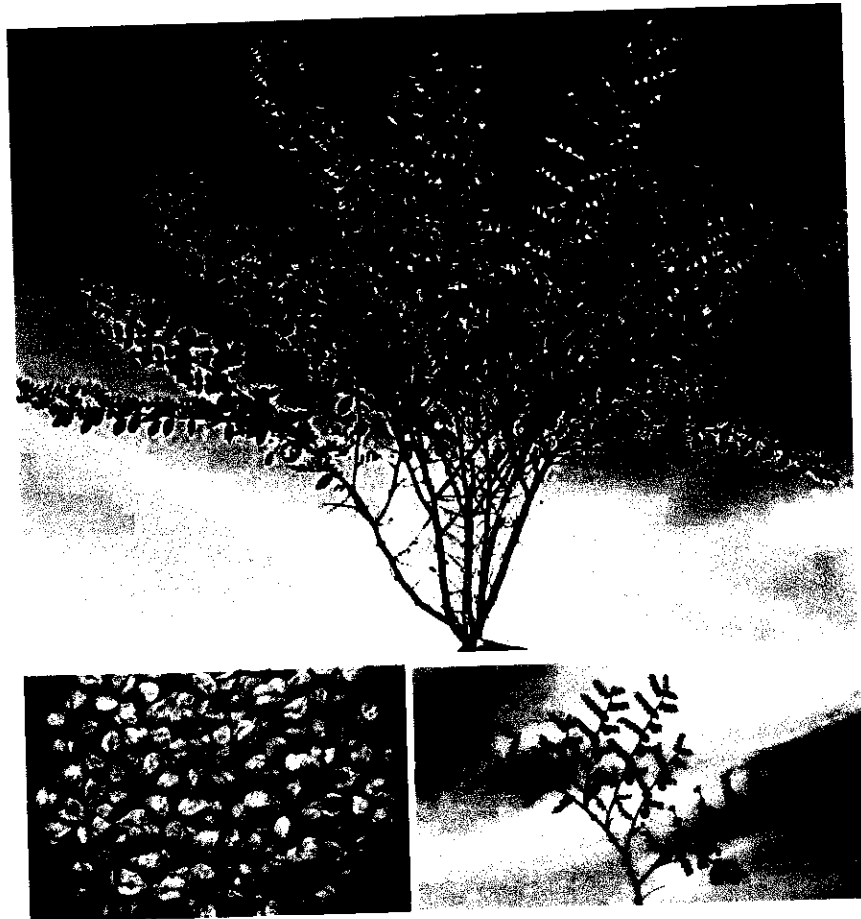


**PROPOSAL FOR VARIETAL IDENTIFICATION OF
DESI CHICKPEA VARIETY**

GNG - 1581

For North West Plain Zone of India

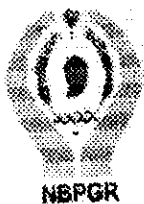


**Submitted to
Varietal Identification Committee
Annual Chickpea Group Meeting (September 08 - 10, 2007)
BAU, Kanke (Ranchi)**

**Submitted by
Chickpea Breeder
Agricultural Research Station
(Rajasthan Agricultural University)
SRIGANGANAGAR -335001**

Salient features of proposed desi chickpea variety GNG-1581

- The proposed variety GNG-1581 has shown consistent grain yield superiority at different locations in NWPZ of India during Rabi 2004-05 to 2006-07. It has given 32.0, 17.9, 18.7 and 15.4 percent grain yield superiority over checks BG-256, CSG-8962, DCP-92-3 and GNG-469, respectively (Table 1)
- The grain yield superiority in this variety is consistent in all the years of testing. In Rabi 2004-05 (IVT), the grain yield superiority over checks ranged between 15.3 to 27.7 percent while in Rabi 2005-06 it ranged between 14.1 to 26.0 and in Rabi 2006-07 it ranged between 16.8 to 42.8 percent {Table 1(a)}
- The proposed variety GNG-1581 has occupied place in first non-significant group for grain yield at 21 locations out of 26 locations during Rabi 2004-05 to 2006-07 in coordinated trials, which further confirms consistency in the performance {Table 1(c)}.
- This variety has shown a very good level of tolerance against wilt disease {Table 7, 7(a), 7(b) and 7(c)}
- The proposed variety has also shown tolerance against diseases like *Ascochyta* Blight, Stunt, root rot and BGM {Tables 8(a), 8(b), 8(c), 9(a), 9(b), 10(a), 10(b), 10(c) & 11}
- This variety has exhibited better tolerance against *Helicoverpa armigera* {Tables 13(a) and 13(b)}
- This variety has the property of profuse branching with some tertiary branches resulting in more number of pods per plant.
- It possesses a good level of protein (21.88 percent) also (Table 6).



