield and quality of loose flowers under open field condition	Approved with following suggestion/s: 1. Change the plant spacing in paired row system (100cmx60cmx60cm) and accordingly change the gross and net plot size (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.59	Effect of media and bioinputs on growth and flowering of potted petunia	Approved with following suggestion/s: 1. Remove the factor -2 (Bioinputs), its level and convert experiment into simple CRD design 2. Repetition will be 05 instead of 03 3. Remove Number of branches per plant from the observation 4. Add flower diameter in observation (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.60	Effect of different bioinputs on growth, flowering and yield of <i>Chrysanthemum</i> (<i>Dendranthema grandiflora</i> L.) under North Gujarat condition	Approved with following suggestion/s: 1. Note- Spray will be applied 30 & 60 DAT only subsequently drenching of the treatment will be applied as per treatment plot (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.61	Studies on intervarietal hybridization and seed germination of gladiolus	Approved with following suggestion/s: 1. Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not approved (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.62	Effect of pot size and cultivars on growth, flowering and presentability of pot chrysanthemum (<i>Chrysanthemum morifolium</i> Ramat.)	Approved with following suggestion/s: 1. Add plant spread in growth parameters of observation (Action: Principal & Dean, College of Horticulture, SDAU, Jagudan)
22.4.3.63	Effect of foliar application of bioenhancer on growth, yield and quality of tomato (<i>Solanum lycopersicum</i> L.) under natural farming	Approved with following suggestion/s: 1. Write 20 DAT instead of 20 DAS in manures and fertilizers (Action: Principal, College of Agriculture, SDAU, Tharad)

22.4.3.64	Effect of foliar application of bioenhancer on growth, yield and quality of Brinjal (<i>Solanum melongena</i> L.) under natural farming	Approved with following suggestion/s: 1. Take variety Surati Ravaiya instead of Dakhani (Action:Principal, College of Agriculture, SDAU, Tharad)
22.4.3.65	Effect of <i>Ghanjeevamrut</i> on growth, flowering and yield of African marigold (<i>Tagetes erecta</i> L.) varieties	Approved with following suggestion/s: Not Approved (Action:Principal, College of Agriculture, SDAU, Tharad)
22.4.3.66	Effect of foliar application of bioenhancer on growth, yield and quality of okra under natural farming	Approved with following suggestion/s: 1. Approved as such (Action: Senior Scientist & Head , KVK, Banaskantha II, Tharad)
22.4.3.67	Evaluation of Indian bean (<i>Lablab purpureus</i> L.) germplasm for genetic diversity and crop improvement	Approved with following suggestion/s: 1. Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not Approved (Action: Principal, Polytechnic in Agriculture, SDAU, Khedbrahma)
22.4.3.68	Hybridization in papaya (<i>Carica papaya</i> L.)	Approved with following suggestion/s: 1. Evaluation of genotype or its crosses is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not Approved (Action: Principal, Polytechnic in Agriculture, SDAU, Deesa)
22.4.3.69	Evaluation of intercropping system based on papaya cv. (Gujarat Junagadh Papaya-1) under natural farming	Approved with following suggestion/s: 1. Check the spelling of <i>Kalingda</i> (Action: Principal, College of Agriculture, SDAU, Bhachau)
22.4.3.70	Standardization of Good Agricultural Practices (GAP) for pomegranate	Approved with following suggestion/s: 1. Approved as feeler trial 2. Complete the survey work and finalize all the modules (Action: Associate Research Scientist, RRS, Bhachau)
22.4.3.71	Effect of <i>Ghanjeevamrut</i> and <i>Jeevamrut</i> on growth and seed yield of Fenugreek	Approved with following suggestion/s: 1. Remove at 20 DAS, at 40 DAS & at 60 DAS from Factor- (Action: Research Scientist, SSRS, SDAU, Jagudan)

22.4.3.72	Studies on intercropping of cucurbits on aonla plantation	Approved with following suggestion/s: 1. Reframe the experiment by taking the cole crops and change the title, objectives, observations, plot size and fertilizer requirement (Action: Research Scientist, Agroforestry Research Station, SDAU, Sardarkrushinagar)
22.4.3.73	Collection and evaluation of elite Indigo (<i>Indigo feratinctoria</i> L.) genotypes for North and North West Gujarat conditions	Approved with following suggestion/s: 1. Evaluation of genotype is a routine continuous process. Accordingly start the work and at the time of MLT present it in respective sub committee Not Approved (Action: Research Scientist, ARS, SDAU, Sardarkrushinagar)

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Sr. No.	Title	Suggestion/s and Action
22.4.3.74	Nutrient management in jamun	Approved with following suggestion/s: 1. Merge objectives-from Two to One as yield and quality 2. Remove observations: Fruit set, Fruit retention, Number of flowers per panicle and fruits per panicle, Phenols and Tannin % 3. Add Observations: Reducing and Non reducing sugars (Action: HOD, Dept. of Horticulture, BACA, AAU, Anand)
22.4.3.75	Effect of thinning on yield and fruit quality of date palm	Approved with following suggestion/s: 1. Merge objectives-from Two to One as yield and quality 2. Add treatment in Factor 1 as N ₃ : 1/4 Strand thinning per branch 3. Change treatment- in Factor 2 use as L ₁ : 05 cm and L ₂ : 10 cm removal of terminal tip 4. Add Observations Tannin % (Action: HOD, Dept. of Horticulture, BACA, AAU, Anand)
22.4.3.76	Effect of land configuration and bulb splitting treatments on growth and yield of tuberose	Approved with following suggestion/s: 1. Add observations Rachis length, Flower longevity, Number of Bulbs/ha., Number of bulblets per plant and ha. observation no 1 convert plant height at harvest to yearly 2. Add notes: Mention size of bulb (Action: HOD, Dept. of Horticulture, BACA, AAU, Anand)

22.4.3.77	Effect of natural nutrient sources on yield and quality of sapota	Approved with following suggestion/s: 1. Use 4 Replication instead of 3 2. Change note -September instead of October 3. Apply vermicompost @ 55 kg/tree (Action: HOD, Dept. of Fruit Science, CoH, Anand)
22.4.3.78	Effect of scion age and PGRs on growth and success of softwood grafting in mango	Approved with following suggestion/s: 1.Change notes no.2 remove for 2 minutes due to quick dip method 2. Add observations: Survival % and Graft of union Take all observations at 180 DAG Use incremental height in observation (Action: HOD, Dept. of Fruit Science, CoH, Anand)
22.4.3.79	Effect of nitrogen, phosphorus and potassium on growth, yield and quality of brinjal	Approved with following suggestion/s: Approved as such (Action: HOD, Dept. of Vegetable Science, CoH, Anand)
22.4.3.80	Effect of nitrogen, phosphorus and potassium on growth, yield and quality of tomato	Approved with following suggestion/s: Approved as such (Action: HOD, Dept. of Vegetable Science, CoH, Anand)
22.4.3.81	Efficacy of modified nutrient solutions on yield, quality and nutrient content of cherry tomato under soilless culture	Approved with following suggestion/s: 1. Change Observations No.3 Nutrient content in Fruits analysis at 5 th and 9 th Picking only 2. Media Analysis at Initial and After harvest also 3. Add observation on days taken to last picking (Action: HOD, Dept. of NRM, CoH, Anand)
22.4.3.82	Composting of leaf litter of different fruit crops using microbial decomposer	Approved with following suggestion/s: Add total microbial count (Action: HOD, Dept. of NRM, CoH, Anand)
22.4.3.83	Evaluation of China aster varieties under Middle Gujarat agro-climatic conditions	Approved with following suggestion/s: 1.Remove word under middle Gujarat agro climatic conditions from title 2. Add observations Weight of 10 flowers, Flower yield /plant and Growth habit of plant (Action: HOD, Dept. of Flori. and Landscaping, CoH, Anand)
22.4.3.84	Influence of different nitrogen levels and plant spacing on growth and flowering of Lisianthus under poly house	Approved with following suggestion/s: 1. Add Treatment- in Factor A Convert N levels from Kg/ha to gm/sq.mt/week as N ₁ = 1.25 gm/sq.mt/week N ₂ = 1.50 gm/sq.mt/week and N ₃ = 1.75 gm/sq.mt/week 2. Add Observations: Number of flower stalk per plant and per plot 3. Soil analysis :Before and After 4. Mention the bed size in bed 5. Use split plot design (Action: HOD, Dept. of Flori. and Landscap.,CoH, Anand)

22.4.3.85	Nutrient management in African marigold	Approved with following suggestion/s: 1. All growth parameters will be recorded at 60 and 90 DAT (Action: HOD, Dept. of Flori. and Landscaping, CoH, Anand)
22.4.3.86	Effect of Calcium, Boron and Potassium on Growth, Yield and quality of Watermelon	Approved with following suggestion/s: 1. Change Treatment- T₂ : Calcium nitrate - 10 kg T₃ : Calcium nitrate - 15 kg T₄ : Boron - 0.75 kg T₅ : Boron – 1.0 kg 2.. Add observations: Fruit cracking (Action: HOD, Dept. of Horticulture, CoA, AAU, Jabugam)
22.4.3.87	Standardization of sustainable on farm storage techniques using indigenous packaging materials in Gladiolus	Approved with following suggestion/s: 1. Recast title : as “Standardization of sustainable onfarm storage techniques on growth and yield of Gladiolus in field conditions” 2. Change treatment- in SOP as Remove Trade name of Company product and use only technical name 3. Add observation on sprouting (%) at storage condition (Action: Unit Head, SDMPH, AAU, Vadodara)
22.4.3.88	Impact of spacing and corm treatment on growth and yield of half split corms in Gladiolus	Approved with following suggestion/s: Approved as such (Action: Unit Head, SDMPH, AAU, Vadodara)
22.4.3.89	Effect of natural nutrient sources on flowering, yield and quality of Mango	Approved with following suggestion/s: 1. Remove observations No.4 as Length of panicle 2. The details application of T₆ mention in note (Action: Unit Head, SDMPH, AAU, Vadodara)
22.4.3.90	Nutrient management in Ber	Approved with following suggestion/s: 1. Remove observations No.4 fruit Volume (Action: HOD, Department of Horticulture, CoA, Vaso)

22.5 SOCIAL SCIENCE

Date & Venue: May 12-14, 2026, at SSK, S. D. Agricultural University, Sardarkrushinagar

Chairman	:	Dr. S. D. Solanki, Hon'ble VC, SDAU, Sardarkrushinagar
Co-Chairmen	:	Dr. N. B. Jadav, DEE, JAU, Junagadh
		Dr. S. R. Patel, Principal & Dean, BACA, AAU, Anand
Rapporteurs	:	Dr. A. S. Shaikh, AAU, Anand
		Dr. B. Swaminathan, JAU, Junagadh
		Dr. Kalpesh L. Chaudhary, NAU, Navsari
		Dr. S. P. Pandya, SDAU, Sardarkrushinagar
Statistician	:	Dr. M. K. Chaudhary, Professor, SDAU
Venue	:	Shri D. N. Moga Conference Hall, SSK, SDAU, Sardarkrushinagar

Conveners of SAUs

Sr. No.	Name	University
1.	Dr. J. B. Patel	AAU, Anand
2.	Dr. S. M. Trivedi	JAU, Junagadh
3.	Dr. O. P. Sharma	NAU, Navsari
4.	Dr. A. R. Deshpande	SDAU, Sardarkrushinagar

Summary of Recommendations and NTPs proposed and approved

Name of University	Recommendations						
	For Farming community			For Scientific Community/ Policymakers /Extension Functionaries/Rural Women			
	Proposed	Approved	Dropped	Proposed	Approved	Dropped	Withheld
AAU	01	01	-	40	28	10	02
JAU	02	02+01*	-	08	07	-	01
NAU	01	01	-	12	10	01	01
SDAU	05	01	04	09	05	04	-
Total	09	05+01*	04	69	50	15	04

Note: *One additional recommendation approved by the house for farming community.

Name of University	New Technical Programmes Presented		
	Proposed	Approved	Dropped
AAU	31	24	07
JAU	15	14	01
NAU	20	17	03
SDAU	27+01*	26+01*	01
Total	93+01*	81+01*	12

Note: *One NTP deferred from Agril. Engg/FPT/PHT/AIT/Food Tech. & Bio-energy Sub-Committee to Social Science Sub-Committee for approval.

Inaugural session:

The inaugural session of the 22nd Combined AGRESCO Social Science Sub-Committee Meeting commenced from 9:00 hrs onwards at Shri D. N. Moga Conference Hall, Sardar Smruti Kendra, S. D. Agricultural University, Sardarkrushinagar. Dr. S. D. Solanki, Hon'ble Vice-Chancellor, SDAU, Sardarkrushinagar, graced the occasion as the Chairman of the meeting, while Dr. N. B. Jadav, DEE, JAU, Junagadh, and Dr. Sunil R. Patel, Principal and Dean, BACA, AAU, Anand, served as the Co-Chairmen. The rapporteurs were drawn from all the SAUs comprising Dr. A. S. Sheikh (AAU), Dr. B. Swaminathan (JAU), Dr. Kalpesh L. Chaudhary (NAU), and Dr. S. P. Pandya (SDAU). Besides, Dr. M. K. Chaudhary (SDAU) facilitated as the statistician for the meeting. Dr. P. S. Patel, DEE, SDAU; Dr. H. S. Bhaduria, DR, SDAU; and Dr. Hamant Sharma, DEE, NAU also remained present.

During the inaugural, Dr. A. R. Deshpande, Convener, AGRESCO Social Science Sub-Committee, SDAU, Sardarkrushinagar, welcomed Dr. S. D. Solanki, Hon'ble Vice Chancellor, SDAU, Sardarkrushinagar, dignitaries on the dais, conveners, rapporteurs and all invited members of the social science sub-committee from all the four SAUs of Gujarat. In his presidential remarks, Dr. S. D. Solanki, Hon'ble Vice-Chancellor, SDAU, congratulated the researchers of all the four SAUs for coming up with quality research studies with 78 recommendations and 94 new technical programmes that are proposed before the house for deliberations. He urged all the learned members of the house to contribute towards improving the overall research acumen of the social science group with their quality discussions, constructive suggestions and critical inputs. In his remarks, Dr. S. R. Patel, Principal and Dean, BACA, AAU, Anand, opined that the social science group has a vital role to play in shaping the policy consciousness of the state. Dr. Hamant Sharma, DEE, NAU, remarked that the potential of the social science group is yet to be fully utilized and asked the members to explore the scope of interdisciplinary studies. In his remarks, Dr. N. B. Jadav, the co-chairman of the meeting as well the Director of Extension Education, JAU, Junagadh, emphasized that the scope of the research studies pursued by the social scientists should extend beyond the realm of academic literature and translate into some actionable inputs for the benefit of stakeholders, especially the small and marginal farmers. He asserted that the social scientists should not only act as a bridge between the farmers and the institutions but also enable the institutions to become farmer friendly and *vice-versa*. The meeting was ended with the vote of thanks proposed by Dr. S. P. Pandya, Professor and Head, Deptt. of Agril. Extension and Communication, CPCA, SDAU, Sardarkrushinagar.

22.5.1 RECOMMENDATIONS FOR FARMING COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.5.1.1	Utility perception of farmers towards new technologies advocated through FLDs under Sardar Sarovar Project in Narmada command area
	The recommendation for farming community was recast as follows: Farmers of the Narmada command area are advised to adopt the improved agricultural technologies demonstrated through Front Line Demonstrations (FLDs) for optimizing agricultural productivity in the region, since these modern technologies have proven highly effective in boosting overall farm income. સરદાર સરોવર પ્રોજેક્ટ હેઠળ પ્રથમ હરોળના નિદર્શન દ્વારા પ્રદર્શિત સુધારેલ કૃષિ તકનીકો ખેડૂતો માટે ઉપયોગી સાબિત થયેલ છે જે ખેતી ની આવક વધારવામાં મદદરૂપ બને છે. તેથી નર્મદા કમાન્ડ વિસ્તારમાં ખેતી કરતા ખેડૂતોને પ્રથમ હરોળના નિદર્શન દ્વારા દર્શાવેલ સુધારેલ કૃષિ તકનીકો અપનાવવાની ભલામણ કરવામાં આવે છે. The house approved the recommendation for farming community. <i>[Action: Professor and Head, Dept. of Agril. Extension, CoA, AAU, Jabugam]</i>

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.5.1.2	Listening behaviour of farmers to programmes broadcast by the Community Radio Station, Junagadh Agricultural University, Junagadh
	The recommendation for farming community was recast as follows: Farmers are recommended to regularly listen programmes broadcasted by Junagadh Janvani Community Radio Station to obtain useful information regarding improved agricultural and horticultural practices, weather-related advisories and other farm-related technologies for timely adoption in farming operations. Regular listening to CRS programmes may help farmers to enhance their agricultural knowledge, decision-making ability and overall farm productivity. ખેડૂતોને ભલામણ કરવામાં આવે છે કે, જૂનાગઢ જનવાણી કોમ્યુનિટી રેડિયો સ્ટેશન દ્વારા પ્રસારીત થતા કાર્યક્રમો નિયમિત સાંભળવાથી કૃષિ અને બાગાયતી પદ્ધતિઓ, હવામાન સંબંધિત માર્ગદર્શન તેમજ અન્ય ખેતીલક્ષી ટેકનોલોજી અંગે ઉપયોગી માહિતી મેળવી સમયસર ખેતી કાર્યોમાં તેનો અમલ કરી શકે. કોમ્યુનિટી રેડિયો સ્ટેશન દ્વારા પ્રસારીત થતા કાર્યક્રમોને નિયમિત સાંભળવાથી ખેડૂતોના કૃષિ જ્ઞાન, નિર્ણયક્ષમતા અને ખેતી ઉત્પાદનક્ષમતા વધારવામાં મદદરૂપ થશે. The house approved the recommendation for farming community. <i>[Action: Director of Extension Education, JAU, Junagadh]</i>

22.5.1.3	Knowledge level of trainees regarding School of Baking, Junagadh Agricultural University
	The recommendation for rural women was recast as follows: The rural women are recommended to participate in scientific and skill-oriented training programmes (one week) organized by School of Baking, Junagadh Agricultural University on preparation of bakery products to start home-based bakery enterprises with minimal investment, quick market acceptance and better income through local sales, thereby significantly enhancing self-employment opportunities and rural livelihood development. ગ્રામીણ મહિલાઓને ભલામણ કરવામાં આવે છે કે, જૂનાગઢ કૃષિ યુનિવર્સિટીમાં બેકરી શાળા ખાતે ચાલતા ટૂંકા ગાળાના (એક અઠવાડિક) વૈજ્ઞાનિક અને કૌશલ્યવક્ષી તાલીમ કાર્યક્રમમાં ભાગ લે, જેથી તેઓ ઓછામાં ઓછા રોકાણ, ઝડપી બજાર સ્વીકૃતિ અને સ્થાનિક વેચાણ દ્વારા સારી આવક સાથે ઘરગથ્થુ રીતે બેકરી ઉદ્યોગ શરૂ કરી શકે, જેનાથી સ્વરોજગારીની તકો ઉભી થાય અને ગ્રામીણ મહિલાઓની આજીવિકાના વિકાસમાં નોંધપાત્ર વધારો થાય. The house approved the recommendation for rural women. <i>[Action: Director of Extension Education, JAU, Junagadh]</i>
22.5.1.4	Assessment of large scale demonstration of best practices to enhance cotton productivity in Amreli district*
	The recommendation for farming community was recast as follows: It is recommended to Bt cotton growers to actively participate in High-Density Planting System (HDPS) training programmes, demonstrations and adopt the HDPS to achieve higher yields and increased net returns. બીટી કપાસ વાવતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે તેઓ સાંકડા ગાળે વાવેતર સંબંધિત તાલીમ કાર્યક્રમો અને પ્રદર્શન પદ્ધતિઓમાં સક્રિય રીતે ભાગ લે અને વધારે ઉત્પાદન અને વધારાની આવક મેળવવા માટે કપાસ માં સાંકડા ગાળે વાવેતર પદ્ધતિ અપનાવે *The house approved the recommendation for farming community. <i>[Action: Senior Scientist and Head, KVK, JAU, Amreli]</i>

Note: *Additional recommendation approved by the house for farming community, which was not proposed earlier by JAU in the pre-proceedings.

NAVASARI AGRICULTURAL UNIVERSITY, NAVASARI

22.5.1.5	Economic impact of Solar Water System of irrigation in Narmada district
	The recommendation for farming community was recast as follows: It is recommended to farmers of tribal region to install solar water pumps in their fields for enhanced irrigation capabilities resulting in increased cropping intensity and farm incomes. આદિવાસી વિસ્તારના ખેડૂતોને તેમના ખેતરમાં સૌર પાણી પંપ સ્થાપિત કરવાની ભલામણ કરવામાં આવે છે. સૌર પાણી પંપ અપનાવવાથી સિંચાઈ ક્ષમતામાં વધારો થયો છે જેના પરિણામે પાકની તીવ્રતા અને ખેતીની આવકમાં વધારો થયો છે. The house approved the recommendation for farming community. <i>[Action: Professor and Head, Dept. of Agril. Economics, NMCA, NAU, Navsari]</i>

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

22.5.1.6	Farmers' perception regarding livestock services delivered by the Banas Milk Cooperative Union
	The recommendation for farming community was recast as follows: As the members of Banas Milk Cooperative Union had positive perception towards the services provided by the dairy, they are advised to take more use of the veterinary and input services to economically and scientifically improve their livestock productivity. બનાસ ડેરીના સભ્યોનો બનાસ દૂધ ઉત્પાદક સહકારી સંઘ દ્વારા પૂરી પાડવામાં આવતી સેવાઓ પ્રત્યે સકારાત્મક અભિગમ છે. તેથી ખેડૂતોને બનાસ ડેરી દ્વારા પૂરી પાડવામાં આવતી પશુચિકિત્સા અને ઇનપુટ સેવાઓનો વધુ લાભ લેવાની સલાહ આપવામાં આવે છે, જેથી તેઓ આર્થિક અને વૈજ્ઞાનિક રીતે પશુધનની ઉત્પાદકતામાં સુધારો કરી શકે છે. The house approved the recommendation for farming community. <i>[Action: - Deptt. of Agril. Extension and Communication CPCA, SDAU, SK Nagar]</i>
22.5.1.7	Price spread and marketing efficiency of Brinjal in Mehsana district
	The recommendation for farming community was not approved and dropped by the house due to its generalized nature. <i>[Action: Department of Social Science, College of Horticulture, SDAU, Jagudan]</i>
22.5.1.8	Knowledge and adoption of weed management practices by the farmers
	The recommendation for farming community was not approved and dropped by the house due to its generalized nature. <i>[Action: KVK, SDAU, Khedbrahma]</i>

22.5.1.9	Adoption of recommended package of practices in amaranth
	The recommendation for farming community was not approved and dropped by the house due to its generalized nature. <i>[Action: DEE, SDAU, SK Nagar]</i>
22.5.1.10	Adoption of recommended production technologies of groundnut growers in Banaskantha district
	The recommendation for farming community was not approved and dropped by the house due to its generalized nature. <i>[Action: DEE, SDAU, SK Nagar]</i>

22.5.2 RECOMMENDATIONS FOR SCIENTIFIC COMMUNITY/ POLICYMAKERS/ EXTENSION FUNCTIONARIES

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.5.2.1	Export performance of major agricultural commodities of Gujarat
	The recommendation for policymakers was recast as follows: Groundnut exports recorded robust growth in both quantity and value, with improving competitiveness and expanding demand in Southeast Asian markets. For sustained growth, focus should be on stable and loyal markets like Indonesia along with high-value, low-tariff markets such as the European Union, USA, and UAE. In castor, policy focus should be directed towards stable high-value regions such as the United States and European markets, particularly the Netherlands and France to avoid heavy dependence on China. For sesame, export strategies should prioritize stable markets such as Iraq and Israel, along with high-growth-relatively unstable markets like Saudi Arabia and Indonesia through long-term trade agreements to ensure sustained market retention. The house approved the recommendation for policymakers. <i>[Action: Professor and Head, Dept. of Agril. Economics, BACA, AAU, Anand]</i>
22.5.2.2	Growth in area, production and productivity of millets in Gujarat
	The recommendation for policymakers was recast as follows: As area and production of all millet crops have reported declining growth rates, policymakers are recommended to promote high yielding cultivars and cluster area approach among farmers to sustain millet cultivation in Gujarat state. The house approved the recommendation for policymakers. <i>[Action: Professor and Head, Dept. of Social Science, CoH, AAU, Anand]</i>

22.5.2.3	Crop diversification in Ahmedabad district
	The recommendation for policymakers was recast as follows: Retention shares of acreage under pulse crops across the seasons are found to be low in Ahmedabad district, thereby, policymakers are recommended to promote the cultivation of pulse crops with targeted training programmes and incentives. The house approved the recommendation for policymakers. <i>[Action: Professor and Head, Dept. of Social Science, CoH, AAU, Anand]</i>
22.5.2.4	Management of potato cold storage in Gujarat
	The recommendation for policymakers was recast as follows: It is recommended to policymakers to promote the use of digital tools and develop market intelligence to ease off managerial burden and improve decision making of potato farmers, especially smallholders, in selling decisions. The house approved the recommendation for policymakers. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.2.5	Exploring placement and career transition issues among IABMI post-graduates
	The recommendation for policymakers was recast as follows: International Agribusiness Management Institute (IABMI) graduates exhibit good employability, with a majority securing employment through campus placement programs. Nonetheless, numerous graduates encounter challenges concerning limited sector opportunities, salary expectations, and skill deficiencies. Targeted development of students' soft skills and the effective utilization of alumni networks for mentorship and career guidance can further augment placement success. The house approved the recommendation for policymakers. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.2.6	Marketing of tomato in middle Gujarat
	The recommendation for policymakers was not approved and dropped by the house as the information rendered for policymakers was inappropriate. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.2.7	Role of FPOs in bridging the credit gap for farmers in tribal and non- tribal districts of middle Gujarat
	The recommendation for policymakers was recast as follows: To make FPOs more effective in reducing the credit gap in the tribal and non-tribal districts of Middle Gujarat, policymakers are recommended to ensure stronger financial support, such as dedicated funding, credit guarantee schemes, and access to

	low-interest capital for FPOs, especially since the study shows that FPOs mainly act as facilitators and do not provide direct credit. The house approved the recommendation for policymakers. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.2.8	Supply chain and post production losses of milk in middle Gujarat
	The recommendation for policymakers was recast as follows: It is recommended that policymakers should focus on enhancing productivity and efficiency, particularly among small and medium farmers, to enable them to benefit from economies of scale. Intervention of cooperative supply chain was found most efficient, where farmer's share was found maximum in consumer rupees. The cooperative-based model will also be effective in minimizing post-production losses. The house approved the recommendation for policymakers. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.2.9	Challenges and opportunities of business incubation in Gujarat
	The recommendation for policymakers was not approved/dropped by the house due to the its generalized nature. <i>[Action: Professor and Head, Dept. of FBM, CoFPT & BE, AAU, Anand]</i>
22.5.2.10	Prediction of light trap catches using fuzzy regression based on weather indices in rice crop
	Recommendation for Scientific Community: The fuzzy regression models for Stem Borer (SBW), Leaf Folder (LFW) successfully captured the complex and uncertain relationship between pest incidence and meteorological variables while model for White Backed Plant Hopper (WBPH) did not capture successfully. Maximum temperature had strongest positive effect on stem borer, while minimum temperature was the key weather factor which played stable role in determining the leaf folder trap catches in rice crop. The house approved the recommendation for scientific community. <i>[Action: Professor & Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>
22.5.2.11	Efficiency of variance balanced design over randomized complete block design for diallel crosses of okra crop
	Recommendation for Scientific Community: It is recommended to the scientific community that the Variance Balanced Design (VBD) performed better in reducing experimental errors when compared to the Randomized Complete Block Design (RCBD) for number of fruits per plant, fruit weight, and fruit yield of okra across seasons and years. The error mean squares under VBD were consistently lower, indicating higher precision, with relative efficiency values above 100 and positive gains in efficiency for all traits. The house approved the recommendation for scientific community. <i>[Action: Professor and Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>

22.5.2.12	Evaluation and development of yardstick of coefficient of variation for irrigated and non-irrigated cotton crop experiments
	Recommendation for Scientific Community: For cotton crop experiments, the recommended yardstick of coefficient of variation (CV %) is 16.11 % for irrigated cotton and 16.64 % for rainfed (un-irrigated) cotton. The house approved the recommendation for scientific community. <i>[Action: Professor and Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>
22.5.2.13	Forecasting carbon footprint and greenhouse gas emissions in Indian agriculture: A pre- and post-harvest perspective
	Recommendation for Scientific Community: India's agrifood carbon footprint (CO₂ eq) is projected to rise in both stages, with post-harvest emissions expected to increase by about 55% and pre-harvest emissions by about 25% till 2035. These results indicate that mitigation policies should prioritize reducing food waste, improving wastewater and supply chain efficiency in post-harvest systems and promoting cleaner fertilizer production and efficient nutrient management in pre harvest activities to control the future emission growth in food system. The house approved the recommendation for scientific community. <i>[Action: Professor and Head, Dept. of Agril. Statistics, CoA, AAU, Jabugam]</i>
22.5.2.14	Machine Learning Approaches to irrigation water quality parameters prediction
	Recommendation for Scientific Community: Tree-based models like Light Gradient Boosting Machine (Light GBM) demonstrated superior predictive performance for Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) and Residual Sodium Carbonate (RSC), proving their reliability in groundwater assessment while effectively handling outliers in order to retain critical information. Given the strong influence of features such as Sodium (Na⁺), Bicarbonate (HCO₃⁻), and Total Hardness (TH) on predictions, policymakers should prioritize these parameters in groundwater monitoring frameworks. The house approved the recommendation for scientific community. <i>[Action: Professor and Head, Dept. of Agril. Statistics, CoA, AAU, Jabugam]</i>
22.5.2.15	Developing image database of major insect-pests and diseases infecting rice in middle Gujarat
	Recommendation for Scientific Community: Deep learning based Deep Convolution Neural Network (DCNN with multi convolution layer) model is suggested for rice disease detection (Rice Blast and Bacterial Leaf Blight) due to their higher accuracy, stable convergence, and superior generalization across severity levels. Support Vector Machine with Radical Basis Function kernel can serve as a reliable alternative when computational resources are limited. The house approved the recommendation for scientific community. <i>[Action: Professor and Head, Dept. of Basic Science, BACA, AAU, Anand]</i>

22.5.2.16	Participation of farmwomen in decision making in agriculture activities
	Recommendation for Extension Functionaries: Extension functionaries should organize need-based training programmes to improve farmwomen's technical knowledge, climate change awareness, and decision-making skills in agriculture. Efforts should also focus on enhancing their education, social participation, and social media exposure through self-help groups, awareness campaigns, and ICT-based extension services. Furthermore, gender-sensitive approaches and capacity-building programmes should be promoted to ensure greater participation of farmwomen in financial and agricultural decision-making. The house approved the recommendation for extension functionaries. <i>[Action: Prof. and Head, Dept. of Agril. Extn. & Commn., BACA, AAU, Anand]</i>
22.5.2.17	Horizontal spread of Gujarat Anand Duram Wheat-3 among the wheat growers in Bhal region
	The recommendation for extension functionaries was recast as follows: Extension functionaries should adopt a participatory and market-oriented extension approach to accelerate the adoption of GADW-3. More emphasis should be placed on timely seed supply, weather-based advisories, farmer training, and strengthening farmer-extension-research linkages for sustainable durum wheat production in the Bhal region of Gujarat. The house approved the recommendation for extension functionaries. <i>[Action: Prof. and Head, Dept. of Agril. Extn. & Commn., BACA, AAU, Anand]</i>
22.5.2.18	Training need assessment of extension professionals
	The recommendation for extension functionaries was withheld by the house with the following suggestions: 1. Reverify the number training need items/statements and carry out their reanalysis accordingly. 2. Recast the recommendation in line with the findings emerging out the reanalysis. 3. Include "Middle Level Extension Functionaries" in the recommendation text. 4. Recast the recommendation accordingly and extend the study for one year. The house extended the study for the ensuing year. <i>[Action: Director, EEI, AAU, Anand]</i>
22.5.2.19	Impact assessment of farm telecast in Gujarat
	The recommendation for extension functionaries was not approved/dropped by the house due to the its generalized nature. <i>[Action: Director, EEI, AAU, Anand]</i>
22.5.2.20	Impact assessment of farm broadcast in Gujarat
	The recommendation for extension functionaries was not approved/dropped by the house due to the its generalized nature. <i>[Action: Director, EEI, AAU, Anand]</i>

