

भारत सरकार

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

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CLUSTERBEAN (GUAR)

Scientific Name:
Cyamopsis tetragonoloba (L.)

Health Benefits:

- Gaur beans have low Glycemic Index, hence good for diabetes.
- Gaur beans help make bone strong, better blood circulation & heart health.

Crop Products:

- Tender pods are used as vegetables which is high protein and fibre.
- All plant parts are used as nutritious fodder for animals.
- Natural polysachharide (Galactomannan Gum) found in seed endosperm is the chief product used in many industries as it acts as binder, stabilizer, thickener in food/pharmaceutical/textile/mining/tobacco/Oil well drilling/ Industrial water treatment and paper industry etc.
- It is also used as green manure (40-50 kg/ha Nitrogen).
- N- Fixation (25-30 kg/ha) is done by guar.

Economic Importance:

Among Pulse crops cluster bean has a special contribution. It is grown in Rajasthan, Gujarat, Haryana, Uttar Pradesh. In India Rajasthan stands first in terms of area and production of Cluster bean. The crop produces gum which is called guar gum and is exported in foreign countries. Its seeds contain protein-18% and Fibre-32% and about 30-33% gum in the endosperm.

Varieties

Vegetable: Pusa Navbharat, Pusa Sadabahar, Durga Bahar, Sharad Bahar, pusa Mausami, Goma Manjari.

Seed & Gum: HG-365, HG-563, HG 2-20, RCG-1066, RCG-1003

Fodder: HFG-119, HFG-156

Sowing Season: Kharif & Summer

Sowing Time : Kharif - Early June to end of July
Summer- February to March

Spacing : Row to Row- 45 cm (normal),
30 cm (single stem variety)

Plant to Plant- 15-20 cm distance

Seed Treatment: 2 gm Thiram and 1 gm Carbendazim /kg seed. Seeds can be treated 2-3 day before sowing. After fungicide seed treatment the seed is inoculated with suitable Rhizobium culture @ 5gm/kg seed.

Seed rate : 12-15 kg/ha

New Varieties:

Year	Varieties
2001	HG 563
2002	RGC-1017
2005	RGM 112, HG 867, GG 2
2006	RGC-1038, RGC 1031 (Gaur Kranti), RGC 1055, RGC 1066
2010	HG 884, HG 2-20, HG 870
2011	RCG 1033 (Gaur Kunjal)

State-wise Recommended Varieties:

Andhra Pradesh : RGM-112, RGC -936, HG-563, HG-365

Gujarat : GC-1, GC-2

Haryana: HG-75, HG-182, HG-258, HG-365, HG-563, HG-870,
HG-884, HG-867, HG-2-20

Madhya Pradesh : HG-365, HG-563

Maharashtra : HG-365, HG-563, RCG-936

Rajasthan: RCG- 1033, RCG-1066, RCG-1055, RCG-1038, RCG-1003,
RCG-1002, RCG-986, RGM-112, RCG-197

Uttar Pradesh: HG-563, HG-365



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Soil Type: Medium to light textured, well drained soil with a pH of 7.0 to 8.5 is best for cluster bean.

Climate: Cluster bean is a tropical plant. It requires warm growing season. The crop requires 30°C to 35°C temperatures at the sowing time for proper germination and 32°C to 38°C temperatures encourages good vegetative growth, but high temperature at flowering stage photosensitive and indeterminate crop.

Weed Management : Two manual weeding given at 20-25 and 40-45 days after sowing. Before germination of the crop application of Pendimethalin 0.75 kg/ha a.i. as pre emergence and for post emergence application Imazethapyr 40 gm/ha a.i. in 600 litres of water is applied at 20-25 DAS. Wheel hoe and Hand Hoe is used for Inter Culture operation to reduce the expenditure. Flat Fan Nozzle should be used for spraying.

Intercropping : Cluster bean can be grown with Bajra.

Crop rotation : 1. Guar-Wheat; 2. Guar- Chickpea; 3. Guar- Mustard

Plant Nutrient Management: Apply FYM/compost- 5-10 t/ha as basal with last ploughing. A fertilizer dose of 50:60:60 kg NPK/ha is recommended. Half N, full P & K are applied as basal dose and remaining N-25-30 days after that.

Irrigation : For good production of the crop one irrigation can be given at the time of flowering and pod formation if crop suffers moisture stress. Cluster bean cannot tolerate water logging condition therefore proper drainage is required in the field.

Harvesting /Threshing: For grain purpose crop, harvesting is done when leaves become dry and 50% pod turn brown & dry. After harvesting crop should be sun dried to bring down the moisture content of 8-9%. Threshing should be done by manually or by thresher separately. For fodder crop, crop cut when crop at flowering stage.

Yield: By adopting improved package of practices, crop can produce 10-15 qtls seed yield/ha. If crop grown for fodder purpose 250- 300 qtls green fodder/ha can be achieved.

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.

Insect-Pest Management:

Sucking Insect

Jassids, Aphids and White fly are sucking insect. For controlling these insect apply Imidacloprid @ 0.2 ml/liter or Dimethoate @ 1.7 ml/liter of water.

Termite: Termites damage plants by eating away root and stem, which cause poor plant stand.

Disease Management

Bacterial Blight:

i) Use resistant/tolerant varieties and certified seed; ii) Seed treatment with Streptocycline for that soak the seed in 200 ppm (0.2g/liter) solution of Streptocycline for 3 hours; iii) In standing crop spray of Copper oxychloride @2.5g/liter of water can be use for controlling disease.