

JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

B. Pulses crops

| Sr. No. | Variety/ Hybrid | |
|-----------|-------------------|--|
| 5. | Chickpea | |
| | 5.1 | Gujarat Junagadh Gram 3 (GJG 3) |
| | 5.2 | Gujarat Gram 5 (GG 5) |
| | 5.3 | Gujarat Junagadh Gram 6 (GJG 6) |
| 6. | Pigeon pea | |
| | 6.1 | Gujarat Junagadh Pigeon pea 1 (GJP 1) |
| 7. | Uradbean | |
| | 7.1 | Gujarat Urad 2 (GU 2) |

5. Chickpea

5.1 Gujarat Junagadh Gram 3 (GJG 3)

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| 1 | Name of crop | Chickpea |
| 2 | Botanical name | <i>Cicer arietinum</i> L. |
| 3 | Name of variety | Gujarat Junagadh Gram 3 (GJG 3) |
| 4 | Parentage with details of its pedigree | ICCV 93001 x ICCV 10 (ICCV 940205-J-1-3-1-1) |
| 5 | Breeding method | Hybridization followed by pedigree method of selection. |
| 6 | Year of release | 2007-08 |
| 7 | Gazette notification | S.O. 2137 (E) Date: 31.08.2010 |
| 8 | Acknowledge particulars about the submission of germplasm samples with NBPGR | GG 3 (GJG 0207) IC: 573501 |
| 9 | Potential yield (kg/ha) | 2625 |
| 10 | Average yield (kg/ha) | 1535 |
| 11 | Recommended regions/areas of adoption | Rainfed areas of Bhal and Coastal Zone of Gujarat. This variety suitable for cultivation under rainfed condition in <i>Rabi</i> season. |
| 12 | Characteristics/Distinguishing morphological in brief: | |
| | • Plant height (cm) | 35.65 |
| | • Plant growth habit | Semi-erect |
| | • Plant green colour intensity of foliage | Medium |
| | • No. of primary branches | 4 |
| | • No. of secondary branches | 12 |
| | • 100 seed weight (g) | 22.77 |
| | • Leaf character | Compound |
| | • Leaf size and shape | Medium and Lanceolate |
| | • Leaf colour | Green |
| | • Leaf pubescent/glabrous | Pubescent |
| | • Time of flowering | Early |
| | • Flower colour | Pink |
| | • Number of flower per peduncle | Single |
| | • Flower strips on standard | Present |
| | • Flower pattern | Indeterminate |
| | • Pod size | Large |
| | • Pod colour | Greamy at maturity |

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| • | Pod hairiness | Hairy |
| • | Pod surface | Rough |
| • | Pod per plant | 34.13 |
| • | Number of seeds per pod | 1.66 |
| • | Seed colour | Yellow |
| • | Seed shape and size | Owls head and Large |
| • | Seed testa texture | Tuberculated |
| • | Seed ribbing | Absent |
| • | Seed type | Desi |
| 13 | Agronomical Practices | Time of sowing: 2 nd fortnight of October Sowing distance: 30 x 10 cm. Seed rate: 60 kg/ha. Fertilizer: N:P:K 20:40:00 kg/ha. |
| 14 | Specific attributes/Describe at least two identifiable characteristics of the variety | Attractive yellow colour of seed with tuberculated surface, large seed size (22.77 g/100) and high carbohydrate (64.02 %). |
| 15 | Quality / Nutritional / Other features | Protein content (%) : 22.76 Total carbohydrates (%) : 64.02 Total Soluble Sugar (%) : 10.51 Phenol (%) : 0.60 Initial Moisture Content (%) : 10.01 Actual Dal (%) : 88.12 Cooking Time in Minutes : 26 |
| 16 | Diseases and pests resistance (give details of any resistance to pest or diseases including races) | Moderately resistant to wilt and stunt diseases and tolerant to <i>Helicoverpa armigera</i> infestation. |
| 17 | Duration/ Maturity group | 98 days/Early maturity group |
| 18 | Originating source/ Institute | Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat) |



