JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

Varieties / hybrids released / developed during last 13th years

(2004-05 to 2016-2017)

New varieties/hybrids were developed in various crops. Out of 53 varieties nearly 20 varieties got recognition at state, national and other state level. The crops covered include oilseeds, cereals, pulses, vegetables and plantation to reflect the attempts to meet the diverse needs of the farmers.

Crop	Variety/hybrid
Groundnut	GG-8▲, GG-16▲, GJG-18▲, GJG-19▲, GJG-32*, GJG-HPS-1, GJG-9 , GJG-31, GJG-17, GJG-22
Pearl Millet	GHB-538*(Pre-*rabi summer*), GHB-757* ,GHB-719* ,GHB-744*, GHB-732* (For *kharif* & *summer* season), GHB-905*
Sesame	G.Til-3 (For *kharif* & *summer* season), G. Til-4, GJ Til-5
Castor	GC-3, GCH-9
Soybean	GJSoy-3
Wheat	GW-366*, GJW-463
Chickpea	GJG-3, GJG-5*, GJG-6
Pigeon pea	GJP-1
Brinjal	JBGR-1, GJB-2, GJB-3, GJLB-4*, GJBH-4
Okra	GO-3*, GJOH-2*, GJ-Okra-3, GJOH-3*, GJOH-4*
Indian bean	GJIB-11 ,GJIB-2 (*papdi*)
Tomato	Junagadh Tomato-3
Sponge gourd	GSG-1*, GJSG-2
Ridge gourd	GJRGH-1
Garlic	GG-4*, GJG-5
Onion	GJRO-11, GJWO-3
Coconut	Hybrid T x D (Mahuva)
Custard Apple	GJCA-1
Papaya	GJP-1
Cotton	GJC-101
Sugarcane	GS-5

SN	Crop & Variety (Area)	Major Characteristics	Photographs
1	**Groundnut: GG-8** (National level Zone –III: Northern Maharashtra & MP for *kharif* season)	15 and 7 per cent higher pod yield (1716 kg/ha) over check variety, JL-24 (1493 kg/ha) and TAG-24 (1608 kg/ha) respectively. The kernel yield (1193 kg/ha) was 18.2 and 13.9 per cent higher than checks JL-24 and TAG-24, respectively. Year of release: 2004-05. Notification details: S.O. 1572 (E) & Date:20.09.2006	
2	**Groundnut: GG-16** (National level Zone –V: Tamilnadu, AP, Kerala, Karnataka, & Southern Maharashtra for *kharif* season)	The pod yield was 2058 kg/ha as compared to M-335 (1454 kg/ha) and ICGV-86325 (1616 kg/ha), which was 41.5 and 27.4 per cent higher than check varieties, respectively. The kernel yield was 1338 kg/ha, which was 40.8 and 18.6 per cent higher than M-335 and ICGV-86325, respectively. Year of release: 2004-05. Notification details: S.O. 1572 (E) & Date:20.09.2006	
3	**Groundnut: GJG HPS-1** (*kharif* rainfed areas of Saurashtra and South Gujarat)	Bold seeded variety given 38.06, 28.33 and 36.75 per cent higher pod yield (2125 kg/ha) over the checks BAU-13 (1539 kg/ha), M-335 (1656 kg/ha) and ICGV-86564 (1554 kg/ha), respectively. The variety displayed higher kernel yield (1437 kg/ha) and oil yield (702 kg/ha) than the checks BAU-13, M-335 and ICGV-86564, respectively. Year of release: 2007-08. Notification details: S.O. 2137 (E) & Date:31.08.2010	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
4	**Groundnut: GJG-9** (*kharif* rainfed groundnut growing areas of the entire Gujarat state)	30.0, 20.5 and 15.5 per cent higher pod yield (1632 kg/ha) over the checks GG-2 (1255 kg/ha), GG-5 (1355 kg/ha) and GG-7 (1413 kg/ha), respectively. It also displayed higher kernel yield (1183 kg/ha) and oil yield (570 kg/ha) than the checks GG-2, GG-5 and GG-7, respectively. It showed tolerant reaction to stem rot disease, jassid and thrips. Year of release: 2009-10. Notification details: S.O. 1708 (E) & Date:26.07.2012	
5	**Groundnut: GJG-31** (*Summer* groundnut growing areas of the entire Gujarat state)	36.9, 24.1, 17.5 and 20.6 per cent higher pod yield (3483 kg/ha) over the checks GG-2 (2545 kg/ha), GG-4 (2812 kg/ha), GG-6 (2965 kg/ha) and TG-26 (2887 kg/ha), respectively. It also displayed higher kernel yield (2460 kg/ha) and oil yield (1211 kg/ha) than the checks GG-2, GG-4, GG-6 and TG-26, respectively. Superior for the incidence and damage by jassid & heliothis as compared to checks. The variety is found free from bud necrosis (PBND) incidence. Year of release: 2009-10. Notification details: S.O.1708 (E) & Date:26.07.2012	
6	**Groundnut: GJG-17** (*kharif* rainfed condition in the spreading groundnut growing areas of the Gujarat state)	38.26, 20.40 and 13.68 per cent higher pod yield (1798 kg/ha) over the checks M-335 (1332 kg/ha), GG-11 (1493 kg/ha) and GG-13 (1581 kg/ha), respectively. The variety has shelling out turn (66.2%), higher kernel yield (1190 kg/ha) and oil yield (577 kg/ha) than the checks. It is also tolerant to stem rot. Year of release: 2010-11. Notification details: S.O. 312 (E) & Date:01.02.2013	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
7	**Groundnut: GJG-22** (*Kharif* groundnut growing semi-spreading areas of Saurashtra and South Gujarat)	38.23 and 15.05 per cent higher pod yield (1770 kg/ha) over the checks Kadiri-3 (1290 kg/ha) and GG-20 (1538 kg/ha), respectively. The variety possesses rose coloured uniform kernels with better shelling out turn (72.5%). It also showed resistant reaction to collar rot. Year of release: 2010-11. Notification details: S.O. 312 (E) & Date:01.02.2013	
8	**Groundnut: GJG-32** (*Kharif* groundnut growing semi-spreading areas of Saurashtra and South Gujarat)	The Spanish bunch groundnut variety, Gujarat Junagadh Groundnut 32 (GJG 32) recorded mean pod yield of 3392 kg/ha, which was 22.6%, 22.6% and 15.4% higher than the check varieties; GG 7 (2766 kg/ha), GJG 9 (2765 kg/ha) and TG 37A (2816 kg/ha), respectively. It has higher oil content (53.9%), oil yield (1253 kg/ha) and protein content (27.5%) as compared to the check varieties; GG 7 (48.9%, 945 kg/ha and 24.5%), GJG 9 (49.3%, 978 kg/ha and 24.5%) and TG 37A (49.9%, 993 kg/ha and 26.4%), respectively. It is more resistant to tikka and rust diseases than the check varieties. The proposed variety is recommended for release in kharif season in Gujarat. Year of release: 2016-17.	
9	**Pearl Millet: GHB-538** (State release for *Pre-rabi summer* season)	It is early maturity and temperature insensitivity for seed set under *summer* and *pre-rabi* seasons. Superior in grain yield (5003 kg/ha) over MH-169 (17.7 %) and GHB-526 (8.7 %) under pre-rabi condition. High level of resistance to downy mildew and pest of pearl millet. The hybrid GHB-538 is endorsed for cultivation for summer/pre-rabi pearl millet growing areas of North Gujarat and Saurashtra region. Year of release: 2006-07. Notification details: S.O. 1177 (E) & Date:25.08.2005	 ચિત્ર. ગુ.હા.બા. ૫૩૮ નો ઉભો પાક