National Bureau of Plant Genetic Resources
(Indian Council of Agriculture Research)
Pusa Campus, New Delhi – 110 012



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E-mail: aksingh@nbpgr.delhi.nic.in
GRAM: G E R M P L A S M

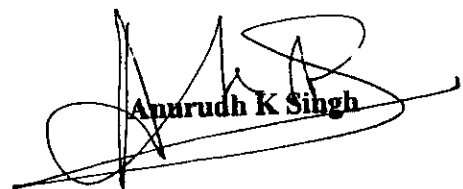
Dr. Anurudh K Singh
Head, Germplasm Conservation Division

Cons/RV/1780
25.7.2007

ACKNOWLEDGEMENT CERTIFICATE

This is to acknowledge the receipt of seed material of **Chickpea GNG-1581 (desi)**, from Dr. Vijay Prakash, Chickpea Breeder & Project Incharge Pulses, Agricultural Research Station, Srigangagar, Rajasthan Agricultural University, Rajasthan, in part of requirement for notification and release of varieties by "**Central Sub-Committee on Crop Standards, Notification and Release of Varieties of Agricultural Crops**". The material has been assigned with the national identity number is **IC553480**, which should be used in all future correspondences.

✓
Dr. Vijay Prakash
Chickpea Breeder & Project Incharge Pulses,
Agricultural Research Station Srigangagar,
Rajasthan Agricultural University,
Rajasthan-335001


Anurudh K Singh

Copy to:

Deputy Commissioner (QC) & Member Secretary, Central Sub-Committee on Crop Standards, Notification and Release of Varieties in Agricultural Crops, F-212, Shastri Bhawan, Ministry of Agriculture, Govt. of India, New Delhi 110 001, for information and early notification please.


Proforma for submission of proposal for identification of crop variety


1. Name of the crop & Species : Chickpea (*Cicer arietinum* L)
2. a) Name of the variety under which tested : **GNG-1581**
 - b) Proposed name of the variety : **Gangaur**
3. Sponsored by : Chickpea Breeder, AICRP on Chickpea
Agricultural Research Station, Sriganaganagar
4. a) Institute responsible for developing variety : Agricultural Research Station,
(Rajasthan Agricultural University),
Sriganaganagar
 - b) Name of the people who developed the variety : **Dr. Vijay Prakash, Chickpea Breeder**
Dr. R. S. Verma, Ex. Sr. Chickpea Breeder
 - c) Collaborators : Dr. R. K. Siag, Agronomist
Sh. K. N. Bhatia, Entomologist
5. a) Parentage with details of its pedigree : GPF-2 X H-82-2
 - b) Source of material in case of introduction : NA
 - c) Breeding method : Hybridization followed by pedigree method
 - d) Breeding objective : High grain yield, wider adaptability, and tolerance to diseases and pests
6. a) Zones/ geographical areas for which to be identified : Chickpea growing area of NWPZ of India comprising of Punjab, Haryana, Rajasthan (excluding southern part), western U.P., Delhi and J & K
 - b) Agro-climatic conditions for which to be identified : Suitable for normal sowing under irrigated conditions in *Rabi* season
7. a) Suitability in the prevalent/ proposed cropping systems : Suitable for prevalent cropping system in the Zone e.g. fallow-chickpea, Pearl millet-chickpea, paddy-chickpea
 - b) Advantages over the best checks/ recently released variety :
 - Higher grain yield
 - Medium size yellow colour seed
 - Tolerant to diseases
 - Tolerant to Heliothis
8. Number of trials each year in IVT/ AVT for which data is presented : IVT Desi (2004-05) : 8 {Table 1(c)}
AVT-I Desi. (2005-06) : 9 {Table 1(d)}
AVT-II Desi (2006-07) : 9 {Table 1(e)}

9. Whether the proposal is submitted for the first time : Yes, submitted first time
10. Description of the variety
- a) Distinguishing morphological characters : • Attractive yellow colour seed
• Medium seed size (16 g/100-seeds)
• Profuse branching with some tertiary branches
• Semi spreading plant type
- b) Plant height
(i) Mean : 51 cm
(ii) Range over locations : 40 – 66 cm
- c) Maturity
(i) Mean : 151 days
(ii) Range over locations : 127 – 177 days
- d) Maturity group (Early, medium, and late wherever such classification exists) : Medium
- e) 100 seed weight (g)
(i) Mean : 16.0 g
(ii) Range over locations : 12.7 – 24.3 g
- f) Seed colour : Yellow
11. a) Disease reaction
(i) Diseases prevalent in the zone : Wilt (*Fusarium oxysporum* f. sp. *ciceri*), *Ascochyta* blight, root rot, stunt, BGM
(ii) Reaction to diseases (Compare with all checks and qualifying varieties) : Please see table Nos. 7, 7(a), 7(b), 7(c), 8(a), 8(b), 8(c), 9(a), 9(b), 10(a), 10(b), 10(c), 11 and 12
- b) Reaction to major pests : Please see table No. 13(a) and 13(b)
12. Yield data from the coordinated trials (IVT-AVT-II) to be given separately. Compare with the latest recommended and identified variety of the zone, state check and qualifying varieties : Please see table 1, 1(a), 1(b), 1(c), 1(d), and 1(e)