5.2 Gujarat Gram 5 (GG 5)

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| 1 | Name of crop | Chickpea |
| 2 | Botanical name | <i>Cicer arietinum</i> L. |
| 3 | Name of variety | Gujarat Gram 5 (GG 5) |
| 4 | Parentage with details of its pedigree | GJG 9707 x IPC 97-7 (JND 2001-02-02-01-05-01-5B) |
| 5 | Breeding method | Hybridization followed by pedigree method of selection. |
| 6 | Year of release | 2013-14 |
| 7 | Gazette notification | S. O. 1007 (E) Date: 30.03.2017 |
| 8 | Acknowledge particulars about the submission of germplasm samples with NBPGR | GG 5 (GJG 0809) IC:598345 |
| 9 | Potential yield (kg/ha) | 3392 |
| 10 | Average yield (kg/ha) | 2510 |
| 11 | Recommended regions/areas of | Jammu and Kashmir, Himachal Pradesh, Uttarakhand |

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| | adoption | and North Eastern Hill region of India and Irrigated condition of Gujarat. |
| 12 | Characteristics/Distinguishing morphological in brief: | |
| | • Plant height (cm) | 50.00 |
| | • Plant growth habit | Semi-erect |
| | • Plant green colour intensity of foliage | Medium Green |
| | • 100 seed weight (g) | 21.37 |
| | • Initial Moisture Content (%) | 9.76 |
| | • Actual Dal (%) | 86.90 |
| | • Actual Husk (%) | 13.10 |
| | • Cooking Time in Minutes | 30.0 |
| | • Leaf character | Compound |
| | • Leaf size and shape | Medium and Lanceolate |
| | • Leaf colour | Green |
| | • Leaf pubescent/glabrous | Pubescent |
| | • Time of flowering | Early |
| | • Flower colour | Pink |
| | • Number of flower per peduncle | Single |
| | • Flower strips on standard | Present |
| | • Flower pattern | Indeterminate |
| | • Pod size | Medium |
| | • Pod colour | Green |
| | • Pod hairiness | Hairy |
| | • Pod surface | Rough |
| | • Pod per plant | 65 |
| | • Number of seeds per pod | 1.46 |
| | • Seed colour | Brown |
| | • Seed shape | Angular |
| | • Seed testa texture | Tuberculated |
| | • Seed ribbing | Present |
| | • Seed type | Desi |
| 13 | Agronomical Practices | Time of sowing: 1 st fortnight of November Sowing distance: 45 x 10 cm. Seed rate: 60 kg/ha. Fertilizer: N:P:K 20:40:00 kg/ha. Irrigation: 4-5 |
| 14 | Specific attributes/Describe at least two identifiable characteristics of the variety | Attractive brown colored medium sized seed. Medium green colour of foliage. |
| 15 | Quality / Nutritional / Other features | Protein content (%) : 22.31 Total carbohydrates (%) : 58.40 TSS (%) : 6.50 Phenol (%) : 0.24 |
| 16 | Diseases and pests resistance (give details of any resistance to pest or diseases including races) | Moderately resistant to wilt, <i>Ascochyta</i> blight, stunt, root rot & BGM diseases. Low <i>Helicoverpa armigera</i> infestation. |
| 17 | Duration/ Maturity group | 103 days (Early maturity group) |
| 18 | Originating source/ Institute | Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat) |



5.3 Gujarat Junagadh Gram 6 (GJG 6)

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| 1 | Name of crop | Chickpea |
| 2 | Botanical name | <i>Cicer arietinum</i> L. |
| 3 | Name of variety | Gujarat Junagadh Gram 6 (GJG 6) |
| 4 | Parentage with details of its pedigree | GJG 0105 x FC 711 (JND 2002-01-01-05-02-01-SB) |
| 5 | Breeding method | Hybridization followed by pedigree method of selection. |
| 6 | Year of release | 2014-15 |
| 7 | Gazette notification | S.O. 3540 (E), Date: 22.11.2016 |
| 8 | Acknowledge particulars about the submission of germplasm samples with NBPGR | GJG 6 (GJG 1003) IC:615013 |
| 9 | Potential yield (kg/ha) | 2722 |
| 10 | Average yield (kg/ha) | 1867 |
| 11 | Recommended regions/areas of adoption | The variety is suitable for cultivation under rainfed (Conserved soil moisture condition) of Gujarat in <i>Rabi</i> season. |
| 12 | Characteristics/Distinguishing morphological in brief: | |
| | • Plant height (cm) | 47.00 |
| | • Plant growth habit | Semi-erect |
| | • Plant green colour intensity of foliage | Medium Green |
| | • 100 seed weight (g) | 22.45 |
| | • Pod per plant | 36 |
| | • Number of seeds per pod | 1.50 |
| | • Leaf character | Compound |
| | • Leaf size and shape | Medium and Lanceolate |
| | • Leaf colour | Green |
| | • Leaf pubescent/glabrous | Pubescent |
| | • Time of flowering | Medium |
| | • Flower colour | Pink |
| | • Number of flower per peduncle | Single |
| | • Flower strips on standard | Present |
| | • Flower pattern | Indeterminate |
| | • Pod size | Medium |
| | • Pod colour | Green |
| | • Pod hairiness | Hairy |
| | • Pod surface | Rough |
| | • Seed colour | Dark Brown |
| | • Seed shape | Angular |
| | • Seed testa texture | Tuberculated |
| | • Seed ribbing | Present |