SN	Crop & Variety (Area)	Major Characteristics	Photographs
10	**Pearl Millet: GHB- 757** (National release for *kharif* season)	Major role in development and release of early maturing pearl millet hybrid GHB-757. This hybrid has recorded 19.0 and 12.0 per cent higher grain yield (2365 kg/ha) over check hybrids HHB-67 and GHB-538, respectively. It has also recorded 15.2 and 4.3 per cent higher fodder yield (4800 kg/ha) than check hybrids HHB-67 and GHB-538, respectively. High level of downy mildew and smut resistance and high level of drought resistance, the hybrid is recommended for cultivation in scanty rainfall areas of Gujarat, Rajasthan and Haryana (A-1 Zone). Year of release: 2006-07. Notification details: S.O. 72 (E) & Date:10.01.2008	
11	**Pearl Millet: GHB-719** (National level in zone A-1 and State release for *kharif* rainfed condition)	Predominant contribution in development and release of early maturing (70 to 74 days), drought resistant, downy mildew resistant, shoot fly and shoot borer tolerant high yielding hybrid GHB-719. The hybrid GHB-719 has displayed average 8.9 %, 16.98 % and 9.5 % higher grain yield (2406 kg/ha) then the checks hybrids ICMH-356, HHB-67 and GHB-538, respectively. GHB-719 has displayed 10.6 %, 27.7 % and 3.7 % higher dry fodder yield (5200 kg/ha) increase as compare to early checks ICMH-356, HHB-67 and GHB-538, respectively. Released at National level for cultivation under *kharif* rainfed condition in scanty rainfall areas of Rajasthan, Gujarat and Haryana state. Year of release: 2007-08. Notification details: S.O. 122 (E) & Date:06.02.2007	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
12	**Pearl Millet: Hybrid GHB-732** **(National and State release for *kharif* season*)***	**The hybrid GHB-732 has recorded 11.50 (2689 kg/ha), 33.70 (2591 kg/ha) and 51.90 (1977 kg/ha) per cent higher grain yield (3000 kg/ha) over the checks GHB-558, PB-106 and MH-169, respectively. This hybrid showed high level of resistance to downy mildew, resistance to lodging and good quality of stover with preferred seed colour. Pivotal role played in the development and release of late maturing pearl millet hybrid GHB-732 at National as well as state level.** **Year of release: 2007-08.** **Notification details: S.O. 72 (E) & Date:10.01.2008**	
13	**Pearl Millet: Hybrid GHB-744** **(National and State release for *kharif* season*)***	**Major contribution in development and release of medium maturing pearl millet hybrid GHB-744. The hybrid has recorded 19.3 (2448 kg/ha), 51.4 (1887 kg/ha) and 10.00 (2707 kg/ha) per cent higher grain yield (2900 kg/ha) over the checks GHB-577, MH-169 and PB-106, respectively. The performance of GHB-744 is consistently good in Gujarat, Rajasthan, Madhya Pradesh, Haryana and Punjab. It is also highly resistant to downy mildew, smut and rust diseases as compared to check hybrids.** **Year of release: 2007-08.** **Notification details: S.O. 72 (E) & Date:10.01.2008**	
14	**Pearl Millet: Hybrid GHB-732** **(State release for *summer* season*)***	**The hybrid GHB-732 is recommended for endorsement for summer pearl millet growing area of Gujarat state as a medium late maturity hybrid. The hybrid revealed 15.0, 13.0 and 22.0 per cent higher grain yield (5037 kg/ha) over GHB-538 (4389 kg/ha), GHB-558 (4449 kg/ha) and GHB-526 (4140 kg/ha), respectively. It has synchronous tillering, appealing ear head with bold seeds. It showed resistance to lodging with good qualit y fodder (8150kg/ha).** **Year of release: 2010-11.** **Notification details: S.O. 72 (E) & Date:10.01.2008**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
15	**Pearl Millet:** **Hybrid GHB-905** **(National level in zone A-1)**	**The hybrid GHB-905 representing medium early type having 79 days of maturity. Hybrid GHB-905 has recorded 15.4, 6.2, 7.6 and 34.9 per cent higher grain yield (2736 kg/ha) than public sector check hybrids ICMH-359, RHB-121, GHB-744 and Pusa-23, respectively and 17.0, 3.4, and 26.2 per cent higher dry fodder yield (6500 kg/ha) than public sector checks ICMH-356, GHB-744 and Pusa-23, respectively. It is also highly resistant against downy mildew diseases and tolerant capacity of hybrid for ergot diseases.** **Year of release: 2011-12** **Notification details: S.O. 2817 (E) &** **Date:19.09.2013**	
16	**Castor:** **GC-3** **(Gujarat state under irrigation condition)**	**Variety GC-3 gave 38.81 per cent, 18.53 per cent, 100.61 per cent and 16.26 per cent higher yield over check variety GC–2 in Saurashtra, North Gujarat, Middle Gujarat and South Gujarat Agro climatic Zone, respectively. Thus the variety GC-3 has recorded 30.47 per cent higher seed yield (2340kg/ha) over GC–2 across the state under irrigated condition. GC–3 is also highly resistant to epidemic castor disease *Fusarium* wilt. Variety GC–3 was recommended for cultivation under irrigated condition in Gujarat state in place of GC–2.** **Year of release: 2006-07.** **Notification details: S.O. 1708 (E) &** **Date:26.07.2012**	
17	**Castor:** **GCH-9** **(Gujarat state under irrigation condition)**	**Gujarat Castor Hybrid-9 (GCH-9) gave seed yield of 3820 kg/ha, which was 9.0 % higher than check GCH-7 (3503 kg/ha). It is resistant to Fusarium wilt and Macrophomina root rot and tolerant to sucking pests. It is a medium duration hybrid having profuse branching habit and shallow cup shape leaves with medium plant stature and 48.3% seed oil content. The proposed variety is recommended for release under irrigated condition in Gujarat.** **Year of release: 2016-17.**	

