

**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**  
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Deptt. of Agriculture, Cooperation & Farmers Welfare  
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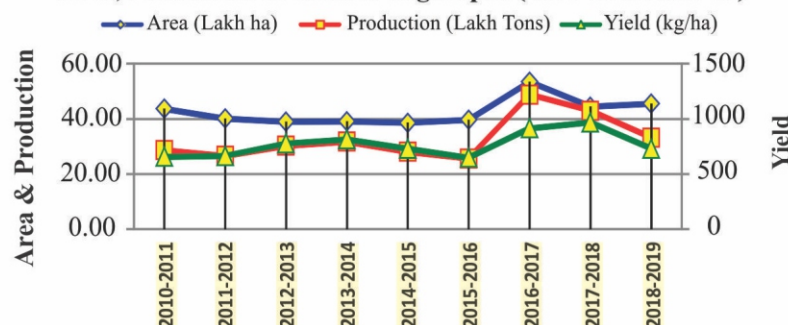


## PIGEONPEA (TUR)

Scientific Name:  
*Cajanus cajan (L.)*

Area : 44.29 Lakh ha  
Production: 35.69 Lakh tonnes  
Yield: 806 kg/ha  
(Avg. of 2014-15 to 2018-19)  
*Ever Highest Production –*  
*> 48 Lt. (2016-17)*

### Area, Production & Yield of Pigeonpea (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
Maharashtra	12.77	29	9.48	27	743
Karnataka	9.93	22	6.67	19	671
Madhya Pradesh	5.30	12	5.87	16	1108
Gujarat	2.63	6	3.08	9	1169
Uttar Pradesh	2.85	6	2.65	7	930
<b>All Above</b>	<b>33.48</b>	<b>(76%)</b>	<b>27.75</b>	<b>(78%)</b>	<b>829</b>
<b>All India</b>	<b>44.29</b>		<b>35.69</b>		<b>806</b>

### Major Districts (2018-19) Except Gujarat- (2017-18)

Major States	Major Districts
Maharashtra (86%)	Amravati, Yavatmal, Wardha, Latur, Buldhana, Nagpur, Chandrapur, Nanded, Akola, Washim, Jalna, Parbhani
Karnataka (98%)	Kalburgi, Vijayapura, Yadgir, Raichur, Bidar, Bagalkote, Davanagere, Belagavi, Ballari, Koppal
Madhya Pradesh (70%)	Narsinghpur, Chhindwara, Betul, Seoni, Rewa, Raisen, Shahdol, Singroli, Khandwa, Balaghat, Jabalpur, Morena, Satna, Sidhi
Gujarat (90%)	Bharuch, Vadodara, Chhotaudepur, Panchmahal, Surat, Narmada, Dahod, Tapi, Sabarkantha, Valsad, Mahisagar
Uttar Pradesh (50%)	Banda, Chitrakut, Kanpur Dehat, Jaunpur, Allahabad, Mirzpur, Fatehpur, Sonbhadra, Kanpur City, Hamirpur

### 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	45.38	75	35.38	68	780
Myanmar	6.28	10	6.54	13	1046
Malawi	2.45	4	3.84	7	1570
Tanzania	2.69	4	2.71	5	1010
Kenya	1.75	3	1.94	4	1106
<b>All Above</b>	<b>58.52</b>	<b>(96%)</b>	<b>50.40</b>	<b>(97%)</b>	<b>861</b>
<b>World</b>	<b>60.65</b>		<b>51.85</b>		<b>855</b>

### Economic Importance:

In India pigeonpea (Arhar), the II<sup>nd</sup> important pulse crop after chickpea, is largely cultivated under rainfed conditions (95%), remaining 5% is grown with critical irrigation support. Seeds are also rich in iron, iodine, essential amino acids like lycine, tyrocene, cystine and arginine.

### Crop Products: Split Dal

- Mainly consumed in split form as 'dal'.
- Seed layer along with the kernel part provides a valuable feed to milch cattle.
- Pods husk, leaves constitute a valuable cattle fodder.
- Dry stick- fuel, thatches, storage bins (baskets) making etc

### New Varieties:

Year	Varieties	Year	Varieties
2011	TAT-9629, AGT 2, Rajeev Lochan	2014	BRG 4, IPA 203
2012	WRG-65, BDN 711, Phule T 0012, RGT-1,	2015	GJP-1, TDRG 4, PRG 176, ICPH 2740, BRG 5, LRG 52, Rajendra Arhar-1, GT 103
2013	ICPH 2671	2016	GRG 881, BDN 716, CORG 8
		2018	AL 882, Pusa Arhar-16, GT-103, BRG-3, GT-104, CRG-2012-25

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**Sowing Season:** Kharif & Rabi

**Sowing Time :** Early Maturing var.: First fortnight of June.

Medium & Late Maturing Var.: Second fortnight of June.

