# JUNAGADH AGRICULTURAL UNIVERSITY, JUNAGADH

#### **B.** Pulses crops

Sr. No.	Variety/ Hybrid			
5.	Chickpea			
	5.1 Gujarat Junagadh Gram 3 (GJG 3)			
	5.2	5.2 Gujarat Gram 5* (GG 5)		
	5.3	Gujarat Junagadh Gram 6 (GJG 6)		
6.	Pigeon pea			
	6.1	Gujarat Junagadh Pigeonpea 1 (GJP 1)		

<sup>\*</sup> Released for National level and Gujarat State also

#### 5. Chickpea

## 5.1 Gujarat Junagadh Gram 3 (GJG 3)

1	Name of crop	Chickpea
2	Botanical name	Cicer arietinum L.
3	Name of variety	Gujarat Junagadh Gram 3 (GJG 3)
4	Parentage with details of its	ICCV 93001 x ICCV 10
	pedigree	(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	GG 3 (GJG 0207) IC: 573501
	the submission of germplasm	
	samples with NBPGR	
9	Potential yield (kg/ha)	2625
10	Average yield (kg/ha)	1535
11	Recommended regions/areas of	Rainfed areas of Bhal and Coastal Zone. This variety
	adoption	suitable for cultivation under rainfed condition in Rabi
10	Characteristics/Distinction	season.
12	Characteristics/Distinguishing mo	
•	Plant height (cm)	35.65
•	Plant growth habit	Semi-erect
•	Plant green colour intensity of	Medium
_	foliage No. of primary branches	4
•	No. of primary branches	12
•	No. of secondary branches	
•	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
•	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 <sup>nd</sup> 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	Attractive yellow colour of seed with tuberculated
	least two identifiable	surface, large seed size (22.77 g/100) and high
	characteristics of the variety	carbohydrate (64.02 %).
15	Quality / Nutritional / Other	Protein content (%): 22.76
	features	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	Moderately resistant to wilt and stunt diseases and
	(give details of any resistance to	tolerant to <i>Helicoverpa armigera</i> infestation.
	pest or diseases including races)	
17	Duration/ Maturity group	98 days/Early maturity group
18	Originating source/ Institute	Pulses Research Station, Junagadh Agricultural
	_	University, Junagadh-362 001 (Gujarat)







## 5.1 Gujarat Gram 5 (GG 5)

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1	Name of crop	Chickpea		
2	Botanical name	Cicer arietinum L.		
3	Name of variety	Gujarat Gram 5 (GG 5)		
4	Parentage with details of its	GJG 9707 x IPC 97-7		
	pedigree	(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	GG 5 (GJG 0809) IC:598345		
	the submission of germplasm			
	samples with NBPGR			
9	Potential yield (kg/ha)	3392		
10	Average yield (kg/ha)	2510		
11	Recommended regions/areas of	Jammu and Kashmir, Himachal Pradesh, Uttarakhand		
	adoption	and North Eastern Hill region of India. & Irrigated		

		condition of Gujarat.
12	Characteristics/Distinguishing mo	
•	Plant height (cm)	50.00
•	Plant growth habit	Semi-erect
•	Plant green colour intensity of	Medium Green
	foliage	21.27
•	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 <sup>st</sup> fortnight of November
		Sowing distance: 45 x 10 cm.
		Seed rate: 60 kg/ha.
		Fertilizer: N:P:K 20:40:00 kg/ha.
1.4	Smarific attaibutes/Describe et	Irrigation: 4-5 Attractive brown colored medium sized seed.
14	Specific attributes/Describe at least two identifiable	Medium green colour of foliage.
	characteristics of the variety	Wedium green colour of foliage.
15	Quality / Nutritional / Other	Protein content (%): 22.31
	features	Total carbohydrates (%): 58.40
		TSS (%): 6.50
		Phenol (%): 0.24
16	Diseases and pests resistance	Moderately resistant to wilt, Ascochyta blight, stunt,
	(give details of any resistance to	root rot & BGM diseases. Low Helicoverpa armigera
	pest or diseases including races)	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)