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18	**Sesame: G.Til-3** (Saurashatra region except Vallabhipur area for *kharif* season)	The variety gave 13.1 and 8.6 higher seed yield (719 kg/ha) over the check varieties G. Til-1 (636 kg/ha) and G. Til-2 (662 kg/ha), respectively. Lower infestation of gallfly and mite. Seeds are white and bold with 1000 seed weight of 3.23 g. Year of release: 2005-06. Notification details: S.O. 449 (E) & Date:11.02.2009	
19	**Sesame: Gujarat Til-4** (North Saurashtra Agro-climatic Zone for *kharif* season)	The variety Gujarat Til-4 registered 18.3 and 10.8 per cent higher yield (770 kg/ha) increment over check varieties G-Til-2 (629 kg/ha) and G-Til-3 (687 kg/ha), respectively. It also showed per day oil production (kg/ha) superiority to the tune of 26.2 and 16.3 per cent over the check varieties G-Til-2 and G-Til-3, respectively. The variety possesses white seeds suitable for export. The variety showed parity with G-Til-2 and G-Til-3 for reaction to capsule borer, gallfly and mites. It has showed earliness to the tune of five to seven days than the check varieties. Year of release: 2009-10. Notification details: S.O. 1708 (E) & Date:26.07.2012	
20	**Sesame: Gujarat Til-3** (Endorsement for summer cultivation of Saurashtra region)	The 7.58 (1115 kg/ha) per cent higher (1200 kg/ha) yield over the check G. Til-2. Seed of this variety are white and bold containing 47.32 per cent oil and suitable for export. Year of release: 2011-12. Notification details: S.O. 449 (E) & Date:11.02.2009	