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| ● | Seed type | Desi |
| 13 | Agronomical Practices | Time of sowing: 2 nd fortnight of October Sowing distance: 30 x 10 cm. Seed rate: 60 kg/ha. Fertilizer: N:P:K 20:40:00 kg/ha. |
| 14 | Specific attributes/Describe at least two identifiable characteristics of the variety | Attractive dark brown colour seed with tuberculated seed testa texture (Surface) and angular seed shape with medium seed size. |
| 15 | Quality / Nutritional / Other features | Protein content (%) : 19.90 Total carbohydrates (%) : 67.84 Total soluble sugar (%) : 5.44 Phenol (%) : 0.24 Initial Moisture Content (%) : 9.83 Actual Dal (%) : 87.72 Cooking Time in Minutes : 27.0 |
| 16 | Diseases and pests resistance (give details of any resistance to pest or diseases including races) | Resistant against wilt and stunt diseases. Low <i>Helicoverpa armigera</i> infestation |
| 17 | Duration/ Maturity group | 112 days/Medium maturity group |
| 18 | Originating source/ Institute | Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat) |



6. Pigeon pea

6.1 Gujarat Junagadh Pigeon pea 1 (GJP 1)

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| 1 | Name of crop | Pigeon pea |
| 2 | Botanical name | <i>Cajanus cajan</i> L. Millsp |
| 3 | Name of variety | Gujarat Junagadh Pigeon pea 1 (GJP 1) |
| 4 | Parentage with details of its pedigree | LRG 41 x BDN 2 (JP-2002-07-10-01-02-01-01-B) |
| 5 | Breeding method | Hybridization followed by pedigree method of selection. |
| 6 | Year of release | 2013-14 2014-15 (Area expansion) |
| 7 | Gazette notification | S. O. 2238 (E) & Date: 29.06.2016 |
| 8 | Acknowledge particulars about the submission of germplasm samples with NBPGR | GJP 1 (GJP 0901) IC: 599727 |
| 9 | Potential yield (kg/ha) | 4306 |
| 10 | Average yield (kg/ha) | 2115 |
| 11 | Recommended regions/areas of adoption | The variety is suitable for cultivation in <i>kharif</i> season in Saurashtra region and rainfed & irrigated areas across the Gujarat state. |
| 12 | Characteristics/Distinguishing morphological in brief: | |
| ● | Plant height (cm) | 168.1 |
| ● | Plant growth habit | Indeterminate |
| ● | Branches/plant | 10.6 |