5.3 Gujarat Junagadh Gram 6 (GJG 6)			
1	Name of crop	Chickpea	
2	Botanical name	Cicer arietinum L.	
3	Name of variety	Gujarat Junagadh Gram 6 (GJG 6)	
4	Parentage with details of its	GJG 0105 x FC 711	
	pedigree	(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	GJG 6 (GJG 1003) IC:615013	
	the submission of germplasm		
	samples with NBPGR		
9	Potential yield (kg/ha)	2722	
10	Average yield (kg/ha)	1867	
11	Recommended regions/areas of	The variety is suitable for cultivation under rainfed	
4.5	adoption	(Conserved soil moisture condition) in <i>Rabi</i> season.	
12	Characteristics/Distinguishing mo		
•	Plant height (cm)	47.00	
•	Plant growth habit	Semi-erect	
•	Plant green colour intensity of	Medium Green	
	foliage		
•	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	
•	Seed type	Desi	

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  15 Quality / Nutritional / Other features  16 Diseases and pests resistance (give details of any resistance to pest or diseases including races)  17 Duration/ Maturity group  18 Originating source/ Institute  Sowing distance: 30 x 10 cm. Seed rate: 60 kg/ha. Fertilizer: N:P:K 20:40:00 kg/ha.  Attractive dark brown colour seed with tuberculated seed testa texture (Surface) and angular seed shape with medium seed size.  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 Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  Pulses Research Station, Junagadh Agricultural University, Junagadh-362 001 (Gujarat)	13	Agronomical Practices	Time of sowing: 2 <sup>nd</sup> fortnight of October
Fertilizer: N:P:K 20:40:00 kg/ha.  14 Specific attributes/Describe at least two identifiable characteristics of the variety  15 Quality / Nutritional / Other features  16 Diseases and pests resistance (give details of any resistance to pest or diseases including races)  17 Duration/ Maturity group  18 Originating source/ Institute  18 Attractive dark brown colour seed with tuberculated seed testa texture (Surface) and angular seed shape with medium seed size.  18 Protein content (%): 19.90  19 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  Resistant against wilt and stunt diseases.  Low Helicoverpa armigera infestation  10 Duration/ Maturity group  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural			Sowing distance: 30 x 10 cm.
Attractive dark brown colour seed with tuberculated seed testa texture (Surface) and angular seed shape with medium seed size.    15			Seed rate: 60 kg/ha.
least two identifiable characteristics of the variety  15 Quality / Nutritional / Other features  16 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)  17 Duration/ Maturity group  18 Originating source/ Institute  seed testa texture (Surface) and angular seed shape with medium seed size.  Protein content (%): 19.90  Total carbohydrates (%): 67.84  Phenol (%): 9.83  Actual Dal (%): 87.72  Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases.  Low Helicoverpa armigera infestation  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural			Fertilizer: N:P:K 20:40:00 kg/ha.
characteristics of the variety  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)  17    Duration/ Maturity group  18    Originating source/ Institute  with medium seed size.  Protein content (%): 19.90  Total carbohydrates (%): 67.84  Phenol (%): 5.44  Phenol (%): 87.72  Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases.  Low Helicoverpa armigera infestation  12 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural	14	Specific attributes/Describe at	Attractive dark brown colour seed with tuberculated
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		least two identifiable	seed testa texture (Surface) and angular seed shape
features  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  Diseases and pests resistance (give details of any resistance to pest or diseases including races)  Puration/ Maturity group  Total carbohydrates (%): 67.84 Phenol (%): 0.24 Initial Moisture Content (%): 9.83 Actual Dal (%): 87.72 Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  17 Duration/ Maturity group  18 Originating source/ Institute  Pulses Research Station, Junagadh Agricultural		characteristics of the variety	with medium seed size.
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)  17 Duration/ Maturity group 18 Originating source/ Institute  Total soluble sugar (%): 5.44 Phenol (%): 9.83 Actual Dal (%): 87.72 Cooking Time in Minutes: 27.0 Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation	15	Quality / Nutritional / Other	Protein content (%): 19.90
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)  17 Duration/ Maturity group  18 Originating source/ Institute  Phenol (%): 0.24 Initial Moisture Content (%): 9.83 Actual Dal (%): 87.72 Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural		features	Total carbohydrates (%): 67.84
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)  17 Duration/ Maturity group 18 Originating source/ Institute  Initial Moisture Content (%): 9.83 Actual Dal (%): 87.72 Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  112 days/Medium maturity group Pulses Research Station, Junagadh Agricultural			Total soluble sugar (%): 5.44
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)  17 Duration/ Maturity group 18 Originating source/ Institute  Actual Dal (%): 87.72 Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  112 days/Medium maturity group Pulses Research Station, Junagadh Agricultural			Phenol (%): 0.24
Cooking Time in Minutes: 27.0  Diseases and pests resistance (give details of any resistance to pest or diseases including races)  Duration/ Maturity group  Originating source/ Institute  Cooking Time in Minutes: 27.0  Resistant against wilt and stunt diseases.  Low Helicoverpa armigera infestation  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural			Initial Moisture Content (%): 9.83
16 Diseases and pests resistance (give details of any resistance to pest or diseases including races)  17 Duration/ Maturity group 18 Originating source/ Institute  Resistant against wilt and stunt diseases. Low Helicoverpa armigera infestation  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural			Actual Dal (%): 87.72
(give details of any resistance to pest or diseases including races)  17 Duration/ Maturity group  18 Originating source/ Institute  Low Helicoverpa armigera infestation  112 days/Medium maturity group  Pulses Research Station, Junagadh Agricultural			Cooking Time in Minutes : 27.0
pest or diseases including races)  17 Duration/ Maturity group  18 Originating source/ Institute  Pulses Research Station, Junagadh Agricultural	16	Diseases and pests resistance	Resistant against wilt and stunt diseases.
17Duration/ Maturity group112 days/Medium maturity group18Originating source/ InstitutePulses Research Station, Junagadh Agricultural		(give details of any resistance to	Low Helicoverpa armigera infestation
18 Originating source/ Institute Pulses Research Station, Junagadh Agricultural		pest or diseases including races)	
	17	Duration/ Maturity group	112 days/Medium maturity group
University, Junagadh-362 001 (Gujarat)	18	Originating source/ Institute	Pulses Research Station, Junagadh Agricultural
			University, Junagadh-362 001 (Gujarat)







