

भारत सरकार

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



Government of India

Ministry of Agriculture & Farmers Welfare,
Deptt. of Agriculture, Cooperation & Farmers Welfare
Directorate of Pulses Development
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Bhopal - 462004 (M.P.)

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COWPEA

Scientific Name:
Vigna anguiculata

Nutritive Value:

Protein	26-28%	Calcium	0.08 – 0.11%
Dietary Fiber	18.2%	Iron	0.005%
Carbohydrate	63-64%	Calorific value	345-346 Kcal/100g

Crop Products:

It is also known as Cowpea, black-eyed pea or southern pea etc. and has multiple uses like food, feed, forage, fodder, green manuring and vegetable. Both the green and dried seeds are suitable for canning and boiling as well.

Economic Importance:

- This crop is known as drought hardy nature, its wide and droopy leaves keeps soils and soil moisture conserved due to shading effect.
- Cowpea seed is a nutritious component in the human diet, and cheap livestock feed as well.
- In Indian context, it is a minor pulse cultivated mainly in arid and semi arid tracts of grown in pockets of Punjab, Haryana, West UP along with considerable area in Rajasthan, Karnataka, Kerala, Tamil Nadu, Maharashtra and Gujarat.

Varieties- Grain: C-152, Pusa Phalguni, Amba (V-16), Ramba (V240), Swarna (V-38), GC-3, Pusa Sampada (V-585),

Fodder: GFC 1, GFC 2, GFC 3 (Kharif), GFC-4 (Summer), Bundel Lobia-1, UPC-287, UPC-5286, Russian Giant, K-395, IGFRI-5450 (Kohinoor), C-88, UPC 5287, UPC-4200

Sowing Season: Kharif, Rabi & Summer

Sowing Time : Kharif - Early June to end of July
Rabi - October-November (southern India)
Summer- Grain : 2nd to 4th week of March;

Fodder: February; Hills: April-May;
Green manuring- Mid June to 1st week of July

Spacing : Row to Row - 30 (Bushing) to 45 cm (spreading),
Plant to Plant - 10 (Bushing) to 15 cm (spreading)

Seed Rate : Kharif & Rabi : 20-25 kg/ha (Grain)
30-35 kg/ha (Green Manure & Fodder)
Summer- 30 kg/ha (Grains)
40 kg/ha (Fodder & Green Manure)

New Varieties:

Year	Varieties
2009	Pant Lobia-1
2010	Pant Lobia- 2, Hisar Cowpea 46 (HC 98-46)
2014	DCS 47-1
2015	Pant Lobia-4
2016	Pant lobia-3 , Phule Vithai (Phule CP-05040)
2017	Pant Lobia-5 , Phule Rakhumai PCP 0306-1 , TPTC 29 (Tirupati cowpea-1) , DC 15

State-wise Recommended Varieties

Madhya Pradesh: V-240, UPC-622
Maharashtra : VCM-8
Gujarat : GC-2 , GC-3 , GC-4 , GC-5
Tamil Nadu: Vamban-1, Co-6, UPC-628
Karnataka : KBC-2, IT-38956-1, PKB-4, PKB-6, Co (CP)-7
Kerala : Subra , Hridya , Kankamony
Rajasthan : RC-101, RCP-27 (FTC-27), RC-19
Punjab : CL-367, UPC-622, VRCP-4 (Kashichand)
Uttarakhan : PL-1,2,3; UPC-622, Swarnaharita (IC285143), Kashi chandan
Haryana: Hisar cowpea 46 (HC 98-46)

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Soil Type: Well drained loam or slightly heavy soil are best suited. It can grow successfully in acidic soil but not in saline/alkaline soil.

Climate: Optimum temperature required for germination is 12-15^o C and for rest period 27-35^o C. It can grow under shade of tree but can not tolerate cold or frost.

Plant Nutrient Management: Apply FYM/compost- 5-10 ton/ha as basal with last ploughing. 15-20 kg N/ ha as starter dose in poor soils (organic carbon<0.5%), 50-60 kg/ha P₂O₅ and 10-20 kg. K₂O/ha to promote growth and to mitigate the impact of water stress in plants when subjected to sub optimal soil stress.

Weed Management: One hand weeding at 20-30 DAS. Chemically, weed can be controlled by pre-planting spray of Basalin @ 1 kg a.i./ha as pre emergence in 800-900 litres of water. Application of Pendimethaline @ 0.75 kg.a.i./ha combined with one hand weeding at 35 DAS resulted in two fold increase in marginal benefit cost ratio and highest weed control efficiency.

Storage:

Storage material with ALP @ 1-2 tablets per tonne before onset of monsoon and again after the monsoon. The small quantity of the produce can also be protected by mixing inert material (soft stone, lime, ash, etc) or by smearing edible/non-edible vegetable oils or by mixing plant products like neem leaf powder at the rate of 1-2% w/w basis.

Yield: A good crop of cowpea yields about 12-15 qtls. of grain and 50-60 qtls.of straw per hectare. If the crop is raised for fodder purpose 250-350 qtls. of green fodder is obtained per hectare.

Recommendation to achieved higher production:

- Deep summer ploughing once in 3 years.
- Seed treatment should be done before sowing.
- Application of fertilizer should be based on soil test value.
- Weed control should be done at right time.
- Adopt integrated approach for plant protection.

Irrigation : Generally, crop required 5-6 irrigation depending on soil, prevailing weather conditions etc, at an interval of 10-15 days. The response to irrigation is in order of flowering> pod filling>vegetative. Crop can tolerate flooding upto 2 days at flowering and pod setting thereafter, a marked decrease in yield and its attribute.

Cropping System:

Grain/Vegetables	Fodder
Cowpea-Wheat-Mung/Cheena	Sorghum+Cowpea-Berseem-Maize+Cowpea
Cowpea-Potato-urd/bean	Maize-Berseem/Oat- Maize+cwpea
Maize/Rice-Wheat-Cowpea	Sudangrass-Berseem/Oat - Maize+cwpea
Maize-Toria-Wheat-Cowpea	Cowpea-Berseem-maize+cwpea
Rice-Mustard-Cowpea	

Harvesting/Threshing:

For grains, the crop can be harvested in about 90-125 days after sowing when pods are fully matured. For fodder, the cutting of the crop depends upon the need and the stage of growth of the component crop sown with it. Generally it should be done 40-45 days after sowing.

Insect-Pest Management:

Cowpea pod borer:

i) Collect and destroy the eggs and young larvae; ii) Fix 3 feet stick in the field @10/ha bird parches to attract predatory birds.

Aphids:

i)Spray the crop with 0.1% Oxydemeton Methyl (Metasystox) ii) Give basal application of Phorate (Thimet) 10% granule @ 10 Kg/ha.

Disease Management

Bacterial Blight:

i) Grow resistant varieties; ii) Use healthy seed from disease free field; iii) In case of severe infection, crop may be sprayed with 0.2 % Blitox.

Cowpea Mosaic:

i) Use healthy seed from healthy crop; ii) For controlling aphids spray 0.1% Oxydemeton methyl (Metasystox) or any other systemic fungicide.

Powdery mildew:

i) After harvest, collect the plants left in the field and burn them; ii) The disease can be controlled by spray of wetttable sulphur like sulfex, Elosal or Hexasual @ 2-3 kg./hectare in 800-1000 lit. of water