**Sowing Method :** Flat Beds, Broad bed & Furrow (BBF), Ridge & furrow

**Spacing :** Early- 45-60 cm X 10-15 cm

Medium/Late - 60-75 cm X 15-20 cm; **Seed Depth :** 7-10 cm

**Seed Rate :** Early- 20-25 kg/ha, Medium/Late - 15-20 kg/ha

**Seed Treatment:** Treat the seed 2 days before sowing.

**Fungicide:** Tricoderma 5 (gm.) @ per kg.

**Culture & Micronutrient :** Use Rhizobium culture 10 gm/kg.

**Soil Type:** It is successfully grown in black cotton soils, well drained with a pH ranging from 7.0-8.5.

**Climate:** 30-35°C for germination, 20-25°C for active growth, 15-18°C during flowering and pod setting (highly susceptible to frost) and 35-40°C at maturity.

**Plant Nutrient Management:** 25-30 kg N, 50-75 kg P<sub>2</sub>O<sub>5</sub>, 30 kg K<sub>2</sub>O /ha at sowing time.

**Zn :** Foliar spray of 0.5 kg ZnSO<sub>4</sub> with 0.25 kg lime or soil application @ 25 kg/ha; **Mo:** 1 kg sodium molybdate/ ha; **Boron:** Foliar spray of B @ 1.0-1.5 kg/ha or soil application of 4 kg borax. **Fe:** Spray 1.0 per cent FeSO<sub>4</sub> to recover the crop from Fe deficiency.

**Weed Management :** i) Raised bed system (2.7 m width) of planting; ii) One hand weeding of 30 DAS; iii) Pre-emergence application of Pendimethalin (1.0-1.5 kg/ha); iv) hand weeding 25-30 DAS optional second weeding (45-60 DAS).

*Application of fertilizer should be based on Soil Test Report.*

**Irrigation :** 1<sup>st</sup> -Branching (30 DAS); 2<sup>nd</sup> -Flowering (70 DAS)  
3<sup>rd</sup> - Podding (110 DAS.)

**Cropping System:**

**Rotation** – i) Maize-Pigeonpea (Rabi); ii) Pigeonpea-Urd-Wheat; iii) Pigeonpea-Sugarcane; iv) Mung + Pigeonpea-Wheat; v) Pigeonpea (early) -Potato-urbean.

**Intercropping-** 80 - 90 % of the pigeonpea were intercropped.

-With cereals (sorghum, maize, pearl millet, finger millet & rainfed rice).

-With legumes (groundnut, cowpea, mung bean, black gram, soybean,).

-With long-season annuals (caster, cotton, sugarcane, and cassava).

**Seed Replacement Rate :**

Crop	2011	2012	2013	2014	2015	2016
Pigeonpea	22.16	21.46	46.25	40.97	45.24	48.11

**Harvesting :** With two third to three fourth pods at maturity judged by changing their colour to brown is the best harvesting time. The plants are usually cut with a sickle within 25-35 cm above the ground.

**Economics of Crop Cultivation:**

Parameters	Kharif
Yield (Normal 2014-15 to 2018-19)	8.06 qtls/ha
Gross income (at MSP 2020-21)	Rs. 48360/ha
Cost of Cultivation (CoCA <sub>2</sub> +FL)*	Rs. 38352/ha
Cost of Production	Rs. 4758/qtls

\*CoC – Cost of Cultivation ; A<sub>2</sub> -Actual paid out cost ; FL- Imputed value of Family labour

**Insect-Pest & Disease Management:**

Major Diseases	Management
Wilt	i) Soil application-T. viride-2.5 kg/ha + 50 kg of well decomposed FYM or sand at 30 days after sowing. ii) Mixed cropping with sorghum; iii) Grow resistant varieties like Amar, Azad, Asha, Maruthi, C-11, BDN-1, BDN-2, NP-5.
Sterility mosaic	i) Spray Fenazaquin @ 1 ml/lit on 45 and 60 DAS; ii) Crop rotation with tobacco, sorghum, pearl millet, cotton. iii) Resistant var. like Pusa-885, Asha, Sharad, Narendra Arhar1.
Phytophthora blight	i) Seed treated with Metalaxyl 35 WS @3 g/kg of seed; ii) Crop rotation should be followed; iii) Grow resistant varieties- ICPL 7916/ 12055/12114/12161, JKM-189, JA-4 etc.

Major Insect Pest	Management
Pod-sucking bugs	i) Soil application of Carbofuran 3G @ 15 kg/ha at sowing. ii) Spray with Ha NPV 3 x1012 POB (Polyhedral occlusion body) /ha in 0.1% teepol.
Plume Moth	i) Apply Neem oil 2%; ii) Spray- Azadirachtin 0.03% WSP 2500-5000 g/ha or Emamectin benzoate 5% SG @ 220 g/ha or Indoxacarb 15.8% SC @ 333 ml/ha.
Pod borers	i) Use H. armigera pheromone trap @ 12/ha; ii) Spray the crop with Emamectin benzoate 5% SG @220 g/ha.

**Minimum Support Price:**

Crop	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Pigeonpea	4625*	5050^	5450@	5675	5800	6000

\*Included bonus of Rs. 200 per qtl ; ^Included bonus of Rs.425 per qtls; @Included bonus of Rs. 200 per qtls.

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