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21	**Sesame:** **GJ Til-5** **(Summer cultivation of Saurashtra region)**	**This variety recorded the seed yield of 1241 kg/ha which was 22.39 per cent higher than the check variety Gujarat Til 3 (1014 kg/ha). Oil yield of proposed variety was 22.22 per cent higher than Gujarat Til 3. Proposed variety matured in 91 days and contains 46.98 per cent oil in its seeds, which are white in colour and bolder in size. This variety was approved by the house for cultivation in summer season.** **Year of release: 2014-15.**	
22	**Wheat:** **GW-366** **(National level for Central Zone and Entire Gujarat State for *rabi* season)**	**The variety GW-366, recorded 16.57, 7.01, 11.16 and 6.18 per cent higher grain yield (4932 kg/ha) than the check varieties GW 273, Lok-1, GW 496 and GW 322, respectively. The variety has high degree of resistance to leaf & stem rust under artificial and natural conditions. The performance of variety is better in terms of grain quality parameters.** **Year of release: 2006-07.** **Notification details: S.O. 122 (E) & Date:06.02.2007**	
23	**Wheat:** **GJW-463** **(Gujarat state for *rabi* season)**	**The wheat variety Gujarat Junagadh Wheat 463 has recorded 5575 kg/ha grain yield under early sown condition which was 28.1, 30.0, 21.7 and 12.9 per cent higher over check varieties GW 496 (4338 kg/ha), LOK 1 (4287 kg/ha), GW 366 (4565 kg/ha) and GW 190 (4938 kg/ha), respectively. Whereas, the proposed variety has recorded 5091 kg/ha grain yield under timely sown condition which was 13.7, 6.9, 1.1 and 6.2 per cent higher grain yield over check varieties GW 496 (4479 kg/ha), LOK 1 (4763 kg/ha), GW 322 (5037 kg/ha) and GW 366 (4792 kg/ha), respectively. It possesses amber seed like GW 496. This variety is tolerant against rust disease. The Gujarat Junagadh Wheat 463 variety was approved for wheat growing area of the state.** **Year of release: 2015-16.**	 

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24	**Chickpea: GJG-3** (Bhal area of Saurashtra for *rabi* season)	The variety is identified for release the Vallabhipur and adjoining region for rainfed condition. It has given 12.18, 9.85 and 8.56 per cent higher yield (1483 kg/ha) than Chaffa, GG-1 and GG-2, respectively. The variety is moderately resistant to wilt and stunt. It has got attractive seed colour (yellow), large seed size, early maturity and consumer and farmers preference. Year of release: 2007-08. Notification details: S.O. 2137 (E) & Date:31.08.2010	
25	**Chickpea: GG-5** (National & Gujarat state for *rabi* season)	This variety of chickpea has produced 27.61 and 12.25 % higher seed yield over check varieties Dahod Yellow and Gujarat Gram 1, respectively under irrigated condition in Gujarat. Seeds of this variety are of medium size and brown in colour. This variety is resistant to wilt and stunt diseases. This variety is approved for release in Gujarat state. Year of release: 2013-14.	
26	**Chickpea: GJG-6** (Gujarat under rainfed condition)	This variety has produced (1867 kg/ha) 13.6, 21.9 and 5.2 per cent higher seed yield over check varieties Gujarat Gram 1 (1643 kg/ha), Gujarat Gram 2 (1531 kg/ha) and Gujarat Junagadh Gram 3 (1775 kg/ha), respectively. Seeds of this variety are of medium size and dark brown in colour with 19.9 per cent protein. This variety is resistant to wilt (8.7 % in wilt sick plot) and stunt (5.0 %) diseases. It is recommended for release in Gujarat under rainfed condition. Year of release: 2014-15.	

