

भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
(कृषि, सहकारिता एवं किसान कल्याण विभाग)
दलहन विकास निदेशालय
छठवीं मंजिल, विन्ध्याचल भवन
भोपाल-462004 (म.प्र.)



सत्यमेव जयते

Government of India
Ministry of Agriculture & Farmers Welfare,
Deptt. of Agriculture, Cooperation & Farmers Welfare
Directorate of Pulses Development
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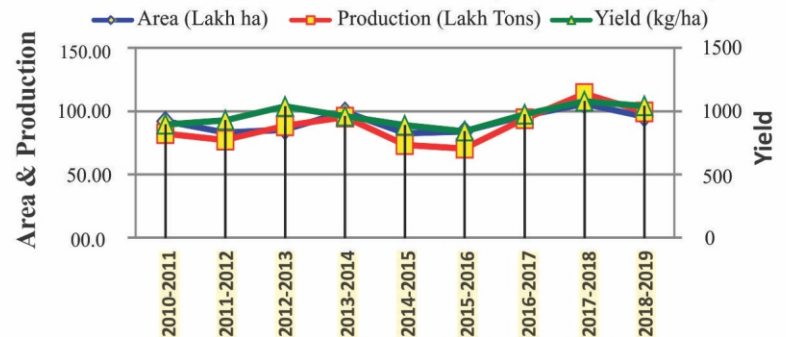


CHICKPEA (GRAM)

Scientific Name:
Cicer arietinum L.

Area : 92.77 Lakh ha
Production: 90.17 Lakh tonnes
Yield: 972 kg/ha
(Avg. of 2014-15 to 2018-19)
**Ever Highest Production –
114 Lt. (2017-18)**

Area, Production & Yield of Gram (2010-11 to 2018-19)



Major States (Avg.: 2014-15 to 2018-19)

(Area in lakh ha; Production in lakh tonnes; Yield in kg/ha)

Major States	Area	% Contri	Prod.	% Contri	Yield
Madhya Pradesh	31.57	34	36.93	41	1170
Maharashtra	16.99	18	13.63	15	802
Rajasthan	13.83	15	13.38	15	967
Karnataka	11.51	12	6.57	7	571
Uttar Pradesh	4.92	5	4.93	5	1001
All Above	78.82	(85%)	75.44	(84%)	957
All India	92.77		90.17		972

Major Districts (2018-19)

Major States	Major Districts
Madhya Pradesh (53%)	Vidisha, Dewas, Sagar, Damoh, Dhar, Ujjain, Raisen, Ashoknagar, Guna, Khargone, Rajgarh, Panna, N. Singhpur
Maharashtra (61%)	Latur, Ahmednagar, Osmanabad, Beed, Buldhana, Nanded, Parbhani, Amravati, Yavatmal, Pune
Rajasthan (73%)	Bikaner, Churu, Jaisalmer, Ajmer, Hanumangarh, Jaipur, Ganganagar, Pali
Karnataka (75%)	Vijayapura, Raichur, Kalburgi, Gadag, Bagalkote, Belagavi
Uttar Pradesh (65%)	Banda, Mahoba, Hamirpur, Chitrakoot, Fatehpur, Jalaun

Major Countries (Avg.: 2014 to 2018)

(Area in lakh ha; Production in lakh tonnes; Yield in kg/ha)

Country	Area	% Contri	Prod.	% Contri	Yield
India	96.03	68	88.75	65	924
Australia	7.51	5	10.12	7	1348
Myanmar	3.72	3	5.48	4	1474
Turkey	4.01	3	4.93	4	1230
Ethiopia	2.39	2	4.83	4	2016
All Above	113.66	(81%)	114.11	(84%)	1004
World	141.08		136.02		964

Economic Importance:

- Pulses crops besides, being rich in protein and some of the essential amino acids, enrich the soil through symbiotic nitrogen fixation from atmosphere.
- Used for human consumption as well as for feeding to animals.

Crop Products:

Chickpea Flour/Dal, Savoury products, Sweets, Biscuits/Nankhatai, Soups/Curry, Salad, Sprouted gram, Puffed chana, Stew etc.