22.5.2.21	Utilization pattern of digital tools among the farmers																																																																											
	The recommendation for extension functionaries was not approved/dropped by the house as the findings were not in tune with the objectives taken up. [Action: Director of Extension Education, O/o DEE, AAU, Anand]																																																																											
22.5.2.22	Development of scale to measure attitude of farmers towards use of drone technology in farming																																																																											
	Recommendation for Scientific Community: The scale, consisting of the following statements, is recommended for the researchers who want to measure the attitude of farmers towards the use of drone technology in farming.																																																																											
	<table><tr><th>Sr. No.</th><th>Statements</th><th>SA</th><th>A</th><th>UD</th><th>DA</th><th>SDA</th></tr><tr><td>1</td><td>Drone technology is the future of farming (+) ડ્રોન ટેકનોલોજી એ કૃષિનું ભવિષ્ય છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>2</td><td>Drone technology saves resources (+) ડ્રોન ટેકનોલોજી થકી સંસાધનોની બચત થાય છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>3</td><td>Application of drone technology in farming requires technical know-how (+) ખેતીમાં ડ્રોન ટેકનોલોજીના ઉપયોગ માટે તાંત્રિક જ્ઞાન હોવું જરૂરી છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>4</td><td>Adoption of drone technology in farming will lead to wage loss to labours (-) ખેતીમાં ડ્રોન ટેકનોલોજી અપનાવવાથી શ્રમિકોને વેતનમાં નુકસાન થશે (-)</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>5</td><td>I think drone technology helps in maximizing the crop yield (+) મને લાગે છે કે ડ્રોન ટેકનોલોજી પાકની ઉપજ વધારવામાં મદદ કરે છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>6</td><td>Precise application of various inputs is possible through drone technology (+) ડ્રોન ટેકનોલોજી દ્વારા વિવિધ ઇનપુટ્સનો ચોકસાઈ પૂર્વકનો ઉપયોગ શક્ય છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>7</td><td>Drone function twice as quickly compared to human labour (+) ડ્રોન માનવ શ્રમ કરતા બમણી ઝડપે કામ કરે છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>8</td><td>Drone helps in identification of water-stressed zones (+) ડ્રોન પાણીની અછતવાળા વિસ્તારોને ઓળખવામાં મદદ કરે છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>9</td><td>Drone provides accurate data about every stage of crop growth and report any variations before they become a crisis. (+) ડ્રોન થકી પાકની વૃદ્ધિના દરેક તબક્કા વિશે સચોટ જાણકારી મેળવી આવનાર કટોકટીની અવસ્થાને ટાળી શકાય છે (+)</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr></table>	Sr. No.	Statements	SA	A	UD	DA	SDA	1	Drone technology is the future of farming (+) ડ્રોન ટેકનોલોજી એ કૃષિનું ભવિષ્ય છે (+)	5	4	3	2	1	2	Drone technology saves resources (+) ડ્રોન ટેકનોલોજી થકી સંસાધનોની બચત થાય છે (+)	5	4	3	2	1	3	Application of drone technology in farming requires technical know-how (+) ખેતીમાં ડ્રોન ટેકનોલોજીના ઉપયોગ માટે તાંત્રિક જ્ઞાન હોવું જરૂરી છે (+)	5	4	3	2	1	4	Adoption of drone technology in farming will lead to wage loss to labours (-) ખેતીમાં ડ્રોન ટેકનોલોજી અપનાવવાથી શ્રમિકોને વેતનમાં નુકસાન થશે (-)	1	2	3	4	5	5	I think drone technology helps in maximizing the crop yield (+) મને લાગે છે કે ડ્રોન ટેકનોલોજી પાકની ઉપજ વધારવામાં મદદ કરે છે (+)	5	4	3	2	1	6	Precise application of various inputs is possible through drone technology (+) ડ્રોન ટેકનોલોજી દ્વારા વિવિધ ઇનપુટ્સનો ચોકસાઈ પૂર્વકનો ઉપયોગ શક્ય છે (+)	5	4	3	2	1	7	Drone function twice as quickly compared to human labour (+) ડ્રોન માનવ શ્રમ કરતા બમણી ઝડપે કામ કરે છે (+)	5	4	3	2	1	8	Drone helps in identification of water-stressed zones (+) ડ્રોન પાણીની અછતવાળા વિસ્તારોને ઓળખવામાં મદદ કરે છે (+)	5	4	3	2	1	9	Drone provides accurate data about every stage of crop growth and report any variations before they become a crisis. (+) ડ્રોન થકી પાકની વૃદ્ધિના દરેક તબક્કા વિશે સચોટ જાણકારી મેળવી આવનાર કટોકટીની અવસ્થાને ટાળી શકાય છે (+)	5	4	3	2	1					
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	10 Drone is used to monitor and manage large herd size (+) ડ્રોનનો ઉપયોગ વિશાળ પશુધનની દેખરેખ અને તેના વ્યવસ્થાપન માટે થઈ શકે છે (+) 11 A short flying time of agriculture drone is a major hurdle (-) ઉડાનનો ઓછો સમય એ કૃષિ ડ્રોનનો એક મોટો અવરોધ છે (-) 12 Drone cause risks for air space (-) ડ્રોન અવકાશી ક્ષેત્રમાં જોખમ પેદા કરે છે (-) 13 Agriculture drones are more vulnerable to adverse weather conditions (-) કૃષિ ડ્રોન પ્રતિકૂળ હવામાન પરિસ્થિતિઓ પ્રત્યે વધુ સંવેદનશીલ છે (-) 14 Agriculture drones fails to monitor nocturnal pest (-) કૃષિ ડ્રોન નિશાયર જીવાતની દેખરેખ રાખવામાં નિષ્ફળ જાય છે (-) 15 Use of drone technology in agriculture requires professional training (-) કૃષિમાં ડ્રોન ટેકનોલોજીના ઉપયોગ માટે વ્યાવસાયિક તાલીમની જરૂર છે (-)	5	4	3	2	1
		1	2	3	4	5
		1	2	3	4	5
		1	2	3	4	5
		1	2	3	4	5
		1	2	3	4	5
	The house approved the recommendation for extension functionaries. <i>[Action: Director of Extension Education, O/o DEE, AAU, Anand]</i>					
22.5.2.23	Adoption of climate resilient technologies among paddy growers in Kheda district					
	The recommendation for extension functionaries was not approved/dropped by the house as the findings were not in tune with the objectives taken up. <i>[Action: Professor and Head, Dept. of Agriculture Science, CoAIT, AAU, Anand]</i>					
22.5.2.24	Impact assessment of training on banana growers					
	The recommendation for extension functionaries was withheld by the house with the following suggestions: 1. Use independent t-test to bring out the significant differences between the groups. 2. Test 'knowledge' and 'attitude' at 5% level of significances. 3. Indicate the correct levels of significances throughout the study. 4. Extend the study for one year. 5. Recast the recommendation accordingly and present the study next year. The recommendation was withheld and the house extended the study for one more year. <i>[Action: Professor and Head, Dept. of Agril. Extension, CoA, AAU, Jabugam]</i>					
22.5.2.25	Extent of Utilization of various components of natural farming among farmers					
	The recommendation for extension functionaries was not approved/dropped by the house as the findings were not in tune with the objectives taken up. <i>[Action: Professor and Head, Dept. of Agril. Extension, CoA, AAU, Vaso]</i>					

22.5.2.26	Perception of the paddy growers about nano fertilizer
	The recommendation for extension functionaries was not approved/dropped by the house as the data used and the findings presented therein were not found suitable. <i>[Action: Professor and Head, Dept. of Agril. Extension, CoA, AAU, Vaso]</i>
22.5.2.27	Indigenous practices followed by cattle and buffalo farmers for reproductive disorders in Vadodara district
	Recommendation for Scientific Community: The scientific validation of Indigenous Technical Knowledge (ITK) practices for managing reproductive disorders in livestock is essential to ensure their efficacy, safety, and reliability. Rigorous research approaches, including controlled experiments, pharmacological evaluations and well-designed field trials, should be undertaken as deemed appropriate by researchers to generate robust evidence. Such validation will support the standardization and potential integration of ITK practices into formal veterinary healthcare systems. Further, this can offer cost-effective, accessible and sustainable solutions for the management of reproductive disorders, particularly in remote and resource-limited areas. Therefore, scientific community should validate the indigenous practices followed by cattle and buffalo farmers in Vadodara district for managing reproductive disorders. The house approved the recommendation scientific community. <i>[Action: Principal, Poly. in Horticulture, AAU, Vadodara]</i>
22.5.2.28	Extent of utilization of agricultural apps among farmers in Panchmahals and Mahisagar districts
	The recommendation for extension functionaries was recast as follows: Extension functionaries are advised to conduct awareness and skill-based training programmes to enhance farmers' knowledge and utilization of agricultural apps, particularly among older and less educated farmers. Efforts should focus on strengthening social participation, extension contact, and the effective use of apps for accessing agricultural schemes, precision farming practices, and expert advisory services. The house approved the recommendation for extension functionaries. <i>[Action: Research Scientist, MMRS, Godhara]</i>
22.5.2.29	Adoption of IPM technologies in castor crop in Panchmahals district
	Recommendation for Extension Functionaries: Majority of the castor growers of Panchmahals district had a low to medium level (78.00%) of adoption of Integrated Pest Management (IPM) technologies. They mainly used cultural and chemical practices, while other important IPM practices, like biological and mechanical practices, were often ignored. This may be due to a lack of awareness, knowledge or access to resources. To promote sustainable pest management and reduce dependence on chemical pesticides, it is important to educate farmers about the benefits and practical use of IPM through training programs, demonstrations and extension services. The house approved the recommendation for extension functionaries. <i>[Action: Research Scientist, MMRS, Godhara]</i>

22.5.2.30	Economics of irrigated, unirrigated and restricted irrigated wheat in Bhal region
	The recommendation for extension functionaries was recast as follows: Polycymakers should strengthen GI-based branding campaigns to promote the nutritional value, coarse grain quality, and cultural significance of Bhalia wheat. They should also develop dedicated value chains, encourage direct marketing platforms, and support Farmer Producer Organizations (FPOs) for better aggregation and improved price realization. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Arnej]</i>
22.5.2.31	Impact analysis of chick pea demonstration conducted by KVK, Ahmedabad
	The recommendation for extension functionaries was recast as follows: To enhance chickpea production and adoption of recommended technologies, extension efforts should prioritize the expansion of production area in Ahmedabad district and increasing the number of cluster frontline demonstrations. This will boost farmers' knowledge about of recommended chickpea production technologies. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Arnej]</i>
22.5.2.32	Awareness of dairy farmers about sex sorted semen doses in Ahmedabad district
	The recommendation for extension functionaries was recast as follows: For effective promotion of sex-sorted semen doses, which offers > 90 per cent female calf accuracy, accelerates genetic progress, reduces birth of male calves and boosts smallholder profitability, extension functionaries should conduct targeted awareness and training programmes to improve farmers' knowledge of sex-sorted semen technology, especially among older, less educated farmers. Strengthening extension contact through field visits, demonstrations, and ICT-based advisories, along with improving access to digital information, is essential to enhance awareness and adoption. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Arnej]</i>
22.5.2.33	Knowledge of dairy farmers about transition period of dairy animals
	The recommendation for extension functionaries was recast as follows: The transition period (pre- and post-parturition) is a critical phase in dairy animals, significantly influencing health and productivity. Dairy farmers exhibit knowledge gaps in key management practices, like teaming up in dairy animals (7.33 %) and amount of concentrate fed to dairy animals (15.67%). Only 34.67 % knew about important metabolic disease like ketosis. Therefore, focused training programs are needed to improve farmers' knowledge and skills in proper transition period management. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Devataj]</i>

22.5.2.34	Problematic soil reclamation practices adopted by the farmers of Anand district
	The recommendation for extension functionaries was recast as follows: Extension functionaries should intensify training, demonstrations, and extension campaigns to improve farmers' knowledge of scientific soil reclamation practices such as green manuring, use of zero till drill technology specially in Rice-Wheat system, use of proper method of irrigation like sprinkler, drip, etc., leaching techniques, integrated nutrient management, field drainage, and use of salt-tolerant crops. Efforts should focus on promoting cost-effective and locally suitable technologies while ensuring better access to soil testing services, credit facilities, and extension literature. In addition, support mechanisms like subsidized inputs, farm pond construction, and soil conservation measures should be strengthened to overcome financial and technical constraints and enhance adoption of soil reclamation practices. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Devataj]</i>
22.5.2.35	Impact assessment of National Innovations in Climate Resilient Agriculture (NICRA) project on beneficiary farmers
	Recommendation for Extension Functionaries: It is recommended that extension functionaries should promote the wider dissemination of climate-resilient agricultural technologies across the district. Emphasis should be given to real-time agro-advisory services and doorstep availability of climate-resilient crop varieties. Extension functionaries should also adopt a group approach to ensure timely technology transfer to farmers. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Dahod]</i>
22.5.2.36	Impact analysis of Cluster Front Line Demonstrations (CFLDs) on chickpea growers
	The recommendation for extension functionaries was recast as follows: Extension functionaries should strengthen trainings, demonstrations, and advisory services to improve farmers' knowledge and adoption of recommended chickpea production technologies. Greater emphasis should be given to mass media exposure, scientific orientation, and innovativeness among farmers, especially non-beneficiaries and small farmers. Regular follow-up and promotion of economically feasible improved practices can help increase adoption and productivity of chickpea cultivation. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Dahod]</i>
22.5.2.37	Farm mechanization adopted by the farmers of Dahod district
	The recommendation for extension functionaries was recast as follows: Extension functionaries should organize need-based training, demonstrations, and awareness programmes to promote farm mechanization among farmers, particularly small and marginal farmers. Emphasis should be given to educating

	farmers about the benefits and efficient use of modern farm machinery and water-saving irrigation technologies such as drip and sprinkler systems. Efforts should also be made to strengthen Custom Hiring Centres (CHCs) at the village level and facilitate access affordable farm machinery. The house approved the recommendation for extension functionaries. <i>[Action: Asso. Research Scientist and Head, Agri-Polyclinic, ARS, AAU, Dahod]</i>
22.5.2.38	Livelihood security of tribal farmers in Dahod district
	The recommendation for extension functionaries was recast as follows: Strengthening livelihood security of tribal farmers in Dahod district requires focused action as most farmers are marginal, had low-income, and dependent on seasonal migration. Since assets like house, land, and irrigation strongly support livelihood security, priority should be given to asset development, irrigation expansion, and basic services such as water and food security. Major constraints like low rainfall and declining soil fertility call for improved water and soil management. Accordingly, extension functionaries should promote organic farming/natural farming, olriculture, diversification, and livestock to enhance income, while improving digital access, skills, and market linkages through targeted training programmes. The house approved the recommendation for extension functionaries. <i>[Action: Sr. Scientist and Head, KVK, AAU, Dahod]</i>
22.5.2.39	Utilization of i-khedut portal by the tribal farmers of Dahod district
	The recommendation for extension functionaries was not approved/dropped by the house as the findings presented were not found suitable. <i>[Action: Training Organiser, TRTC, AAU, D'Baria]</i>
22.5.2.40	Extent of utilization of various components of natural farming among farmers
	The recommendation for extension functionaries was not approved/dropped by the house as the suggestions given by the house in the 22st Combined AGRESCO Meeting was not followed by the investigators. <i>[Action: Assoc. Research Scientist, FTTC, ARS, AAU, Sansoli]</i>

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.5.2.41	Decomposition and supply response analysis of cotton production in major districts of Gujarat
	The recast recommendation for policymakers is as follows: It is recommended to policymakers that the institutional interventions focusing on yield enhancement and accounting for lagged acreage responses are more effective than price-based measures in sustaining cotton area and production in Gujarat. As yield improvements contribute most significantly to output growth, policy efforts should prioritize increased public investment in cotton research and extension, particularly for the development and dissemination of high-yielding varieties and hybrids. The recommendation was approved by the house for policymakers. <i>[Action: Professor & Head, Dept. of Agril. Economics, CoA, JAU, Junagadh]</i>

22.5.2.42	Resource use efficiency and demand-supply scenario analysis of fodder in the Saurashtra region, Gujarat
	The recast recommendation for policymakers is as follows: It is recommended to policymakers that the deficit of dry fodder and concentrates in the Saurashtra region need to be managed through their targeted procurement and distribution from the other net surplus regions. As fodder is found to be underutilized across all animal units and dairy farm types, awareness on balanced rations needs to be promoted on a large scale. The recommendation was approved by the house for policymakers. <i>[Action: Professor & Head, Dept. of Agril. Economics, CoA, JAU, Junagadh]</i>
22.5.2.43	Development of Computer Programs using Python for the Analysis of Biometric Techniques
	The recast recommendation for scientific community is as follows: The Python-based programme developed by the Department of Agricultural Statistics, Junagadh Agricultural University, Junagadh is recommended to the scientists involved in the experiments of Generation Mean Analysis conducted under Compact Family Block Design (CFBD)/Randomized Block Design (RBD). The recommendation was approved by the house for scientific community. <i>[Action: Professor & Head, Dept. of Agril. Statistics, CoA, JAU, Junagadh]</i>
22.5.2.44	Listening behaviour of farmers to programmes broadcast by the Community Radio Station, Junagadh Agricultural University, Junagadh
	The recast recommendation for extension functionaries is as follows: Extension functionaries are advised to give more emphasis to progressive farmers and active listeners who can motivate other farmers for regular listening Junagadh Janvani Community Radio Station programmes for getting timely, useful and improved agricultural as well as horticultural information along with weather-related advisories in local language for enhancing their farm productivity, which ultimately can improve their standard of living. The recommendation was approved by the house for extension functionaries. <i>[Action: Director of Extension Education, JAU, Junagadh]</i>
22.5.2.45	Perception of farmers towards agri-drone technology in Saurashtra region
	The recast recommendation for extension functionaries is as follows: Extension functionaries are advised to give more emphasis to enhance knowledge and encourage farmers through mass media campaigns, hands on training programmes, and organising field demonstrations for promotion of agri-drone technology. The recommendation was approved by the house for extension functionaries. <i>[Action: Professor & Head, Dept. of Agril. Ext. Edu., CoA, JAU, Junagadh]</i>

22.5.2.46	Financial inclusion among rural women in Junagadh district
	The recast recommendation for policymakers is as follows: To empower rural women, policymakers must shift from mere account opening to a human-centric support model that uses "Bank Sakhis" to provide face-to-face guidance and build trust. Financial institutions must simplify complex "bank language" and paperwork to remove the mental and procedural barriers of potential users. The recommendation was approved by the house for policymakers. <i>[Action: Principal, PG Institute of Agribusiness Management, JAU, Junagadh]</i>
22.5.2.47	Role of SHGs in promoting financial literacy among rural women in selected districts of Saurashtra region
	The recommendation was withheld and the following suggestions were given by the house: 1. Mismatches in Table 4 and 6 in terms of monthly savings. 2. Mismatches in Table 3,5, and 6 in bank loan details. 3. Verify, check and re-analyse the data. 4. Recast the recommendation in line with the new findings after clearing all the mismatches. 5. The study is extended for one year for re-analysis of the entire data. The recommendation was withheld and the study was extended for one year. <i>[Action: Principal, PG Institute of Agribusiness Management, JAU, Junagadh]</i>
22.5.2.48	Assessment of large scale demonstration of best practices to enhance cotton productivity in Amreli district
	The recast recommendation for extension functionaries is as follows: For increasing the income of Bt cotton growers, extension functionaries are advised to organize training program and demonstrations on the high-density planting system along with the information about suitable HDPS varieties and best management practices to ensure optimal result and motivate farmers for active participation. The recommendation was approved by the house for extension functionaries. <i>[Action: Senior Scientist & Head, KVK, JAU, Amreli]</i>

NAVASARI AGRICULTURAL UNIVERSITY, NAVASARI

22.5.2.49	Economic impact of Solar Water System of irrigation in Narmada district
	The recast recommendation for policymakers is as follows: To facilitate the adoption of solar water pumps, it is recommended to policymakers that custom service centres be developed near cluster of villages and arrange primary training programme for the adopted farmers in tribal regions. The recommendation was approved by the house for policymakers. <i>[Action: Prof and Head, Dept. of Agril. Economics, NMCA, Navsari]</i>

22.5.2.50	Temporal business opportunities and price forecasting of TOP (Tomato, Onion and Potato) vegetables for major markets of Gujarat using Neural Network Model
	The recast recommendation for policymakers is as follows: The policymakers are recommended that decentralized cold-chain infrastructure should be developed for tomato and potato and onion. It is also advised that forecasting approaches should consider regional market heterogeneity. ARIMA suits tomato, while potato requires hybrid models and TDNN. Onion forecasting performs best with ARIMA and hybrid models for improved forecasting performance. The recommendation was approved by the house for policymakers. <i>[Action: Prof and Head, Dept. of Agril. Economics, NMCA, Navsari]</i>
22.5.2.51	Decomposition analysis and forecasting of milk production in Gujarat
	The recommendation for policymakers was withheld and the following suggestions were given by the house: 1. Split the actual data of the study period into training and testing. 2. Build the candidate models only using the training data and compute Q-statistics of the selected candidate model. 3. Cross-validate the out-of-sample forecasting data with the actual data kept for testing. The recommendation was withheld and the study was extended for one year. <i>[Action: Prof and Head, Deptt. of Agril. Social Science, ACH, Navsari]</i>
22.5.2.52	Assessment of post-harvest loss of papaya on farmers income in South Gujarat
	The recast recommendation for policymakers is as follows: The total post-harvest losses of papaya in South Gujarat are estimated at approximately 21.78%; therefore, policy makers are suggested to promote standard post-harvest management practices at various levels of supply chain. The recommendation was approved by the house for policymakers. <i>[Action: Associate Professor and Planning Officer, Directorate of Research, NAU, Navsari]</i>
22.5.2.53	Factors influencing farmers' decision to select a bank for availing an agricultural loan in Navsari district
	The recast recommendation for policymakers is as follows: Banks should strengthen local accessibility, cost convenience for farmers, targeted promotional activities, and digital service delivery, while enhancing personal outreach through branch staff and field officers, as these significantly influence farmers' choice of banks for agricultural loans. The recommendation was approved by the house for policymakers. <i>[Action: Associate Professor and Planning Officer, Directorate of Research, NAU, Navsari]</i>

22.5.2.54	Market mechanism and socio-economic implication in rural periodic markets (haats) in South Gujarat
	Recommendation for policymakers: To transform rural haats of South Gujarat into efficient, farmer-centric direct marketing platforms for fresh and local produce, priority should be given to infrastructure development and modernization, including permanent sheds, fencing, paved platforms and grading and weighing facilities. Dedicated land allocation for organized operations, along with appropriate regulation of trader participation, is required to preserve the core objective of direct farmer-to-consumer marketing. The recommendation was approved by the house for policymakers. <i>[Action: Principal, AABMI, NAU, Navsari]</i>
22.5.2.55	Perception of farmers about natural farming in South Gujarat
	The recast recommendation for extension functionaries is as follows: For increasing perception about natural farming among farmers. extension functionaries are advised to organize extensive capacity-building, knowledge enhancement programmes, farm advisory services, conduct distribution of extension materials on natural farming and facilitate certification procedures and consumer awareness programme. The recommendation was approved by the house for extension functionaries. <i>[Action: Prof. & Head, Deptt. of Agril. Ext. and Comm., NMCA, NAU, Navsari]</i>
22.5.2.56	Training needs and information seeking behavior of the farmers about natural farming in South Gujarat
	The recast recommendation for extension functionaries is as follows: Extension functionaries should provide the information and organize need-based, location specific training programmes on the preparation and use of different natural farming inputs for management of insect pests, disease and soil fertility followed by guidance on marketing strategies for natural farming produce. Information should be disseminated through printed and audio-visual form to enhance farmers' knowledge, improve their understanding and adoption of natural farming practices. Further, Government institutions should enhance marketing facilities and support systems to ensure better market access. The recommendation was approved by the house for extension functionaries. <i>[Action: Prof. & Head, Deptt. of Agril. Ext. and Comm., NMCA, NAU, Navsari]</i>
22.5.2.57	Knowledge and adoption of farmers about mushroom production technologies in the Dangs district
	The recast recommendation for extension functionaries is as follows: It is advised to extension functionaries that skill-oriented training on mushroom production should be conducted at the village level in Dang district of Gujarat. Adequate marketing facilities, easy access to credit, and awareness programmes on mushroom cultivation and its nutritional benefits should be provided to mushroom growers. Additionally, the supply of quality raw materials, and value-addition facilities at the village level are essential to increase adoption and profitability of mushroom cultivation. The recommendation was approved by the house for extension functionaries. <i>[Action: Sr. Sci. & Head, KVK, NAU, Waghai]</i>

22.5.2.58	Knowledge and adoption of value addition in millets among rural women of Surat district
	The recommendation for extension functionaries was not approved and dropped by the house owing to its generalized nature. <i>[Action: Sr. Sci. & Head, KVK, NAU, Surat]</i>
22.5.2.59	Estimation of lactation period milk yield from cumulative monthly and bimonthly test day records in Surti Buffalo
	The recast recommendation for scientific community is as follows: The scientific community is recommended to use the cumulative monthly test-day yield (CMTDY) over cumulative bi-monthly test-day yield (CBTDY) for the early and more accurate prediction of total lactation milk yield. The use of at least five cumulative monthly records provides satisfactory accuracy with acceptable prediction error. Furthermore, quadratic regression is recommended over linear models, as it better captures the biological curvature of lactation. Thus, CMTDY combined with quadratic modelling offers a reliable and scientifically robust approach for milk yield estimation. The recommendation was approved by the house for scientific community. <i>[Action: Prof. and Head, Dept. of Agril. Statistics, NMCA, Navsari]</i>
22.5.2.60	Trends and geostatistical interpolation of spatio-temporal variability of precipitation in Gujarat
	The recast recommendation for scientific community is as follows: Gujarat's monsoon rainfall shows a significant increasing trend with strong spatial variability. Rainfall intensification is mainly observed in southern regions (moderate variability, CV: 30–40%), while north western areas exhibit much higher variability (CV > 60%). Major extremes include droughts in 1987 and 2002 and unusually wet years during 2006–2010. These patterns suggest shifting monsoon dynamics and a redistribution of rainfall, emphasizing the need for improved spatial monitoring, especially in high-variability regions. Kriging proves to be a reliable method for spatial rainfall interpolation. The recommendation was approved by the house for scientific community. <i>[Action: Prof. and Head, Dept. of Agril. Statistics, NMCA, Navsari]</i>

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

22.5.2.61	Comparison of different forecast models for predicting area, production and productivity of Isabgol in Banaskantha district
	Recommendation for scientific community: For prediction of productivity under isabgol crop in Banaskantha district, cubic model with five year moving average data approach is recommended as shown under: $\hat{Y} = 663.183^{**} - 40.791^{**}t + 5.055^{**}t^2 - 0.134^{**}t^3$ $(R^2 = 92.50\%)$ In above mentioned polynomial model, 'Y' corresponds to original value of productivity and 't' corresponds to time. The recommendation was approved by the house for scientific community. <i>[Action: Department of Agricultural Statistics, CPCA, SDAU, Sardarkrushinagar]</i>

22.5.2.62	Functioning status of Farmer-Producer Organizations in North Gujarat
	Recommendation for policymakers: Based on the study of Farmer-Producer Organizations (FPOs) in North Gujarat, it is recommended that there is a need to encourage FPOs for processing, value addition and custom hiring facilities for their long term sustainability. The recommendation was approved by the house for policymakers. <i>[Action: Department of Extension Education and Communication Management, ASPEE College of Nutrition and Community Science, SDAU, Sardarkrushinagar]</i>
22.5.2.63	Technological gap in adoption of recommended pomegranate cultivation practices by pomegranate growers of Banaskantha district
	The recommendation for scientific community was not approved and dropped by the house as there was ambiguity in the study in determining technology gap. The recommendation was not approved and dropped by the house for scientific community. <i>[Action: Directorate of Extension Education, SDAU, Sardarkrushinagar]</i>
22.5.2.64	Causes of lime decline and its management practices adopted in Mehsana district
	The recommendation for extension functionaries was not approved and dropped by the house as the causes of lime decline were not enunciated clearly. The recommendation was not approved and dropped by the house for extension functionaries. <i>[Action: Department of Social Science, College of Horticulture, SDAU, Jagudan]</i>
22.5.2.65	Utilization of social networking sites by rural women of adopted Villages of SDAU
	The recast recommendation for extension functionaries is as follows: As the social networking sites have both positive and negative effects, extension functionaries are advised to guide rural women to judiciously use them to gain knowledge and avoid addiction. ગ્રામીણ મહિલાઓ માટે સંદેશ: સોશિયલ નેટવર્કિંગ સાઇટ્સ સકારાત્મક અને નકારાત્મક બંને અસરો ધરાવે છે, ગ્રામીણ મહિલાઓ માટે જરૂરી છે કે તેઓ જ્ઞાનવૃદ્ધિ માટે તેનો વિવેકપૂર્ણ અને મર્યાદિત ઉપયોગ કરે, જેથી સોશિયલ મીડિયાની લતથી બચી શકાય. The recommendation was approved by the house for extension functionaries. <i>[Action: Polytechnic in Nutrition and Community Science, ASPEE College of Nutrition and Community Science, SDAU, Sardarkrushinagar]</i>

22.5.2.66	Knowledge and adoption of weed management practices by the farmers
	The recast recommendation for extension functionaries is as follows: The extension functionaries are advised to organize training programmes on weed management with special emphasis on stale seed bed, live and organic mulch, etc. for effective weed management. The recommendation was approved by the house for extension functionaries. <i>[Action: Krishi Vigyan Kendra, SDAU, Khedbrahma]</i>
22.5.2.67	Adoption of recommended package of practices in amaranth
	The recommendation for extension functionaries was not approved and dropped by the house due to its generalized nature. The recommendation was not approved by the house for extension functionaries. <i>[Action: Directorate of Extension Education, SDAU, Sardarkrushinagar]</i>
22.5.2.68	Adoption of recommended production technologies of groundnut growers in Banaskantha district
	The recommendation for extension functionaries was not approved and dropped by the house due to its generalized nature. The recommendation was not approved by the house for extension functionaries. <i>[Action: Directorate of Extension Education, SDAU, Sardarkrushinagar]</i>
22.5.2.69	Assessment of Stress and its management strategies among working women
	Recommendation for Working Women: Working women can reduce stress by seeking social support, setting proper boundaries for clear communication and seeking help at work place. કામકાજ મહિલાઓ માટે સંદેશ કામકાજ મહિલાઓ સામાજિક સમર્થન મેળવી, સ્પષ્ટ સંવાદ માટે યોગ્ય સીમાઓ નક્કી કરી અને કાર્યસ્થળ પર મદદ માંગીને તણાવ ઘટાડી શકે છે. The recommendation was approved by the house for working women. <i>[Action: HDFS, ASPEE College of Nutrition and Community Science, SDAU]</i>

22.5.3 NEW TECHNICAL PROGRAMMES (NTP)

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title	Suggestion/s and Action
22.5.3.1	Export performance of selected cash crops of Gujarat from India	The house approved the NTP with the following suggestions: 1. Reframe the title as, “Export Performance of commodities of selected cash crops from Gujarat.” 2. Keep the study period as 20 years. <i>[Action: Professor & Head, Department of Agril. Econ., BACA, AAU, Anand]</i>
22.5.3.2	Crop diversification in middle Gujarat	The NTP was dropped as per the suggestions of the house. <i>[Action: Assistant Professor & Head, Dept. of Social Science., CoH, AAU, Anand]</i>
22.5.3.3	Sustainability assessment of livestock sector in Gujarat	The house approved the NTP. <i>[Action: Assistant Professor & Head, Dept. of Agril. Economics., CoA, AAU, Vaso]</i>
22.5.3.4	Supply chain and post-harvest losses of Soybean in middle Gujarat	The NTP was dropped as per the suggestions of the house. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.3.5	Design and development of mobile-based digital agri-ecosystem for farmers	The NTP was dropped as per the suggestions of the house. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.3.6	Awareness and utilization of Scheme for assistance on purchase of smartphone by the farmers of middle Gujarat	The NTP was dropped as per the suggestions of the house. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.3.7	Price behaviour analysis of Tomato, Onion and Potato (TOP) in Gujarat	The house approved the NTP with the following suggestions: 1. Reframe the title as, “Price behaviour analysis of green chilli in Gujarat.” 2. Modify objectives and methodology as per the changes in the title. <i>[Action: Principal, IABMI, AAU, Anand]</i>
22.5.3.8	Assessment of credit utilization under Kisan Credit Card Scheme among dairy farmers in Middle Gujarat	The NTP was approved by the house. <i>[Action: Principal, IABMI, AAU, Anand]</i>