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27	**Pigeonpea: GJP-1** (*Kharif* season in South Saurashtra)	This Pigeonpea variety has produced 71.14, 2.82, 29.12 and 25.23 per cent higher seed yield over check varieties, BDN 2, ICPL 87119, Vaishali and AGT 2, respectively during *kharif* season in South Saurashtra. This variety is medium late (176 days) in maturity. GJP 1 is also found moderately resistant to wilt and SMD diseases. The seed of this variety is bold in size with white colour. **Year of release: 2013-14.**	
28	**Pigeonpea: GJP-1** (Area expansion for *Kharif* season in Gujarat States)	This variety has produced **(2115, 2045 & 1987 kg/ha)** 38.78, 10.06 and 27.62 per cent higher seed yield over check varieties, BDN 2 (1524 kg/ha), ICPL 87119 (1858 kg/ha) and Vaishali (1557 kg/ha), respectively. This variety is medium late (176 days) in maturity. Gujarat Junagadh Pigeonpea 1 (GJP 1) is also found moderately resistant to wilt (13.89 %) and SMD (13.89 %) disease. The seeds of this variety are bold in size with white colour. This variety is recommended for Gujarat state. **Year of release: 2014-15.**	
29	**Coconut: Hybrid T x D (Mahuva)** (Coastal area of Gujarat state)	This variety gave **43 nuts/palm/year**. The coconut hybrid T x D (Mahuva) is semi tall with good bucking habit. The variety is alternative/ replacement for existing hybrid D x T (Mahuva). It is also alternative solution of seed production problem of hybrid D x T (Mahuva). **Year of release: 2005-06.** **Notification details: S.O. 2978 (E) & Date:26.12.2008**	

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29	**Custard Apple:** **Gujarat Junagadh Custard Apple-1 (GJCA-1)** (Saurashtra region)	The variety, GJCA-1 registered 45.86, 22.59 and 23.21 per cent higher fruit yield (27 kg/tree), as compared to checks Sindhan, selection 11 & 12, respectively. The variety possessed more number of fruits per tree than the checks, less number of seeds per fruit and higher pulp content. **Year of release: 2008-09.**	
30	**Papaya:** **Gujarat Junagadh Papaya-1 (GJP-1)** (Saurashtra region)	Gujarat Junagadh Papaya-1 (GJP-1) recorded fruit yield of 84.5 t/ha, which was 59.1% higher than the check variety Pusa Dwarf (53.1 t/ha). It is earlier in flowering with more number of fruits per plant. The fruits are medium in size (1.650 kg) with pyriform shape. The fruit possesses higher pulp to seed ratio, pulp and sugar content and better organoleptic characters than check Pusa Dwarf. The proposed variety is recommended for release in Saurashtra region. **Year of release: 2016-17.**	
31	**Soybean:** **GJSoy-3** (*kharif* rainfed condition for Saurashtra region)	The variety given 24.80 and 43.70 per cent higher seed yield (1860 kg/ha) over the local checks GS-1 (1490 kg/ha) and GS-2 (1277 kg/ha), respectively. It has also recorded 18.02 and 28.63 per cent higher yield than zonal checks JS-335 (1576 kg/ha) and PK- 472 (1446 kg/ha), respectively. It is determinate type, with dark green foliage and yellowish brown seeds coupled with non-shattering habit. **Year of release: 2010-11.**	
32	**Tomato:** **Junagadh Tomato-3** (Saurashtra Region for late *Kharif* & *Rabi* seasons)	The variety gave 22.52 per cent higher yield (38460 kg/ha) over check variety Gujarat Tomato-2. Fruits are medium in size, flat round in shape with attractive red colour, thick skin and 4 to 5 locules with high T.S.S. **Year of release: 2007-08.**	

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33	**Sponge gourd:** **GSG-1** (National level in Zone VI and Entire Gujarat state for *kharif* season)	Average yield (13129 kg/ha) 22 per cent higher yield than Pusa Chikni, attractive light green colour & more soluble sugar (1.99 %) as compared to Pusa Chikni (1.59 %). Year of release: 2004-05. Notification details: S.O. 597 (E) & Date:25.04.2006	
34	**Sponge gourd:** **GJSG-2** (Gujarat state for *kharif* season)	This variety had recorded a mean fruit yield of 114.04 q/ha, which was 18.05 and 19.18 per cent higher than state check variety GSG 1 (96.60 q/ha) and National check variety Pusa Chikni (95.69 q/ha). Further, mosaic (18.25 %), downy mildew score (2.35), fruit fly damage (12.86 %) and leaf miner larvae (5.61/leaf) were less as compared to check varieties. The pulp/skin ratio (12.393), total soluble solids (6.25 %), total soluble sugar (1.67 %), protein (0.218 %) and chlorophyll total (1.53 mg/g) were more as compared to check varieties. The fruits of GJSG 2 are long in size, green colour with good shine. It is recommended for release in Gujarat. Year of release: 2014-15.	
35	**Garlic:** **GG-4** (National level in Zone IV (Gujarat & Rajasthan) and Saurashtra & Middle Gujarat for *Rabi* season)	The Gujarat Garlic-4 recorded 20.42 and 20.34 per cent higher bulb yield (8933 kg/ha) over checks GG-3 and G-282, respectively. The bulbs are compact and contain higher soluble solids (36.12 %) as compared to GG-3 (35.50 %) and G-282 (34.75 %). Year of release: 2006-07. Notification details: S.O. 2978 (E) & Date:26.12.2008	