13. Agronomical data compare with the best check : Please see table 3
14. a) Agency responsible for maintaining breeder seed : Agricultural Research Station,
Rajasthan Agricultural University,
Sriganganagar – 335 001 (Rajasthan)
- b) Quantity of breeder seed available : 150 kg
15. a) Special features of the variety, if any : High yielding, attractive medium size yellow colour seed, Profuse branching with some tertiary branches and wider adaptability
- b) Defects of the variety if any : No
16. Any other pertinent information : Good Protein content (21.88%)
NBPGR National Identity No. IC 553480
17. Enclosures
- (i) Colour photograph : Enclosed
- (ii) Seed sample : Enclosed
18. Descriptors : Filled Performa enclosed at page No.4
- a) Optimum sowing date
- a) Irrigated : First fortnight of November
- b) Rain fed : --
- b) Deviated sowing date 15 days before optimum : 20th October – 20th November

Proposed by


(Vijay Prakash)
Chickpea Breeder
Agricultural Research Station
Sriganganagar –335 001


ZONAL DIRECTOR (RESEARCH)
Agricultural Research Station
Sriganganagar –335 001


DIRECTOR RESEARCH
RAJASTHAN AGRICULTURAL UNIVERSITY
BIKANER

DESCRIPTORS OF CHICKPEA (*Cicer arietinum* L) VARIETY GNG-1581

- 1. General**
 - 1.1 Name of the crop & species : Chickpea (*Cicer arietinum* L.)
 - 1.2 Name of the variety : **GNG-1581**
 - 1.3 Pedigree : GPF-2 X H-82-2
 - 1.4 Year of development : 2002-03
 - 1.5 Year of release : --
 - 1.6 Origin (name of institute) : Agricultural Research Station
(Rajasthan Agricultural University)
Sriganganagar -335 001
- 2. Growth habit** : Medium tall, semi spreading plant type
- 3. Leaf characters**
 - 3.1 Simple or compound : Compound
 - 3.2 Shape : Lanceolate
 - 3.3 Colour : Green
 - 3.4 Pubescent/ glabrous : Pubescent
- 4. Stem colour** : Green
- 5. Flower colour** : Pink
- 6. Flower pattern** : Indeterminate
- 7. Pod**
 - 7.1 Colour : Light brown at maturity
 - 7.2 Hairiness : Hairy
 - 7.3 Surface : Rough
- 8. Seed** :
 - 8.1 Shape : Owl's head
 - 8.2 Testa colour : Yellow
- 9. Agronomic traits**
 - 9.1 Days to 50 % Flowering : Mean : 83 days, Range : 80 - 87 days
 - 9.2 Days to maturity : Mean : 151 days, Range : 127-177 days
 - 9.3 Plant height : Mean : 51 cm, Range : 40 - 66 cm
 - 9.4 No. of primary branches : Mean : 5.2, Range : 4 - 7
 - 9.5 No. of secondary branches : Mean : 12.4, Range : 8 - 17
 - 9.6 Pods per plant : Mean : 73, Range : 59 - 88
 - 9.7 Number of seeds per pod : Mean : 1.94 Range 01- 02 seeds
 - 9.8 100 seed weight : Mean : 16.0 g, Range : 12.7 - 24.3 (g)
- 10. Disease reaction** : Low incidence of wilt (*Fusarium oxysporum* *f.sp.ciceri*), Ascochyta blight, stunt, root rot, BGM
- 11. Pest reaction** : Low Heliothis infestation
- 12. Special characters** : Attractive yellow colour seed
Profuse branching with tertiary branches as well
Medium seed size (16.0 g /100-seeds)

Table 1: Performance of proposed variety GNG-1581 in coordinated trials during Rabi 2004-05 to Rabi 2006-07 in NWPZ

Variety	Grain yield (kg/ ha)			Weighted mean over years	Per cent increase over checks	Freq. in first NS group for grain yield
	2004-05 IVT- Desi	2005-06 AVT-I Desi	2006-07 AVT-II Desi			
GNG-1581 (PV)	2150 (8)	2514 (9)	2415 (9)	2368	-	21/26
BG-256 (Ch)	1684 (8)	1996 (9)	1691(9)	1794	32.0	4/26
CSG-8962 (Ch)	1823 (8)	2151 (9)	2028 (9)	2008	17.9	5/26
DCP-92-3 (Ch)	1808 (8)	2157 (9)	1998 (9)	1995	18.7	7/26
GNG-469 (Ch)	1864 (8)	2203 (9)	2068 (9)	2052	15.4	7/26

Values in parenthesis indicate no. of locations

PV – Proposed variety, Ch – Check variety

Table1 (a): Consistency in grain yield of proposed variety GNG-1581 as indicated by percent increase in grain yield during individual years of testing