22.5.3.9	Role of AAU Incubation Centre in start-up growth	The house approved the NTP with the following suggestions: 1. Reframe the second objective as, “To examine the role of AAU incubation centre on start-ups growth.” 2. Add “amount of funding’ received. 3. Revise the questionnaire accordingly in accordance with the objective added. <i>[Action: Professor and Head, Dept. of FBM, CoFPT & BE, AAU, Anand]</i>
22.5.3.10	Current status and future prospects of processed fruits & vegetables Exports	The house approved the NTP with the following suggestions: 1. Keep the study period for 20 years, from 2005 to 2024. 2. Add statements related to prospects in the interview schedule. <i>[Action: Professor and Head, Dept. of FBM, CoFPT & BE, AAU, Anand]</i>
22.5.3.11	Farmers’ perceptions and constraints in the adoption of biogas plant use in Anand district of Gujarat	The house approved the NTP with the following suggestions: 1. Add one more objective: “To elicit the reasons behind the non-operational biogas plants.” 2. Keep the study duration as two years. <i>[Action: Professor and Head, Dept. of FBM, CoFPT & BE, AAU, Anand]</i>
22.5.3.12	Evaluating preference structures for rice varietal attributes among farmers of Middle Gujarat: A Conjoint Analysis approach	The house suggested to drop the NTP. <i>[Action: Professor & Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>
22.5.3.13	Comparative performance of statistical models for price of major oilseed crops in Gujarat	The house approved the NTP with the following suggestion: • Keep the title as: “Comparative performance of statistical models for price forecasting of major oilseed crops in Gujarat.” <i>[Action: Professor & Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>
22.5.3.14	Evaluation and development of yardstick of coefficient of variation for medicinal and aromatic plant crops experiments	The NTP was approved by the house. <i>[Action: Professor & Head, Dept. of Agril. Statistics, BACA, AAU, Anand]</i>

22.5.3.15	Identification of major crop pathogenic fungi genus using ITS DNA sequences through NLP based Machine Learning	The NTP was approved by the house. <i>[Action: Professor & Head, Dept. of Agril. Statistics, BACA, AAU, Jabugam]</i>
22.5.3.16	Prediction of seasonal rainfall of Middle Gujarat using different mathematical methods	The NTP was approved by the house. <i>[Action: Professor & Head, Dept. of Basic Sciences, BACA, AAU, Anand]</i>
22.5.3.17	Career and academic advancement for undergraduate students of agriculture faculty	The house approved the NTP with the following suggestions: 1. Revise the title as “Career and academic advancement among graduated students of agriculture faculty” 2. Add the graduated students of 2019-20 and 2020-21 to the study. 3. Add appropriate statistical tools including descriptive statistics and correlation to the methodology. 4. Include actual income in the questionnaire. <i>[Action: Professor & Head, Dept. of Agril. Extn. & Commn., BACA, AAU, Anand]</i>
22.5.3.18	Development of a multidimensional student experience feedback tool for agricultural university setting	The NTP was approved by the house with the following suggestion: 1. Reframe the title as, “Development of a multidimensional student feedback assessment tool for agricultural universities.” <i>[Action: Principal, Department of Agril. Extn. & Commn., College of Agriculture, AAU, Vaso]</i>
22.5.3.19	Assessment of stress level and its management strategies among the middle level extension functionaries of western region	The NTP was approved by the house with the following suggestions: 1. In Part II of the questionnaire, remove ‘alcohol consumption’ and add ‘diabetes’ and ‘excess consumption of tea and coffee’. 2. Add appropriate statistical tools including descriptive statistics and correlation to the methodology. <i>[Action: Director, EEI, AAU, Anand]</i>
22.5.3.20	Effectiveness of training programmes conducted by EEI	The NTP was not approved and dropped by the house. <i>[Action: Director, EEI, AAU, Anand]</i>

22.5.3.21	Perception of rural youth towards farming as an enterprise	The NTP was dropped as by the house as the work of similar nature has been done earlier. <i>[Action: Director of Extension Education, O/o DEE, AAU, Anand]</i>
22.5.3.22	Readiness of farmers in Anand district towards AI-enabled advisory services	The NTP was approved by the house with the following suggestion: • Add Vadodara to the study area. <i>[Action: Professor & Head, Dept. of Agril. Extension, CoAIT, AAU, Anand]</i>
22.5.3.23	Career and academic advancement for students of the agriculture faculty	The house approved the NTP with the following suggestions: 1. Revise the title as “Career and academic advancement among graduated students of College of Agriculture, Vaso” 2. Add the graduated students of 2019-20 and 2020-22 to the study. 3. Add appropriate statistical tools including descriptive statistics and correlation to the methodology. 4. Include actual income in the questionnaire. <i>[Action: Professor & Head, Dept. of Agril. Extension, CoA, AAU, Vaso]</i>
22.5.3.24	Awareness of buffalo owners about causes of infertility in buffaloes of Vadodara district	The NTP was approved by the house. <i>[Action: Polytechnic in Horticulture, AAU, Vadodara]</i>
22.5.3.25	Knowledge and attitude of farmers towards use of fermented organic manure (FOM) of Ahmedabad district	The NTP was approved by the house with the following suggestion: • Increase sample size to 300 in the study. <i>[Action: Sr. Scientist and Head, KVK, AAU, Arnej]</i>
22.5.3.26	Documentation of Indigenous animal husbandry practices in Bhal region	The NTP was approved by the house with the following suggestion: • Add two more objectives to the study on ‘Adoption of ITK’, and ‘Rationale of ITK’. <i>[Action: Sr. Scientist and Head, KVK, AAU, Arnej]</i>
22.5.3.27	An explorative study on backyard poultry farming	The NTP was approved by the house with the following suggestion: • Include one more district, i.e., Kheda to the study and select the respondents using propionate sampling method. <i>[Action: Sr. Scientist and Head, KVK, AAU, Devataj]</i>

22.5.3.28	Socio economic condition, health status and food habits of Pagadiya fishermen from the villages of Khambhat taluka of Anand district	The NTP was approved by the house with the following suggestion: Discuss and revise the dietary habits of the fishermen with a home science scientist before including the same in the interview schedule. [Action: Sr. Scientist and Head, KVK, AAU, Devataj]
22.5.3.29	Awareness about sex sorted semen doses among tribal farmers of Dahod district	The NTP was approved by the house with the following suggestion: Select villages and respondents randomly. [Action: Sr. Scientist and Head, KVK, AAU, Dahod]
22.5.3.30	Ethnographic Documentation of Tribal Cultural Heritage and Agricultural Traditions	The NTP was approved by the house with the following suggestions: - Reframe the title as, “Ethnographic documentation and the study of tribal cultural heritage and agricultural traditions” - Add two more objectives to the study. [Action: Head, TRTC, AAU, Devgadhbaria]
22.5.3.31	Decision making ability of farm women in dairy occupation	The NTP was approved by the house with the following suggestions: - Add three talukas of Kheda district to the study area. - In 4th objective, write the correct word for respondents [Action: Head, FTTC, ARS, AAU, Sansoli]

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title	Suggestion/s and Action
22.5.3.32	Carbon footprint management and economic feasibility of mitigation strategies in Junagadh Agricultural University Campus	The NTP was approved by the house with the following suggestion: Restrict to one PI and three Co-PIs. [Action: Professor & Head, Dept.of Agril. Economics, CoA, JAU, Junagadh]
22.5.3.33	Feasibility of export-led growth in India: Evidence from cointegration, volatility, and causality among key macroeconomic indicators	The NTP was approved by the house with the following suggestion: Restrict to one PI and three Co-PIs. [Action: Professor & Head, Dept.of Agril. Economics, CoA, JAU, Junagadh]

22.5.3.34	R-Based package for Line × Tester analysis in plant breeding experiments	The NTP was approved by the house with the following suggestion: • Restrict to one PI and three Co-PIs. <i>[Action: Professor & Head, Dept. of Agril. Statistics, CoA, JAU, Junagadh]</i>
22.5.3.35	Assessment of knowledge level of fertilizer dealers towards integrated nutrient management	The NTP was approved by the house with the following suggestion: • Restrict to one PI and three Co-PIs. <i>[Action: Director of Extension Education, JAU, Junagadh]</i>
22.5.3.36	A comparative analysis of beneficiary and non-beneficiary farmers under the Farmer FIRST Programme	The NTP was approved by the house with the following suggestion: • Keep only one PI and three Co-PIs. <i>[Action: Director of Extension Education, JAU, Junagadh]</i>
22.5.3.37	Adoption level of farmers towards wheat production technologies recommended by JAU	The NTP was approved by the house with the following suggestion: 1. Keep only one PI and three Co-PIs. <i>[Action: Professor & Head, Dept. of Agril. Ext. Edu., CoA, JAU, Junagadh]</i>
22.5.3.38	Utilization pattern and effectiveness of ICT tools and services in agricultural information dissemination towards the farmers of the Saurashtra region	The NTP was approved by the house with the following suggestion: 1. Replace ‘towards’ with ‘among’ in the title. 2. Remove ‘risk orientation’ component 3. Keep only one PI and three Co-PIs <i>[Action: Professor & Head, Dept. of Agril. Ext. Edu., CoA, JAU, Junagadh]</i>
22.5.3.39	Impact of groundnut GJG-32 variety in Porbandar district of Gujarat state	The NTP was approved by the house with the following suggestion: • Keep only one PI and three Co-PIs. <i>[Action: Principal, ASPEE College of Agriculture, JAU, Khapat]</i>
22.5.3.40	Dynamics of break-even output, yield and area as well as decomposition of changes in breakeven output for major crops of Gujarat	The NTP was approved by the house with the following suggestion: • Keep only one PI and three Co-PIs. <i>[Action: Principal, ASPEE College of Agriculture, JAU, Khapat]</i>

22.5.3.41	Comparative study on time series forecasting of arhar (red gram) prices in Gujarat	The NTP was approved by the house with the following suggestion: Keep only one PI and three Co-PIs. [Action: Principal, ASPEE College of Agriculture, JAU, Khapat]
22.5.3.42	Opinion of students toward Rural Agricultural Work Experience Programme (RAWEP) of Junagadh Agricultural University	The NTP was not approved and dropped by the house due to RAWEP no longer being a part of the VI Deans' Committee curriculum framework. [Action: Principal, College of Agriculture, JAU, Motabhandariya]
22.5.3.43	Software-based visualization of ANOVA models in agricultural experiments using Hasse diagrams	The NTP was approved by the house with the following suggestion: Keep only one PI and three Co-PIs. [Action: Principal, College of Agriculture, JAU, Motabhandariya]
22.5.3.44	Impact of productivity difference between GJG 32 and other varieties of groundnut cultivation in Saurashtra region of Gujarat	The NTP was approved by the house with the following suggestion: Keep only one PI and three Co-PIs. [Action: Principal, College of Agriculture, JAU, Motabhandariya]
22.5.3.45	Perception of farmers about smart farming technologies in Gujarat	The NTP was approved by the house with the following suggestions: - Add 'Saurashtra region, Gujarat' to the title. - Keep the first objective as 'To study the profile of the farmers' - Add an additional objective to study the relationship between profile characteristics and perception. [Action: Principal, PG Institute of Agribusiness Management, JAU, Junagadh]
22.5.3.46	Risk perception of farmers about climate change in Saurashtra region	The NTP was approved by the house. [Action: Principal, PG Institute of Agribusiness Management, JAU, Junagadh]

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Sr. No.	Title	Suggestion/s and Action
22.5.3.47	Constraints in banana export as perceived by the farmers of South Gujarat	The NTP was not approved and dropped by the house as the methodology was ambivalent. [Action: Prof. and Head, Deptt. of Agril. Ext. and Comm., CoA, Bharuch]

22.5.3.48	Utilization pattern of ICT tools for transfer of agricultural information by the tribal farmers of the Dang district	The NTP was approved by the house with the following suggestions: 1. Discard the second objective. 2. Reframe the third objective as, “To analyse the utilization pattern of ICT tools for agricultural information among tribal farmers.” 3. Drop ‘adoption’ in objective 4. 4. Conduct the study in two years. 5. Increase the number of ICT statements. 6. Add statistical tools for the study. <i>[Action: Prof and Head, Deptt. of Agril. Ext. and Comm., CoA, Waghai]</i>
22.5.3.49	Role of Artificial Intelligence (AI) tools in farmer’s decision making in Tapi district	The NTP was not approved and dropped by the house as the problem statement of the study lacked clarity. <i>[Action: Senior Scientist and Head, KVK, Vyara]</i>
22.5.3.50	Adoption of anemia preventive measures among tribal women of the Dangs district, Gujarat	The NTP was approved by the house with the following suggestions: 1. Remove age restriction for women and take all the women above 18 years of age as respondents. 2. Conduct the study in two years. 3. Give references or sources to the preventive measures selected for the study. 4. Keep multiple choice questions to test knowledge. 5. Include correlation in methodology. <i>[Action: Senior Scientist and Head, KVK, Waghai]</i>
22.5.3.51	Impact Assessment of ARYA Project in Navsari district of Gujarat.	The NTP was not approved and dropped by the house since the suitable statements were not furnished for impact assessment. <i>[Action: Senior Scientist and Head, KVK, Navsari]</i>
22.5.3.52	Knowledge and adoption of improved Indian bean production technology among farm women in Narmada district	The NTP was approved by the house with the following suggestions: 1. Add correlation analysis to methodology. 2. Increase the number of relevant independent variables. 3. Write the selection criteria of farm women in methodology.

		4. Furnish separate questions/statements for knowledge and adoption in the interview schedule. 5. Keep 'education' and 'landholding' variables in standard categories. 6. Keep the annual income in actual terms. 7. Add multiple choice questions to test knowledge. <i>[Action: Senior Scientist and Head, KVK, Dediapada]</i>
22.5.3.53	Knowledge and adoption of location specific drudgery reducing tools among farm women in Narmada district	The NTP was approved by the house with the following suggestions: 1. Prepare close ended statements for constraints in the interview schedule. 2. Keep multiple choice questions for testing knowledge about drudgery reducing tools. 3. Keep tool-wise questions separately for knowledge and adoption in Part IV of the interview schedule. <i>[Action: Senior Scientist and Head, KVK, Dediapada]</i>
22.5.3.54	Attitude of farmer towards NAVROJI bio fertilizers in Navsari and Valsad district of South Gujarat	The NTP was approved by the house with the following suggestions: 1. Reframe title as, "Attitude and usefulness towards NAVROJI biofertilizers among the farmers in Navsari and Valsad districts of South Gujarat." 2. Add objective 4th as, "To study the usefulness of NAUROJI biofertilizers" 3. Ensure the report preparation is in proper format. <i>[Action: Prof. and Head, Dept. of Agril. Extn. and Communication, NMCA, NAU, Navsari]</i>
22.5.3.55	Effectiveness of Scheme of developing High Quality Research (SHODH) in State Agricultural Universities of Gujarat	The NTP was approved by the house with the following suggestions: 1. Include only the PhD students of NAU and AAU for the study. 2. Consult with the investigators of the same study at SDAU to draft a common interview schedule. <i>[Action: Prof. and Head, Dept. of Agril. Extn. and Communication, NMCA, NAU, Navsari]</i>

22.5.3.56	Pesticide utilization pattern of cotton growers in the Tapi district of South Gujarat	The NTP was approved by the house with the following suggestions: 1. Rectify methodology as per the proper format and ensure it is grammatically correct. 2. Ensure that the sample size is at least 300 respondents. 3. Modify the interview schedule in line with the objectives taken up, without any deviation. 4. Include correlation analysis and other statistical tools in the methodology section. <i>[Action: Senior Scientist and Head, KVK, NAU, Vyara]</i>
22.5.3.57	Dynamic time series analysis of macroeconomics shock and agricultural export from India	The NTP was approved by the house. <i>[Action: Prof. and Head, Dept. of Agril. Economics, NMCA, NAU, Navsari]</i>
22.5.3.58	Area dynamics of major vegetable crops in Gujarat	The NTP was approved by the house with the following suggestion: • Ensure that the study period is at least 20 years for analysis. <i>[Action: Asst. Prof., Deptt. of Agril. Economics, CoA, NAU, Bharuch]</i>
22.5.3.59	Farmers' expectations of digital interventions of agricultural produce marketing in South Gujarat	The NTP was approved by the house with the following suggestions: 1. Reframe the interview schedule as per the objectives of the study. 2. Employ appropriate statistical tools. <i>[Action: Asso. Professor and Planning Officer Directorate of Research, NAU, Navsari]</i>
22.5.3.60	Economic impact assessment of NAU developed sugarcane variety (CoN 13072) in South Gujarat	The NTP was approved by the house with the following suggestions: 1. Change the title to 'Impact assessment of the sugar variety CoN 13072 in South Gujarat'. 2. Estimate variety-wise costs and returns in the study. <i>[Action: Asso. Professor and Planning Officer Directorate of Research, NAU, Navsari]</i>

22.5.3.61	Supply response and decomposition analysis of pigeon pea in Gujarat	The NTP was approved by the house with the following suggestions: • Ensure that the study period taken up for analysis is at least 20 years. <i>[Action: Asst. Prof, Deptt. of Agril. Economics, CoA, Waghai]</i>
22.5.3.62	Factors affecting farmers' behaviour towards sustainable crop residue management in South Gujarat	The NTP was approved by the house with the following suggestions: • Use Garrett's ranking for constraint analysis and include the same in methodology. <i>[Action: Principal, AABMI, NAU, Navsari]</i>
22.5.3.63	Training need identification of prospective agripreneurs of Navsari Agricultural University	The NTP was approved by the house with the following suggestions: 1. Present the findings separately for Diploma, UG, and PG students. 2. Employ multistage stratified random sampling technique for respondent selection. <i>[Action: Principal, AABMI, NAU, Navsari]</i>
22.5.3.64	Value chain analysis of Jaggery in South Gujarat	The NTP was approved by the house. <i>[Action: Principal, AABMI, NAU, Navsari]</i>
22.5.3.65	Comparative study of climate variability on paddy crop through classical and machine learning techniques in Navsari	The NTP was approved by the house with the following suggestion: • Keep at least 30 years for the study period. <i>[Action: Professor & Head, Dept. of Agril. Statistics, NMCA, NAU, Navsari]</i>
22.5.3.66	Comparative study of empirical and mathematical approaches for optimum plot size determination in marigold	The NTP was approved by the house. <i>[Action: Professor & Head, Dept. of Agril. Statistics, NMCA, NAU, Navsari]</i>

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

Sr. No.	Title	Suggestions
22.5.3.67	Adoption of summer bajra production technology by the farmers of North Gujarat	The NTP was approved by the house with the following suggestions: 1. Include MCQs to test knowledge of the respondents. 2. Modify the interview schedule in accordance with the objectives. 3. Present both practice-wise and adoption-wise statements. 4. Include both individual as well as overall adoption summary tables in the study. <i>[Action: DEE, SDAU, Sardarkrushinagar]</i>
22.5.3.68	Knowledge and attitude of the farmers towards ICT in Banaskantha district	The NTP was approved by the house with the following suggestions: 1. Include MCQs to test knowledge of the respondents. 2. Use scale with requisite modification. 3. Keep herd size possession of the farmers and their annual income in actual terms. 4. Include variables related to ICT gadgets and their possession. 5. Employ arbitrary method for the fixation of levels/categories. 6. Modify the interview schedule in accordance with the objectives. <i>[Action: DEE, SDAU, Sardarkrushinagar]</i>
22.5.3.69	Knowledge and adoption of okra production technology by the farmers	The NTP was approved by the house with the following suggestion: • Use triennium ending average of acreage for selection of districts/talukas under okra production. <i>[Action: DEE, SDAU, Sardarkrushinagar]</i>
22.5.3.70	Knowledge and adoption of recommended mustard production technology by the farmers	The NTP was approved by the house with the following suggestion: • Use triennium ending average of acreage for selection of districts/talukas under mustard production. <i>[Action: DEE, SDAU, Sardarkrushinagar]</i>

22.5.3.71	Knowledge and adoption of recommended cumin production technologies by the cumin growers of Vav-Tharad District	The NTP was approved by the house with the following suggestion: • Use triennium ending average of acreage for selection of districts/talukas under cumin production. <i>[Action: DEE, SDAU, Sardarkrushinagar]</i>
22.5.3.72	Adoption of natural farming practices by trained willingly farmers in Banaskantha District	The NTP was approved by the house with the following suggestions: 1. Change the phrase ‘trained willingly farmers’ to ‘willingly trained farmers’ across the title, objectives, and methodology of the study. 2. Include the total landholding of farmers as a variable. 3. Include one additional objective on ‘Perception of farmers about natural farming practices.’ <i>[Action: Poly. in Agriculture, SDAU, Deesa]</i>
22.5.3.73	Study of feeding practices and metabolic disorders in bovines of Banaskantha district	The NTP was approved by the house with the following suggestions: 1. Change the title as: ‘Feeding practices and occurrence of metabolic disorders in bovines of Banaskantha district’. 2. Modify the second objective by adding ‘occurrence’ to it. 3. Include the statements for the causes of metabolic disorders in the interview schedule. 4. Keep family size, income, and other socio-economic characteristics in actual terms, without any categories. 5. Conduct correlation between profile characteristics and adopted feeding practices. 6. Include the training received on animal husbandry as a variable. <i>[Action: DoR, SDAU, Sardarkrushinagar]</i>
22.5.3.74	Training needs of rural youth in agricultural enterprises of Banaskantha district	The NTP was approved by the house with the following suggestions: 1. Revise the title as: ‘Training needs of rural youth in agricultural enterprises of Banaskantha and Vav-Tharad districts’ 2. Include Vav-Tharad district in the study area.

		3. Justify the purposive selection of districts in methodology. <i>[Action: Dept. of AEC, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.75	Awareness and attitude of farmers towards Agritourism in North Gujarat	The NTP was approved by the house with the following suggestions: 1. Revise the title to: ‘Awareness and willingness of farmers towards agrotourism in North Gujarat’ 2. Use ‘agrotourism’ in place of ‘agritourism’ throughout the study. 3. Retain only the first and fourth objectives and keep the objectives in the following order: (i) Profile; (ii) Awareness; (iii) Willingness; and (iv) Correlation. 4. Drop ‘attitude’ from objectives and methodology. 5. Conduct statement-wise awareness and willingness analysis and present them separately along with their overall summary. <i>[Action: Dept. of AEC, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.76	Effect of scheme of developing high quality research (SHODH) fellowship among scholars of State Agricultural Universities of Gujarat	The NTP was approved by the house with the following suggestions: 1. Include only the PhD students of SDAU and JAU for the study. 2. Collaborate with the investigators of the same study at NAU to draft a common interview schedule that is applicable for all the four SAUs of Gujarat. 3. Ensure that all the PhD scholars who have received SHoDH from both SDAU and JAU are covered. <i>[Action: DSW, SDAU, Sardarkrushinagar]</i>
22.5.3.77	Knowledge and adoption of soil reclamation strategies followed by the farmers in salt affected soil of Vav-Tharad	The NTP was approved by the house with the following suggestions: 1. Revise the title as follows: ‘Soil reclamation practices followed by the farmers in the salt affected soil of Vav-Tharad district’.

		2. Replace ‘soil reclamation strategies’ with ‘soil reclamation practices’ throughout the study. 3. Modify the interview schedule as per the objectives. <i>[Action: DSW, SDAU, Sardarkrushinagar]</i>
22.5.3.78	Knowledge and adoption of chickpea production technology by chickpea growers in Sabarkantha	The NTP was approved by the house with the following suggestion: • Use triennium ending average of acreage for selection of talukas under chickpea production. <i>[Action: Dept. of AEC, Vanbandhu Polytechnic in Agriculture, SDAU, Khedbrahma]</i>
22.5.3.79	Knowledge and adoption of scientific castor production technologies among castor growers of Kachchh	The NTP was approved by the house with the following suggestion: • Revise the questionnaire as per the objectives taken up. <i>[Action: RRS, SDAU, Bhachau]</i>
22.5.3.80	Knowledge and practices regarding nutrition among pregnant women in Banaskantha	The NTP was approved by the house with the following suggestions: 1. Revise the title to: ‘Knowledge about nutrition and dietary practices among pregnant women in Banaskantha’. 2. Include multiple choice questions to measure knowledge. <i>[Action: Department of Food Science and Nutrition, ASPEE College of Nutrition and Community, SDAU, Sardarkrushinagar]</i>
22.5.3.81	Determinants and Patterns of Crop Diversification: Evidence from Central Gujarat and Saurashtra-Kutch region	The NTP was approved by the house. <i>[Action: College of Agribusiness Management, SDAU, Sardarkrushinagar]</i>
22.5.3.82	Crop diversification pattern and its determinants in North and South Gujarat regions	The NTP was approved by the house. <i>[Action: College of Agribusiness Management, SDAU, Sardarkrushinagar]</i>
22.5.3.83	Assessing farmers’ awareness and attitude towards crop insurance in Banaskantha District	The NTP was not approved and dropped by the house since PMFBY is discontinued in the state. <i>[Action: College of Agribusiness Management, SDAU, Sardarkrushinagar]</i>

22.5.3.84	Economics of production and marketing of Indian Bean in Sabarkantha District of Gujarat	The NTP was approved by the house with the following suggestion: • Ensure that the secondary data is taken for 20 years. <i>[Action: KVK, SDAU, Khedbrahma]</i>
22.5.3.85	Growth performance, instability and decomposition analysis of major oilseeds in Gujarat state	The NTP was approved by the house. <i>[Action: Department of Agri. Economics, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.86	Growth performance, instability and decomposition analysis of major pulses in Gujarat state	The NTP was approved by the house. <i>[Action: Department of Agri. Economics, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.87	Growth performance, instability and decomposition analysis of major horticultural crops in Gujarat State	The NTP was approved by the house. <i>[Action: Department of Agri. Economics, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.88	Growth performance, instability and decomposition analysis of major cereals in Gujarat State	The NTP was approved by the house. <i>[Action: Department of Agri. Economics, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.89	Cumin yield forecasting using Machine Learning techniques	The NTP was approved by the house with the following suggestion: • Use the phrase ‘best-fit models’ in place of ‘models’, wherever applicable in objectives and methodology. <i>[Action: Department of Social Science, College of Horticulture, SDAU, Jagudan]</i>
22.5.3.90	Forecasting of cumin crop prices in Gujarat using time series models	The NTP was approved by the house with the following suggestion: • Include the development of weather indices in methodology. <i>[Action: Deptt. of Agril. Statistics, CPCA, SDAU, Sardarkrushinagar]</i>
22.5.3.91	Women empowerment through Self-Help Groups in Vav-Tharad	The NTP was approved by the house with the following suggestions:

		1. Use appropriate formula for women empowerment index. 2. Conduct the correlation between empowerment index and profile characteristics. 3. Include income generation variable. <i>[Action: Deptt. of AEC, CoA, SDAU, Tharad]</i>
22.5.3.92	Study on horizontal spread of Gujarat Wheat 513 among the wheat growers	The NTP was approved by the house with the following suggestions: • Revise the title to: ‘Horizontal spread of Gujarat Wheat 513 among the wheat growers’. • Include varietal preference attributes of the farmers in the interview schedule. <i>[Action: Deptt. of AEC, CoA, SDAU, Tharad]</i>
22.5.3.93	Impact of front-line demonstration on farmers about wheat production technology	The NTP was approved by the house with the following suggestion: • It has to be confirmed by the investigators that the farmers categorized under non-beneficiaries to not to have received any FLDs <i>[Action: Deptt. of AEC, CoA, SDAU, Tharad]</i>
22.5.3.94*	Analysis of consumer awareness and purchasing behaviour towards Food Processing Pilot Plant produced hot extruded snack in Dantiwada taluka of Banaskantha district, Gujarat.	The NTP was approved by the house with the following suggestions: 1. Change the title as: ‘Consumer awareness and purchasing behaviour towards hot extruded snack produced by the Food Processing Pilot Plant of SDAU’. 2. Restrict respondents to only those consumers who visit the store for purchasing the product. 3. Ensure that the sample size is at least 300. <i>[Action: Prof. & Head, Department of Food Business Mgt., CoFT, SDAU, SK Nagar]</i>

Note: *The NTP was deferred from Agril. Engg/FPT/PHT/AIT/Food Tech. & Bio-energy Sub-Committee to Social Science Sub-Committee for approval.

In the 22nd Combined AGRESKO of Social Science Sub-Committee of SAUs of Gujarat, organized during May 12-14, 2026, at SDAU, Sardarkrushinagar, altogether nine (9) recommendations for farming community were proposed, in which five (5) recommendations were approved and one recommendation was additionally approved by the house for farming community. In all, the house approved six (6) recommendations for farming community. As

far as the recommendations for policymakers/extension functionaries/scientific community are concerned, out of the 69 recommendations proposed, 50 were approved, five (4) were withheld for the ensuing year, and 15 were not approved and dropped. Coming to the new technical programmes (NTPs), the two days of research churning witnessed the presentation of 94 NTPs, with one NTP deferred from the Agril. Engg/FPT/PHT/AIT/Food Tech. & Bio-energy Sub-Committee. Overall, 82 NTPs were approved by the house and 12 were dropped over redundancy and want of scientific rigour.

In the plenary session organized in the afternoon of May 14, 2026, Dr. S. D. Solanki, Hon'ble Vice-Chancellor, SDAU, Sardarkrushinagar, presided over the ceremony as its Chairman, while Dr, N. B. Jadav, DEE, JAU, Junagadh, and Dr. S. R. Patel, Dean, BACA, AAU, Anand, served as its Co-Chairmen. The superannuating senior faculty members were felicitated by the house and were thanked for their services.

During their plenary session remarks, Dr. N. B. Jadav, DEE, JAU, Junagadh, urged the junior and experienced researchers to bring out studies in the focus areas in which the government is interested, while Dr S. R. Patel, Dean, BACA, AAU, Anand, advised young researchers to inculcate good practices in research. In his presidential remarks, Dr. S. D. Solanki, Hon'ble Vice-Chancellor, SDAU, Sardarkrushinagar, congratulated the members of the house for their valuable contributions and insights towards making the 22nd Combined AGRESCO Social-Science Sub-Committee successful. He also categorically stated that in the days of artificial intelligence all the superficial works need to be discarded and the researchers, young and old, need to work hard to come out with more impactful, nuanced and well-articulated research supported by scientific rigour and sound statistical evidence.

22.6 Basic Sciences & Humanities (Plant Physiology, Biochemistry, and Biotechnology)

Date & Venue : 12-14th May, 2026 at V. C. Conference Hall, NAU, Navsari

Chairman	Dr. T. R. Ahlawat, Hon. Vice Chancellor, NAU, Navsari
Co-Chairman-1	Dr. H. P. Gajera, HoD (Bio-chem), JAU
Co-Chairman-2	Dr. J. J. Dhruve, HoD (Bio-chem.), AAU
Rapporteurs	Dr. G. B. Patil, AAU, Anand Dr. M. V. Parakhia, JAU, Junagadh Dr. Abidali Bhagat, SDAU, Sardarkrushinagar Dr. Kiran Suthar, NAU, Navsari
Statistician	Dr. A. P. Chaudhary, NAU, Navsari

The 22nd Meeting of the Combined Joint AGRESCO Basic Science Sub-Committee was organized by Navsari Agricultural University, Navsari, from May 12 to 14, 2026, at the VC Conference Hall, NAU, Navsari. The meeting commenced with the welcome address delivered by Dr. Lalit Mahatma, ADR, NAU, Navsari, followed by floral welcome of dignitaries and lighting of the lamp. The inaugural session was presided over by Dr. T. R. Ahlawat, Hon'ble Vice Chancellor, NAU, Navsari and also acted as Chairman of the meeting. Dr. H. P. Gajera, HoD (Biochemistry), JAU and Dr. J. J. Dhruve, HoD (Biochemistry), AAU served as Co-Chairmen.

Hon'ble Vice Chancellor Dr. T. R. Ahlawat emphasized the importance of scientific accountability and timely completion of research experiments. He instructed that Action Taken Reports must invariably be submitted along with recommendations, and any modifications suggested in experiments should be properly adopted and justified. He stressed that the time period of every experiment should be fixed and unnecessary extension should be avoided. In case of unforeseen circumstances, proper justification should be provided for the extension of the experiment. He further advised that all experiments should be completed within the stipulated time frame. The Hon'ble Vice Chancellor also highlighted the urgent need to reduce dependency on chemical fertilizers and encouraged scientists to formulate experiments and develop technologies aimed at reducing fertilizer inputs. He instructed that while presenting recommendations or scientific information, the suggestions and action taken report for the same at the time of approval as new technical programmes must be included. He urged all scientists to undertake research efforts that promote sustainable agriculture and environmentally friendly nutrient management practices. Dr. Vipulkumar Patel, Convener, BSSC proposed the vote of thanks at the end of the inaugural session.