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36	**Garlic:** **GJG-5** **(Saurashtra and Middle Gujarat for *rabi* season)**	**This variety of garlic recorded 23.34 and 26.93 per cent higher bulb yield over check varieties GG 4 and G 282, respectively during *rabi* season in Saurashtra and Middle Gujarat. The bulbs of this variety are medium in size, compact and white in color. This variety is approved for release in Saurashtra and Middle Gujarat.** **Year of release: 2013-14.**	
37	**Onion:** **GJRO-11** **(Gujarat State except South Gujarat)**	**This variety had recorded a mean bulb yield of 323.55 q/ha which was 21.57, 18.71 and 15.41 per cent higher over check varieties AGFL-Red (266.15 q/ha), Pilli Patti (272.55 q/ha) and Talaja-Red (280.34 q/ha), respectively. The purple bloch (12.67 %) was less as compared to check varieties AGFL-Red (20.30 %), Pilli Patti (23.56 %) and Talaja-Red (24.28 %). Population of thrips (5.7/leaf) was found less as compared to check varieties. It was found less pungent (Pyruvic acid: 1.22 %) as compared to check varieties AGFL-Red and Talaja-Red. In this variety, 12.94 per cent total soluble solids were recorded. The bulbs of GJRO 11 are medium in size with flat globe shape and red in colour. It is recommended for release in Gujarat (except South Gujarat).** **Year of release: 2014-15.**	

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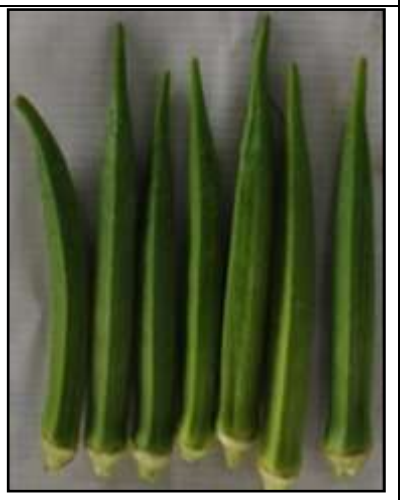
38	**Onion:** **GJRO-11** (Area Expansion) (Gujarat State)	The red onion variety recorded bulb yield of 336.29 q/ha, which was 16.0, 27.3 and 21.3 per cent higher over check varieties, AGFL Red (289.9 q/ha), Pilli Patti (264.2 q/ha) and Talaja Red (277.3 q/ha), respectively. This variety was found less pungent (pyruvic acid, 1.22 µM/g) as compared to check varieties AGFL-Red and Talaja-Red and the bulbs of this variety were medium in size with flat globe shape and red in colour. The variety was found good as compared to check varieties against diseases and insect-pest reactions. The variety was approved for South Gujarat too. **Year of release: 2015-16.**	 
39	**Onion:** **GJWO-3** (Gujarat state for *rabi* season)	The white onion variety recorded bulb yield of 398.06 q/ha, which was 20.8, 11.3 and 7.8 per cent higher over check varieties viz., PWF-131 (329.54 q/ha), GWO-1 (357.75 q/ha) and qualifying variety GAWO-2 (369.26 q/ha), respectively. The proposed variety bulbs contain higher total soluble solid (13.15%) as compared to check varieties viz., PWF-131 (12.80%), GWO-1 (12.88%) and GAWO-2 (12.18%). Bolting per cent and jointed bulb per cent were less as compared to check varieties and the bulbs of this variety were medium in size with flat globe shape and white in colour preferred by industry. The variety was approved for Gujarat state. **Year of release: 2015-16.**	 