Variety	Percent increase in grain yield of GNG-1581 over check			Over all Per cent increase over checks
	2004-05 IVT- Desi	2005-06 AVT-I Desi	2006-07 AVT-II Desi	
GNG-1581 (PV)	-	-	-	-
BG-256 (Ch)	27.7	26.0	42.8	32.0
CSG-8962 (Ch)	17.9	16.9	19.1	17.9
DCP-92-3 (Ch)	18.9	16.6	20.9	18.7
GNG-469 (Ch)	15.3	14.1	16.8	15.4

PV – Proposed variety, Ch – Check variety

Table 1(b): Consistency in grain yield of proposed variety GNG-1581 as indicated by frequency in first non-significant group for grain yield during individual years of testing

Varieties	Frequency in first non significant group for grain yield			Over all mean
	2004-05 IVT- Desi	2005-06 AVT-I Desi	2006-07 AVT-II Desi.	
GNG-1581 (PV)	7 / 8	5 / 9	9 / 9	21 / 26
BG-256 (Ch)	1 / 8	1 / 9	2 / 9	4 / 26
CSG-8962 (Ch)	1 / 8	1 / 9	3 / 9	5 / 26
DCP-92-3 (Ch)	1 / 8	2 / 9	4 / 9	7 / 26
GNG-469 (Ch)	2 / 8	2 / 9	3 / 9	7 / 26

PV – Proposed variety, Ch – Check variety

Table 1 (c): Yield performance of proposed variety GNG-1581 in IVT- Desi during Rabi 2004-05 in NWPZ

Variety	2004-05										Frequency in first non-significant group	Percent increase in GNG-1581 over check
	Grain Yield (kg/ha)											
	Faridkot	Durgapura	Ludhiana	Delhi	Pantnagar	Kaul	Hisar	Modipuram	Mean			
GNG-1581	2013	2278	1875	1562	2660	2187	1305	3316	2150	7/8	-	
BG-256	1493	1653	1041	1531	2458	1250	954	3090	1684	1/8	27.7	
CSG 8962	1770	1993	1250	1781	1888	1944	1024	2934	1823	1/8	17.9	
DCP 92-3	1840	1736	1458	1812	2065	1666	1163	2726	1808	1/8	18.9	
GNG 469	1736	2083	1270	1750	1965	1701	989	3420	1864	2/8	15.3	

Ref.: AICRP on Chickpea AR 2005-06 page 26

Table 1 (d): Yield performance of proposed variety GNG-1581 in AVT- 1 Desi during Rabi 2005-06 in NWPZ

Variety	2005-06										Frequency in first non-significant group	Percent increase in GNG-1581 over check
	Grain Yield (kg/ha)											
	Hisar	Delhi	Sanba	Durga-pura	Srigang-nagar	Meerut	Ludhiana	Pantnagar	Fridkot	Mean		
GNG-1581	2319	2222	1602	817	3005	2777	1631	4576	3681	2514	5/9	-
BG-256	827	1805	1180	485	1933	2256	2152	4792	2535	1996	1/9	26.0
CSG 8962	1131	2027	1375	972	2319	2170	1631	4576	3160	2151	1/9	16.9
DCP 92-3	1527	1972	1639	819	2033	2413	2256	3840	2917	2157	2/9	16.6
GNG 469	1090	2166	1356	1007	2461	2065	1875	4479	3333	2203	2/9	14.1

Ref.: AICRP on Chickpea AR 2005-06 page 20

Table 1 (e): Yield performance of proposed variety GNG-1581 in AVT- 2 Desi during Rabi 2005-06 in NWPZ

Variety	2006-07										Frequency in first non- significant group	Percent increase in GNG-1581 over check
	Grain Yield (kg/ha)											
	Sriganga -nagar	Ludhiana	Durga -pura	Hisar	Frickot	New Delhi	Modi- puram	Samba	Pantnagar	Mean		
GNG-1581	3143	2986	2083	2517	2621	2052	4008	831	1495	2415	9/9	-
BG-256	1803	2430	1010	1528	2048	1250	3072	805	1273	1691	2/9	42.8
CSG 8962	2526	2812	1476	1993	2743	1667	3211	695	1125	2028	3/9	19.1
DCP 92-3	2206	2083	1661	2271	2586	1775	3038	857	1509	1998	4/9	20.9
GNG 469	2482	2534	1659	1937	2951	2006	3159	651	1236	2068	3/9	16.8

Ref.: AICRP on Chickpea AR 2006-07

Table 2: Performance of proposed variety GNG-1581 in station trials

Variety	Grain yield (kg/ha)			Mean	Percent increase over check
	2003-04	2006-07			
	Sriganganagar (GST-1)	Kumbher (MLT)	Hanumangrh (ATC)		
GNG-1581 (PV)	3510	2337	1778	2542	-
GNG-469 (Ch)	2805	1731	1683	2058	23.5
BG-256 (Ch)	-	2064	1175	1620	56.9
CSG-8962 (Ch)	-	1546	1333	1440	76.5
GNG-663 (Ch)	3050	1555	1556	2054	23.8
DCP-92-3 (Ch)	-	1967	1365	1666	52.6
CV %	10.6	9.34	13.03	-	-
CD (5%)	503	321	336	-	-