Presentation of recommendations and new technical programmes by Conveners of SAUs

Sr. No.	Name	Designation & University
1	Dr. Amar Sakure	Convener, BSSC, AAU, Anand
2	Dr. U. K. Kandoliya	Convener, BSSC, JAU, Junagadh
3	Dr. Vipulkumar Patel	Convener, BSSC, NAU, Navsari
4	Dr. Yogesh Patel	Convener, BSSC, SDAU, Sardarkrushinagar

Summary

Name of University	No. of Recommendations				New Technical Programs	
	Farmers/Entrepreneurs/ Industry		Scientific			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
AAU	00	-	06	06	05	05
JAU	01*	-	03+01*	04	07	07
NAU	00	-	05	05	12	12
SDAU	00	-	02	01	11	10
Total	01	-	16+1=17	16	35	34

*The concerned farmer recommendation shifted for scientific information.

22.6.1 RECOMMENDATIONS FOR FARMING COMMUNITY:

ANAND AGRICULTURAL UNIVERSITY, ANAND - NIL

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.6.1.1	Effect of chemical defoliant on boll opening percentage, yield and quality parameters of Bt cotton (<i>Gossypium hirsutum</i> L.) Chemical defoliant Ethephon (ethrel) @ 2000 ppm [Ethephon 39% SL =51.3 ml/10 l water] can be sprayed in cotton at 150 DAS to obtain maximum defoliation, boll opening for early picking and 19 days early maturity (171 DAS) as compared to control. Suggestions: Approved with following suggestions: 1. It should be considered as scientific recommendation. 2. Recast the recommendation as per the scientific information (Action: Research Scientist, Cotton Research Station, JAU, Junagadh)
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NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI – NIL

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR - NIL

22.6.2 INFORMATION FOR SCIENTIFIC COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.6.2.1	<i>De-novo</i> whole genome sequencing of saffron (<i>Crocus sativus</i> L.) through next generation sequencing technology Hybrid sequencing using short-read Illumina sequencing and long-read PacBio sequencing proved to be an effective strategy for whole-genome sequencing of the large genome (~3.5 Gb) of saffron (<i>Crocus sativus</i>). The estimated sequencing coverage obtained through this approach was 150× for PacBio and 72× for Illumina, resulting in combined genome coverage of ~222×, which provided sufficient depth to generate informative genomic data for saffron. <i>De novo</i> genome assembly revealed that approximately 80.9% of the saffron genome consisted of repetitive elements. Among these, retroelements represented the dominant class (~37.3%), with long terminal repeat (LTR) retrotransposons such as Ty1/Copia and Gypsy contributing substantially whereas, no satellite elements were observed. A considerable proportion (~39.1%) of repetitive sequences remained unclassified, indicating the presence of a highly complex and species-specific repeat landscape in <i>Crocus sativus</i>. Structural gene prediction identified a total of 45,528 protein-coding genes. The relatively high gene count likely reflected genome duplication events, repeat expansion,
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	and possible annotation redundancy, which are commonly observed in large plant genomes. KEGG pathway analysis revealed that the genes <i>CCD2L</i>, <i>ALDH3I1</i>, and <i>UGT74AD1</i> may serve as potential candidate genes involved in crocin biosynthesis in saffron stigmas. Comparative synteny analysis revealed conserved genomic regions between <i>Crocus sativus</i> and <i>Iris virginica</i>, a closely related species within the family Iridaceae. Suggestions: Approved with following suggestions 1. Recast the recommendation by mentioning the qualitative genes involved in crocin biosynthesis (Action: Professor & Head, Department of Agril. Biotechnology, AAU, Anand)
21.6.2.2	Development of micropropagation protocol in Ivy gourd (<i>Coccinia grandis</i> L.) The standardized protocol for Ivy gourd involves utilization of nodal segment explant for establishment on basal MS medium. Multiple shoot induction for large scale multiplication of cultures was successfully achieved on MS + 1.0 mg L⁻¹ BAP + 0.1 mg L⁻¹ Kinetin with highest number of shoots per explants of 2.67 and highest shoot length (5.45 cm). The best rooting of the in vitro shoots has been achieved on ½ MS + 1 mgL⁻¹ IBA with number of roots (7.00) and length of roots (6.02 cm) were recorded. <i>In vitro</i> developed ivy gourd plantlets successfully acclimatized and developed new shoots and roots after four weeks of transfer with the highest percentages of survival (92%). Suggestions: Approved with following suggestions 1. Recast the recommendation 2. Add data of survival per cent/mortality and also mention the name of the explant (Action: Associate Professor & Head, CARPTC, AAU, Anand)
22.6.2.3	Synthesis and characterization of urea – hydroxyapatite nanohybrids and study of its for growth promontory effects on wheat Urea–HAP nanohybrids were successfully synthesized from technical grade urea and phosphoric acid with the addition of the stabilizing agent CMC using sonication and high-pressure homogenization approaches. Among the two approaches, the sonication method initially produced a smaller particle size (534 nm) compared to the high-pressure homogenization method (699 nm). However, stability studies indicated that the formulation prepared through high-pressure homogenization exhibited a reduced particle size (451.0 nm) and better stability, with a zeta potential of - 34.4 mV, under neutral pH conditions (pH 7). Characterization studies using FTIR revealed the presence of characteristic functional groups of urea and hydroxyapatite in the synthesized nanohybrid. SEM–EDAX analysis indicated the formation of nanostructured particles and confirmed the presence of nitrogen (N) and phosphorus (P) elements, while XRD analysis confirmed the crystalline structure, absence of impurities, and successful formation of the nanohybrid. However, further field evaluation and optimization of the formulation are recommended before large-scale agricultural application Suggestions: Approved with following suggestions 1. Recast the recommendation 2. Add data for performance on wheat in report (Action: Associate Professor & Head, CARPTC, AAU, Anand)

22.6.2.4	Morpho-physiological and phytochemical characterization of aromatic plants in response to cadmium stress The present investigation demonstrated significant interspecific variation among aromatic grasses in response to cadmium (Cd) stress. Among the species evaluated, lemon grass (<i>Cymbopogon citratus</i> L.) exhibited superior plant height, root biomass, accumulation of nutrients such as phosphorus and sulphur, indicating its suitability for cultivation in Cd-affected soils and indicating a strong phytoaccumulation potential. Cadmium stress significantly reduced morphological growth parameters, with optimal performance observed under control (0 ppm). However, moderate Cd levels (3–6 ppm) sustained certain physiological and quality traits, including chlorophyll content and essential oil yield. The accumulation of stress-related biochemical compounds such as proline and antioxidants under higher Cd levels reflects the adaptive response of these grasses to heavy metal stress. Suggestions: Approved with following suggestions 1. Recast the recommendation <i>(Action: Research Scientist, Medicinal & Aromatic Plant Research Station, AAU, Anand)</i>
22.6.2.5	Impact of source manipulation practices on morpho-physiological, biochemical and sennosides biosynthesis gene expression of senna (<i>Cassia alexandriana</i> Mill.) under different harvesting stage Nipping of apical buds at 45 DAS increases the number of branches per plant, leaf area index, leaf area ratio, leaf weight ratio, specific leaf weight, fresh and dry leaves weight, chlorophyll, starch, phenol, antioxidant activity and sennoside content in senna leaves. Furthermore, leaf plucking at 75, 105 and 135 DAS improves quality parameters, while harvesting at 105, 135 and 165 DAS gives higher fresh and dry leaf yields. Suggestions: Approved with following suggestions 1. Recast the recommendation text by mentioning the full form of the abbreviation. <i>(Action: Research Scientist, Medicinal & Aromatic Plant Research Station, AAU, Anand)</i>
22.6.2.6	Comparative phytochemical study of flowers of different okra varieties Sun dried (6 hours) flowers of ornamental okra variety Anand Shobha have higher content of total soluble sugars (9.42%), phenols (6.27%), flavonoids (0.87%), soluble proteins (9.46%), carotenoids 7.70%) and total antioxidant activity (10.10%) as compared to flowers of other okra varieties (GAO 8, Anand Kranti, Pusa Sawani, GAO 5) Suggestions: Approved with following suggestions 1. Recast the recommendation text by mentioning varieties name and values of respective biochemicals 2. Remove word nutraceutical from the recommendation text <i>(Action: Research Scientist, Department of Biochemistry and Plant Physiology, AAU, Anand)</i>

22.6.2.7	Improvement of antioxidant and defence properties of tomato using <i>Bacillus</i> spp. The consortium of <i>Bacillus</i> isolates, namely <i>Priestia endophytica</i> (T4), <i>Bacillus cereus</i> (L3), <i>Bacillus sonorensis</i> (L8), <i>Bacillus licheniformis</i> (TJ3) and <i>Bacillus endophytica</i> (TJ-6) as well as the individual isolate TJ3, demonstrated significant potential in enhancing antioxidant activity and reduced <i>Fusarium</i> wilt incidence in tomato (<i>Solanum lycopersicum</i>). Their application improved fruit quality parameters, including DPPH radical scavenging activity, total phenolics, total flavonoids and lycopene content. These positive effects were consistently observed in tomato varieties (JT-3 and GT-6). Suggestions: Approved with following suggestions: 1. Recast the recommendation text by mentioning the name of bacteria in place of isolate numbers 2. Methodology corrections as per standard procedure and expression of unit in appropriate forms. (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)																												
22.6.2.8	Molecular characterization of sesame genotypes using SRAP markers A total of 121 SRAP primer combinations (11F x 11R) were employed to screen polymorphism among sesame genotypes/varieties comprising 18 white-, 4 black-, and 8 brown-seeded types. Out of these, 109 primer combinations exhibited polymorphism. Based on the polymorphic markers, genetic diversity analysis grouped the sesame genotypes into two major clusters: Cluster A (Table 1), representing genotypes collected from the Regional Research Station, TNAU, Vriddhachalam, and Cluster B (Table 2), representing genotypes/varieties collected from the Agricultural Research Station, JAU, Amreli. The following 10 highly polymorphic SRAP primer combinations are recommended for DNA fingerprinting of sesame genotypes/varieties. <table><tr><th>Sr. No.</th><th>Name of Primer</th><th>Combination</th><th>Primer 5’Forward (Me) and 3’reverse (Em)</th></tr><tr><td>1</td><td>SRAP-15</td><td>Me-02 Em-04</td><td>Me02 : TGAGTCCAAACCGGAGC Em04 : GACTGCGTACGAATTTGA</td></tr><tr><td>2</td><td>SRAP-16</td><td>Me-02 Em-05</td><td>Me02 : TGAGTCCAAACCGGAGC Em05 : GACTGCGTACGAATTAAC</td></tr><tr><td>3</td><td>SRAP-25</td><td>Me-03 Em-03</td><td>Me03 :TGAGTCCAAACCGGAAT Em03 : GACTGCGTACGAATTGAC</td></tr><tr><td>4</td><td>SRAP-33</td><td>Me-03 Em-11</td><td>Me03 :TGAGTCCAAACCGGAAT Em-11 :GACTGCGTACGAATTCCA</td></tr><tr><td>5</td><td>SRAP-57</td><td>Me-06 Em-03</td><td>Me06: TGAGTCCAAACCGGTAA Em03 :GACTGCGTACGAATTGAC</td></tr><tr><td>6</td><td>SRAP-58</td><td>Me-06 Em-04</td><td>Me06 :TGAGTCCAAACCGGTAA</td></tr></table>	Sr. No.	Name of Primer	Combination	Primer 5’Forward (Me) and 3’reverse (Em)	1	SRAP-15	Me-02 Em-04	Me02 : TGAGTCCAAACCGGAGC Em04 : GACTGCGTACGAATTTGA	2	SRAP-16	Me-02 Em-05	Me02 : TGAGTCCAAACCGGAGC Em05 : GACTGCGTACGAATTAAC	3	SRAP-25	Me-03 Em-03	Me03 :TGAGTCCAAACCGGAAT Em03 : GACTGCGTACGAATTGAC	4	SRAP-33	Me-03 Em-11	Me03 :TGAGTCCAAACCGGAAT Em-11 :GACTGCGTACGAATTCCA	5	SRAP-57	Me-06 Em-03	Me06: TGAGTCCAAACCGGTAA Em03 :GACTGCGTACGAATTGAC	6	SRAP-58	Me-06 Em-04	Me06 :TGAGTCCAAACCGGTAA
Sr. No.	Name of Primer	Combination	Primer 5’Forward (Me) and 3’reverse (Em)																										
1	SRAP-15	Me-02 Em-04	Me02 : TGAGTCCAAACCGGAGC Em04 : GACTGCGTACGAATTTGA																										
2	SRAP-16	Me-02 Em-05	Me02 : TGAGTCCAAACCGGAGC Em05 : GACTGCGTACGAATTAAC																										
3	SRAP-25	Me-03 Em-03	Me03 :TGAGTCCAAACCGGAAT Em03 : GACTGCGTACGAATTGAC																										
4	SRAP-33	Me-03 Em-11	Me03 :TGAGTCCAAACCGGAAT Em-11 :GACTGCGTACGAATTCCA																										
5	SRAP-57	Me-06 Em-03	Me06: TGAGTCCAAACCGGTAA Em03 :GACTGCGTACGAATTGAC																										
6	SRAP-58	Me-06 Em-04	Me06 :TGAGTCCAAACCGGTAA																										

				Em04 :GACTGCGTACGAATTTGA	
7	SRAP-74	Me-07 Em-09		Me07 :TGAGTCCAAACCGGTCC Em09 :GACTGCGTACGAATTCGA	
8	SRAP-79	Me-08 Em-03		Me08 : TGAGTCCAAACCGGTGC Em03 :GACTGCGTACGAATTGAC	
9	SRAP-81	Me-08 Em-05		Me08 : TGAGTCCAAACCGGTGC Em04 :GACTGCGTACGAATTTGA	
10	SRAP-86	Me-08 Em-10		Me08 :TGAGTCCAAACCGGTGC Em-10:GACTGCGTACGAATTCAG	
Table-1 List of genotypes/varieties in Group-A (Vriddhachalam, TNAU)					
TMV-4	TMV-7	VRI-1	VRI-2	VRI-3	VRI-4 VRI-5
Paiyur-1	CO-1	Smark	Amrit	Nirmala	Prachi Subhra
TKG-21	TKG-22	TKG-55	TKG-306	TKG-308	Kalinga Sesame 3-1
Table-2 List of genotypes/varieties in Group-B (Amreli, JAU)					
G-Til-1	G-Til-2	G-Til-3	G-Til-4	G-Til-5	
G-Til-6	G-Til-10	G-Til-11	Purva		
Suggestions: Approved with following suggestions: 1. Recast the recommendation 2. Correct the analysis name (Dice dissimilarity co-efficient check: Table 5) (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)					
22.6.2.9	Ameliorative responses of synthetic compounds on growth and yield of wheat (<i>Triticum aestivum</i> L.) under heat stress condition. Foliar application of salicylic acid @100 ppm at booting stage and grain filling stage emerged as the most efficient treatment in alleviating heat stress induced by late sowing wheat. Improvements in yield attributing traits, chlorophyll retention, canopy temperature regulation, and harvest index establishing it as a reliable option for sustaining wheat productivity under heat stress conditions. Suggestions: Approved with following suggestions: 1. Recast the recommendation text (Action: Research Scientist (Wheat), Wheat Research Station, JAU, Junagadh)				

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

22.6.2.10	Molecular barcoding of <i>Spodoptera frugiperda</i> affecting sorghum crop <i>Mitochondrial cytochrome c oxidase</i> subunit I gene (COI) markers were used to characterize <i>Spodoptera frugiperda</i> populations from different locations of sorghum-growing regions of Gujarat. Barcode gap analysis indicated low mitochondrial divergence (0.443), with populations from four locations clustering closely and minor divergence observed in the Junagadh location. All specimens showed high similarity with the c strain of <i>S. frugiperda</i> and barcode information submitted to Barcode of Life Data System (BOLD) database. Suggestions: Approved with following suggestion 1. Recast recommendation by mentioning full form of COI and BOLD, 2. Add numerical data for mitochondrial divergence [Principal, ASBI, NAU, Surat]
22.6.2.11	Biochemical and Molecular Characterization of <i>Cry1Ac</i> genotypes of cotton (<i>Gossypium hirsutum</i> L.) Increase in <i>Cry1Ac</i> protein and biochemical parameters (tannin, total phenol, reducing sugars, total protein, flavonoids and gossypol) were observed across Bt cotton genotypes with growth stages up to 90 DAS and then declined at 120 DAS. EST-SSR markers viz., CIR413, DPL0249, STV023, TMB0409, and BNL3140 recorded higher PIC and SPI values. These markers can be used for assessing genetic diversity in cotton. Bt cotton genotypes viz., BC68-2 <i>Cry1Ac</i>, GISV-272 <i>Cry1Ac</i>, GISV-267 <i>Cry1Ac</i>, GPC-28 <i>Cry1Ac</i> and GPC-9 <i>Cry1Ac</i> recorded significantly higher <i>Cry1Ac</i> protein and biochemical parameters across growth stages along with higher yield and less pest and diseases incidences. Suggestions: Approved with the following suggestions 1. Recast the recommendation by removing bullet number [Research Scientist (Cotton), MCRS, NAU, Surat]
22.6.2.12	Bio-composting of rice and finger millet straw by potent cellulolytic isolates. Cellulolytic isolates <i>Bacillus subtilis</i> CDB9_NAU (GenBank accession No. PX945892) and <i>Bacillus subtilis</i> CDB20_NAU (GenBank accession No. PX945893) exhibited significant potential for the biocomposting of rice and finger millet straw.

	Their combined application at 1 mL/kg (10^8 cfu/mL) markedly enhanced cellulose degradation, reduced cellulose content from 38.13 to 22.78% in rice straw and 33.84 to 20.01% in finger millet straw. The treatment also resulted in a substantial reduction in organic carbon content, from 42.25 to 19.95% in rice straw and 40.35 to 18.90% in finger millet straw. While, the C:N ratio decreased from 60.61 to 18.30 in rice straw and 43.69 to 16.47 in finger millet straw, compared to individual bacterial inoculations and untreated controls. Suggestions: Approved with following suggestions 1. Recast the recommendation by adding isolate details and numerical data for analysed parameters <i>[HOD, Dept. of Microbiology, NMCA, NAU, Navsari]</i>
22.6.2.13	Physical properties and chemical composition influenced by drying methods in turmeric. Variety GNT 4 (NVST 87/Amruta) showed higher curcuminoids content (3.77%), whereas, GNT 1 exhibited higher oleoresin content (9.50%), indicating their respective industrial potential. Among the drying methods, freeze-drying achieved the highest retention of essential oils, curcuminoids, and oleoresins. It also preserved structural and physical quality, resulting in significantly higher rehydration ratios, reduced shrinkage, and enhanced color stability. Suggestions: Approved with following suggestions 1. Recast the recommendation with addition of numerical data <i>[Research Scientist, Department of Soil Science, NAU, Navsari]</i>
22.6.2.14	Forecasting of monthly stream flow of tapi river, gujarat Seasonal Auto Regressive Integrated Moving Average model SARIMA (0,1,2) (0,1,1) [5], can be used efficiently to forecast monthly stream flow of Tapi river at Mandvi River gauging station. It reported moderate sensitivity and high specificity with 1490.94 AIC and 577.13 RMSE. Suggestions: Approved with following suggestions 1. Recast the recommendation by mentioning the technical details of model 2. Add details of sensitivity, specificity, R^2 value, features and utility of model compared to other models <i>[HOD, Department of Ag. Engineering, NMCA, NAU, Navsari]</i>

S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

22.6.2.15	Optimization of Feather hydrolysate production by keratinolytic bacteria and its application as bio-enhancer to tomato plants <i>Bacillus bigmayongensis</i> (GenBank accession No. OQ181222.1) showed high keratinolytic potential (71.64%), keratinase activity (293.50 U/mL/h) and amino acid content (274.97 µg/mL) in a feather meal medium having 1% sodium sulphite at pH 8, temperature 30°C and incubation time 7 days. Suggestions: Approved with following suggestion 1. Recast the recommendation <i>(Action: Unit Head, Bio Science Research Centre, SDAU, S.K. Nagar)</i>
22.6.2.16	Effect of smoke water on biochemical and physiological attributes of kidney beans (Rajmash) It is informed to the scientific community that Cluster Bean crop residue smoke water (1 Kg/L) sprayed at 20, 40 and 60 days at a dose of 771.60 L/Ha (~800 L/Ha) after sowing increases chlorophyll content upto 72 per cent and leaf area upto 34 per cent, in kidney bean variety GR-1. Suggestions: Conclude the experiment <i>(Action: Unit Head, Bio Science Research Centre, SDAU, S.K. Nagar)</i>

22.6.3 NEW TECHNICAL PROGRAMMES

ANAND AGRICULTURAL UNIVERSITY, ANAND

Sr. No.	Title	Suggestion/s and Action
22.6.3.1	Identification of candidate genes for TLCV resistance in tomato (<i>Solanum lycopersicum</i> L.) through integrated transcriptomics and proteomics	Suggestions: Approved <i>(Action: Professor and Head, Dept. of Agril. Biotechnology, AAU, Anand)</i>
22.6.3.2	Development of <i>In Vitro</i> Propagation Protocol for different species of Guggal	Suggestions: Approved with following suggestions 1. Keep ten bottles per treatment per replication 2. Maintain minimum error df. Action: Associate Pofessor and Head, CARPTC, AAU, Anand)

22.6.3.3	Development, characterization and field evaluation of multi-micronutrient nano formulation on fodder maize (<i>Zea mays</i> L.)	Suggestions: Approved with following suggestions 1. Specify the treatment details and concentration. 2. Modify the title as “Development, characterization and field evaluation of multi-micronutrient nano formulation on fodder maize (<i>Zea mays</i> L.) 3. Add phytotoxicity related observation <i>(Action: Research Scientist, Dept. of Biochemistry & Plant Physiology, AAU, Anand)</i>
22.6.3.4	Influence of methyl jasmonate on nutritional quality of fenugreek genotypes	Suggestions: Approved with following suggestions 1. Specify the treatment combination, level, plot size and experiment design. 2. Specify the stage for RT-PCR analysis. 3. Specify the standard methodology. <i>(Action: Research Scientist, Dept. of Biochemistry & Plant Physiology, AAU, Anand)</i>
22.6.3.5	Assessment of coloured shade nets on growth, physiology and quality attributes of Peace Lily (<i>Spathiphyllum wallisii</i>)	Suggestions: Approved with following suggestions 1. Add PAR observation 2. Mention the number of bag per treatment per replication <i>(Action: Principal, College of Horticulture, AAU, Anand)</i>

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Sr. No.	Title	Suggestion/s and Action
22.6.3.6	Molecular characterization of groundnut genotypes/varieties using SRAP markers.	Suggestions: Approved <i>(Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)</i>

22.6.3.7	Molecular and biochemical characterization of drought tolerant genes in groundnut (<i>Arachis hypogaea</i> L.).	Suggestions: Approved with following suggestions 1. Modify the title as “Biochemical and expression study of drought tolerant gene DREB2C in groundnut (<i>Arachis hypogaea</i> L.)” 2. Add RWC observation 3. Remove the objective 1 4. Change the measurement of ROS to H₂O₂ analysis (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)
22.6.3.8	<i>Bacillus</i> -derived green nanoparticles: Mechanistic and genomic approaches for biocontrol activity against <i>Fusarium oxysporum</i> f. sp. <i>Cumini</i> .	Suggestions: Approved with following suggestions 1. Merge objective 2 and 3. (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)
22.6.3.9	Development of tissue culture protocol for papaya (<i>Carica papaya</i> L.).	Suggestions: Approved with following suggestions 1. Identify female plants using specific primers and develop an <i>in vitro</i> propagation protocol for female plants only. (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)
22.6.3.10	Targeted SSR marker-based characterization of <i>Fusarium</i> wilt resistance in chickpea (<i>Cicer arietinum</i> L.) genotypes.	Suggestions: Approved with following suggestions 1. Remove CRD design from an experiment 2. Use appropriate molecular analysis tool (Action: Professor and Head, Department of Biotechnology, JAU, Junagadh)
22.6.3.11	Foliar application of plant growth regulators for Agro-physiological improvement of drought tolerance in pearl millet.	Suggestions: Approved with following suggestions 1. Specify the irrigation schedule 2. Modify title as “Effect of foliar application of various agrochemicals on pearl millet under rainfed conditions” 3. Change the objective as per title (Action: Res. Scientist (Pearl Millet), Pearl Millet Research Station, JAU, Jamnagar)

22.6.3.12	Effect of seed priming on crop growth and yield of groundnut (<i>Arachis hypogaea</i> L.) under Rainfed conditions.	Suggestions: Approved with following suggestions 1. Add appropriate physiological observations 2. Remove seed priming of NaCl treatment (Action: Res. Scientist, Main Dry Farming Research Station, JAU, Targhadia)
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NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

Sr. No.	Title	Suggestion/s and Action
22.6.3.13	Optimization and quantification of cordycepin in <i>Cordyceps militaris</i> product.	Suggestions: Approved [Action: Principal, ASBI, NAU, Surat]
22.6.3.14	Optimization of solid-state culture media for <i>Cordyceps militaris</i> using different substrates.	Suggestions: Approved [Action: Principal, ASBI, NAU, Surat]
22.6.3.15	Biochemical profiling of plant defense mechanisms against <i>Spodoptera frugiperda</i> (J.E. Smith) in sorghum genotypes under South Gujarat region.	Suggestions: Approved with following suggestions 1. Mention the gross and net plot size 2. Mention the unit of enzyme activity [Action: Principal, ASBI, NAU, Surat]
22.6.3.16	Study of <i>Cissus quadrangularis</i> morphotypes	Suggestions: Approved [Action: Professor and Head, Dept. of Basic Science, ACH, NAU, Navsari]
22.6.3.17	Callus induction and determination of total phenols from callus extract of <i>Celastrus paniculatus</i>	Suggestions: Approved [Action: Professor and Head, Dept. of Basic Science, ACH, NAU, Navsari]

22.6.3.18	Elicitation of total phenolics in cell suspension culture of <i>Celastrus paniculatus</i>	Suggestions: Approved with following suggestions 1. Discuss with statistician and finalize the experimental design 2. Take JA and SA concentration 50, 100, 150, 200, 250 μM [Action: Professor and Head, Dept. of Basic Science, ACH, NAU, Navsari]
22.6.3.19	Morpho-physiological and biochemical responses of determinate tomato (<i>Solanum lycopersicum</i> L.) to seed-soaking with a citrus oil based oil-in-water formulation.	Suggestions: Approved with following suggestions 1. Add references for methodology 2. Add observation “Membrane injury” 3. Mention stage for Biochemical analysis 4. Add observation of total soluble sugar content and TSS/acidity ratio 5. Remove carbohydrate percentage observation [Action: Professor and Head, Dept. of Plant Physiology, NMCA, NAU, Navsari]
22.6.3.20	Standardization of tissue culture protocol for strawberry.	Suggestions: Approved with following suggestions 1. Mention the explant 2. Use appropriate replication in experiment [Action: Professor and Head, Dept. of Plant Physiology, NMCA, NAU, Navsari]
22.6.3.21	Evaluation of drying and grinding effects on recovery yield and bioactive potential of <i>Blumea lacera</i> powder.	Suggestions: Approved with following suggestions 1. Mention the number of samples and sample size. [Action: Head, FQTL, NMCA, NAU, Navsari]
22.6.3.22	Development of machine learning for rice stomata distribution and morphology.	Suggestions: Approved [Action: HOD, Dept. Of Basic Sci. & Humanities, CoF, NAU, Navsari]
22.6.3.23	Integrative physiological and anatomical characterization of rice (<i>Oryza sativa</i> L.) under salinity stress at tillering stage.	Suggestions: Approved [Action: Research Scientist, MRRS, SWRMU, NAU, Navsari]

22.6.3.24	Physiological modulation of rice under salinity stress via seed priming and foliar application of eco-friendly moringa leaf extract-based ZnO nanoparticles	Suggestions: Approved with following suggestions 1. Add XRD analysis of nanoparticles <i>[Action: Research Scientist, MRRS, SWRMU, NAU, Navsari]</i>
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S. D. AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

Sr. No.	Title	Suggestion/s and Action
22.6.3.25	Method development and validation for Ethylene Oxide residue analysis in seed spices using GC-high resolution mass spectrometry.	Suggestions: Approved with following suggestions 1. Merge objective 1, 2 and 3 and revise title as “Standardization and validation of extraction methodology for ETO and 2CE with GC-HRMS in cumin” 2. Elaborate the method performance characteristics parameter <i>(Action: Unit Head, Bio Science Research Centre, SDAU, S.K. Nagar)</i>
22.6.3.26	Method validation and elemental analysis in milk samples of Banaskantha, Gujarat.	Suggestions: Approved with following suggestions 1. Specify the sample collection season. 2. Modify the title as “Method validation and elemental analysis in milk samples of Banaskantha district” 3. Elemental analysis should be done as per standard guidelines. <i>(Action: Unit Head, Bio Science Research Centre, SDAU, S.K. Nagar)</i>
22.6.3.27	<i>In silico</i> comparative transcriptome analysis of high and low-iron content <i>Amaranthus</i> species	Suggestions: Approved with following suggestions 1. Include DEG validation with qRT-PCR part in experiment <i>(Action: Head, Dept. of Biotechnology, CBSH, SDAU, S.K. Nagar)</i>
22.6.3.28	Biochemical and genetic analysis of protein and lysine content in <i>Amaranthus</i> germplasm.	Suggestions: Approved with following suggestions

		1. Modify the title as “Gene expression analysis underlying lysine content in <i>Amaranthus</i> germplasm” 2. Perform protein content analysis with Folin Lowry methods (Action: Head, Dept. of Biotechnology, CBSH, SDAU, S.K. Nagar)
22.6.3.29	Effect of natural additives on shelf-life and microbial diversity of <i>Jeevamrut</i>	Suggestions: Approved with following suggestions 1. Conduct the experiment for two years 2. Mention - observation on microbial count at 15 days interval up to 03 month. 3. Replace the Xanthan gum with acacia gum in treatment (Action: Head, Dept. of Microbiology, CBSH, SDAU, S.K. Nagar)
22.6.3.30	Isolation and characterization of <i>Rhizobium</i> spp. from the root nodules of groundnut	Suggestions: Approved with following suggestions 1. Specify the fungus name for antifungal activity 2. include <i>Nitrogenase</i> activity and P solubilization parameters. 3. Remove the word cowpea from title and objectives. (Action: Head, Dept. of Microbiology, CBSH, SDAU, S.K. Nagar)
22.6.3.31	Performance of blackgram (<i>Vigna mungo</i> (L.) Hepper) with nutrient fortification under late <i>kharif</i> and summer seasons	Suggestions: Not Approved (Action: Research Scientist, Pulses Research Station, SDAU, S.K. Nagar)
22.6.3.32	Biochemical analysis of karingda [<i>Citrullus lanatus</i> (Thumb) Mansf] seed genotypes	Suggestions: Approved with following suggestions 1. Add element analysis (Fe & Ca), lycopene, moisture parameter (Action: Head, Dept. of Agril. Chem. and Soil Sci., SDAU, S.K. Nagar)
22.6.3.33	Physiological modulation of plant architecture and life cycle duration	Suggestions: Approved with following suggestions

	in Castor (<i>Ricinus communis</i> L.) using plant growth regulator	1. Modify title as “Physiological modulation of plant architecture and life cycle duration in Castor (<i>Ricinus communis</i> L.) using paclobutrazol” (Action: Research Scientist, Centre for Oilseeds Research, SDAU, S.K. Nagar)
22.6.3.34	Nanomaterial based colorimetric detection of pesticide residues from agricultural produces	Suggestions: Approved with following suggestions 1. Include okra, brinjal, chili and tomato samples for study 2. Add relevant pesticide (Action: Head, Dept. of Biochemistry, CBSH, SDAU, S.K. Nagar)
22.6.3.35	Response of pearl millet (<i>Pennisetum glaucum</i> L.) genotypes on different soil under natural farming	Suggestions: Approved with following suggestions 1. Change treatment as FRBD 2. Add initial physicochemical analysis of soil sample. (Action: Principal, College of Agriculture, SDAU, S.K. Nagar)

22.7 Agril. Engg. Tech./Agril. Inform. Tech./Food Process. Technology/Food Tech. / Post Harvest Tech.

Date and Venue: 12-14/05/2026 at Anand Agricultural University, Anand

Chairman	Dr. N. I. Shah, Hon'ble Vice Chancellor, AAU, Anand
Co-Chairman	1. Dr. J. R. Jat, Principal & Dean (Food Technology), SDAU 2. Dr. H. D. Rank, Dean (Agril. Engg.), CAET, JAU, Junagadh
Rapporteurs	1. Dr. S.H. Akbari, Professor, AAU, Anand 2. Dr. G.V. Prajapati, Professor, JAU, Junagadh 3. Dr. F.M. Sahu, Associate Professor, NAU, Navsari 4. Dr. N.D. Joshi, Associate Professor, SDAU, SKNagar
Statistician	Dr. A.N. Khokhar, Professor, AAU, Anand

The 22nd Combined AGRESCO Meeting was graced by the Hon'ble Vice Chancellor and distinguished dignitaries, and was formally opened with a welcome address delivered by Dr. S. N. Shah, Director of Research & Dean, Post-Graduate Studies, Anand Agricultural University, Anand. Dr. Shah extended a warm welcome to all participants, including the Conveners of the sub-committees on Agricultural Engineering and Technology (AET), Agricultural Information Technology (AIT), Food Processing Technology (FPT), Food Technology (FT), Post-Harvest Technology (PHT), as well as the rapporteurs and esteemed members in attendance.