SN	Crop & Variety (Area)	Major Characteristics	Photographs
40	**Brinjal:** **JBGR-1** (Saurashatra & Middle Gujarat for late *Kharif* & *Rabi* season)	The variety gave 18.13 per cent higher yield (40100 kg/ha) over check variety green round local. Fruits are round with attractive green colour, good shining and taste. The variety contains higher TSS, protein, acidity and phenol as compared to check. The incidence of jassids, white fly and fruit borer was lower than the brinjal green round local. **Year of release: 2005-06.** **Notification details: S.O. 2978 (E) & Date:26.12.2008**	
41	**Brinjal:** **GJB-2** (Late *Kharif* & *Rabi* seasons across the Gujarat state)	The brinjal variety Gujarat Junagadh Brinjal-2 (GJB-2) recorded overall 20.9 per cent higher fruit yield (34294 kg/ha) over check variety GOB-1. The fruits of this variety have attractive pink purple color, medium in size, medium long shape and possessing white fruit pulp with less seeds. The variety showed tolerance against little leaf disease. **Year of release: 2009-10.** **Notification details: S.O. 2277 (E) & Date:17.08.2015**	
42	**Brinjal:** **GJB-3** (Late *Kharif* brinjal growing area of Gujarat)	The 43.6 (31390 kg/ha) and 29.3 (21030 kg/ha) per cent higher yield (39390 kg/ha) over the checks JBGR-1 and GOB-1, respectively. The variety is tolerant to little leaf disease and jassid compared to checks. The fruit pulp is creamy white with less seed. The plants are medium in size and semi spreading. The variety is relatively tolerant to little leaf disease and jassid compared to checks *vis.*, JBGR-1 and GOB-1. **Year of release: 2011-12.**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
43	**Brinjal:** **GJLB-4** **(Brinjal growing area of Gujarat)**	**This variety had recorded a mean fruit yield of 396.03 q/ha which was 30.81 and 25.83 per cent higher over check varieties GOB 1(302.75 q/ha) and GBL 1 (314.73q/ha), respectively. The little leaf disease (5.08 %) was less as compared to check variety GOB 1(6.15%). Jassid (3.04/leaf), whitefly (4.70/leaf) and fruit borer (11.05 %) were less as compared to check variety GOB 1. The protein (1.51 %) and total soluble sugar (3.36 %) were also more than check varieties. The fruits of GJB 4 are medium in size with long shape and light purple colour with good shining. It is recommended for release in Gujarat state.** **Year of release: 2014-15.**	
44	**Brinjal:** **GJBH-4** **(Brinjal growing area of Saurashtra and Middle Gujarat)**	**This hybrid gave a mean fruit yield of 428.01 q/ha which was 14.11 and 25.68 per cent higher over hybrid checks GBH 2 (375.08 q/ha) and ABH 1 (340.57 q/ha), respectively. It has recorded 6.63 and 7.66 per cent higher fruit yield than the private hybrids Navina (VNR Seeds) and ARBH 201 (Ankur Seeds), respectively. The little leaf disease (4.42%) was less as compared to check variety GBH 2 (4.98%). The damage due to jassid (2.84/leaf), white fly (3.93/leaf) and fruit borer (4.93 %) were less as compared to hybrid checks. The protein (1.48 %) and total soluble sugar (3.33 %) were more as compared to hybrid checks. The fruits of this hybrid are medium in size with oblong shape and pink purple colour with good shine. It is recommended for release in Saurashtra and Middle Gujarat.** **Year of release: 2014-15.**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
45	**Okra:** **GO-3** **(National level in Zone VII & VIII for *kharif season*)**	**The okra variety GO-3 gave the mean fruit yield of 8668 kg/ha in Zone–VII which was 28.68, 51.17, 20.77, 28.54, 31.32 and 34.96 per cent higher over checks varieties Arka Abhay, P-7, PB-57, Parbhani Kranti, Arka Anamika and Pusa Sawani, respectively. This variety GO-3 gave the mean fruit yield of 12725 kg/ha in Zone–VIII which was 45.02, 54.90, 72.08, 28.54, and 115.12 per cent higher over checks varieties Arka Abhay, P-7, Parbhani Kranti, Arka Anamika and Pusa Sawani, respectively. The fruit are smooth, green, tender and attractive in colour.** **Year of release: 2006-07.**	
46	**Okra:** **GJOH-2** **(National level in *Z*one II, IV, VI, VII & VIII and *Kharif* okra growing areas of Saurashtra, Middle & South Gujarat)**	**The variety GJOH-2 showed 23.33 and 39.92 per cent higher green fruit yield over GJOH-1 and Pusa Sawani, respectively at Junagadh during *kharif* 2003-2008. In AICRP, it showed 20.71 and 41.95 per cent higher fruit yield, respectively over Parbhani Kranti and Pusa Sawani at Anand and Junagadh centers. The variety has been recommended by AICRP. The average yield of the fruit is 14836 kg/ha.** **Year of release: 2008-09.** **Notification details: S.O. 2978 (E) & Date:26.12.2008**	
47	**Okra:** **GJO-3** **(*Kharif* okra growing areas of Saurashtra, South Gujarat)**	**The variety GJ Okra-3 registered 20.6 and 25.7 per cent higher green fruit yield over checks GO-2 and Pusa Sawani, respectively. Further, it also registered 38.4, 49.1 and 71.3 per cent higher yield as compared to Parbhani Kranti, Arka Anamika and Pusa Sawani, respectively. The variety possesses green, tender and attractive fruits. The average fruit yield is 15052 kg/ha.** **Year of release: 2009-10.**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
48	**Okra:** **GJOH-3** **(National level in Zone V, VI & VII and *kharif* okra growing area of Gujarat state)**	**The hybrid GJOH-3 is recommended for endorsement for cultivation in *kharif* okra growing area of Gujarat state due to its yield superiority (13744 kg/ha) to the tune of 19.9, 26.2, and 29.8 per cent over the checks GOH-1 (11465 kg/ha), Parbhani Kranti (10887 kg/ha) and Pusa Sawani (10587 kg/ha), respectively. The fruit is dark green colour and tender with higher protein (1.15%) and ascorbic acid content (6.3 mg/100g). The hybrid showed lesser incidence of YVMV (24.2%). The hybrid was tested already been released under AICRIP programme for Zone V, VI and VII of India.** **Year of release: 2010-11.** **Notification details: S.O. 2277 (E) & Date:17.08.2015**	
49	**Okra:** **GJOH-4** **(National level in Zone VI & VII and *kharif* okra growing area of Gujarat state)**	**This hybrid recorded a mean fruit yield of 135.94 q/ha, which was 46.91 per cent higher over check variety Pusa Sawani (92.50 q/ha) while with hybrid check the GJOH 4 recorded 145.74 q/ha fruit yield which was 23.86 per cent higher than GJOH 3 (117.67q/ha). It also yielded 17.11, 28.04 and 30.69 per cent higher yield over one private check HOK 152 and two public sector checks Arka Anamika and Pusa Sawani, respectively. The yellow vain mosaic (36.71%) was found less as compared to check variety Gujarat Okra Hybrid 2 (46.15 %). The jassid (5.26), thrips (4.79), white fly (4.76) and fruit borer (4.66 %) damage were less than check varieties. The pods of this hybrid are medium dark green, tender, long and attractive. It is recommended for release in Gujarat.** **Year of release: 2014-15.**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
50	**Indian Bean:** **GJIB-11** **(Late *kharif* growing areas of Saurashtra and Middle Gujarat)**	**The variety Gujarat Junagadh Indian Bean-11 recorded 31.2 and 32.1 per cent higher green pod yield (9539 kg/ha) over *Virpur* local (7270 kg/ha) and *Dantiwada* local (7222 kg/ha), respectively. This variety being semi-spreading in nature is easier to harvest. The Gujarat Junagadh Indian Bean-11 is recommended for cultivation in late *kharif* growing areas of Saurashtra and Middle Gujarat. The pods of this variety are medium length in size with green colour.** **Year of release: 2010-11.**	
51	**Indian Bean:** **GJIB-2(*papdi*)** **(Late *kharif* growing areas of Saurashtra and Middle Gujarat)**	**The 25.6 (9095 kg/kg) per cent higher green pod yield (11250 kg/ha) over the checks Gujarat Papdi-1. The pods of this variety are tender, flat and medium long in shape with green colour. The immature seed color is light green and inflorescence length is more as compared to Gujarat Papdi-1. Plants are semi spreading; leaf spot and leaf blight disease intensity are less than Guj. Papdi-1.** **Year of release: 2011-12.**	
52	**Ridge Gourd:** **GJRGH-1** **(*Kharif* ridge gourd growing area of Saurastra and Middle Gujarat)**	**The 24.56 (9096 kg/ha) per cent higher fruit yield (11330 kg/ha) over the national checks variety Pusa Nasdar. The fruits of the hybrid are long in size with green color. It is moderately resistant to downy mildew and major pests.** **Year of release: 2011-12.**	