# 6. Pigeonpea 6.1 Gujarat Junagadh Pigeonpea 1 (GJP 1)

1	Name of crop	Pigeonpea
2	Botanical name	Cajanus cajan L. Millsp
3	Name of variety	Gujarat Junagadh Pigeonpea 1 (GJP 1)
4	Parentage with details of its	LRG 41 x BDN 2
	pedigree	(JP-2002-07-10-01-02-01-01-B)
5	Breeding method	Hybridization followed by pedigree method of
		selection.
6	Year of release	2014-15
7	Gazette notification	S. O. 2238 (E) & Date: 29.06.2016
8	Acknowledge particulars about	GJP 1 (GJP 0901) IC: 599727
	the submission of germplasm	
	samples with NBPGR	
9	Potential yield (kg/ha)	4306
10	Average yield (kg/ha)	2115
11	Recommended regions/areas of	The variety is suitable for cultivation in <i>kharif</i> season
	adoption	in Saurashtra region of Gujarat State.
12	Characteristics/Distinguishing mo	orphological in brief:
•	Plant height (cm)	168.1
•	Plant growth habit	Indeterminate
•	Branches/plant	10.6
•	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	• Time of sowing:
		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	Attractive white seed colour.
	least two identifiable	Light green foliage.
1.7	characteristics of the variety	Bold seed size.
15	Quality / Nutritional / Other	• Milling Dal (%): 74.58
	features	• Protein content (%): 19.51
		• Actual Dal (%): 86.97
16	Disassas and nosts registance	• Cooking time Min.: 21.0  The variety moderately resistant against wilt and
16	Diseases and pests resistance (give details of any resistance to	SMD.
	pest or diseases including races)	SIND.
17	Duration/ Maturity group	176 days/Medium maturity group
18	Originating source/ Institute	Pulses Research Station, Junagadh Agricultural
		University, Junagadh-362 001 (Gujarat)
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