In his address, Dr. Shah underscored the transformative role of agricultural engineering, digital technologies, and value-addition innovations in building a resilient, sustainable, and economically viable agricultural sector. He stressed the imperative of developing forward-looking research programs to address pressing challenges encompassing climate change, energy security, mechanization, post-harvest management, precision agriculture, and digital agriculture. He further articulated that the future trajectory of Indian agriculture hinges on the seamless integration of engineering innovation, information technology, and advanced processing systems to enhance productivity, resource-use efficiency, and farmers' income.

Dr. Shah called upon scientists to direct their efforts toward frontier research domains, including artificial intelligence, machine learning, the Internet of Things (IoT), robotics, drone applications, sensor-based smart farming, renewable energy systems, agrivoltaics, agricultural automation, protected cultivation, precision irrigation, smart post-harvest technologies, food quality and safety, circular bioeconomy, biomass utilization, and carbon-neutral production systems. He also emphasized the critical importance of strengthening industry-academia partnerships and fostering technology-driven start-ups to generate employment and accelerate the commercialization of innovative agricultural technologies.

The inaugural session was chaired by Dr. N. I. Shah, Hon'ble Vice Chancellor, Anand Agricultural University, Anand, who, in his chairperson's remarks, highlighted the growing significance of engineering and technological interventions in ensuring sustainable agricultural development. He observed that future agricultural growth must be anchored in innovations that

conserve natural resources, reduce production costs, enhance energy efficiency, and improve value addition across agricultural supply chains.

The Vice Chancellor noted that multifaceted challenges — including climate variability, labour shortages, escalating energy costs, and post-harvest losses — demand multidisciplinary solutions engaging agricultural engineers, information technologists, and food processing experts. He encouraged scientists to formulate need-based, impact-oriented research programmes capable of delivering practical, scalable technologies for farmers, entrepreneurs, and agro-industries alike.

He further emphasized the imperative of digital transformation in agriculture through decision support systems, smart advisory services, big-data analytics, remote sensing, and precision farming. Equally, he advocated for intensified research on renewable energy applications in agriculture — including solar-powered systems, agrivoltaic technologies, biomass energy, energy-efficient farm machinery, and sustainable processing technologies — and urged that research outcomes be translated into field-level solutions that directly contribute to farmers' prosperity and environmental sustainability.

Following the inaugural proceedings, the technical session commenced under the chairmanship of Dr. N. I. Shah. Research recommendations and new technical programs from the respective sub-committees of Anand Agricultural University, Junagadh Agricultural University, Navsari Agricultural University, and Sardarkrushinagar Dantiwada Agricultural University were systematically presented and deliberated upon by the assembled members.

The technical session was co-chaired by Dr. J. R. Jat and Dr. H. D. Rank. Proceedings were meticulously documented by the designated rapporteurs - Dr. S. H. Akbari, Dr. G. V. Prajapati, Dr. F. M. Sahu, and Dr. N.D. Joshi - with statistical support provided by Dr. A. N. Khokhar & Dr.R.S.Parmar.

The inaugural session concluded with a vote of thanks proposed by Dr. D. K. Vyas, who conveyed sincere gratitude to the Hon'ble Vice Chancellor, dignitaries, scientists, conveners, rapporteurs, and all participants for their valuable contributions toward the advancement of research in Agricultural Engineering & Technology, Agricultural Information Technology, Food Processing Technology, and Bio-Energy Engineering.

SUMMARY

Name of University	No. Of Recommendations				Number of New Technical Programmes	
	For Farming Community/ Entrepreneurs		Information for Scientific Community			
	Proposed	Approved	Proposed	Approved	Proposed	Approved
AAU	09	09	04	04	16	16
JAU	13	10+3*	07	07	22	21+1 [#]
NAU	05	04 +1**	02	02	03	03
SDAU	02	02	--	--	29	27+2 ^{##}
Total	29	25	13	13	70	68

*Three farmer's /entrepreneur recommendations of JAU were merged

**One Recommendation of NAU extended for next year

[#]One NTP of JAU shifted to Horticulture Subcommittee

^{##}One NTP of SDAU shifted to Social Science Subcommittee and one NTP is approved as filler trial.

22.7.1 RECOMMENDATIONS FOR FARMING COMMUNITY

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.7.1.1	Standardization of process parameters for preparation of dragon fruit leather Recommendation: Entrepreneurs and food processors interested in red-fleshed dragon fruit processing are recommended to adopt the technology developed by Anand Agricultural University for the preparation of dragon fruit leather. The process involves incorporation of 29g dragon fruit peel crush and 23 g sugar per 100g of pulp, followed by spreading at 3mm thickness and tray drying at 70°C temperature. The developed product contains approximately 39 mg/100 g vitamin C, 8% protein and 18.26 colour value (a*). The three-layered (one above one) product, vacuum-packed in laminated aluminium foil pouches, can be safely stored up to 120 days without any significant change in quality parameters. ભલામણ: લાલ માવા વાળા ડ્રેગન ફ્રૂટમાંથી લેધર બનાવવા માટે રસ ધરાવતા ઉદ્યોગસાહસિકો અને ખાદ્ય પ્રક્રિયકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ તકનીકની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયામાં પ્રતિ ૧૦૦ગ્રામ પલ્પમાં ૨૯ ગ્રામ ડ્રેગન ફ્રૂટની પીલ અને ૨૩ ગ્રામ ખાંડ ઉમેરવામાં આવે છે. તૈયાર મિશ્રણને ૩ મીમી જાડાઈમાં પાથરીને ૭૦ °સે. તાપમાને ટ્રે ડ્રાયરમાં સુકવણી કરવી. તૈયાર લેધરમાં અંદાજે ૩૯ મિ.ગ્રા./૧૦૦ગ્રામ વિટામિન C, ૮% પ્રોટીન અને ૧૮.૨૬ કલર વેલ્યુ (a*) મળે છે. ડ્રેગન ફ્રૂટ લેધરને ૩-થરમાં (એકની ઉપર એક) લેમિનેટેડ એલ્યુમીનીયમ ફોઈલ બેગમાં વેક્યૂમ પેક કરી ૧૨૦ દિવસ સુધી સુરક્ષિત રીતે સંગ્રહિત કરી શકાય છે. House approved the recommendation with following suggestions. 1. Add colour value in Table 4 for optimization 2. Recast the recommendation [Action: PI & HOD, PFE Dept., CAET, GODHRA]
22.7.1.2	Development of value-added farali extruded snack Recommendation: Entrepreneurs and food processors interested in the manufacture of nutritious farali extruded snacks are recommended to adopt the extrusion technology developed by Anand Agricultural University. The technology involves blending of amaranth flour, potato flour, whey protein and rock salt, followed by moisture conditioning of the flour mix. The conditioned blend is then processed through a twin-screw extruder followed by drying, seasoning and packaging. The developed snack contains about 17.95% protein and 4.09% fat, and is rich in essential minerals (mg/100 g) such as iron (24.45), calcium (217.17), zinc (5.47), magnesium (159.19) and phosphorus (1212.26). The product is “A food, rich in iron and a good source of protein, calcium, zinc and magnesium”. The product remains acceptable up to 90 days at ambient storage. ભલામણ: રાજગરા યુક્ત પોષક ફરાલી નાસ્તાના ઉત્પાદનમાં રસ ધરાવતા ઉદ્યોગ સાહસિકો અને ખાદ્ય પ્રક્રિયકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ ઉત્તોદન (extrusion) તકનીક અપનાવવાની ભલામણ કરવામાં આવે છે. આ તકનીકમાં રાજગરાનો લોટ, બટાટાનો લોટ, વ્હે પ્રોટીન અને સિંધવ મીઠાનું મિશ્રણ બનાવી તેમાં ભેજનું પ્રમાણ નિયમિત કરવામાં આવે છે. ત્યારબાદ આ મિશ્રણને ટ્વિન-સ્ક્રૂ ઉત્તોદન મશીનમાંથી પ્રોસેસ કરી, તેની સુકવણી તેમજ

	પેકેજીંગ કરવામાં આવે છે. વિકસાવેલ ફરાળી નાસ્તામાં ૧૭.૯૫% પ્રોટીન અને ૪.૦૯% ફેટ હોય છે તેમજ તેમાં આવશ્યક ખનિજ તત્વો (મિ.ગ્રા. પ્રતિ ૧૦૦ ગ્રામમાં) જેવાકે, લોહતત્વ (૨૪.૪૫), કેલ્શિયમ (૨૧૭.૧૭), ઝિંક (૫.૪૭), મેગ્નેશિયમ (૧૫૯.૧૯) અને ફોસ્ફરસ (૧૨૧૨.૨૬) પ્રચુર માત્રામાં રહેલાં છે, તેથી આ ઉત્પાદને “લોહતત્વથી સમૃદ્ધ તથા પ્રોટીન, કેલ્શિયમ, ઝિંક તથા મેગ્નેશિયમનો ઉત્તમ સ્ત્રોત” કહી શકાય છે. આ ફરાળી પોષક નાસ્તો સામાન્ય તાપમાને ૯૦ દિવસ સુધી સ્વીકાર્ય રહે છે. House approved the recommendation with following suggestions. 1. Add extrusion before technology 2. Replace “high” with “rich” and recast the recommendation [Action: PI & HOD, Dept. of FPT, CFPTBE, AAU, ANAND]
22.7.1.3	Technology for production of Ready-To-Serve green tomato beverage Recommendation: Entrepreneurs and food processors interested in the production of RTS (Ready-to-Serve) matured green tomato beverage are recommended to adopt the technology developed by Anand Agricultural University. The process involves washing, cutting, and blanching of matured green tomatoes, followed by juice extraction using a centrifugal juicer, beverage formulation, thermal processing, and packaging in PET bottles. The developed beverage contains 2.10 mg vitamin C, 457 μmol Fe^{2+} antioxidant activity, 12.48 mg GAE total phenolic content, and 1.40 mg tomatine per 100 ml. The product can be stored safely for up to 60 days at $4 \pm 2^\circ\text{C}$ and 40 days at $30 \pm 2^\circ\text{C}$, maintaining acceptable quality attributes. ભલામણ : પરિપક્વ લીલા ટામેટાના રેડી ટુ સર્વ પીણાના ઉત્પાદનમાં રસ ધરાવતા ઉદ્યોગસાહસિકો અને ફૂડ પ્રોસેસર્સને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ ટેકનોલોજી અપનાવવાની ભલામણ કરવામાં આવે છે. આ ટેકનોલોજીમાં, પરિપક્વ લીલા ટામેટાંને ઘોઈ, ટુકડાકરી, બ્લાન્ચ કરી, સેન્ટ્રીફ્યુગલ જ્યુસરનો ઉપયોગ કરીને રસ કાઢવામાં આવે છે અને રેડી ટુ સર્વ લીલા ટામેટાના પીણાનું ઉત્પાદન કરવામાં આવે છે. ત્યારબાદ પીણાને થર્મલ પ્રોસેસિંગ કરવામાં આવે છે. પ્રતિ ૧૦૦ મિલી લીલા ટામેટાના રેડી ટુ સર્વ પીણામાં ૨.૧૦ મિલિગ્રામ વિટામિન સી, ૪૫૭ માઈક્રોમોલ એન્ટીઓક્સિડન્ટ એક્ટીવીટી (Fe^{2+}), ૧૨.૪૮ મિલિગ્રામ ફિનોલ્સ અને ૧.૪૦ મિલિગ્રામ ટોમેટીન હોય છે. આ રીતે તૈયાર કરેલ પીણાને $4 \pm 2^\circ\text{C}$ થી $30 \pm 2^\circ\text{C}$ સુધી સુરક્ષિત રીતે પેટ બોટલમાં સંગ્રહિત કરી શકાય છે. House approved the recommendation. [Action: PI & HOD, Dept. of FPT, CFPTBE, AAU, ANAND]
22.7.1.4	Development and quality assessment of muffins prepared from jackfruit seed flour and sorghum flour Recommendation: Bakers and entrepreneurs interested in production of high fibre muffins are recommended to use the technology developed by Anand Agricultural University. The technology involves the flour formulation containing 65 % wheat flour, 20 % sorghum flour and 15 % jackfruit seed flour. Muffins made from this formulation contains 2.72 %

	crude fibre. The muffins packed in LDPE or LLDPE remain acceptable upto 10 days at 30±2°C temperature. ભલામણ: ઉચ્ચ ફાઇબરવાળા મફિન્સના ઉત્પાદનમાં રસધરાવતા બેકર્સ અને ઉદ્યોગ સાહસિકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ ટેકનોલોજીનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આટેકનોલોજીમાં ૬૫ % ઘઉંનોલોટ, ૨૦ % જુવારનો લોટ અને ૧૫ % જેકફૂટના બીજનો લોટ ધરાવતા લોટના ફોર્મ્યુલેશનનો સમાવેશ થાય છે. આ ફોર્મ્યુલેશનમાંથી બનેલા મફિન્સમાં ૨.૭૨ ટકા ફૂડ ફાઇબર હોય છે. એલડીપીઇ અથવા એલએલડીપીઇમાં પેક કરેલા મફિન્સ ૩૦±૨ °સેલ્સિયસ તાપમાને ૧૦દિવસ સુધી સ્વીકાર્ય રહે છે. House approved the recommendation with following suggestions. 1. Replace “Bakery industrialist” with “Bakers” 2. Check the hardness data in Table 6 [Action: PI & HOD, Dept. of FPT, CFPTBE, AAU, ANAND]
22.7.1.5	Technology for production of unripe banana flour using vacuum drying technique Recommendation: Food processors and entrepreneurs interested in production of unripe banana flour are recommended to adopt the production technology developed by Anand Agricultural University. This technology involves peeling and slicing of unripe bananas into 3 mm thick slices, followed by hot water blanching at 80 °C for 2 minutes. The slices are then dipped in 0.1% potassium metabisulfite solution for 10 minutes. After pre-treatment, the slices are subjected to vacuum drying at 50 °C under 600 mmHg pressure until the moisture content is reduced to below 10 %. The dried slices are then ground into fine powder to obtain unripe banana flour. The prepared flour can be safely stored up to 90 days in 120 micron foil laminated pouches. ભલામણ: કાચા કેળાનો લોટ બનાવવામાં રસ ધરાવતા ખાદ્ય પ્રક્રિયકો અને ઉદ્યોગ સાહસિકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ ટેકનોલોજી અપનાવવાની ભલામણ કરવામાં આવે છે. આ ટેકનોલોજીમાં કાચા કેળાની છાલ ઉતારીને ૩ મીમી જાડાઈમાં કાપ્યા બાદ ૮૦ °સે તાપમાને ૨ મિનિટ માટે ગરમ પાણીમાં બ્લાંચિંગ કરવામાં આવે છે. ત્યારબાદ આ સ્લાઈસને ૦.૧% પોટેશિયમ મેટાબાઈસલ્ફાઈટના દ્રાવણમાં ૧૦ મિનિટ માટે ડૂબાડવા અને ત્યારબાદ સ્લાઈસને વેક્યૂમ ડ્રાયરમાં ૫૦ ° સે તાપમાને અને ૬૦૦ mmHg દબાણે જ્યાં સુધી ભેજનું પ્રમાણ ૧૦% કરતા ઓછું થાય ત્યાં સુધી સુકવણી કરવામાં આવે છે. સુકવેલ કેળાની સ્લાઈસને દળીને લોટ બનાવવામાં આવે છે. આ રીતે તૈયાર થયેલ કાચા કેળાના લોટને ૯૦ દિવસ સુધી ૧૨૦ માઈક્રોનના ફોઈલ લેમીનેટેડ પાઉચમાં સુરક્ષિત રીતે સંગ્રહ કરી શકાય છે. House approved the recommendation with following suggestion. 1. Remove “of storage period” from last line of recommendation [Action: PI & HOD, Dept. of FPT, CFPTBE, AAU, ANAND]
22.7.1.6	Dehydration of green leaves of selected vegetables Recommendation:

	The entrepreneurs and processors interested in dehydration of green leafy vegetables (Radish and Garlic leaves) are recommended to use the Refractance Window drying technology developed by Anand Agricultural University. Refractance Window drying technology at 45°C takes lesser time for dehydration of green leafy vegetables and also contains more antioxidant activity, total phenols and its natural colour as compared to Tray drying. ભલામણ: લીલા પાનવાળા શાકભાજી (મૂળા અને લસણનાં પાન) ના ડિહાઇડ્રેશનમાં રસધરાવતા ખાદ્ય પ્રક્રિયકો અને ઉદ્યોગ સાહસિકો ને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસિત રીફ્રેક્ટન્સ વિન્ડો ડ્રાઇંગ ટેકનોલોજીનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. ૪૫°C થી વધુ તાપમાને રીફ્રેક્ટન્સ વિન્ડો ડ્રાઇંગ ટેકનોલોજી દ્વારા લીલાપાનવાળા શાકભાજીનાં ડિહાઇડ્રેશનમાં ઓછો સમય લાગે છે, અને ટ્રે-ડ્રાઇંગ ટેકનોલોજીની તુલનામાં કુદરતી રંગ જાળવી રાખવાની સાથે વધુ એન્ટી ઓક્સિડન્ટ એક્ટિવીટી અને કુલ ફિનોલ્સ પણ ધરાવે છે. Approved the recommendation with following suggestion. 1. Remove “Onion leaves” from recommendation and recast the recommendation. [Action: PI & HOD, Dept. of FPE, CFPTBE, AAU, ANAND]
22.7.1.7	Performance evaluation of the developed Internet of Things (IoT) based system Recommendation: Industrialists and food processors are recommended to use the Internet of Things (IoT)-based system developed by Anand Agricultural University for real-time monitoring of key respiratory parameters, including temperature, mixed gas concentrations, and relative humidity of stored horticultural produce. The system, evaluated using tomato and mature banana stored in a 2' × 2' × 2' acrylic chamber under ambient conditions, performed satisfactory in comparison with manual observations for all measured parameters. The system comprises a Wi-Fi-enabled module, integrated with temperature and humidity sensor and gas sensor, mounted on a specially designed layout and fabricated printed circuit board (PCB) for reliable and stable operation. It is further supported by cloud-based data visualization through ThingSpeak, enabling continuous monitoring and remote accessibility. ભલામણ : ઉદ્યોગપતિઓ અને ખાદ્ય પ્રક્રિયકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસિત કરવામાં આવેલી ઇન્ટરનેટ ઓફ થિંગ્સ (IoT) આધારિત સિસ્ટમનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આ સિસ્ટમ, સંગ્રહિત બાગાયતી પેદાશોના મુખ્ય પરિમાણો જેવા કે, તાપમાન, મિશ્ર વાયુની સાંદ્રતા અને સાપેક્ષ ભેજનું રીઅલ-ટાઇમ મોનિટરિંગ કરવા માટે વિકસાવવામાં આવી છે. આ સિસ્ટમનું મૂલ્યાંકન ટામેટા અને પાકેલા કેળા ઉપર કરવામાં આવેલ, જેને ૨' × ૨' × ૨' એકેલિક ચેમ્બરમાં વાતાવરણીય પરિસ્થિતિઓ હેઠળ સંગ્રહિત કરવામાં આવેલ. તમામ માપવામાં આવેલા પરિમાણો માટે મેન્યુઅલ અવલોકન સાથે સરખામણીમાં તેનું પ્રદર્શન સંતોષકારક જણાયું હતું. આ સિસ્ટમમાં વાઇ-ફાઇ (Wi-Fi) સક્ષમ મોડ્યુલનો સમાવેશ થાય છે, જે તાપમાન અને ભેજ માપનાર સેન્સર તેમજ ગેસ માપનાર સેન્સર સાથે જોડાયેલું છે. તેને વિશેષ રીતે ડિઝાઇન કરેલા લે-આઉટ (layout) અને ફેબ્રિકેટેડ પ્રિન્ટેડ સર્કિટ બોર્ડ (PCB) પર લગાવેલું છે, જેથી વિશ્વસનીય અને સ્થિર કાર્યપ્રદર્શન મળે.

	વધુમાં, તે ThingSpeak દ્વારા ક્લાઉડ આધારિત ડેટા વિઝ્યુઅલાઇઝેશનથી સજ્જ છે, જે સતત મોનિટરિંગ અને દૂરસ્થ પહોંચને સક્ષમ બનાવે છે. Approved the recommendation with following suggestion. 1. Replace “Entrepreneurs” with “Industrialists” [Action: PI & HOD, Dept. of FPE, CFPTBE, AAU, ANAND]
22.7.1.8	Supercritical fluid extraction of mango seed kernel oil Recommendation : Entrepreneurs and food processors interested in valorisation of mango seed kernel are recommended to adopt the supercritical fluid extraction technology developed by Anand Agricultural University. The technology involves tray drying of mango seed kernel at 60°C followed by supercritical CO₂ extraction at 54°C, 297 bar pressure and 210 min extraction time. The process yields about 11.23% high-quality mango seed kernel oil with high antioxidant activity and around 177 mg/100 g β-sitosterol content. The extracted oil exhibits desirable physicochemical properties and good fatty acid profile rich in oleic acid. ભલામણ: કેરીની ગોટલીનાં મૂલ્યવર્ધનમાં રસ ધરાવતા ઉદ્યોગસાહસિકો અને પ્રક્રિયકોને આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવેલ સુપરક્રિટિકલ ફ્લુઇડ એક્સ્ટ્રેક્શન ટેકનોલોજી અપનાવવાની ભલામણ કરવામાં આવે છે. આ ટેકનોલોજી અંતર્ગત, સૌપ્રથમ કેરીની ગોટલીને 50°સે તાપમાને ટ્રે-ડ્રાઇંગ કરવામાં આવે છે. ત્યારબાદ, 54°સે તાપમાન, 297 બાર દબાણ અને 210 મિનિટનાં એક્સ્ટ્રેક્શન સમય પર સુપરક્રિટિકલ CO₂ એક્સ્ટ્રેક્શન પ્રક્રિયા હાથ ધરવામાં આવે છે. આ પ્રક્રિયા દ્વારા અંદાજે 11.23% જેટલું ઉચ્ચ ગુણવત્તાયુક્ત કેરીના ગોટલીનું તેલ પ્રાપ્ત થાય છે, જેમાં પ્રતિ 100 ગ્રામ દીઠ આશરે 177 મિ.ગ્રા. β-સિટોસ્ટેરોલ અને ઉત્તમ એન્ટીઓક્સિડન્ટ ગુણધર્મો જોવા મળે છે. આ પ્રક્રિયા દ્વારા નિષ્કર્ષિત કરવામાં આવેલ તેલ ઉત્તમ ભૌતિક-રાસાયણિક ગુણધર્મો ધરાવે છે તેમજ તેમાં ભરપૂર માત્રામાં ઓલેઇક એસિડ ધરાવતી ફેટી એસિડ પ્રોફાઇલ પણ જોવા મળે છે. House approved the recommendation. [Action: PI & HOD, Dept. of FSQA, CFPTBE, AAU, ANAND]
22.7.1.9	Development of rapid method for detection of Rhodamine B in chili powder Recommendation: Entrepreneurs and food processors are recommended to use the paper-based rapid and cost-effective method developed by Anand Agricultural University for screening of Rhodamine B adulteration in chilli powder. The method involves methanol extraction of sample, spotting it on Whatman filter paper followed by UV-assisted visualization using a handheld UV torch. It enables detection of Rhodamine B in chilli powder up to 10 ppm (0.001%) concentration. The method is simple, requires minimal instrumentation, and is suitable for field-level and routine screening applications. ભલામણ: મરચાનાં પાવડરમાં રોડામાઇન-બીની ભેળસેળ શોધવા માટે આણંદ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલી પેપર-આધારિત ઝડપી અને સસ્તી પ્રાથમિક તપાસ પદ્ધતિનો ઉપયોગ કરવામાટે ઉદ્યોગ સાહસિકો અને ફૂડ પ્રોસેસર્સને ભલામણ કરવામાં આવે છે. આ પદ્ધતિમાં નમૂનાનું મિથેનોલ દ્વારા નિષ્કર્ષણ કરી, તેનું વોટમેનફિલ્ટરપેપર ઉપર ટપકું મૂકવામાં આવે છે અને ત્યાર બાદ હેન્ડ હેલ્ડ યુવી ટોર્ચની મદદથી તેની તપાસ કરવામાં આવે છે. આ

	પ્રકૃતિ દ્વારા ન્યૂનતમ ૧૦ પીપીએમ (૦.૦૦૧%) જેટલી ઓછી રોડામાઈન-બીની માત્રા હાજરી પણ શોધી શકાય છે.આ પ્રકૃતિ અત્યંત સરળ છે, જેમાં ખૂબજ ઓછા સાધનોની જરૂર પડે છે, અને તે ફિલ્ડ-લેવલ તેમજ નિયમિત તપાસ માટે અત્યંત ઉપયોગી છે. Approved the recommendation with following suggestion 1. Recast the English text as per Gujarati text of recommendation [Action: PI & HOD, Dept. of FSQA, CFPTBE, AAU, ANAND]
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JUNAGADH AHRICULTURAL UNIVERSITY, JUNAGADH

22.7.1.10

Simulating the climate change impacts on water productivity of chickpea using Aqua Crop Model (AICRP on Irrigation water management)

Recommendation:

The farmers of the South Saurashtra Agro-Climatic zone growing chickpea crop are recommended to apply the irrigations using drip systems as per the following details and schedules to get higher seed yield and net return as well as to make it more climate resilient as compared to irrigations by border method adopted by farmers.

Specifications of drip irrigation system and its operating time fo chickpea crop

Drip irrigation system details	Nos and depth of irrigation and drip irrigation system operating time for chickpea crop during winter season			
	DAS	No of irrigations	Irrigation depth (mm)	Drip System Operating time
Lateral type=Inline Inline drip size=16mm (OD) Dripper rate=4lph Dripper spacing=0.4m Lateral spacing=0.9m Nos of pair of crop rows per drip line=1 Parried row: 0.3mx0.6mx0.1m	0	1	20	1 h & 48 Minutes
	7	1	10	54 Minutes
	35	1	16	1 h & 27 Minutes
	42	1	17	1 h & 32 Minutes
	49	1	18	1 h & 37 Minutes
	55	1	19	1 h & 43 Minutes
	61	1	21	1 h & 53 Minutes
	67,73,79,86,93	5	20	1 h & 48 Minutes
	Total	12	221	19h & 54 Minutes

ખેડૂત ઉપયોગી ભલામણ :

દક્ષિણ સૌરાષ્ટ્ર ખેત-આબોહવાકીય વિસ્તારમાં ચણાનું વાવેતર કરતા ખેડૂતોને ક્યારા પધ્ધતિથી પિયત આપવાની સરખામણીએ વધુ ઉત્પાદન અને વળતર મેળવવા તેમજ વાતાવરણ બદલાવમાં પણ ટકાઉ ઉત્પાદકતા જાળવવા માટે નીચે મુજબની ડ્રીપ પધ્ધતિથી સમયપત્રક મુજબ પિયત આપવાની ભલામણ કરવામાં આવે છે.

ડ્રીપ પધ્ધતિ અને પિયત સમયપત્રકની વિગત

ડ્રીપ પિયત પધ્ધતિ વિગત	શિયાળામાં ચણાનાં પાક માટે પિયત ઊંડાઈ, સંખ્યા અને ડ્રીપ પધ્ધતિ – સંચાલન સમય			
	વાવેતર બાદ (દીવસો)	પિયત સંખ્યા	પિયત ઊંડાઈ (મીમી)	સંચાલન સમય
	૦	૧	૨૦	૧ કલાક & ૪૮ મીનીટ

લેટરલ પ્રકાર=ઇનલાઇન . ઇનલાઇન ડ્રીપ સાઈઝ=૧૬મિમિ. ડ્રીપર પ્રવાહ=૪ લી./કલાક. ડ્રીપર અંતર= ૦.૪ મી. ઇનલાઇન અંતર=૦.૯ મી. દરેક ઇનલાઇન ડ્રીપ દીઠ પાક- હારની જોડની સંખ્યા = ૧	૭	૧	૧૦	૫૪ મીનીટ
	૩૫	૧	૧૬	૧ કલાક & ૨૭ મીનીટ
	૪૨	૧	૧૭	૧ કલાક & ૩૨ મીનીટ
	૪૯	૧	૧૮	૧ કલાક & ૩૭ મીનીટ
	૫૫	૧	૧૯	૧ કલાક & ૪૩ મીનીટ
	૬૧	૧	૨૧	૧ કલાક & ૫૩ મીનીટ
	૬૭, ૭૩, ૭૯, ૮૬, ૯ ૩	૫	૨૦	૧ કલાક & ૪૮ મીનીટ
	કુલ	૧૨	૨૨૧	૧૯ કલાક & ૫૪ મીનીટ

House approved the recommendation.

[Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]

22.7.1.11	Identification of potential groundwater recharge zones in major river basins of Saurashtra (AICRP on Irrigation water management) Recommendation: Farmers, farmer self-help groups, government line departments, and non-government organizations are recommended to use the maps developed by Junagadh Agricultural University for groundwater recharge and harvesting activities in the Ozat, Bhadar, Aji, Bhogavo, Machhu, Meghal, and Shingoda river basins. These maps delineate good potential groundwater recharge zones covering an area of 7677 square kilometers and identify 33608 suitable locations for groundwater recharge structures such as check dams, ponds, and percolation tanks. The maps for Gujarat state, have been prepared for identifying 95536 square kilometers of good potential groundwater recharge areas and 239885 suitable locations for groundwater recharge structures are also recommended to use to enhance the effectiveness of groundwater recharge interventions. ભલામણ: ખેડૂતો, ખેડૂત સ્વ-સહાય જૂથો, સરકારના સલગ્ન વિભાગો તથા બિન-સરકારી સંસ્થાઓને ઓઝત, ભાદર, આજી, ભોગાવો, મચ્છુ, મેઘલ અને શિંગોડા નદી તટપ્રદેશોમાં ભૂગર્ભ જળ રિચાર્જિંગ અને જળ સંચય પ્રવૃત્તિઓ માટે જુનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલા નકશાઓનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આ નકશાઓમાં ૭૬૭૭ ચોરસ કિલોમીટર વિસ્તારના સારા ક્ષમતાવાળા ભૂગર્ભ જળ રિચાર્જ ઝોન તેમજ ચેક ડેમ, તળાવ અને પર્કોલેશન ટેંક જેવા રિચાર્જ સ્ટ્રક્ચર્સ માટે યોગ્ય એવા ૩૩૬૦૮ સ્થળોનો સમાવેશ થાય છે. ઉપરાંત, ગુજરાત માટે ૯૫૫૩૬ ચોરસ કિલોમીટર વિસ્તારના સારા ક્ષમતાવાળા ભૂગર્ભ જળ રિચાર્જ વિસ્તારો તથા ૨૩૯૮૮૫ ભૂગર્ભ જળ રિચાર્જ સ્ટ્રક્ચર્સ માટે યોગ્ય સ્થળોના નકશાઓ તૈયાર કરવામાં આવ્યા છે, જે ગુજરાત રાજ્ય માટે આ
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	નકશાઓનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. જેથી ભૂગર્ભ જળ રિચાર્જ પ્રવૃત્તિઓની અસરકારકતા, ટકાઉપણું અને પ્રભાવ વધારી શકાય. House approved the recommendation with following suggestion. 1. Change data of suitable locations as per Table 26 in recommendation i.e 33608 in place of 43009. [Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]
22.7.1.12	Study on storage stability of pearl millet flour Recommendation: Food processors and entrepreneurs are recommended to adopt the process technology developed by Junagadh Agricultural University for increasing the shelf life and better retention quality of pearl millet flour. The developed process can safely store the pearl millet flour atleast upto 90 days when packed in vacuum-sealed aluminium foil pouches. ભલામણ: ફૂડ પ્રોસેસર્સ અને ઉદ્યોગકારોને બાજરાના લોટનો સંગ્રહ કરવા માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ પદ્ધતિ અપનાવવાની ભલામણ કરવામાં આવે છે. વિકસિત કરેલ પ્રક્રિયા વડે બાજરાના લોટને એલ્યુમિનિયમ ફોઈલ પાઉચમાં વેક્યુમપેક કરી ઓછામાં ઓછા ૯૦ દિવસ સુધી સુરક્ષિત રીતે સંગ્રહ કરી શકાય છે. House approved the recommendation with following suggestions. 1. Remove “Farmer”, “upto” and “of storage period” word from recommendation paragraph. 2. Recast the recommendation [Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]
22.7.1.13	Pasteurization of Kesar mango pulp through ohmic heating treatment Recommendation: Mango pulp processors are recommended to adopt the ohmic heating process technology developed by Junagadh Agricultural University for enhancing the shelf life and maintaining the quality of Kesar mango pulp. The developed process involves treating the mango pulp in the ohmic heating system at voltage gradient of 20 V/cm till pulp attained the temperature of 80 °C. This process can extend the shelf life of Kesar mango pulp upto 75 days under 6-7°C refrigerated storage condition. ભલામણ: કેરીના પલ્પ પ્રોસેસરોને કેસર કેરીના પલ્પની સંગ્રહ શક્તિમાં વધારો કરવા અને તેની ગુણવત્તા જાળવી રાખવા માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ ઓહમિક હિટીંગ પ્રક્રિયા ટેકનોલોજી અપનાવવાની ભલામણ કરવામાં આવે છે. વિકસિત પ્રક્રિયામાં કેરીના પલ્પને ઓહમિક હિટીંગ સિસ્ટમમાં ૨૦ વોલ્ટ/સે.મિ.ના વોલ્ટેજ ગ્રેડીયન્ટ પર જ્યાં સુધી પલ્પનું તાપમાન ૮૦ °સે સુધી પહોંચે ત્યાં સુધી ટ્રીટમેન્ટ આપવામાં આવે છે. આ પ્રક્રિયાથી ૬-૭ °સે તાપમાને કેસર કેરીના પલ્પની સંગ્રહ શક્તિ ૭૫ દિવસ સુધી વધારી શકાય છે. House approved the recommendation with following suggestions. 1. Recast the gujarati recommendaiton. [Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]

22.7.1.14	Optimization of process parameters for protein extraction from partially defatted peanut flour through fermentation Recommendation: The processors involved in the peanut processing are recommended to adopt a process technology developed by Junagadh Agricultural University for the extraction of protein from partially defatted peanut flour. The process involves preparing a mixture of partially defatted peanut flour and water in a 1:10.5 (w/v) ratio and subjecting the mixture to sonication for 9.0 minutes. The suspension is then fermented using <i>Lactobacillus plantarum</i> bacteria at 37°C until the pH of suspension decreases to 4.3, followed by drying in a hot-air oven at 45°C for five hours. This method is capable to extract 42 % true protein from partially defatted peanut flour. OR The processors involved in the peanut processing are recommended to adopt a process technology developed by Junagadh Agricultural University for the extraction of protein from partially defatted peanut flour. The process involves preparing a mixture of partially defatted peanut flour and water in a 1:9.4 (w/v) ratio and subjecting the mixture to sonication for 9.5 minutes. The suspension is then fermented using <i>Pediococcus acidilactici</i> bacteria at 37°C until the pH of suspension decreases to 4.6, followed by drying in a hot-air oven at 45°C. for five hours. This method is capable to extract 43 % true protein from partially defatted peanut flour. ભલામણ : મગફળી પ્રોસેસિંગ સાથે સંકળાયેલ પ્રોસેસરોને આંશિક તેલ ધરાવતા મગફળીના દાણાના લોટમાંથી પ્રોટીનના ઉત્કર્ષણ માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલી પ્રોસેસ ટેકનોલોજી અપનાવવાની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયામાં આંશિક તેલ ધરાવતા મગફળીના લોટ અને પાણીને ૧:૧૦.૫ (w/v)નાં પ્રમાણમાં મિશ્રણ તૈયાર કરી તેને ૯.૦ મિનીટ માટે સોનીકેશન આપવામાં આવે છે. ત્યારબાદ આ સસ્પેન્સનને “લેક્ટોબેસિલસ પ્લાન્ટેરમ” બેક્ટેરિયાનો ઉપયોગકરીને ૩૭°સે તાપમાન પર, જ્યાં સુધી સસ્પેન્સનની પી.એચ. ૪.૩ સુધી ઘટી ન જાય ત્યાં સુધી આથવણની પ્રક્રિયા કરી મિશ્રણને ૪૫ °સે તાપમાન પર હોટ એર ઓવનમાં પાંચ કલાક માટે સૂકવવામાં આવે છે. આ પ્રક્રિયા વડે આંશિક તેલ ધરાવતા મગફળીના દાણાના લોટમાંથી ૪૨ % જેટલું વાસ્તવિક પ્રોટીન મેળવી શકાય છે. અથવા આંશિક તેલ ધરાવતા મગફળીના લોટ અને પાણીને ૧:૯.૪ (w/v)નાં પ્રમાણમાં મિશ્રણ તૈયાર કરી તેને ૯.૫ મિનીટ માટે સોનીકેશન આપવામાં આવે છે. ત્યારબાદ આ સસ્પેન્સનને “પીડીયોકોકસ એસીડીલેક્ટીસી” બેક્ટેરિયાનો ઉપયોગકરીને ૩૭°સે તાપમાન પર, જ્યાં સુધી સસ્પેન્સનની પી.એચ. ૪.૬ સુધી ઘટી ન જાય ત્યાં સુધી આથવણની પ્રક્રિયા કરી મિશ્રણને ૪૫ °સે તાપમાન પર હોટ એર ઓવનમાં પાંચ કલાક માટે સૂકવવામાં આવે
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	છે. આ પ્રક્રિયા વડે આંશિક તેલ ધરાવતા મગફળીના દાણાના લોટમાંથી ૪૩ % જેટલું વાસ્તવિક પ્રોટીન મેળવી શકાય છે. House approved the recommendation with following suggestion. 1. Make the two recommendation para (22.7.1.14.1 and 22.7.1.14.2) by using “OR” between both the recommendations under single title [Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]
22.7.1.15	Development of millet-based extruded product supplemented with partially defatted peanut flour Recommendation (Revised): Snack manufacturing units are recommended to adopt a process technology developed by Junagadh Agricultural University for the preparation of pearl millet based extruded product supplemented with partially defatted peanut flour to increase the protein content in such products. The process involves blending of pearl millet flour with partially defatted peanut flour followed by extrusion cooking. This process enables the production of pearl millet based extruded product with improved protein content and desired product characteristics. They are also recommended to adopt storage method developed by Junagadh Agricultural University for this extruded product. This method can safely store the developed extruded product up to 180 days under ambient condition. ભલામણ : આંશિક તેલ ધરાવતા મગફળીના લોટ સાથે સંયોજિત બાજરા આધારિત એક્સ્ટ્રુડેડ પ્રોડક્ટનું ઉત્પાદન નાસ્તા ઉત્પાદન કરતા ઉદ્યોગકારોને બાજરા આધારિત એક્સ્ટ્રુડેડ પ્રોડક્ટસમાં પ્રોટીનની માત્રામાં વધારો કરવા જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ પ્રક્રિયાને અપનાવવાની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયામાં બાજરાના લોટને આંશિક તેલ ધરાવતા મગફળીના લોટ સાથે સંયોજિત કરી ત્યારબાદ એક્સ્ટ્રુઝન કુકિંગની પ્રક્રિયા કરવામાં આવે છે આપ્રક્રિયા વડે વધુ માત્રામાં પ્રોટીન અને ઇચ્છિત લાક્ષણિકતાઓ ધરાવતી બાજરા આધારિત એક્સ્ટ્રુડેડ પ્રોડક્ટસ તૈયાર કરી શકાય છે. એક્સ્ટ્રુડેડ પ્રોડક્ટસના સંગ્રહ માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ પદ્ધતિ અપનાવવાની ભલામણ કરવામાં આવે છે. આ પદ્ધતિ દ્વારા વિકસિત એક્સ્ટ્રુડેડ પ્રોડક્ટને સામાન્ય વાતાવરણમાં ૧૮૦ દિવસ સુધી સુરક્ષિત રીતે સંગ્રહ કરી શકાય છે. House approved the recommendation with following suggestion. 1. Merge both the recommendation (22.7.1.15.1 and 22.7.1.15.2) and recast the recommendation [Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]
22.7.1.16	Development of Jamun leather using refractance window dryer (AICRP on Post-Harvest Engg. & Technology) Recommendation (Revised): Food processors are recommended to use process technology developed by Junagadh Agricultural University to develop jamun leather at particular temperature and thickness in the Refractance Window Dryer. This jamun leather have good biochemical content and sensory score. This jamun leather could be stored in plastic bag or aluminum foil with vacuum condition in refrigeration for 60 days with good sensory score. ભલામણ : ખાદ્ય પ્રોસેસરોને જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા આપવામાં આવેલ રીફ્રેક્ટન્સ વિન્ડો ડ્રાયરમાં ચોક્કસ તાપમાન અને જાડાઈ પર જામુન (રાવણા) લેધર (પટ્ટી) વિકસાવવાની

	પ્રોસેસ ટેકનોલોજીનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે. આ જામુન લેધરમાં સારી બાયોકેમિકલ અને સેન્સરી સ્કોર છે. આ જામુન લેધરને વેક્યુમાઈઝડ પ્લાસ્ટિક બેગ અથવા એલ્યુમિનિયમ ફોઈલમાં સારી સેન્સરી સ્કોર સાથે ફીઝમાં ૬૦ દિવસ સુધી સંગ્રહ કરી શકાય છે. House approved the recommendation with following suggestion. 1. Recast the recommendation in both language <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.1.17	Standardization of process technology for preparation of peanut Sauce (AICRP on Post-Harvest Engg. & Technology)
22.7.1.17.1	Recommendation: Peanut processors are recommended to adopt a process technology developed by Junagadh Agricultural University for the production of peanut sauce through chemical process (Acid hydrolysis). The process involves blending of partially defatted peanut kernels with roasted wheat pieces in a 90:10 ratio, followed by acid hydrolysis using a 16.5% acid concentration for 25 hours. The developed process can efficiently prepare the peanut sauce from the partially defatted peanut kernels and roasted wheat pieces that meets the established quality standards for commercial peanut sauce. This peanut sauce can be stored in aluminium foil spout pouch, having a thickness of 100 µm up to 90 days under ambient condition. ભલામણ - ૧: રાસાયણિક પદ્ધતિદ્વારા પીનટ સોસ તૈયાર કરવાની પ્રોસેસ ટેકનોલોજી મગફળીના પ્રોસેસરને પીનટ સોસના ઉત્પાદન માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલી રાસાયણિક પ્રક્રિયા (એસિડ હાઇડ્રોલિસિસ) અપનાવવાની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયામાં આંશિક તેલ ધરાવતા મગફળીના દાણા અને શેકેલા ઘઉંના ટુકડાઓને ૯૦:૧૦ ના પ્રમાણમાં મિશ્રિત કરવામાં આવે છે, ત્યારબાદ ૧૬.૫% એસિડના સાંદ્રણ સાથે ૨૫ કલાક સુધી એસિડ હાઇડ્રોલિસિસ કરવામાં આવે છે. વિકસિત પ્રક્રિયા દ્વારા આંશિક તેલ ધરાવતા મગફળીના દાણા અને શેકેલા ઘઉંના ટુકડાનો ઉપયોગ કરીને પીનટ સોસ અસરકારક રીતે તૈયાર કરી શકાય છે, જે વ્યવસાયિક પીનટ સોસ માટે નિર્ધારિત ગુણવત્તા ધોરણોને પૂર્ણ કરે છે. આ પીનટ સોસને ૧૦૦ માઈક્રોમીટર જાડાઈ ધરાવતા સ્પાઉટ પાઉચમાં પેક કરીને સંગ્રહ કરવાથી તેને સામાન્ય વાતાવરણમાં ૯૦ દિવસ સુધી સુરક્ષિત રીતે સાચવી શકાય છે. House approved the recommendation with following suggestion. 1. Merge first (22.7.1.17.1) and third (22.7.1.17.3) recommendation (storage part) and make it one. <i>[Action: HoD, Dpet. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.1.17.2	Process technology for the preparation of peanut sauce through fermentation method Recommendation: Peanut processors are recommended to adopt a process technology developed by Junagadh Agricultural University for the production of peanut sauce through fermentation process. The process involves blending of partially defatted peanut cake with roasted wheat pieces in a 66:34 ratio, followed by brine fermentation for 158 days. The developed process can efficiently prepare the peanut sauce from the partially defatted peanut cake

	and roasted wheat pieces that meets the established quality standards for commercial peanut sauce. ભલામણ -૨ : : આથવણ પદ્ધતિ દ્વારા પીનટ સોસ તૈયાર કરવાની પ્રોસેસ ટેકનોલોજી મગફળીના પ્રોસેસર્સને પીનટ સોસના ઉત્પાદન માટે જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલી આથવણ પ્રક્રિયા અપનાવવાની ભલામણ કરવામાં આવે છે. આ પ્રક્રિયામાં આંશિક તેલ ધરાવતી મગફળીની કેક અને શેકેલા ઘઉંના ટુકડાઓને ૬૬:૩૪ના પ્રમાણમાં મિશ્રિત કરવામાં આવે છે, ત્યારબાદ ૧૫૮ દિવસ સુધી ખારાપાણી (બ્રાઇન) દ્વારા આથવણ પ્રક્રિયા કરવામાં આવે છે. વિકસિત પ્રક્રિયા દ્વારા આંશિક તેલ ધરાવતી મગફળીની કેક અને શેકેલા ઘઉંના ટુકડાનો ઉપયોગ કરીને પીનટ સોસ અસરકારક રીતે તૈયાર કરી શકાય છે, જે વ્યવસાયિક પીનટ સોસ માટે નિર્ધારિત ગુણવત્તા ધોરણોને પૂર્ણ કરે છે. House approved the recommendation. [Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]																																																
22.7.1.18	Study on dehulling characteristics of different sesame cultivars (AICRP on Sesame) Recommendation: The sesame processing industries and entrepreneurs are recommended to adopt variety specific dehulling protocols developed by Junagadh Agricultural University. These process protocol gave higher dehulling efficiency, hullability, whole dehulled kernel recovery, extraction rate with lower yield loss. The variety specified standardized operating conditions and their outputs are summarized below: <table><tr><th>Process Parameters</th><th>G. Til 4</th><th>GJT 5</th><th>G. Til 6</th></tr><tr><td>Water soaking time (min.)</td><td>73.00</td><td>71.50</td><td>72.50</td></tr><tr><td>Hydration temperature (°C)</td><td>51.00</td><td>53.00</td><td>51.00</td></tr><tr><td>Dehulling time (min.)</td><td>6.00</td><td>6.50</td><td>6.50</td></tr><tr><td>Dehulling efficiency (%)</td><td>83.00 ± 0.49</td><td>84.04 ± 1.52</td><td>81.94 ± 1.26</td></tr><tr><td>Hullability (%)</td><td>70.37 ± 0.32</td><td>69.13 ± 1.44</td><td>70.08 ± 1.08</td></tr><tr><td>Yield loss (%)</td><td>1.91 ± 0.12</td><td>1.94 ± 0.08</td><td>1.90 ± 0.05</td></tr><tr><td>Whole dehulled kernel recovery (%)</td><td>82.87 ± 0.42</td><td>84.07 ± 1.62</td><td>81.20 ± 1.72</td></tr><tr><td>Extraction rate (%)</td><td>89.74 ± 0.56</td><td>89.74 ± 2.72</td><td>92.74 ± 1.16</td></tr></table> ભલામણ: તલના પ્રોસેસિંગ ઉદ્યોગો તથા ઉદ્યોગ સાહસિકોને જૂનાગઢ કૃષિ યુનિવર્સિટી દ્વારા તલની વિવિધ જાતો માટે વિકસાવવામાં આવેલી જાત મુજબની ફોતરી (ડિહલિંગ) કાઢવાની પ્રક્રિયા અપનાવવાની ભલામણ કરવામાં આવે છે. આ વિકસાવવામાં આવેલી ડિહલિંગ પ્રક્રિયાથી ઉચ્ચ ડિહલિંગ કાર્યક્ષમતા, ફોતરી કાઢવાનો દર, ફોતરી કાઢેલ આખા દાણાની પ્રાપ્તિ અને નિષ્કર્ષણ દર મળે છે. તેમજ ઓછું ઉપજ નુકશાન થાય છે. જાત મુજબ ભલામણ કરેલી પ્રક્રિયાનાં માનકો અને તેના પરિણામોનો સારાંશ નીચે મુજબ છે. <table><tr><th>પ્રક્રિયાના માનકો</th><th>ગુ .તલ ૪</th><th>ગુ.જ .તલ ૫</th><th>ગુ .તલ ૬</th></tr><tr><td>ગરમ પાણીમાં પલાળવાનો સમય</td><td>૭૩.૦૦</td><td>૭૧.૫૦</td><td>૭૨.૫૦</td></tr><tr><td>ગરમ પાણીનું તાપમાન (ડિગ્રી સે.)</td><td>૫૧.૦૦</td><td>૫૩.૦૦</td><td>૫૧.૦૦</td></tr></table>	Process Parameters	G. Til 4	GJT 5	G. Til 6	Water soaking time (min.)	73.00	71.50	72.50	Hydration temperature (°C)	51.00	53.00	51.00	Dehulling time (min.)	6.00	6.50	6.50	Dehulling efficiency (%)	83.00 ± 0.49	84.04 ± 1.52	81.94 ± 1.26	Hullability (%)	70.37 ± 0.32	69.13 ± 1.44	70.08 ± 1.08	Yield loss (%)	1.91 ± 0.12	1.94 ± 0.08	1.90 ± 0.05	Whole dehulled kernel recovery (%)	82.87 ± 0.42	84.07 ± 1.62	81.20 ± 1.72	Extraction rate (%)	89.74 ± 0.56	89.74 ± 2.72	92.74 ± 1.16	પ્રક્રિયાના માનકો	ગુ .તલ ૪	ગુ.જ .તલ ૫	ગુ .તલ ૬	ગરમ પાણીમાં પલાળવાનો સમય	૭૩.૦૦	૭૧.૫૦	૭૨.૫૦	ગરમ પાણીનું તાપમાન (ડિગ્રી સે.)	૫૧.૦૦	૫૩.૦૦	૫૧.૦૦
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ગરમ પાણીમાં પલાળવાનો સમય	૭૩.૦૦	૭૧.૫૦	૭૨.૫૦																																														
ગરમ પાણીનું તાપમાન (ડિગ્રી સે.)	૫૧.૦૦	૫૩.૦૦	૫૧.૦૦																																														

	ડિહલિંગ સમય (મિનિટ)	૬.૦૦	૬.૫૦	૬.૫૦
	ડિહલિંગ કાર્યક્ષમતા (%)	૮૩.૦૦ ± ૦.૪૮	૮૪.૦૪ ±	૮૧.૮૪ ±
	ફોતરી કાઢવાનો દર (%)	૭૦.૩૭ ± ૦.૩૨	૬૯.૧૩ ±	૭૦.૦૮ ±
	ઉપજ નુકશાન (%)	૧.૮૧ ± ૦.૧૨	૧.૮૪ ± ૦.૦૮	૧.૮૦ ± ૦.૦૫
	ફોતરી કાઢેલા આખા દાણાની પ્રાપ્તિ	૮૨.૮૭ ± ૦.૪૨	૮૪.૦૭ ±	૮૧.૨૦ ±
	નિષ્કર્ષણ દર (%)	૮૯.૭૪ ± ૦.૫૬	૮૯.૭૪ ±	૮૨.૭૪ ±
House approved the recommendation. [Action: Res. Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli]				

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

22.7.1.19	Design and development of suitable furrow opener for clay loam soil condition for South Gujarat Recommendation: Farmers are recommended to use furrow opener developed by Navsari Agricultural University for better seed germination in clay loam soil condition. ભલામણ: ખેડૂતોને મધ્યમ કાળી જમીનમાં બીજના વધુ સારા અંકુરણ માટે નવસારી કૃષિ યુનિવર્સિટી દ્વારા વિકસિત ફરો ઓપનર વાપરવાની ભલામણ કરવામાં આવે છે. House approved the recommendation with following suggestions. 1. Write ફરો ઓપનર Instead of ફર્લો ખોલનાર 2. Remove South Gujarat from recommendation para 3. Add “Developed by Navsari Agricultural University” in recommendation 4. Recast the recommendation in both languages [Action: HoD, Dept. of FMPE, CAET, NAU, DEDIAPADA]
22.7.1.20	Development of SPV powered cold storage system pulled by tractor for enhancing shelf life of agricultural produce Recommendation: Farmers are recommended to use the 1 ton wheel mounted SPV powered cold storage system developed by NAU to enhance the shelf life of perishable agriculture commodities. The system can maintain approximately 85% humidity and temperature 8 to 12°C. The system has a payback period of about 6 years, making it economically beneficial and a sustainable long-term solution. ભલામણ: ખેડૂતો માટે ભલામણ કરાય છે કે તેઓ NAU દ્વારા વિકસાવવામાં આવેલ ૧ ટન ક્ષમતા ધરાવતું વ્હીલ માઉન્ટેડ એસ. પી. વી. (SPV) આધારિત કોલ્ડ સ્ટોરેજ સિસ્ટમ વપરાશમાં લાવે, જેથી નાશવંત કૃષિ ઉત્પાદનોની શેલ્ફ લાઈફ વધારી શકાય. સિસ્ટમ અંદાજે ૮૫ ટકા આર્દ્રતા અને ૮ થી ૧૨ °સે. તાપમાન જાળવી શકે છે. સિસ્ટમનો પેબેક પિરિયડ આશરે ૬ વર્ષ છે, જે તેને આર્થિક રીતે લાભદાયક અને લાંબા ગાળે ટકાઉ ઉકેલ બનાવે છે. House extended for next year with following suggestions. 1. Conduct the study with different perishable agricultural commodities (at least 3) [Action: HoD, Dept. of BEAS, CAET, NAU, DEDIAPADA]
22.7.1.21	Feasibility of box and concentrating solar cooker for formulation of herbal oil Recommendation (Revised):

	Farmers and Self Help Group (SHG) are recommended to use box type solar cooker for achieving 56 per cent herbal oil recovery in 18 sunshine hours from mixture of coconut oil (500 ml) and herbs (each of 15 g Amla, Henna, Banyan aerial root, Curry leaves and hibiscus flower powder). ભલામણ: ખેડૂતો અને સ્વ-સહાય જૂથને (એસ. એચ. જી.) હર્બલ તેલ બનાવવા માટે બોક્સ પ્રકારના સોલાર ફકરનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે જેમાં નાળીયેર તેલ (૫૦૦ મીલી) અને હર્બ્સ (દરેક વસ્તુ ૧૫-૧૫ ગ્રામ, જેમાં આમળા, મેંદી, વડની હવાઈ મૂળ, કઢી પાન અને હિબિસ્કસ પાવડર) ના મિશ્રણને ૧૮ કલાક સુધી સૂર્ય પ્રકાશમાં રાખવાથી ૫૬ ટકા જેટલું હર્બલ તેલ પ્રાપ્ત કરી શકાય છે. House approved the recommendation with following suggestions. 1. Check the ambient temperature during summer 2. Write “sunshine hours” instead of “two days” 3. Recast the recommendation in both the languages [Action: HoD, Dept. of RERE, CAET, NAU, DEDIAPADA]
22.7.1.22	Standardize forced ripening process using ethylene gas in ripening room for Sonpari mango Recommendation: Farmers and exporters are recommended to ripe Sonpari mango fruits by keeping in ripening chamber at 25°C temperature and 95% RH using 80, 90, 100 and 110 ppm ethylene concentration for ripening in 20, 15, 10 and 5 days, respectively as per method developed by Navsari Agricultural University. In this method, washed Sonpari mango fruits should be kept in the ripening chamber at given conditions for two days followed by fresh air circulation for 24 hours. ભલામણ: ખેડૂતો અને નિકાસકારોને નવસારી કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલી પદ્ધતિ મુજબ, સોનપરી કેરીના ફળોને પકાવવા ૨૫°C તાપમાન અને ૯૫% RH પર રાઈપનીંગ ચેમ્બરમાં રાખીને ઇથિલિનની અનુક્રમે ૮૦, ૯૦, ૧૦૦ અને ૧૧૦ ppm સાંદ્રતાનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે જેનાથી સોનપરી કેરીના ફળ અનુક્રમે ૨૦, ૧૫, ૧૦ અને ૫ દિવસમાં પકાવી શકાય છે. આ પદ્ધતિમાં, ઘોંચેલા સોનપરી કેરીના ફળોને બે દિવસ માટે ઉપરોક્ત પરિસ્થિતિમાં રાઈપનીંગ ચેમ્બરમાં રાખી અને ત્યારબાદ ૨૪ કલાક માટે તાજું હવાનું પરિભ્રમણ ચાલુ રાખવું જોઈએ. House approved the recommendation with following suggestions. 1. Recast the recommendation by mentioning number of days required for ripening at 80ppm, 90ppm, 100ppm and 110ppm separately 2. Remove “cleaned and” from recommendation and mention humidity percentage at the time of ripening 3. Recast the recommendations in both languages [Action: Head of Unit, PHTC, NAU, NAVSARI]
22.7.1.23	Design and development of packaging box for sonpari mango Recommendation:

Farmers and exporter are recommended to use corrugated fiber board boxes developed by Navsari Agricultural University with following specifications for lucrative marketing of *Sonpuri* mango fruits in 3 kg, 5 kg and 10 kg box pack.

Designed specifications of Sonpuri mango CFB box

Particulars	3kg Box			5kg Box			10kg Box		
Type of Box	Two piece (Telescopic)			One-piece tuck-in cover (OSC)			One piece box (RSC)		
Strength of Box, Kgf	113.02			194.78			190.80		
Internal Dimension, mm	L	W	H	L	W	H	L	W	H
	305	245	125	414	151	165	360	330	205
Type of Board	3-ply CFB			3-ply CFB			5-ply CFB		
Type of Flute	E-type			E-type			E+B-type		
Type of Paper	Kraft Liner			Kraft Liner			Kraft Liner		
Max. Moisture of paper (%, wb)	<12%			< 12%			< 12%		
ECT of CFB (N/mm)	1.38			3.52			5.87		
Vent at right and left side each	Ellipsoid Ø3.5cm x 5.5cm (1 Nos/side at center of side)			ellipsoid Ø2.5cm x 5.5cm (1 Nos/side near top corner center of side)			ellipsoid Ø2.5cm x 5.5cm (1 Nos/side near top corner center of side)		
% of ventilation at right and left side each wall	7.08			8.44			5.15		
Vent at front and back side each	Circle Ø2.5cm (2 Nos/side at center of height and at edges of side)			circle Ø2.0cm (2 Nos/side at center of height and at edges of side)			ellipsoid Ø2.0cm x 2cm (2 Nos/side at center of height and at edges of side)		
% of ventilation at front and back side each wall	2.47			0.88			1.84		
Vent at top and bottom side each	Circle Ø2.0cm (4 Nos/side at corner of side)			circle Ø2.0cm (4 Nos/side at corner of side)			ellipsoid Ø2.0cm x 2cm (4 Nos/side at corner of side)		
% of ventilation at top and bottom side each	1.58			1.15			2.24		

ભલામણ:

ખેડૂતો અને નિકાસકારોને નવસારી કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલા કોરુગેટેડ ફાઇબર બોર્ડ બોક્સનો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે, જે સોનપરી કેરીના ફળોના ૩ કિલો, ૫ કિલો અને ૧૦ કિલોના બોક્સ પેકમાં નફાકારક માર્કેટિંગ માટે નીચે મુજબની વિશિષ્ટતાઓ ધરાવે છે.