PV – Proposed variety, Ch – Check variety

Table 3: Performance of chickpea genotype GNG-1581 in agronomic trial at Sriganganagar location during Rabi 2006-07

Treatments	Grain yield (q/ha)	Percent Increase over check	100 seed weight (g)
Date of sowings (D)			
D ₁ – 25 th October	16.74	-	17.4
D ₂ – 10 th November	18.67	-	17.7
D ₃ – 25 th November	17.82	-	17.6
S. Em. ±	0.66	-	0.06
CD at 5%	NS	-	0.09
Genotypes (V)			
V ₁ – GNG-1581 (PV)	21.22	-	17.0
V ₂ – GNG-663 (Ch)	15.35	38.2	11.5
V ₃ – GNG-469 (Ch)	16.67	27.3	24.1
S. Em. ±	0.66	-	0.06
CD at 5%	1.98	-	0.18
CV (%)	10.96	-	1.08
D x V	NS	-	NS

PV – Proposed variety, Ch – Check variety

Table 4: 100 - seed weight (g) of proposed variety GNG-1581 in comparison to checks in coordinated trials during *Rabi* 2004-05 to *Rabi* 2006-07 in NWPZ

Variety	100 - seed weight (g)			Weighted Mean
	2004-05 IVT- Desi	2005-06 AVT-I Desi	2006-07 AVT-II Desi	
GNG-1581 (PV)	16.1 (7)	16.0 (7)	16.1 (7)	16.0
BG-256 (Ch)	28.8 (7)	25.7 (7)	23.8 (7)	26.1
CSG-8962 (Ch)	15.1 (7)	14.4 (7)	14.6 (7)	14.7
DCP-92-3 (Ch)	16.2 (7)	14.5 (7)	15.6 (7)	15.4
GNG-469 (Ch)	25.0 (7)	23.5 (7)	22.9 (7)	23.8

Values in parenthesis indicate number of locations
PV – Proposed variety, Ch – Check variety

Table 5: Days to maturity of proposed variety GNG-1581 in comparison to checks in coordinated trials during *Rabi* 2004-05 to *Rabi* 2006-07 in NWPZ

Variety	Days to maturity			Weighted Mean
	2004-05 IVT- Desi	2005-06 AVT-I Desi	2006-07 AVT-II Desi	
GNG-1581 (PV)	152 (10)	148 (9)	154 (9)	151
BG-256 (Ch)	154 (10)	148 (9)	153 (9)	152
CSG-8962 (Ch)	153 (10)	148 (9)	155 (9)	152
DCP-92-3 (Ch)	153 (10)	147 (9)	154 (9)	151
GNG-469 (Ch)	153 (10)	148 (9)	154 (9)	152

Values in parenthesis indicate no. of locations.
PV – Proposed variety, Ch – Check variety

Table 4 (a): 100 -seed weight (g) of proposed variety GNG-1581 in IVT- Desi during Rabi 2004-05 in NWPZ

Variety	100- seed weight (g) (2004-05)							Mean
	Modipuram	Ludhiana	Faridkot	Pantnagar	Samba	Hisar	Kaul	
GNG-1581 (PV)	15.1	15.4	14.5	17.5	18.8	16.1	15.4	16.1
BG-256 (Ch)	28.9	28.2	25.4	31.36	31.1	28.9	27.6	28.8
CSG 8962 (Ch)	14.9	12.7	15.3	16.9	17.5	14.3	13.9	15.1
DCP 92-3 (Ch)	15.9	15.6	15.6	17.1	17.9	15.6	15.8	16.2
GNG 469 (Ch)	25.5	21.7	24.6	28.2	24.6	24.2	26.0	25.0

Ref.: AICRP on Chickpea AR 2005-06 page 28, PV – Proposed variety, Ch – Check variety

Table 4 (b): 100 -seed weight (g) of proposed variety GNG-1581 in AVT- 1 Desi during Rabi 2005-06 in NWPZ

Variety	100- seed weight (g) (2005-06)							Mean
	Sanba	Durgapura	Hisar	Sriganganagar	Ludhiana	Pantnagar	Fridkot	
GNG-1581 (PV)	16.1	18.8	12.7	16.1	17.2	18.0	13.3	16.0
BG-256 (Ch)	25.4	20.3	22.9	26.1	29.6	36.3	19.5	25.7
CSG 8962 (Ch)	15.8	15.6	11.4	13.3	14.0	17.1	14.0	14.4
DCP 92-3 (Ch)	15.4	14.6	12.2	13.9	14.8	17.8	12.9	14.5
GNG 469 (Ch)	23.3	26.0	19.5	23.6	26.5	27.7	18.4	23.5

Ref.: AICRP on Chickpea AR 2005-06 page 21, PV – Proposed variety, Ch – Check variety