SN	Crop & Variety (Area)	Major Characteristics	Photographs
53	**Cotton:** **GJC-101**	The farmers of non Bt cotton (*Gossypium hirsutum*) growing areas of Gujarat state are advised to grow variety GJ. Cot-101 under irrigated condition. This variety has recorded a seed cotton yield of 2107 kg/ha, which was 13.5, 39.9, 18.7 and 48.1 per cent higher than the local check varieties viz., G. Cot-18 in South Saurashtra Agro-climatic Zone, G.Cot-10 in South Gujarat Agro-climatic Zone, G. Cot-16 in North Gujarat Agro-climatic Zone and zonal check LRA-5166 in Central Agro-climatic Zone, respectively. The calculated lint yield 676 kg/ha was produced by GJ. Cot-101, which was 9.6, 23.8, 17.5 and 41.7 per cent higher than local check varieties G.Cot-18, G.Cot-10, G.Cot-16 and zonal check LRA-5166, respectively. It has 32.0 per cent ginning outturn and 18.34 per cent oil content in seed. This variety is medium in maturity. It is found moderately resistant to *Alternaria* leaf spot disease. **Year of release: 2012-13.**	 Boll shape of GJC-101  Plant view with squaring &boll development stage of GJC-101
54	**Sugarcane:** **GS-5**	The farmers of South Saurashtra Agro-climatic Zone growing sugarcane crop are advised to grow sugarcane variety CoN 05071 (Gujarat Sugarcane 5) for getting higher cane and sugar yield. This variety has recorded 121.20 t/ha cane yield in plant crop which was 17.44, 16.44 and 19.20 per cent higher as compared to check varieties viz., Co 85004, CoN 03131 and CoC 671, respectively. Ratoon crop of this variety also gave 35.24, 31.81 and 62.54 per cent higher cane yield (97.59 t/ha) over check varieties viz., Co 85004, CoN 03131 and CoC 671, respectively. It is an early maturing variety. **Year of release: 2012-13.**	 Fully mature cane