સોનપરી કેરી માટે CFB બોક્સની ડિઝાઇન કરેલી વિશિષ્ટતાઓ

વિગતો	૩ કિગ્રા બોક્સ (~૯ફળ)	૫ કિગ્રા બોક્સ (~૧૬ફળ)	૧૦ કિગ્રા બોક્સ (~૧૬ફળ)
બોક્સનો પ્રકાર	બે ટુકડા (ઉપરથી ખૂલતું)	એક ટુકડા	એક ટુકડા વળી શકાય તેવું

				કવરને ખૂટી શકાય તેવું (OSC)			(RSC)		
બોક્ષની મજબૂતી ,Kgf	૧૧૩.૦૨			૧૮૪.૭૮			૧૯૦.૮૦		
અંદરના માપ,મીમી	લંબાઈ	પહોળાઈ	ઊંચાઈ	લંબાઈ	પહોળાઈ	ઊંચાઈ	લંબાઈ	પહોળાઈ	ઊંચાઈ
	૩૦								
	૫	૨૪૫	૧૨૫	૪૧૪	૧૫૧	૧૬૫	૩૬૦	૩૩૦	૨૦૫
પુઠાનો પ્રકાર	૩-૫૬ CFB			૩-૫૬ CFB			૫-૫૬CFB		
વમળનો પ્રકાર	E			E			E+B		
કાગળનો પ્રકાર	ક્રાફ્ટલાઇનર			ક્રાફ્ટલાઇનર			ક્રાફ્ટલાઇનર		
કાગળમાં મહત્તમ ભેજ (%,wb)	<૧૨%			<૧૨%			<૧૨%		
પુઠાની ધાર તૂટવાની મજબૂતી (ન્યુ./મીમી)	૧.૩૮			૩.૫૨			૫.૮૭		
ડાબી અને જમણી બાજુની દરેક દિવાલ પર કાણાં	લંબગોળ ૪૩.૫ સેમી. X૫.૫ સેમી (૧ નંગ /બાજુ વચ્ચે)			લંબગોળ ૪૨.૫ સેમી. X૫.૫ સેમી (૧ નંગ /બાજુ ઉપરની ધાર ની વચ્ચે)			લંબગોળ ૪૨.૫ સેમી. X૫.૫ સેમી (૧ નંગ / બાજુ ઉપરની ધાર ની વચ્ચે)		
દરેક ડાબી અને જમણી બાજુની દીવાલ કાણાં બારી ક્ષેત્રફળ,%	૭.૦૮			૮.૪૪			૫.૧૫		
આગળ અને પાછળ બાજુની દરેક દિવાલ પર કાણાં	ગોળ ૪૨.૫ સેમી (૨ નંગ/ બાજુ ઉપરની ધારની વચ્ચે)			ગોળ ૪૨.૦ સેમી (૨ નંગ/ બાજુ ઉપરની ધારની વચ્ચે)			ગોળ ૪૨.૦ સેમી x૨.૦ ૨.૦ સેમી (૧ નંગ/ બાજુ ઉપરની ધારની વચ્ચે)		
દરેક આગળ અને પાછળ બાજુની દીવાલ કાણાં બારી ક્ષેત્રફળ,%	૨.૪૭			૦.૮૮			૧.૮૪		
ઉપર અને નીચેની બાજુની દરેક દિવાલ પર કાણાં	ગોળ ૪૨.૦ સેમી (૨ નંગ/ બાજુના ખૂણે)			ગોળ ૪૨.૦ સેમી (૨ નંગ/ બાજુના ખૂણે)			લંબગોળ ૪૨.૦ સેમી x૨.૦ સેમી (૧ નંગ/ બાજુ બાજુના ખૂણે)		
દરેક ઉપર અને નીચેની બાજુની દીવાલ કાણાં બારી ક્ષેત્રફળ,%	૧.૫૮			૧.૧૫			૨.૨૪		

	House approved the recommendation with following suggestions. 1. Remove the sentence “It can be scribed, that the JAU box... by NAU for Sonpari mango fruits” from conclusion. 2. Recast the recommendation paragraph of both languages and remove the word “attractive” from recommendation. [Action: Head of Unit, PHTC, NAU, NAVSARI]
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**SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY,
SARDARKRUSHINAGAR**

22.7.1.24	Strip intercropping of groundnut and greengram under dryland condition Recommendation: The farmers of the North Gujarat agro-climatic zone-IV are recommended to grow 6.75 m wide alternate strips of main crop and 45 cm row spacing groundnut across the slope for getting higher yield, net return and rainwater productivity under rainfed farming. ખેડૂત ઉપયોગી ભલામણ : ઉત્તર ગુજરાત ખેત-આબોહવાકિય વિભાગ-૪ મા વરસાદ આધારિત ખેતી કરતા ખેડૂતોને વધુ ઉત્પાદન, આવક અને વરસાદી પાણીની વધુ ઉત્પાદકતા માટે મુખ્યપાકની અને ૪૫ સેમીના ચાસે મગફળીના પાકની વાવણી ૬.૭૫ મીટર પહોળી આંતરપટ્ટીઓમાં ઢાળની લમ્બ દિશામાં કરવાની ભલામણ કરવામાં આવે છે. House approved the recommendation with following suggestion. 1. Recast the recommendation in both the languages. [Action: Res. Scientist, CNRM, SDAU, SARDARKRUSHINAGAR]
22.7.1.25	Effect of summer ploughing with tractor and mini tractor on in- situ moisture conservation and yield of rainfed castor Recommendation: The farmers of North Gujarat growing rainfed castor are recommended for ploughing before onset of the monsoon every year using M.B. plough (width: 45 or 75cm) for obtaining higher castor seed yield, net return, energy use efficiency and rain water productivity. ખેડૂત ઉપયોગી ભલામણ : ઉત્તર ગુજરાતમાં વરસાદ આધારિત દિવેલાની ખેતી કરતા ખેડૂતોને દિવેલાનું વધુ ઉત્પાદન, વળતર, વરસાદી પાણીની ઉત્પાદકતા અને ઊર્જા કાર્યક્ષમતા માટે એમ.બી. પ્લાઉ (પહોળાઈ: ૪૫ અથવા ૭૫ સેમી) નો ઉપયોગ કરી ચોમાસા પહેલા દર વર્ષે ખેડ કરવા ભલામણ કરવામાં આવે છે. House approved the recommendation with following suggestions. 1. Remove the MB Plough height data from recommendation 2. Replace “ before Summer” with “before onset of the monsoon” in recommendation in both languages. [Action: Res. Scientist, CNRM, SDAU, SARDARKRUSHINAGAR]

22.7.2 SCIENTIFIC INFORMATIONS

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.7.2.1	Estimation of spatio-temporal surface soil moisture using multispectral remote sensing, GIS and deep learning techniques Scientific Information: The scientists are informed to use Deep learning based MLP-ANN with backpropagation architecture developed by Anand Agricultural University for soil moisture estimation using remote sensing and deep learning. The Vegetative Class model gave test R^2 0.79 consisted of 3 hidden layers with a neuron structure of 64–32–16. It was trained using a learning rate of 0.001, batch size of 32, dropout rate of 0.25, and L2 regularization of 0.001. The model was trained for a maximum of 150 epochs, achieved best convergence around epoch 110, and used an early stopping patience of 20 epochs. The Non-Vegetative Class gave test R^2 0.83 model also used 3 hidden layers with a neuron structure of 64–32–16. The model employed a learning rate of 0.0012, batch size of 32, dropout rate of 0.20, and L2 regularization of 0.0008. Training was performed for a maximum of 130 epochs, with best convergence achieved around epoch 95 and an early stopping patience of 15 epochs. The Mixed Vegetation Class gave test R^2 0.80 model used a deeper architecture with 4 hidden layers and a neuron structure of 128–64–32–16. The model was trained using a learning rate of 0.0008, batch size of 16, dropout rate of 0.30, and L2 regularization of 0.0015. It was trained for a maximum of 170 epochs, achieved best convergence around epoch 135, and applied an early stopping patience of 25 epochs. The relationship $K_c = 1.08 \text{ NDVI} + 0.2623$ for maize with R^2 as 0.76 is recommended for estimation of crop evapotranspiration and irrigation water requirements at the taluka scale. House approved the scientific information with following suggestion. 1. Recast the scientific information [Action: PI & HOD, Dept. of SWCE Dept., CAET, GODHRA]																
22.7.2.2	Evaluation of GPM IMERG, TRMM and CHIRPS precipitation products over middle Gujarat Scientific Information: Based on a comparative evaluation of Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS), Global Precipitation Measurement (GPM) IMERG, and Tropical Rainfall Measuring Mission (TRMM) datasets across nine locations in Middle Gujarat, the GPM IMERG dataset demonstrated the highest capability in identifying rainfall occurrence patterns. The error magnitude analysis indicates that GPM consistently exhibits lower errors at monthly and annual scales compared to TRMM and CHIRPS dataset. Areal pixel-to-pixel matching is preferable to point-to-areal pixel approaches, as it enhances spatial accuracy and minimizes validation errors in satellite-based rainfall assessments. House approved the scientific information. [Action: PI & HOD, Dept. of Agri. Engg., BACA, ANAND]																
22.7.2.3	Visual classification model for procurement of maize kernel used for poultry feed Scientific Information: A Convolutional Neural Network (CNN)-based deep learning model can be utilized for rapid visual inspection of maize kernels in the poultry industry, enabling automated detection and classification of kernel quality. The model accepts maize kernel inputs of size $224 \times 224 \times 3$ pixels to enable automated detection and classification of kernel quality. The model parameters are as follows: <table border="1" data-bbox="405 1697 1444 2038"> <tr> <td>Input Layer</td><td>$224 \times 224 \times 3$ pixel</td></tr> <tr> <td>Convolutinal Block</td><td>4 blocks, each with Conv2D + ReLU + MaxPooling</td></tr> <tr> <td>Fully connected layers</td><td>3 layers</td></tr> <tr> <td>Output Layer</td><td>3 classes</td></tr> <tr> <td>Learning rate</td><td>0.0001</td></tr> <tr> <td>Batch size</td><td>16</td></tr> <tr> <td>Epochs</td><td>15</td></tr> <tr> <td>Optimizer</td><td>Adam</td></tr> </table>	Input Layer	$224 \times 224 \times 3$ pixel	Convolutinal Block	4 blocks, each with Conv2D + ReLU + MaxPooling	Fully connected layers	3 layers	Output Layer	3 classes	Learning rate	0.0001	Batch size	16	Epochs	15	Optimizer	Adam
Input Layer	$224 \times 224 \times 3$ pixel																
Convolutinal Block	4 blocks, each with Conv2D + ReLU + MaxPooling																
Fully connected layers	3 layers																
Output Layer	3 classes																
Learning rate	0.0001																
Batch size	16																
Epochs	15																
Optimizer	Adam																

	Weight decay	1.00×10^{-4}
	Dropout rates	0.5, 0.3
	Scheduler	ReduceLROnPlateau
	House approved the scientific information. [Action: PI & HOD, Dept. of AIT, CAIT, AAU, ANAND]	
22.7.2.4	Compartmentalization of Pigeon Pea (<i>Cajanus cajan</i> L.) varieties using computer vision Scientific Information: The scientific community is suggested to adopt an algorithm developed by Anand Agricultural University for classifying Pigeon pea (<i>Cajanus cajan</i> L.) varieties [GT -106, AGT-2, GT -109]. Image Acquisition: Scanned using flatbed scanner with black background at 100 DPI with color in JPEG format. Image Segmentation: Gray scale, non-linear median filter applied, Mean Denoising, Gaussian Blur, convert to binary, Canny edge detection, Dilation to connect broken or disjoint edge. Feature Extraction: Extract Area, Perimeter, Solidity, Aspect Ratio, Extent, Equi Diameter, Orientation Angle, Major and Minor axis, HSV and RGB for each grain. Model Training: Multi-Layer Perceptron with input layer with 15 nodes, 1 hidden layer containing 9 nodes sigmoid activation function and 1 output layer with 3 and sigmoid activation function, Learning Rate: 0.3, Momentum: 0.2; Validation Set Size: 20 (hold-out validation set %) and Validation Threshold: 20. House approved the scientific information. [Action: PI & HOD, Dept. of AIT, CAIT, AAU, ANAND]	

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.7.2.5	Simulating the Climate Change Impacts on Water Productivity of Chickpea using Aqua Crop Model (AICRP on Irrigation water management)																																																		
22.7.2.5.1	Scientific Information: The scientific communities working on simulation of chickpea response to irrigation water management strategies using AquaCrop model are informed to use the following information to calibrate the model for chickpea crop under border or drip irrigation. Aqua crop model calibration parameters <table> <tr> <th rowspan="2">S N</th><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="2">Parameter value for</th></tr> <tr> <th>Border irrigation</th><th>Drip irrigation</th></tr> <tr> <td>1</td><td>Threshold base temperature for crop development</td><td>°C</td><td>5</td><td>5</td></tr> <tr> <td>2</td><td>Threshold upper temperature for crop development</td><td>°C</td><td>30</td><td>30</td></tr> <tr> <td>3</td><td>Initial canopy cover (CC₀)</td><td>%</td><td>1.11</td><td>1.11</td></tr> <tr> <td>4</td><td>Canopy development rate (CGC)</td><td>% / day</td><td>11.1</td><td>12.1</td></tr> <tr> <td>5</td><td>Non-stressed crop transpiration (K_{ctr})</td><td>Fraction</td><td>0.85</td><td>0.9</td></tr> <tr> <td>6</td><td>Crop water productivity-normalized for climate and CO₂</td><td>gm/sq.m</td><td>25</td><td>14.7</td></tr> <tr> <td>7</td><td>Canopy decline rate (CDC)</td><td>% / day</td><td>13.1</td><td>11.8</td></tr> <tr> <td>8</td><td>Maturity</td><td>days</td><td>103</td><td>100</td></tr> </table>				S N	Parameter	Unit	Parameter value for		Border irrigation	Drip irrigation	1	Threshold base temperature for crop development	°C	5	5	2	Threshold upper temperature for crop development	°C	30	30	3	Initial canopy cover (CC ₀)	%	1.11	1.11	4	Canopy development rate (CGC)	% / day	11.1	12.1	5	Non-stressed crop transpiration (K _{ctr})	Fraction	0.85	0.9	6	Crop water productivity-normalized for climate and CO ₂	gm/sq.m	25	14.7	7	Canopy decline rate (CDC)	% / day	13.1	11.8	8	Maturity	days	103	100
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7	Canopy decline rate (CDC)	% / day	13.1	11.8																																															
8	Maturity	days	103	100																																															

	9	Harvest Index(HI)	%	26	25																																																																												
	House approved the scientific information. <i>[Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]</i>																																																																																
22.7.2.5.2	Scientific Information: The scientific communities working on irrigation water management strategies are informed that the impact of climate change on the chickpea crop can be as below. <table><tr><th colspan="2" rowspan="2">Outcome Parameters at present climate (Last 10 Years average)</th><th colspan="4">Percent Increase(+)/Decrease(-) of outcome parameter over present if warming by</th></tr><tr><th>0.5 °C</th><th>1.0 °C</th><th>1.5 °C</th><th>2.0 °C</th></tr><tr><td>GDD (days-°C)</td><td>1840 days-°C</td><td>+2.80</td><td>+5.60</td><td>+8.40</td><td>+11.31</td></tr><tr><td>ET_o (mm)</td><td>329 mm</td><td>+1.20</td><td>+2.41</td><td>+3.63</td><td>+5.06</td></tr><tr><td>ET_c (mm)</td><td>226mm</td><td>+1.23</td><td>+2.46</td><td>+3.66</td><td>+5.11</td></tr><tr><td>Irrigation water under Surface irrigation</td><td>305mm</td><td>+1.21</td><td>+2.62</td><td>+3.64</td><td>+4.92</td></tr><tr><td>Irrigation water under Drip irrigation</td><td>224 mm</td><td>+1.21</td><td>+2.41</td><td>+3.62</td><td>+5.36</td></tr><tr><td>Biomass Yield under Surface irrigation</td><td>8109 kg/ha</td><td>-1.60</td><td>-3.11</td><td>-4.14</td><td>-6.14</td></tr><tr><td>Biomass Yield under Drip irrigation</td><td>8530kg/ha</td><td>-0.13</td><td>-0.18</td><td>-0.26</td><td>-0.68</td></tr><tr><td>Seed yield under Surface irrigation</td><td>2334 kg/ha</td><td>-1.59</td><td>-3.08</td><td>-4.58</td><td>-6.13</td></tr><tr><td>Seed yield under Drip irrigation</td><td>2452 kg/ha</td><td>-0.08</td><td>-0.16</td><td>-0.25</td><td>-0.65</td></tr><tr><td>Water Productivity under Surface irrigation</td><td>7.65 kg/ha-mm</td><td>-2.76</td><td>-5.56</td><td>-7.93</td><td>-10.53</td></tr><tr><td>Water Productivity under Drip irrigation</td><td>10.95 kg/ha-mm</td><td>-1.27</td><td>-2.51</td><td>-3.73</td><td>-5.70</td></tr></table>					Outcome Parameters at present climate (Last 10 Years average)		Percent Increase(+)/Decrease(-) of outcome parameter over present if warming by				0.5 °C	1.0 °C	1.5 °C	2.0 °C	GDD (days-°C)	1840 days-°C	+2.80	+5.60	+8.40	+11.31	ET _o (mm)	329 mm	+1.20	+2.41	+3.63	+5.06	ET _c (mm)	226mm	+1.23	+2.46	+3.66	+5.11	Irrigation water under Surface irrigation	305mm	+1.21	+2.62	+3.64	+4.92	Irrigation water under Drip irrigation	224 mm	+1.21	+2.41	+3.62	+5.36	Biomass Yield under Surface irrigation	8109 kg/ha	-1.60	-3.11	-4.14	-6.14	Biomass Yield under Drip irrigation	8530kg/ha	-0.13	-0.18	-0.26	-0.68	Seed yield under Surface irrigation	2334 kg/ha	-1.59	-3.08	-4.58	-6.13	Seed yield under Drip irrigation	2452 kg/ha	-0.08	-0.16	-0.25	-0.65	Water Productivity under Surface irrigation	7.65 kg/ha-mm	-2.76	-5.56	-7.93	-10.53	Water Productivity under Drip irrigation	10.95 kg/ha-mm	-1.27	-2.51	-3.73	-5.70
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22.7.2.6	Soil Salinity mapping and modeling using Remote Sensing and GIS for coastal belt of Saurashtra region																																																																																
22.7.2.6.1	Landsat-based Random Forest Model for Land Use / Land Cover (LULC) prediction in the coastal belt of Saurashtra Scientific Information: Scientists and NGOs are recommended to use a Landsat-based Random Classification Model developed by Junagadh Agricultural University for Land Use Land Cover mapping at 30 m × 30 m resolution in Saurashtra. The model achieved an overall accuracy of 76.6% and a Kappa coefficient of 0.72 (substantial agreement). Model Parameters <table><tr><th>Parameter</th><th>Value</th></tr><tr><td>Predictors</td><td>B (Blue), G (Green), R (Red), NIR, SWIR1, SWIR2, NDVI, NDBI, MNDWI, BSI</td></tr><tr><td>n_estimators</td><td>500</td></tr><tr><td>criterion</td><td>Gini impurity</td></tr><tr><td>max_depth</td><td>None (fully grown)</td></tr><tr><td>max_features</td><td>Sqrt</td></tr><tr><td>min_samples_split</td><td>2</td></tr><tr><td>min_samples_leaf</td><td>1</td></tr><tr><td>bootstrap</td><td>True</td></tr><tr><td>class_weight</td><td>None</td></tr><tr><td>Trees trained</td><td>500</td></tr></table>					Parameter	Value	Predictors	B (Blue), G (Green), R (Red), NIR, SWIR1, SWIR2, NDVI, NDBI, MNDWI, BSI	n_estimators	500	criterion	Gini impurity	max_depth	None (fully grown)	max_features	Sqrt	min_samples_split	2	min_samples_leaf	1	bootstrap	True	class_weight	None	Trees trained	500																																																						
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22.7.2.6.2	Sentinel-based Random Forest Regression Model for Electrical Conductivity (EC) prediction in the coastal belt of Saurashtra Scientific Information: Scientists and NGOs working on soil salinity monitoring and management in the coastal belt of Saurashtra are recommended to use a Sentinel-based Random Forest Regression model developed by Junagadh Agricultural University for Electrical Conductivity (EC) prediction at 10 × 10 m resolution. The model provides EC prediction with R² = 0.90, RMSE = 0.58 dS/m, and NSE = 0.82. Model Parameters <table><tr><th>Parameter</th><th>Value</th></tr><tr><td>Predictors</td><td>S6, S3, Elevation, Clay_15cm, Soil_Depth</td></tr><tr><td>n_estimators (ntree)</td><td>300</td></tr><tr><td>criterion</td><td>Variance reduction</td></tr><tr><td>max_depth</td><td>None (fully grown)</td></tr><tr><td>max_features (mtry)</td><td>1</td></tr><tr><td>min_samples_split</td><td>1</td></tr><tr><td>min_samples_leaf</td><td>1</td></tr><tr><td>bootstrap</td><td>True (bagging always used)</td></tr><tr><td>Trees trained</td><td>300</td></tr><tr><td>Model complexity</td><td>Ensemble of 300 fully grown trees</td></tr></table> House approved the scientific information. <i>[Action: Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]</i>	Parameter	Value	Predictors	S6, S3, Elevation, Clay_15cm, Soil_Depth	n_estimators (ntree)	300	criterion	Variance reduction	max_depth	None (fully grown)	max_features (mtry)	1	min_samples_split	1	min_samples_leaf	1	bootstrap	True (bagging always used)	Trees trained	300	Model complexity	Ensemble of 300 fully grown trees
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22.7.2.7	Development of Combined Agricultural Drought Index and <i>kharif</i> crop yield prediction for Saurashtra region using Remote Sensing and Machine Learning																						
22.7.2.7.1	Remote Sensing and Machine Learning based <i>kharif</i> Crop Acreage Estimation of cotton, groundnut and soybean for Saurashtra Scientific information: Scientists, NGOs, and policymakers are recommended to use the Random Forest machine-learning-based <i>Kharif</i> crop acreage estimation model for Cotton, Groundnut, and Soybean developed by Junagadh Agricultural University for the Saurashtra region using integrated Sentinel-1 SAR and Sentinel-2 optical data at an effective spatial resolution of 10 m × 10 m. Crop-wise performance indicates consistently high classification accuracy, with producer’s accuracy, user’s accuracy, and F-score for all three crops exceeding 0.96. The model achieved an overall classification accuracy above 96%, demonstrating strong reliability for operational crop acreage estimation. The model architecture, optimized hyperparameters, and feature selection details of the Random Forest classifier are presented below : <table><tr><th>Component</th><th>Parameter / Description</th><th>Value / Details</th></tr><tr><td>Classification approach</td><td>Method</td><td>Sample-based object-oriented classification</td></tr><tr><td>Machine learning algorithm</td><td>Classifier</td><td>Random Forest (RF)</td></tr></table>	Component	Parameter / Description	Value / Details	Classification approach	Method	Sample-based object-oriented classification	Machine learning algorithm	Classifier	Random Forest (RF)													
Component	Parameter / Description	Value / Details																					
Classification approach	Method	Sample-based object-oriented classification																					
Machine learning algorithm	Classifier	Random Forest (RF)																					

	Platform	Processing environment	Google Earth Engine (GEE)
	Number of trees	ntrees	150
	Variables per split	mtry	6
	Segmentation scale	size_segmentation	8
	Random seed	seedrand	6
	Training–validation split	GT data usage	70% training, 30% validation
	Ensemble strategy	Model construction	Bootstrap aggregation (bagging)
	Decision rule	Output aggregation	Majority voting
	Feature importance evaluation	RF metric	Gini impurity index
	Number of input features	Total features evaluated	43
	Most important feature	Top-ranked variable	NDVI time series
	Secondary important features	Vegetation index	Radar Vegetation Index (RVI)
	Key temporal windows	Phenological relevance	August–September (groundnut), September–October (cotton)
	Key NDVI features	Time-specific indices	b11_NDVI_297
	Key SAR features	Backscatter and composites	VH_k, VV_k
	Key optical feature	SWIR band composite	B11_k or w_B11
	Sensor integration	Data sources	Sentinel-1 (SAR) and Sentinel-2 (optical)
	Role of RVI	Data continuity	Replacement of missing NDVI during cloud cover
	Cloud resilience	Seasonal suitability	Effective during <i>Kharif</i> season
	Crop classes (GEE)	IDs	Groundnut (0), Cotton (1), Soybean (2), Pigeon Pea (3), Horticulture (4), Other crops (5), Mix crop (6)
House approved the scientific information. [Action: Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]			
22.7.2.7.2	Combined Agricultural Drought Index (CDI) for <i>kharif</i> groundnut and cotton in Saurashtra Scientific information: Scientists and policymakers are recommended to use the Combined Agricultural Drought Index (CDI) developed by Junagadh Agricultural University for operational agricultural drought monitoring of <i>Kharif</i> Cotton and Groundnut in the Saurashtra region, together with crop-wise yield anomaly responses linked to CDI drought–wetness classes, to support timely district-level intervention decisions. $CDI_{Cotton} = 0.10 MCI_{6_C} + 0.15 MCI_{7_C} + 0.14 MCI_{8_C} + 0.17 MCI_{9_C} + 0.12 Z(NDWI) + 0.16 Z(TCI) + 0.15 Z(VCI)$		

$$CDI_{Groundnut} = 0.11 MCI_{6_G} + 0.12 MCI_{7_G} + 0.09 MCI_{8_G} + 0.11 MCI_{9_G} + 0.23Z(NDWI) + 0.10 Z(TCI) + 0.24 Z(VCI)$$

Where, CDI represents the Combined Agricultural Drought Index; MCI₆–MCI₉ denote monthly meteorological combined indices for the *Kharif* season (June–September); and Z(NDWI), Z(TCI), and Z(VCI) are Z Scores of Normalized Difference Water Index, Temperature Condition Index and Vegetation Condition Index respectively.

Table 1: CDI classes and associated Groundnut yield anomaly

CDI_G Class and Range	Median Yield Anomaly (%)	Yield Anomaly Range (%)	Interpretation
Extremely Dry (≤ -1.5)	-88.4	-85 to -100	Near crop failure
Severely Dry (-1.0 to -1.49)	-87.7	-60 to -100	Catastrophic loss
Moderately Dry (-0.5 to -0.99)	-45.1	-30 to -80	Strong drought impact
Normal (-0.49 to +0.49)	-4.7	-20 to +20	Near-normal
Moderately Wet (+0.5 to +0.99)	56.2	+20 to +100	Strong yield gain
Very Wet to Extremely Wet ($\geq +1.0$)	65.9	+30 to +120	Exceptional yield years

Table 2: CDI classes and associated Cotton yield anomaly

CDI_C Class and Range	Median Yield Anomaly (%)	Yield Anomaly Range (%)	Interpretation
Extreme/Severely Dry (≤ -1.0)	-64.5	-40 to -90	Drought loss
Moderately Dry (-0.5 to -0.99)	-47.3	-30 to -80	Likely drought-induced loss
Normal (-0.49 to +0.49)	1.8	-20 to +20	Management-dominated
Moderately Wet (+0.5 to +0.99)	30.1	+10 to +60	Yield gain likely
Very/Extremely Wet ($\geq +1.0$)	47.1	+20 to +70	High yield potential

House approved the scientific information.

[Action: Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]

22.7.2.8

Study on dehulling characteristics of different sesame cultivars

(AICRP on Sesame)

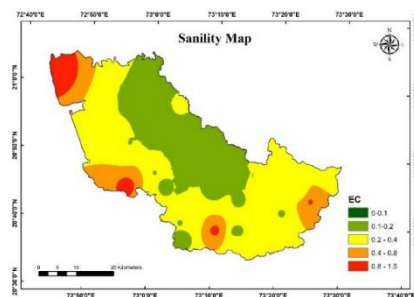
Scientific information:

The scientific community engaged in the development of sesame processing equipment are advise to consider information developed by Junagadh Agricultural University for the moisture-dependent engineering properties viz. dimensional, gravimetric, frictional, aerodynamic as well as mechanical properties of the sesame varieties G.Til 3, G.Til 4, GJT 5, G.Til 6 and TKG 22 within the moisture range of 4.26 to 50.21% (w.b.). The results disclosed that moisture exerted significant effect on all evaluated parameters, except elongation ratio and aspect ratio of all the varieties evaluated. All the engineering properties displayed rising tendency except aspect ratio, true density, bulk density, tapped densities, drag coefficient and hardness with moisture content variation. The dehulling attributes had strong correlations with thousand seed weight, fat content and protein content. Therefore, the scientists engaged in development of sesame

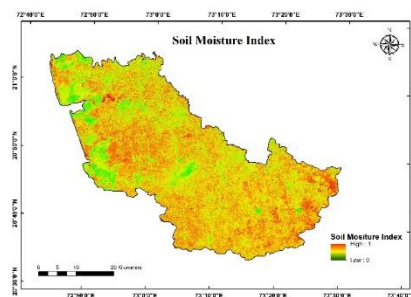
	varieties are informed that the sesame dehulling performance can be enhanced through the development of varieties with higher seed weight, oil and protein content. House approved the scientific information with following suggestion. 1. Recast the scientific information [Action: Res. Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli]
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NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

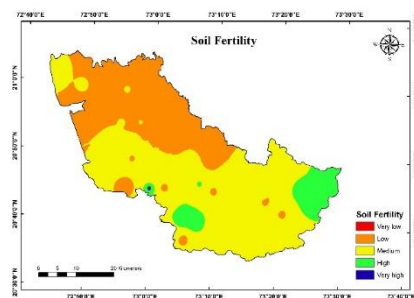
22.7.2.9	A study on technical feasibility and development of online digital medicinal plants identification and knowledge management system of NAU Scientific information: The scientific community is informed to use AI-enabled Medicinal Plant Identification and Knowledge Management System developed by Navsari Agricultural University for learning and research activities. It can be effectively applied for medicinal plant identification and self-learning. <table border="1"> <thead> <tr> <th>Hyperparameter</th><th>Value Used</th></tr> </thead> <tbody> <tr> <td>Deep Learning Architecture</td><td>MobileNetV2</td></tr> <tr> <td>Input Image Size</td><td>224 × 224 × 3</td></tr> <tr> <td>Batch Size</td><td>16</td></tr> <tr> <td>Epochs</td><td>10</td></tr> <tr> <td>Optimizer</td><td>Adam</td></tr> <tr> <td>Learning Rate</td><td>0.001</td></tr> <tr> <td>Loss Function</td><td>Categorical Crossentropy</td></tr> <tr> <td>Activation Function</td><td>ReLU</td></tr> <tr> <td>Output Activation</td><td>Softmax</td></tr> <tr> <td>Dense Layer Units</td><td>128</td></tr> <tr> <td>Dropout Rate</td><td>0.3</td></tr> <tr> <td>Transfer Learning</td><td>Enabled</td></tr> <tr> <td>Pretrained Weights</td><td>ImageNet</td></tr> <tr> <td>Base Model Trainable</td><td>False</td></tr> <tr> <td>Rotation Range</td><td>20</td></tr> <tr> <td>Zoom Range</td><td>0.2</td></tr> <tr> <td>Horizontal Flip</td><td>True</td></tr> </tbody> </table> Approved the scientific information with following suggestions. 1. Add hyper paramters table in recommendation 2. Replace word ‘Predicted’ with ‘classified’ and ‘confidence’ with ‘accuracy’ in text 3. Write “by NAU for information of scientific community” in place of “in this study is recommended” in recommendation paragraph [Action: HOD, Dept. of ABM, AABMI, NAU, NAVSARI]	Hyperparameter	Value Used	Deep Learning Architecture	MobileNetV2	Input Image Size	224 × 224 × 3	Batch Size	16	Epochs	10	Optimizer	Adam	Learning Rate	0.001	Loss Function	Categorical Crossentropy	Activation Function	ReLU	Output Activation	Softmax	Dense Layer Units	128	Dropout Rate	0.3	Transfer Learning	Enabled	Pretrained Weights	ImageNet	Base Model Trainable	False	Rotation Range	20	Zoom Range	0.2	Horizontal Flip	True
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Base Model Trainable	False																																				
Rotation Range	20																																				
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Horizontal Flip	True																																				
22.7.2.10	Monitoring and assessment of soil ph, salinity, and soil chemical properties in agricultural land of navsari district using remote sensing and GIS based machine learning technique Scientific information: The scientific community is informed that in Navsari district, salinity and alkalinity management practices can be effectively implemented using the electrical conductivity map (EC), while the Soil Moisture Index (SMI) can be utilized for efficient irrigation scheduling, drought assessment, and water conservation. Site-specific nutrient management practices may be adopted using the Soil Fertility Index (SFI), and the Crop Condition Index (CCI) map can be integrated for crop planning and soil management to improve agricultural productivity.																																				



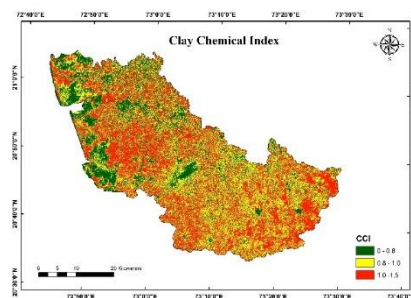
Electrical Conductivity (Salinity) map of Navsari district



Soil Moisture Index map of Navsari district



Soil Fertility map of Navsari district



Clay Chemical Index map of Navsari district

House approved the scientific information with following suggestions.