Table 4 (c): 100 -seed weight (g) of proposed variety GNG-1581 in AVT- 2 Desi during Rabi 2006-07 in NWPZ

Variety	100- seed weight (g) (2006-07)							Mean
	Sriganganagar	Ludhiana	Durgapura	Hisar	Fridkot	Samba	Pantnagar	
GNG-1581 (PV)	15.9	13.3	24.3	14.7	13.0	16.2	15.5	16.1
BG-256 (Ch)	24.3	24.8	18.4	27.3	24.4	24.5	23.2	23.8
CSG 8962 (Ch)	12.8	12.3	22.1	14.1	12.2	15.6	13.1	14.6
DCP 92-3 (Ch)	14.9	14.4	21.0	15.5	13.4	14.1	15.9	15.6
GNG 469 (Ch)	24.2	20.6	21.2	26.0	23.3	21.5	23.7	22.9

Ref.: AICRP on Chickpea AR 2006-07, PV – Proposed variety, Ch – Check variety

Table 5 (a): Days to maturity of proposed variety GNG-1581 in IVT-Desi during Rabi 2004-05 in NWPZ
Days to maturity (2004-05)

Variety	Sriganga nagar	Modipuram	New Delhi	Durgapura	Ludhiana	Pantnagar	Kaul	Hisar	Samba	Faridkot	Mean
GNG-1581 (PV)	161	146	134	127	162	150	152	162	166	167	152
BG-256 (Ch)	162	150	138	125	165	154	157	161	163	165	154
CSG 8962 (Ch)	162	147	137	125	162	154	152	160	164	167	153
DCP 92-3 (Ch)	162	147	133	128	163	151	153	162	165	169	153
GNG 469 (Ch)	163	149	139	127	162	150	155	163	164	167	153

Ref.: AICRP on Chickpea AR 2005-06 page 27, PV – Proposed variety, Ch – Check variety

Table 5 (b): Days to maturity of proposed variety GNG-1581 in AVT- 1 Desi during Rabi 2005-06 in NWPZ
Days to maturity (2005-06)

Variety	Sanba	Durga-pura	Hisar	Delhi	Srigang-nagar	Meerut	Ludhiana	Pantnagar	Fridkot	Mean
GNG-1581 (PV)	141	141	155	141	136	137	159	149	172	148
BG-256 (Ch)	143	140	161	139	138	147	154	146	171	148
CSG 8962 (Ch)	141	139	164	139	136	139	160	148	172	148
DCP 92-3 (Ch)	141	144	152	140	139	140	162	140	172	147
GNG 469 (Ch)	142	148	156	132	138	142	156	148	172	148

Ref.: AICRP on Chickpea AR 2005-06 page 22, PV – Proposed variety, Ch – Check variety

Table 5 (c): Days to maturity of proposed variety GNG-1581 in AVT- 2 Desi during Rabi 2006-07 in NWPZ
Days to maturity (2006-07)

Variety	Sriganga -nagar	Ludhiana	Durga-pura	Hisar	Fridkot	New Delhi	Modipuram	Samba	Pantnagar	Mean
GNG-1581 (PV)	152	167	137	153	151	146	151	177	150	154
BG-256 (Ch)	154	165	138	154	151	145	152	175	147	153
CSG 8962 (Ch)	152	168	145	155	152	144	151	178	150	155
DCP 92-3 (Ch)	153	164	137	154	150	150	155	178	149	154
GNG 469 (Ch)	152	162	139	155	153	148	150	176	149	154

Ref.: AICRP on Chickpea AR 2006-07, PV – Proposed variety, Ch – Check variety

Table 6: Protein content in proposed variety GNG-1581 analyzed at IIPR, Kanpur during Rabi 2006-07

S.No.	Name of the variety	Protein content (%)
1.	GNG-1581 (AVT-2) (PV)	21.88
2.	GNG-1591 (AVT-1)	21.00
3.	DCP-92-3 (Ch)	19.80

PV – Proposed variety, Ch – Check variety

Table 7: Mean percent reaction of proposed variety GNG-1581 against wilt at different locations during Rabi 2004-05 to Rabi 2006-07

Variety	Mean percent wilt incidence			Over all mean percent wilt incidence
	2004-05 (IVT)	2005-06 (AVT-1)	2006-07 (AVT-2)	
GNG-1581 (PV)	35.0 (10)	40.7 (15)	27.3 (13)	34.3 (38)
JG-62 (Ch)	83.0 (8)	81.7 (9)	89.4 (13)	84.7 (30)
LSI	39.2 (10)	43.8 (15)	42.5 (13)	41.8 (38)

Values in parenthesis indicate number of locations

PV – Proposed variety, Ch – Check variety

Table 7 (a): Reaction of proposed variety GNG-1581 (IVT-Desi) against wilt at different locations during Rabi 2004-05