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| • | Pod per plant | 220.5 |
| • | Number of seeds per pod | 4 |
| • | Days to 50 % flowering | Medium (123) |
| • | Initial Moisture Content (%) | 11.74 |
| • | Actual Dal (%) | 86.97 |
| • | Actual Husk (%) | 13.03 |
| • | Cooking Time in Minutes | 21.0 |
| • | Protein content (%) | 19.51 |
| • | Stem anthocyanin colour | Absent |
| • | Leaf shape | Sesame |
| • | Leaf pubescent | Present |
| • | Leaflet size | Medium |
| • | Leaf tip | Pointed |
| • | Base colour of petal | Yellow |
| • | Patter of streaks on petal | Absent |
| • | Pod size | Medium |
| • | Pod colour | Green with purple streaks |
| • | Pod Pubescence | Absent |
| • | Pod Waxiness | Absent |
| • | Pod Stickiness | Present |
| • | Pod Constriction | Prominent |
| • | Seed colour | White |
| • | Seed eye colour | Light Brown |
| • | Seed shape | Oval |
| • | Seed colour pattern | Mottled |
| • | Seed size (g/100 seeds) | Extra-large (11.7) |
| 13 | Agronomical Practices | <ul style="list-style-type: none"> • Time of sowing: <ul style="list-style-type: none"> ➤ First fortnight of June (Sole crop) ➤ First week of August (Relay crop in Groundnut) • Sowing distance: 90 x 20 cm. • Seed rate: 20 kg/ha. • Fertilizer: N:P:K 25:50:00 kg/ha. • Irrigation: 2-3 after cessation of monsoon |
| 14 | Specific attributes/Describe at least two identifiable characteristics of the variety | Attractive white seed colour. Light green foliage. Bold seed size. |
| 15 | Quality / Nutritional / Other features | <ul style="list-style-type: none"> • Milling Dal (%) : 74.58 • Protein content (%) : 19.51 • Actual Dal (%) : 86.97 • Cooking time Min. : 21.0 |
| 16 | Diseases and pests resistance (give details of any resistance to pest or diseases including races) | The variety moderately resistant against wilt and SMD. |
| 17 | Duration/ Maturity group | 176 days/Medium maturity group |
| 18 | Originating source/ Institute | Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat) |



7. Uradbean

7.1 Gujarat Urad 2 (GU 2)

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| 1 | Name of crop | Uradbean (Black gram) |
| 2 | Botanical name | <i>Vigna mungo (L.) hepper</i> |
| 3 | Name of variety | Gujarat Urad 2 (GU 2) |
| 4 | Parentage with details of its pedigree | CoBG 593 x TPU 4 [JND2008-08-08-02-01-02-16 (Bulk)] |
| 5 | Breeding method | Hybridization followed by pedigree method of selection. |
| 6 | Year of release | 2018-19 |
| 7 | Gazette notification | Awaited |
| 8 | Acknowledge particulars about the submission of germplasm samples with NBPGR | GU 2 (GJU 1509) IC 629205 |
| 9 | Average yield (kg/ha) | 1079 |
| 10 | Recommended regions/areas of adoption | The proposed variety is suitable for <i>kharif</i> season cultivation in Gujarat state |
| 11 | Characteristics/Distinguishing morphological in brief: | |
| | • Plant height (cm) | 60 |
| | • Plant growth habit | Semi erect |
| | • No. of branches/plant | 4.3 |
| | • 100 seed weight (g) | 4.76 |
| | • Pod per plant | 40 |
| | • Number of seeds per pod | 6.8 |
| | • Days to maturity | 82 (Medium) |
| | • Leaf colour | Green |
| | • Leaflet size | Medium |
| | • Stem pubescent | Present |
| | • Time of flowering | Medium |
| | • Matured pod colour | Brown |
| | • Matured pod shape | Round |
| | • Hilum size | Small |
| | • Seed colour | Greenish brown |
| | • Seed shape | Drum |
| | • Seed size | Large |
| 12 | Agronomical Practices | <ul style="list-style-type: none"> • Time of sowing: 1st fortnight of July • Sowing distance: 45 x 10 cm. • Seed rate: 18-20 kg/ha. • Fertilizer: N:P:K 25:50:00 kg/ha & 20 kg/ha S |
| 13 | Specific attributes/Describe at least two identifiable characteristics of the variety | Greenish brown colour of seed with drum seed shape and brown coloured round shape long pod with pubescent |
| 14 | Quality / Nutritional / Other | Total carbohydrates (%) : 63.85 |

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| | features | Total soluble sugar (%) : 1.34 Protein: 22.59 Actual Dal (%) : 66.71 Cooking Time in Minutes : 32.0 |
| 15 | Diseases and pests resistance (give details of any resistance to pest or diseases including races) | This variety has resistance against MYMV, leaf curl and powdery mildew diseases |
| 16 | Duration/ Maturity group | 82 days/Medium maturity group |
| 17 | Originating source/ Institute | Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat) |