1. Mention the study area in the recommendation
2. Recast the recommendation

[Action: HOD, Dept. of AE, NMCA, NAU, NAVSARI]

22.7.3 NEW TECHNICAL PROGRAMMES

ANAND AGRICULTURAL UNIVERSITY, ANAND

22.7.3.1	Modelling and Sensitivity Analysis of Reference Evapotranspiration Using Machine Learning Techniques in Panchmahal district of Gujarat House approved the NTP. <i>[Action: PI & HOD, Dept. of IDE, CAET, GODHRA]</i>
22.7.3.2	Assessment of potential waterlogging zones using microwave and optical remote sensing data House approved NTP with following suggestion. 1. Remove “Min. 20 location data will be collected during each satellite” from text of observation <i>[Action: PI & HOD, Dept. of IDE, CAET, GODHRA]</i>
22.7.3.3	Timeseries Assessment of Reservoir Area and Storage Capacity of Panam Dam Using Remote Sensing and GIS House approved NTP with following suggestions. 1. Replace “Sentinel-2” with “Sentinel” in objective no. 1 2. Replace “to develop” with “to evaluate” in objective no. 2 Revised objectives 1. To delineate reservoir water spread area using Sentinel imagery through water indices

	2. To evaluate area–capacity curves for the Panam Dam reservoir using integrated RS–GIS techniques <i>[Action: PI & HOD, Dept. of SWCE, CAET, GODHRA]</i>
22.7.3.4	Probability analysis approach for hydrologic design of roof water harvesting for middle Gujarat House approved NTP with following suggestions. 1. Add “to” in objective no. 1 before study 2. Remove “of middle Gujarat” in objective no. 2 Revise objectives 1. To study probability analysis of seasonal rainfall of middle Gujarat 2. Hydrologic design of roof water harvesting tank for urban area of middle Gujarat <i>[Action: PI & HOD, Dept. of SWCE, CAET, GODHRA]</i>
22.7.3.5	Development of electrohydrodynamic dryer House approved NTP with following suggestions. 1. Mention sample size and unit of all observations 2. Replace “development’ with “To develop” in objective no. 1 and replace “ Study” with “ To study” in objective no.2 Revised objectives: 1. To develop electrohydrodynamic dryer for drying of jamun fruit 2. To study the effect of drying variables on physicochemical properties of jamun <i>[Action: PI & HOD, Dept. of PFE, CAET, GODHRA]</i>
22.7.3.6	Development of heat exchanger based biochar production unit from agro-residue wastes House approved NTP with following suggestions. 1. Change the title as “ Development of shell and tube type heat exchanger based biochar production unit for agro-residue waste” 2. Data of fast pyrolysis temperature is missing in the text <i>[Action: PI & HOD, Dept. of REE, CAET, GODHRA]</i>
22.7.3.7	Design and development of solid state air conditioning system House approved NTP with following suggestion. 1. Remove “Design” from title Revised title: “Development of solid state air conditioning system” <i>[Action: PI & HOD, Dept. of BEAS, CAET, GODHRA]</i>
22.7.3.8	Conjugate assessment of irrigation regimes and frequency on growth, yield and water productivity of drip irrigated maize under natural farming condition House approved NTP with following suggestions. 1. Remove “of natural farming” with “under natural farming” in objective no. 2 Revised objective 2: To determine irrigation schedule and water use efficiency of maize crop under natural farming 2. Replace dripper discharge “4 lph x 0.6” with “2 lph x 0.4” 3. Remove flood irrigation as treatment and add as control <i>[Action: PI & Principal, PAE, AAU, DAHOD]</i>
22.7.3.9	Design and development of Recommender-Augmented Generation (RAG) based intelligent agricultural advisory system using Kisan Call center data for Gujarat House approved NTP with following suggestions. 1. Replace word “develop” with “design” in objective no. 1 2. Replace word “design” with “develop” in objective no. 2 Revised objectives: 1. To design a semantic retrieval system for Kisan Call Center data with contextual relevance 2. To develop and evaluate a Retrieval-Augmented Generation framework outcome <i>[Action: PI & HOD, Dept. of AIT, CAIT, AAU, ANAND]</i>

22.7.3.10	Development of technology for preservation of Sapota (<i>Achras zapota</i> L.) juice using high pressure processing House approved NTP with following suggestions. 1. Start all objectives with “To” Revised objectives: 1.To characterize sapota fruit and pulp 2.To optimize blanching conditions for whole sapota fruit for optimum juice yield 3.To study the effect of high pressure processing on the quality parameters of sapota juice 4.To assess shelf life of high pressure processed sapota juice 2. Add sensory quality: Colour, body, taste, consistency and overall acceptability 3. Add process flow chart 4. Mention units of all observations <i>[Action: PI & HOD, Dept. of FPT, CFPTBE, AAU, ANAND]</i>
22.7.3.11	Development of beetroot based blended juice House approved NTP with following suggestions. Revised objectives: 1. To characterize the raw materials 2. To standardise the formulation of beetroot based blended juice 3. To evaluate shelf-life extension of beetroot based blended juice 1. Show treatment combinations 2. Add sensory quality: Colour, body, taste, flavour and overall acceptability <i>[Action: PI & HOD, Dept. of FPO, CFPTBE, AAU, ANAND]</i>
22.7.3.12	Development of muffins from marigold and chrysanthemum flower petal powder House approved NTP with following suggestion. 1. Use the variety of chrysanthemum released by IARI, PUSA Revised objectives: 1. To characterize marigold and chrysanthemum flower petal powder 2. To standardize the levels of marigold and chrysanthemum flower petal powder 3. To estimate physicochemical properties of standardized muffins 4. To assess shelf-life of muffins <i>[Action: PI & HOD, Dept. of PHM, CoH, ANAND]</i>
22.7.3.13	Technology for irradiation of Sapota (Chikoo) fruit pulp House approved NTP <i>[Action: PI & HOD, Dept. of FPE, CFPTBE, AAU, ANAND]</i>
22.7.3.14	Development of bael fruit (<i>Aegle marmelos</i>) pulp powder using Refractance Window dryer House approved NTP with following suggestions. 1. Start all objectives with “To” Revised objectives: 1. To characterize bael fruit pulp 2. To standardize drying parameters using Refractance Window Dryer (RWD) 3. To compare quality of bael fruit powder obtained by standardized tray and greenhouse with standardized Refractance Window drying 4. To evaluate shelf life of standardized Refractance Window dried bael fruit powder 2. Mention units of all the observations 3. In independent variable, Beside Drying temperature add (temperature of water) in bracket <i>[Action: PI & HOD, Dept. of FPE, CFPTBE, AAU, ANAND]</i>

22.7.3.15	Development of rapid method for detection of Sudan I in chili powder House approved NTP with following suggestions. 1. Change the title as “Development of rapid method for detection of adulteration of Sudan I in chili powder” 2. Start all objectives with “To” Revised objectives: 1. To evaluate and compare various methods employed for detection of Sudan I in chili powder 2. To develop new method for detection of Sudan I adulteration in chili powder <i>[Action: PI & HOD, Dept. of FSQA, CFPTBE, AAU, ANAND]</i>
22.7.3.16	Development of rapid method for detection of Metanil Yellow adulteration in turmeric powder House approved NTP with following suggestion. 1. Start all objectives with “To” Revised objectives: 1. To evaluate turmeric powder for adulteration with Metanil Yellow dye 2. To develop and validate a rapid method to detect Metanil Yellow dye adulteration in turmeric powder <i>[Action: PI & HOD, Dept. of FSQA, CFPTBE, AAU, ANAND]</i>

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

22.7.3.17	Development of mango (Kesar cultivar) harvesting assistance system using computer vision (AICRP on Farm Implements and Machinery) House approved the NTP with following suggestions. 1. Add Yolo algorithm and hybrid algorithm 2. Use standard harvester in experiment <i>[Action: HoD, Dept. of FMPE, CAET, JAU, JUNAGADH]</i>
22.7.3.18	Design and development of tractor operated high-reach air-assisted boom sprayer for coconut House approved the NTP with following suggestions. 1. Take treatment as “height from bottom of canopy” in place of boom height 2. Add air speed parameter of blower <i>[Action: HoD, Dept. of FMPE, CAET, JAU, JUNAGADH]</i>
22.7.3.19	Development of tractor-operated reversible cultivator-blade harrow integrated with clod crusher House approved the NTP with following suggestion. 1. Add treatments as three speed of operations and consult statistician for design of experiment <i>[Action: HoD, Dept. of FMPE, CAET, JAU, JUNAGADH]</i>
22.7.3.20	Development and performance evaluation of tractor mounted multi- purpose interculturing implement for cotton crop House approved the NTP with following suggestion. 1. Add treatments as three speed of operations and consult statistician for design of experiment <i>[Action: Res.Scientist (Dry Farming), Main Dry Farming Res. Station, JAU, TARGHADIA]</i>
22.7.3.21	Development of IoT enabled pan evaporation based ET₀ measurement system House approved the NTP with following suggestions. 1. Replace the word “develop” with “calculate” in objective no.2 2. Remove objective no. 3 Revised objectives:

	1. To develop an IoT enabled automated pan evaporation measurement system. 2. To calculate a monthly Pan coefficient using observed data. 3. To evaluate the performance and accuracy of the developed system under field conditions. <i>[Action: HoD, IDE, CAET, JAU, JUNAGADH]</i>
22.7.3.22	Development and laboratory evaluation of an IoT-enabled smart irrigation control system with distributed field radio units for precision water management House approved the NTP with following suggestions. 1. Remove “and laboratory evaluation” from title Revised title: Development of an IoT-enabled smart irrigation control system with distributed field radio units for precision water management 2. Remove objective no. 3 Revised objectives: 1. To design and develop a centralized smart irrigation controller for automated control of pump and irrigation valves. 2. To develop low-power, solar-operated field radio units for soil moisture sensing and solenoid valve actuation. 3. To develop firmware and software for real-time data acquisition, decision making and cloud connectivity. 4. To evaluate the performance of the developed system under laboratory conditions. <i>[Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]</i>
22.7.3.23	Identification of small water bodies in Gujarat state (AICRP on Irrigation water management) House approved the NTP with following suggestions. 1. Mention year of completion in report 2. Remove objective no. 2 Revised objectives: 1. To identify and delineate small water bodies using RS & GIS 2. To assess the potential irrigated area from small water bodies 3. Consult with statistician for sample size <i>[Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]</i>
22.7.3.24	Assessment of spatial variability of runoff potential in Ozat river basin using SWAT model (AICRP on Irrigation water management) House approved the NTP. <i>[Action: HoD, Dept. of IDE, CAET, JAU, JUNAGADH]</i>
22.7.3.25	Effect of biochar and irrigation methods on soil health and crop productivity of wheat House approved the NTP. <i>[Action: Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]</i>
22.7.3.26	Comparative evaluation of natural and chemical farming in drip-irrigated brinjal coriander intercropping system under water stress conditions House approved the NTP with following suggestion. 1. Use “Conventional Farming” word in place of “Chemical Farming” in whole experiment Revised title: Comparative evaluation of natural and conventional farming in drip-irrigated brinjal coriander intercropping system under water stress conditions Revised objectives: 1. To study the effect of natural and conventional farming on soil physical properties including infiltration modelling 2. To evaluate the effect of water stress under natural and conventional farming on yield attributes, yield and WUE of brinjal- coriander intercropping system <i>[Action: Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]</i>

22.7.3.27	Evaluate the effect of different pre-sowing slicing / dehusking techniques and irrigation scheduling on germination performance of coconut (<i>Cocos nucifera</i> L.) seedling House approved the NTP with shift to Horticulture Subcommittee group <i>[Action: PI & Res. Scientist (Agril. Engg.), RTTC, JAU, JUNAGADH]</i>
22.7.3.28	Encapsulation of mango seed oil for postharvest shelf life enhancement of kesar mango House approved the NTP with following suggestions. 1. Change the title as “Shelf life enhancement of kesar mango using coating of emulsified mango seed kernel oil” 2. Accordingly modify the objectives Revised objectives: 1. To analyze the biochemical properties of oil extracted from mango seeds. 2. To prepare emulsion by of mango seed oil. 3. To assess the physico-chemical characteristics of the mango seed oil emulsion. 4. To optimize the formulation of the mango seed oil emulsion. 5. To compare the storage stability of Kesar mango coated with the emulsion against uncoated Kesar mango <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.3.29	Shelf life extension of pearl millet flour of varieties developed by Junagadh Agricultural University House approved the NTP with following suggestion. Change the title as “Shelf life extension of pearl millet flour of released varieties by Junagadh Agricultural University” <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.3.30	Standardization of drying method for production of functional Jamun (<i>Syzygium cumini</i>) seed powder House approved the NTP with following suggestions. 1. Remove word “functional” from title Revised title : Standardization of drying method for production of Jamun (<i>Syzygium cumini</i>) seed powder 2. Mention ΔT heat of sublimation in methodology 3. Mention particle size of powder 4. Mention replication/ repetition <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.3.31	Encapsulation of garlic oil in plant-based bio-polymers for sustainable bio-fumigation House approved the NTP with following suggestions. 1. Mention sample size 2. In dependent parameter replace “Total Plate Count” with “Aerobic plate count” <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.3.32	Development and storage study of premix pearl millet Raab House approved the NTP with following suggestions. 1. Mention type of moisture absorber (name) in 2nd factor 2. Mention sample size <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>
22.7.3.33	Development of Jamun pulp powder House approved the NTP with following suggestions. 1. Mention temperature as “water temperature” in RW dryer independent parameter 2. In flow chart replace “cleaning” with “sorting” <i>[Action: HoD, Dept. of PFE, CAET, JAU, JUNAGADH]</i>

22.7.3.34	Utilization of partially defatted sesame flour for preparation of protein enriched cookies House approved the NTP with following suggestions. 1. Remove “L”, “a”, and “b” colour value from observation 2. Mention year of completion 3. Mention variety Revised title: “Utilization of partially defatted white sesame flour for preparation of protein enriched cookies” <i>[Action: Res. Scientist (Pl. Br.), Agricultural Research Station, JAU, AMRELI]</i>
22.7.3.35	Standardization of process technology for unripe mango (Cv. Kesar) powder and its storability House approved the NTP with following suggestions. 1. Remove objective 1 and 3 2. Change maturity stage parameter. Keep 2 level as Marbal stage and Egg stage 3. Change the experimental design accordingly Revised objectives: 1. To standardized the process technology for production of unripe mango powder 2. To evaluate the storability of standardized unripe mango powder <i>[Action: Principal, Polytechnic in Agro Processing, JAU, JUNAGADH]</i>
22.7.3.36	Development of on-farm FRP Based spiral separator for different grains (AICRP on PEASEM) House approved the NTP with following suggestions. 1. Remove objective 2 2. In method of separation: Add 1. Existing spiral separator and 2. Modified spiral separator Revised objectives: 1. Design and develop a FRP based spiral separator of 500 kg/h capacity for different grains 2. To evaluate performance of spiral separator for different grains 3. To study the cost-effectiveness of spiral separator with traditional methods <i>[Action: HoD, Dept. of REE, CAET, JAU, JUNAGADH]</i>
22.7.3.37	Enhanced biohydrogen production from microalgae through optimization of physicochemical parameters in photobioreactor (ERP on EA) House approved the NTP with following suggestions. 1. Mention the name of microalgae strain 2. Write units in all observations 3. Mention the year of completion Revised title: “Enhanced biohydrogen production from microalgae (<i>Chlorella Vulgaris</i>) through optimization of physicochemical parameters in photobioreactor” <i>[Action: HoD, Dept. of REE, CAET, JAU, JUNAGADH]</i>
22.7.3.38	Development of biochar-based polymer composites for agricultural application (AICRP on PEASEM) House approved the NTP with following suggestions. 1. Write the Objective 1 as “To develop biochar based polymer composite and study their characteristics” 2. Write “Cotton Stalk” in place of “Cotton” Revised objectives: 1. To develop biochar-based polymer composites and study their characterization 2. To evaluate the economic and environmental impacts of developed composites <i>[Action: HoD, Dept. of REE, CAET, JAU, JUNAGADH]</i>

NAVSARI AGRICULTURAL UNIVERSITY, NAVSARI

22.7.3.39	Assessment of groundwater quality for domestic and agricultural use in dediapada taluka House approved the NTP with following suggestions. 1. Add Chikda Taluka in title Revised title: “Assessment of groundwater quality for domestic and agricultural use in dediapada and Chikda taluka” 2. Increase sample size as per standard norms 3. Add groundwater quality indices 4. Add observation of carbonate, bi-carbonate, chloride as well as heavy metals <i>[Action: HoD, Dept. of IDE, CAET, NAU, DEDIAPADA]</i>
22.7.3.40	Development and performance evaluation of low cost SPV powered spraying cum weeding machine House approved the NTP with following suggestions. 1. Remove “low cost” from title and objectives Revised Title: “Development and performance evaluation of SPV powered spraying cum weeding machine” Revised Objectives: 1. To develop SPV powered spraying cum weeding machine for small and marginal farmers. 2. To evaluate the performance of the developed machine. 2. Add observation related to performance of spraying <i>[Action: HoD, Dept. of AE, NMCA, NAU, NAVSARI]</i>
22.7.3.41	Development of low cost conical shape solar still House approved the NTP with following suggestions. 1. Remove “low cost” from title and objectives Revised title: “Development of conical shape solar still” Revised objectives 1. To develop a portable conical shape solar still 2. To evaluate the performance of developed solar still 2. Add treatment T₂ = three level of different cone size of solar still 3. Add observation of carbonate, bicarbonate, chloride <i>[Action: HoD, Dept. of AE, COA, NAU, BHARUCH]</i>

SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY, SARDARKRUSHINAGAR

22.7.3.42	Geospatial analysis of soil salinity distribution in North Gujarat region using remote sensing and GIS House approved the NTP with following suggestion. 1. Add and analyze with Machine Learning model: Random forest, Super vector machine (SVM) and MLR <i>[Action: Res. Scientist, CNRM, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.43	In-situ moisture conservation in groundnut using broad bed furrow planter and intercultivator under light textured soils House approved the NTP. <i>[Action: Res. Scientist, CNRM, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.44	Process optimization and densification characteristics of biomass pellets from various feedstocks House approved the NTP with following suggestions. 1. Add observation ; Shattering index, trumbling test, calorific value and water resistance 2. Remove elemental parameters <i>[Action: Dean, CREEE, SDAU, SARDARKRUSHINAGAR]</i>

22.7.3.45	Performance evaluation of drone sprayer in different crops House approved the NTP with following suggestions. 1. Change the title as “ Performance evaluation of spray drone for selected crops” 2. Remove “Row spacing” and “drift (%)” from observation <i>[Action: Dean, CREEE, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.46	Comparative evaluation of pyrolysis techniques for biochar production from date palm waste House approved the NTP with following suggestions. 1. Add the temperature of biochar in methodology 2. Add observation of carbon content <i>[Action: Dean, CREEE, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.47	Performance evaluation of solar dryers for drying of raw papaya House approved the NTP with following suggestions. 1. Add type of dryer as Solar Electric Hybrid Tunnel Dryer in factor 1. 2. Add storage study in objective Objective 4: To study the storability of the developed product <i>[Action: Dean, CREEE, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.48	Study on quality attributes of moringa (<i>Moringa oleifera</i> L.) leaves drying in different dryers House approved the NTP with following suggestions. 1. Add proximate analysis of standardized product 2. Add storage study in objective Objective: To study the storability of the developed product 3. Take observations; Moisture content, β-carotene, Vitamine C during storage (refer FSSAI standards) 4. In treatments : Replace “Bed Thickness” with “Harvesting stage of leaves” (Tender leaves, Before flowering, Before harvesting of pods) <i>[Action: Principal, CAET, SDAU, KHEDBHRAHMA]</i>
22.7.3.49	Assessment of present and future crop water requirements for major crops of North Gujarat in context of climate change House approved the NTP with following suggestion. 1. Replace “Context of” with “Context to” in title Revised title: “Assessment of present and future crop water requirements for major crops of North Gujarat in context to climate change” <i>[Action: Principal, CAET, SDAU, KHEDBHRAHMA]</i>
22.7.3.50	Temperature stabilization of buffer tank using IOT-Integrated solar heating system for enhanced biogas production in a food waste based smart biogas plant House approved the NTP. <i>[Action: Principal, CAET, SDAU, KHEDBHRAHMA]</i>
22.7.3.51	Study on quality attributes of fenugreek (<i>Trigonella foenum-graecum</i> L.) drying in different dryers House approved the NTP with following suggestions. 1. Add Coriander leaves in title Revised title: “Study on quality attributes of fenugreek (<i>Trigonella foenum-graecum</i> L.) and coriander (<i>Coriandrum sativum</i>) leaves drying in different dryers” 2. Add blanching 3. Change temperature level: 45, 50 & 55 °C 4. Add proximate analysis of fresh and dried leaves Revised objectives:

	1. To study the effect of bed thickness and drying temperature on fenugreek and coriander leaves using different dryer 2. To analyse the quality parameters of dried fenugreek and coriander leaves 3. To evaluate the cost economics of different dryers <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.52	Development of a moringa leaf separation machine House approved the NTP with following suggestions. 1. Change title as “Development of a moringa leaves stripping machine” 2. Replace word “Separation” with “Stripping” in objective Revised objectives: 1. To develop a moringa leaves stripping machine 2. To evaluate the performance of the developed moringa leaves stripping machine 3. To optimise the operational parameters of the developed machine 4. To study the cost economics of the developed machine 3. Replace word “Separating roller” with “Stripping roller” and “leaf separation efficiency” with “leaf stripping efficiency” <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.53	An integrated machine learning approach for crop identification and hectareage estimation using multi- temporal satellite image House approved the NTP with following suggestion. 1. Change title as “Crop identification and hectareage estimation using Machine Learning approach” <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.54	Modification and performance evaluation of battery operated rotary weeder House approved the NTP with following suggestion. 1. Replace “forward speed” with “rotary speed” in independent parameter <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.55	Development and performance evaluation of an insulated drum-type biochar unit House approved the NTP with following suggestions. 1. Add treatment; Glasswool as material for insulation 2. Take thickness of insulations: 50mm, 100mm 3. Take 6 replications <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.56	Design and development of seed separator for kalingada [<i>Citrullus lanatus</i> (Thumb) Mansf.] House approved the NTP with following suggestions. 1. Replace “Thresher” with “Separator” in objective and recast the objective Revised objectives: 1. To study the physical properties of <i>Karingada</i> fruit and seed 2. To develop a tractor operated seed separator to separate <i>Karingada</i> Seed 3. To evaluate the performance of the developed seed separator 2. Add “seed to pulp ratio” in observation 3. Replace “threshing efficiency” with “separation efficiency” <i>[Action: Principal, CAET, SDAU, THARAD]</i>
22.7.3.57	Prioritization of Dharoi sub-watersheds in the semi-arid region of North Gujarat using remote sensing and GIS House approved the NTP. <i>[Action: Dean, CPCA, SDAU, SARDARKRUSHINAGAR]</i>
22.7.3.58	Optimization of UAVs spray operational parameters for improving spray deposition in mustard (<i>Brassica juncea</i> L.) House approved the NTP with following suggestion. 1. Replace the crop “Mustard” with “Potato” in title and whole experiment

	Revised title: “Optimization of UAV spray operational parameters for improving spray deposition in potato (<i>Solanum tuberosum</i>)” Revised objectives: 1. To optimize UAV flight height and operational speed for effective spray deposition in potato crop 2. To study the economics feasibility of drone spraying in potato crop [Action: Dean, CPCA, SDAU, SARDARKRUSHINAGAR]
22.7.3.59	Effect of active herbal edible coating on shelf life of acid lime House approved as filler trial. [Action: Dean, COH, SDAU, JAGUDAN]
22.7.3.60	Drying of blue pea (<i>Clitoria ternatea</i>) flower to prepare ready to use herbal tea premix bag House approved the NTP with following suggestion. 1. Replace “Oven drying” with “Hot air drying” in Treatment T3 [Action: Dean, COH, SDAU, JAGUDAN]
22.7.3.61	Process optimization for the development of garden cress seed (<i>Lepidium sativum</i>) enriched extruded product House approved the NTP with following suggestion. 1. Moisture of flour to be changed as 12, 14,16,18 and 20% (w.b.) [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.62	Development of peanut <i>chikki</i> incorporated with moringa leaves powder House approved the NTP with following suggestion. 1. Add process flowchart indicating heating temperature of Jaggery and time duration [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.63	Post-harvest characterization of varieties of isabgol (<i>Plantago ovata</i>) House approved the NTP. [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.64	Valorization of pigeonpea broken dhal for the development of extruded snacks House approved the NTP with following suggestions. 1. Change feed moisture (c) as 12%, 14% and 16% 2. Change storage time upto 180 days 3. Add ‘Water Absorption Index’ and ‘Water Soluble Index’ of optimized sample in observations [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.65	Development and quality evaluation of pasta from composite flour House approved the NTP with following suggestion. 1. Add moisture content of feeding dough. [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.66	An analysis of consumer awareness and purchasing behavior towards hot extruded snack produced at SDAU food processing pilot plant in Dantiwada village of Banaskantha district, Gujarat House shifted NTP to Social Science Subcommittee. [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.67	Development of pomegranate peel based bio-packaging material reinforced with ZnO nanoparticles House approved the NTP. [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]
22.7.3.68	Development of malted finger millet flour based cookies incorporated with ginger powder House approved the NTP. [Action: Dean, CFT, SDAU, SARDARKRUSHINAGAR]

22.7.3.69	Development of sangri (<i>Prosopis cineraria</i>) based chocolate flavoured protein powder House approved the NTP. <i>[Action: Project Coordinator, KVK, SDAU, DEESA]</i>
22.7.3.70	Potato foliage disease identification using deep learning technique House approved the NTP. <i>[Action: DIT, CAICT, SDAU, SARDARKRUSHINAGAR]</i>

General guideline for AET/AIT/FPT/FT/PHT subcommittee

1. In all the drying experiments, provide proximate analysis in dry weight basis for comparing fresh and dries product parameters.
2. In all the hydrology related experiments, minimum 30 years rainfall data must be required /referred.
3. All objectibe must start with “ To.....”.

**Proceeding of Plenary Session of 22nd Combined AGRESKO meeting of
SAUs of Gujarat held through Virtual Mode hosted by Anand Agricultural
University (AAU), Anand on May 21, 2026**

Date: 21/05/2026

Time: 09.30-16:00

Chairman	:	Dr. N.I. Shah, Hon. VC, AAU, Anand
Co-Chairmen	:	Dr. V. P. Chovatia, Hon. VC, JAU, Junagadh Dr. T. R. Ahlawat, Hon. VC, NAU, Navsari Dr. S. D. Solanki, Hon. VC, SDAU, Sardarkrushinagar
Rapporteurs	:	Dr. V. J. Patel, ADR, AAU, Anand Dr. V. D. Tarpara, ADR, JAU, Junagadh Dr. Lalit Mahatma, ADR, NAU, Navsari Dr. N. N. Prajapati, ADR, SDAU, Sardarkrushinagar

The plenary session of the 22nd Combined AGRESKO Meeting held in virtual mode was chaired by Dr. N. I. Shah, Hon'ble Vice-Chancellor, AAU, Anand. Dr. S. N. Shah, Director of Research and Dean, PG Studies, AAU, Anand welcomed the Chairperson, all the Hon'ble Vice-Chancellors, Directors of Research, Associate Directors of Research, Deans of various faculties, Conveners, Rapporteurs and Scientists from the State Agricultural Universities (SAUs). In his welcome address, Dr. Shah expressed his gratitude for the successful conduct of the Combined AGRESKO meetings of all seven groups. He highlighted the fruitful scientific discussions and deliberations that led to the final release of 27 crop varieties, approval of 345 recommendations for farmers and scientific information and formulation of several new technical programmes across the SAUs. The Directors of Research of all the SAUs felicitated the Hon'ble Vice-Chancellors of their respective universities with flower bouquets.

Inaugural Session

In his inaugural remarks, Dr. S. D. Solanki, Hon'ble Vice-Chancellor, SDAU, Sardarkrushinagar appreciated the coordinated efforts of all State Agricultural Universities in strengthening agricultural research and extension activities in Gujarat. He emphasized the importance of climate-resilient technologies and farmer-oriented research programmes. He also highlighted the greater role of the Basic Science Sub-Committee in promoting novel research and emerging technologies such as artificial intelligence, robotics, and value addition of agricultural produce.

Dr. T. R. Ahlawat, Hon'ble Vice-Chancellor, NAU, Navsari, highlighted the positive and constructive deliberations in the Combined AGRESKO meetings, reflecting strong inter-university collaboration for the development and dissemination of improved crop varieties, integrated farming recommendations and sustainable agricultural practices for the benefit of

farmers. Dr. Ahlawat suggested the preparation of modules or packages of practices to provide comprehensive solutions to complex agricultural problems through multidisciplinary interventions.

Dr. V. P. Chovatia, Hon'ble Vice-Chancellor, JAU, Junagadh expressed gratitude for the successful conduct of the Combined AGRESCO meeting. He stressed the need to simplify recommendations for farmers, particularly those related to fertilizers and plant protection measures to enhance their understanding and adoption of improved technologies. Dr. Chovatia further emphasized the importance of research focused on the mechanization of agricultural practices and the development of climate-resilient farming technologies for the benefit of the farming community.

Dr. N. I. Shah, Hon'ble Vice-Chancellor, AAU, Anand and Chairman of the plenary session, congratulated all scientists and researchers for developing diverse research programmes covering various aspects of agricultural research while keeping future needs in focus thereby, contributing to agricultural research and technology generation. He urged all scientists to focus on the development of farmer-centric technologies, quality seed production, and effective transfer of technologies to farming communities. Dr. Shah also suggested to frame new technical programmes based on quality research outputs emerging from postgraduate research work supported under SHODH scholarships.

Presentation of proceedings

Following the inaugural session, the presentation of proceedings of each sub committees by the respective conveners was made wherein, recommendations and new technical programmes of different sub committees were discussed and approved as per the following details.

Dr. B N Patel, Convener, Crop Improvement, AAU presented release proposals of varieties and recommendations of Crop Improvement AGRESCO sub-committee of SAUs. Out of the 27 release proposals of improved crop varieties/hybrids, all the 6, 7, 10 and 4 from AAU, JAU, NAU and SDAU, respectively were approved. Besides the variety release proposal, one recommendation for farming community was also proposed and it was approved. Total 9 new technical programmes were proposed and were approved.

The house discussed about the implications of releasing *Bt.* cotton varieties developed by State Agricultural Universities (SAUs), taking into consideration similar releases by SAUs in various states across the country. The House recommended for seeking the approval from the Ministry of Agriculture and Farmers Welfare, Government of Gujarat, Gandhinagar for the release of these varieties.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. Manoj Lunagariya, Convener, Crop Production, AAU, Anand presented the proceedings of the Crop Production Sub-Committee. A total of 59 recommendations for farmers and 23 information for the scientific community were proposed which were thoroughly discussed and approved by the house. In addition, 144 new technical programmes proposed by the State Agricultural Universities (SAUs) were presented and approved. The house further

resolved that the Natural Farming inputs particularly *Jivamrut* would be utilized directly without any dilution in their formulations.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. R. G. Parmar, Convener, Crop Protection, AAU, Anand presented the summary of the Plant Protection/Crop Protection Sub-Committee. Out of the 37 recommendations proposed for the farming community, all the approved in which, 7, 13, 8 and 9 recommendations from AAU, JAU, NAU and SDAU, respectively. A total of 47 scientific recommendations/information items, including 16, 09, 16 and 6 from AAU, JAU, NAU and SDAU, respectively were also approved by the house. In addition, 116 new technical programmes were presented and approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. B N Satodiya, Convener, Horticulture and Forestry, AAU presented the proceeding of Horticulture and Forestry research sub-committee of SAUs. Out of 31 and 9 proposals of recommendations for farming and scientific community, respectively, the committee approved 4, 4, 15 and 8 recommendations for farmers from AAU, JAU, NAU and SDAU respectively and 2, 1, 5 and 1 recommendations for scientific community from AAU, JAU, NAU and SDAU respectively. Total 78 new technical programmes were also approved.

It was suggested that post-harvest storage studies should be conducted after identifying the most effective treatment.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. Amar Sakure, Convener, Basic Science Sub-Committee, AAU, Anand presented the recommendations and new technical programmes finalized by the sub-committee. He reported a total of 16 information for the scientific community. After thorough discussion, all the recommendations submitted by the State Agricultural Universities (SAUs), 6 from AAU, 4 from JAU, 5 from NAU and 1 from SDAU were approved by the house. In addition, a total of 34 new technical programmes proposed by the SAUs were also approved.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. J B Patel, Convener, Social Science Sub-Committee, AAU, Anand presented the proceedings of the Social Science sub-committee. He presented 6 recommendations for the farming community, comprising 1, 3, 1 and 1 recommendations from AAU, JAU, NAU and SDAU, respectively. He also presented 50 recommendations for the scientific information, policymakers and extension agencies involving 28, 7, 10 and 5 recommendations from AAU, JAU, NAU and SDAU, respectively. After thorough deliberations, all the recommendations were approved by the house. Furthermore, 82 new technical programmes were also approved by the house.

(Action: Concerned Director of Research and Scientist of SAUs)

Dr. D K Vyas, Convener, Agricultural Engineering/FTP/PHT/AIT/Food Technology & Bioenergy AGRESCO Sub-Committee, AAU, Anand presented the proceedings of the sub-

committee. A total of 25 recommendations for farmers, entrepreneurs and industry stakeholders were presented, comprising 9, 10, 4 and 2 recommendations from AAU, JAU, NAU and SDAU, respectively. After detailed discussion, all the recommendations were approved by the house. In addition, 13 scientific information and 68 new technical programmes, including 16, 21, 3 and 28 programmes from AAU, JAU, NAU and SDAU, respectively were also approved by the house.

(**Action:** Concerned Director of Research and Scientist of SAUs)

Concluding Remarks

The Hon'ble Vice Chancellors of SDAU, NAU and JAU expressed satisfaction over the scientific deliberations and appreciated the efforts made by Anand Agricultural University for successful organization of the plenary session.

Dr. S. D. Solanki emphasized strengthening location-specific and climate-resilient research programmes along with enhanced inter-university collaboration for efficient utilization of research resources.

Dr. T. R. Ahlawat highlighted the importance of sustainable agriculture, nutritional security and market-oriented research. He stressed the need for compilation of guidelines for formulation and execution of research programs from suggestions made in combined AGRESO meetings.

Dr. V. P. Chovatia emphasized innovative and multidisciplinary research approaches for addressing challenges related to climate change, natural resource management and crop protection. He also suggested all the SAUs to include the zonal recommendation from AICRP programs in the research achievement booklet that is useful for farmers as well as policymakers.

In his concluding remarks, Dr. N. I. Shah thanked all participants, scientists and organizers for their active contribution to the success of the plenary session. He emphasized the need for collaborative, climate-resilient and farmer-oriented research, promotion of bio fortified and high-yielding varieties and integration of modern technologies for sustainable agricultural development in Gujarat.

The house held a special discussion on the use of the term "Reference Variety" in place of "Check Variety" in Crop Improvement programmes. After detailed deliberations, it was unanimously decided to continue using the term "Check Variety" to avoid confusion and any potential complications in future research, evaluation and reporting activities.

The session ended with Vote of Thanks by Dr. V. J. Patel, Associate Director of Research, AAU, Anand.

22nd Combined AGRESO Meeting of SAUs of Gujarat
Organized by AAU, Anand during May 05 to 21, 2026

Summary of the approved Recommendations and New Technical Programmes

Name of University	Crop Improvement	Crop Production	Plant Protection	Horticulture & Forestry	Social Science	Basic Science	AET/AIT/FPT /FT/PHT	Total
Varieties and Farmers / Entrepreneurs Recommendations								
AAU	06* + 00	17	07	04	01	-	09	44
JAU	07* + 00	12	13	04	03	-	10	49
NAU	10* + 00	18	08	14 (Horti) 01(Forestry)	01	-	04	56
SDAU	04* + 01	12	09	08	01	-	02	37
Total	27* + 01	59	37	31	06	-	25	186
Scientific Information								
AAU	00	07	16	02	28	06	04	63
JAU	00	08	09	01	07	04	07	36
NAU	00	02	16	02 (Horti) 03(Forestry)	10	05	02	40
SDAU	01	06	06	01	05	01	--	20
Total	01	23	47	09	50	16	13	159
New Technical Programmes								
AAU	0	30	51	17	24	05	16	143
JAU	8	37	25	10	14	07	21	122
NAU	0	25	13	22 (Horti) 06(Forestry)	17	12	03	98
SDAU	1	52	27	23	27	10	28	168
Total	09	144	116	78	82	34	68	531

* Indicate no. of crop varieties released