Entry	Percent wilt incidence at locations										No. of locations entry found R/MR		
	Dholi	Faridkot	ICRISAT	IIPR	Rahuri	Sehore	Junagarh	Delhi	Gulberga	Jabalpur	Mean	R	MR
GNG 1581(PV)	16.7	38.3	90.3	3.9	40.7	17.7	50.6	39.2	47.5	5.3	35.0	2	2
JG-62 (Ch)	51.3	98.0	100	100	100	95.5	100	-	19.1	-	83.0	-	-
LSI	23.4	42.9	75.1	25.5	48.2	27.0	51.0	32.0	39.6	27.7	39.2	-	-

Ref.: AICRP on Chickpea AR 2004-05 page 194, PV – Proposed variety, Ch – Check variety

Table 7(b): Reaction of proposed variety GNG-1581 (AVT-1 Desi) against wilt at different locations during Rabi 2005-06

Entry	Percent wilt incidence at locations													Number of locations entry found R / MR				
	IIPR	ICRISAT	Badnapur	Kanke	Jabalpur	Sehore	Delhi	Junagarh	Ludhiana	Samba	Rahuri	Bangalore	Shillongani	Dholi	Bharati	MEAN	R	MR
GNG 1581 (PV)	27.3	97.3	5.7	6.9	84.3	9.1	19.6	93.0	57.8	19.5	93.2	15.3	18.1	25.2	37.5	40.7	3	4
Check	100	-	100	76.7	91.6	98.1	-	-	67.4	94.5	-	46.4	-	60.8	81.7	-	-	-
LSI	42.9	84.8	28.8	28.2	69.2	39.7	33.5	71.0	48.4	37.6	71.2	20.8	24.7	26.5	28.9	43.8	-	-

Ref.: AICRP on Chickpea AR 2005-06 page 186, PV – Proposed variety, Ch – Check variety

Table 7(c): Reaction of proposed variety GNG-1581 (AVT-2) against wilt at different locations during Rabi 2006-07

Entry	Percent wilt incidence at locations														No. of locations entry found R/MR	
	Badnapur	ICRISAT	Kanpur	Ludhiana	Rahuri	Sehore	New Delhi	Junagadh	Bangalore	Berhampur	Samba	Jabalpur	Ranchi	MEAN	R	MR
GNG 1581 (PV)	1.3	96.5	5.5	3.6	44.2	21.0	83.7	16.1	5.4	29.6	22.3	6.9	19.0	27.3	5	2
JG-62 (Ch)	100	100	100	100	100	83.1	100	91.5	39.3	100	100	64.7	83.5	89.4	-	-
LSI	34.6	71.2	32.4	19.9	53.9	42.4	58.8	60.4	23.8	50.5	41.1	31.8	31.9	42.5	-	-

Ref.: AICRP on Chickpea AR 2006-07, PV – Proposed variety, Ch – Check variety

Table 8(a): Reaction of proposed variety GNG-1581 (IVT Desi) against *Ascochyta* blight at different locations during Rabi 2004-05

Trial	Location	Entries found moderately resistant (MR)
IVT (Desi)	Ludhiana	GNG-1581, GL 21136, H 00-216
	Delhi	GNG-1581 (only entry)

Ref.: AICRP on Chickpea AR 2005-06 page 187

Table 8(b): Reaction of proposed variety GNG-1581 (AVT-1 Desi) against *Ascochyta* blight at different locations during Rabi 2005-06

Entries	Disease grade against <i>Ascochyta</i> blight				
	Hisar	ICRISAT	New Delhi	Ludhiana	Dhaulakuan
GNG-1581 (PV)	4.0	7.0	8.3	5.5	2.0
Check	-	9.0	-	9.0	-
LSI	3.6	7.1	7.5	6.6	2.5

Ref.: AICRP on Chickpea AR 2005-06 page 224

PV – Proposed variety, Ch – Check variety

Table 8(c): Reaction of proposed variety GNG-1581 (AVT-2) against *Ascochyta* blight at different locations during Rabi 2006-07

Entry	Disease incidence (Grade 1-9)		
	Ludhiana	New Delhi	Dhaulakuan
GNG-1581 (PV)	4.0 (MR)	4.7 (MR)	4.0 (MR)
L-550 (Ch)	9.0	9.0	9.0
LSI	7.5	7.0	7.3

Ref.: AICRP on Chickpea AR 2006-07

PV – Proposed variety, Ch – Check variety

Table 9(a): Reaction of proposed variety GNG-1581 (AVT 1 Desi) against dry root rot at different locations during Rabi 2005-06

Entries	Percent dry root incidence				
	Hisar	Ludhiana	Bharari	Badnapur	Durgapura
GNG-1581 (PV)	60.6	42.0	20.0 (MR)	75.7	13.2 (MR)
Check	-	24.1	-	-	86.9
LSI	24.2	36.5	27.6	22.2	37.6

Ref.: AICRP on Chickpea AR 2005-06 page 207

PV – Proposed variety, Ch – Check variety

Table 9(b): Reaction of proposed variety GNG-1581 (AVT-2) against root rot at different locations during Rabi 2006-07