New Varieties:

Year	Varieties	Year	Varieties
2010	Pant Kabuli Chana 1, Gujarat Junagadh gram 3	2015	WCGK 2000-16, Birsa Chana 3, BG 1084
2011	MNK 1, RVKG 101, RVKG 201	2016	GNG 2144, NBeG 119, JGK 5, CSJ 515, BDNGK 798, GJG 6, JG 36, GBM 2
2012	AKG 9303-12, HK 4, RVG 202, RVG 203, CSJK 6, L 555, Phule G 0027	2017	GJG 0809, GNG 2171, Pant Gram 5, Indira Chana 1, NBeG 49, Pant Gram-4, Pant Gram -3, Pant Kabuli Gram-2, NBeG 47, Phule Vikram
2013	GNG 1958, GNG 1969, GLK 28127, NBeG 3	2018	BG 3043, GNG 2207, Phule G 0405, BGD 111-1



Desi Gram



Green Gram



Kabuli Gram



Black Gram

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Sowing Season: Rabi (100%)
Sowing Time : North India -Rainfed: Second fortnight of October
Irrigated: First fortnight of November
Central & South India - First fortnight of October
Sowing Method : Flat Beds, Broad bed & Furrow (BBF)
Spacing : Timely Sown- 30 X 10 cm: Late Sown- 25 cm. X 10 cm.
Irrigated - 45 cm. X 10 cm. **Seed Depth:** 5-7 cm
Seed rate : Small seeded- 60-70 kg/ha; **Kabuli**-100-120 kg/ha
Bold seeded and late sowing-75-90 kg/ha
Seed Treatment : Hexaconazole @ 2 ml/kg seed.
Culture & Micronutrient : Rhizobium 5 gm+ PSB 5 gm/kg & after that apply Molybdenum 1 gm/kg.

Soil Type: Well drained Sandy to fine textured deep black soils. Best suited deep loams or silty clay loams with a pH ranging from 6.0 to 8.0.
Rainfall : An average crop season rainfall of 600-900 mm
FYM : 5 tonnes FYM or compost or biogas spent slurry with 50% recommended dose of fertilizers (RDF) plus Rhizobium inoculation for better yields and Fertilizer Use Efficiency (FUE).
Fertilizer Recommendations: 15- 20 kg (N) and 50-60 kg (P) per ha. If soils are low in potassium (K), an application of 17-20 kg/ha is recommended.
- Foliar spray of 2% urea at flowering has been found beneficial in rainfed crops.
- 25 kg zinc sulphate and 10 kg borax /ha has positive effect on root growth, BNF and yield.
Application of fertilizer should be based on Soil Test Report.

Irrigation : Critical stages are branching, Pod formation/development.
Cropping System:
Intercropped- Mustard Linseed, Wheat/Barley, Safflower, Coriander
Rotation - Kharif fallow-Gram; Paddy-Gram, Maize-Gram, Bajra-Gram; Jowar-Gram

Major Weeds	Management
Bathua, Gajri, Chatri, Matri, Ankari, Kateli, Senji, Jungli Piaji, Krishanneel, Canary Grass	Crop rotation, Intercropping, Mechanical & Manual weeding, Spray of Fluchloralin (Pre-em), Quizalofop ethyl/I (Post-em)

Seed Replacement Rate :

Crop	2012	2013	2014	2015	2016	2017
Gram	21.17	31.43	25.35	27.64	31.83	30.90

Harvesting : Leaves begin to fall, stem and pod turn brown or straw in colour and seeds are hard and rattle (most important) with 15% moisture inside them.

Economics of Crop Cultivation :

Parameters	Rabi
Yield (Normal 2014-15 to 2018-19)	9.72 qtls/ha
Gross income (at MSP 2019-20)	Rs. 47385/ha
Cost of Cultivation (CoC A ₂ +FL)*	Rs. 27923/ha
Cost of Production	Rs. 2873/qtls

*CoC – Cost of Cultivation ; A₂-Actual paid out cost ; FL- Imputed value of Family labour

Insect-Pest & Disease Management:

Major Insect Pest	Management
Cutworm	Summer deep ploughing, Crop rotation, Intercropping with wheat /linseed /mustard, Grow marigold on bunds, Apply Phorate 10G @ 10kg/ha before sowing.
Gram Pod Borer	Early sowing, grow short duration varieties. Intercrop with linseed, marigold, mustard, sunflower or wheat, coriander. - Install bird perches@ 10-15/ha -Spray neem seed extract (5%). Use moderate resistant cultivars like ICCV10, Vijay, ICCV 7 & ICCL86103, PBG-3.
Major Diseases	Management
Collor Rot	Crop rotations with cereals, Application of calcium fertilizer, Seed treatment with carboxin @ 3 gm/kg of seed.
Dry Root Rot	Crop rotation, Timely sowing should be done to avoid post-flowering drought and heat stresses, which aggravate the disease.
Wilt	Sowing should be third week of October. Deep Planting of chickpea (8-10 cm.) in light soil. In heavy incidence avoid chickpea cultivation for 3 to 4 years

Minimum Support Price:

Crop	2015-16	2016-17	2017-18	2018-19	2019-20
Gram	3425*	4000^	4400@	4620	4875

*Included bonus of Rs. 75 per qtl; ^Included bonus of Rs. 200 per qtls; @Included bonus of Rs. 150 per qtls.



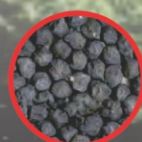
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