Entry	Percent disease incidence		Number of locations	
	Coimbatore	Badnapur	R	MR
GNG-1581 (PV)	34.3	11.0 (MR)	-	1
JG-62 (Ch)	-	-	-	-
LSI	24.5	21.1	-	-

Ref.: AICRP on Chickpea AR 2006-07

PV – Proposed variety, Ch – Check variety

Table 10(a): Reaction of proposed variety GNG-1581 (IVT Desi) against BGM at Pantnagar during Rabi 2004-05

Trial	Location	Entries found moderately resistant to BGM
IVT (Desi)	Pantnagar	GNG-1581, GNG-1594, GL 21136, NDG 3-31, WCG 2000-03 and JG 2004-24

Ref.: AICRP on Chickpea AR 2004-05 page 187

Table 10(b): Reaction of proposed variety GNG-1581 (AVT-1 Desi) against BGM at different locations during Rabi 2005-06

Variety	Disease grade against BGM		
	Ludhiana	Pantnagar	Dhaulakuan
GNG-1581 (PV)	9.0	7.0	2.0 (MR)
Check	9.0	9.0	-
LSI	8.0	7.9	4.3

Ref.: AICRP on Chickpea AR 2005-06 page 228

PV – Proposed variety

Table 10(c): Reaction of proposed variety GNG-1581 (AVT-2 Desi) against BGM at different locations during Rabi 2006-07

Variety	Disease grade against BGM	
	Ludhiana	Pantnagar
GNG-1581 (PV)	9.0	7.0
G 543/H 208 (Ch)	9.0	9.0
LSI	8.0	7.8

Ref.: AICRP on Chickpea AR 2006-07

PV – Proposed variety, Ch – Check variety

Table 11: Reaction of proposed variety GNG-1581 (AVT-2) against stunt at hot spot location Junagarh during Rabi 2006-07

Entry	Percent disease incidence	
	Location – Junagarh (Hot spot)	Reaction
GNG-1581 (PV)	14.0	MR

Ref.: AICRP on Chickpea AR 2006-07
PV – Proposed variety

Table 12: Reaction of proposed variety GNG-1581 (AVT-2) against collar rot at different locations during Rabi 2006-07

Entry	Percent disease incidence	
	Jabalpur	Raipur
GNG-1581 (PV)	3.1(MR)	100.0
JG-62 (Ch)	35.1	-
LSI	19.1	97.8

Ref.: AICRP on Chickpea AR 2006-07
PV – Proposed variety, Ch – Check variety

Table 13(a): Reaction of proposed variety GNG-1581 (AVT-1 Desi) against *Heliothis* at different locations during Rabi 2005-06

Entry	Hisar			Bangalore			Sriganaganagar			Mean*		
	Pod damage (%)	No. of larvae/mrl	PSR	Grain yield (kg/ha)	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	Pod damage (%)	Grain yield (kg/ha)
GNG-1581 (PV)	32.6	6.8	4	360	4.90	0.4	1333.3	12.27	1.8	1597.22	18.75	847.7
BG-256 (Ch)	40.3	6.4	5	333	8.77	0.4	1350.0	-	-	-	24.54	841.5

* Mean of common locations only

Ref.: AICRP on Chickpea AR 2005-06 page 250 and 259

Table 13(b): Reaction of proposed variety GNG-1581 (AVT-2 Desi) against *Heliothis* at different locations during Rabi 2006-07

Entry	Ludhiana			Samba			Durgapura			Sriganaganagar			Hisar			Mean*			
	Pod damage (%)	PSR	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	Pod damage (%)	PSR	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	Pod damage (%)	PSR	Pod damage (%)	No. of larvae/mrl	Grain yield (kg/ha)	
GNG-1581 (PV)	23.0	4	15.61	14.67	1173	46.75	9	4.08	0.7	2963	28.1	12.6	2068	6	15.93	6	18.41	1332	
H-82-2 (Ch)	-	-	19.29	13.3	552	-	-	6.74	1.07	2111	29.2	6.7	-	-	-	-	-	-	-
BG-1003 (Ch)	-	-	-	-	1125	35.35	9	-	-	-	-	-	-	-	-	-	-	-	-
L-550 (Ch)	26.83	5	-	-	1175	27.85	8	-	-	-	-	-	-	-	-	-	-	-	-
BG-1053 (Ch)	-	-	-	-	1775	22.21	7	-	-	-	-	-	-	-	-	-	-	-	-
BG-267 (Ch)	-	-	-	-	1250	50.15	9	-	-	-	-	-	-	-	-	-	-	-	-
PBG-1 (Ch)	39.67	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPF-2 (Ch)	35.83	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG-256 (Ch)	-	-	-	-	-	-	-	6.65	1.10	1556	-	-	-	-	-	-	-	-	-

* Mean of common locations only

Ref.: AICRP on Chickpea AR 2006-07