



FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

Cluster Bean

Scientific name : *Cyamopsis tetragonoloba*

Family : *Fabaceae*

Common Name : *Guar*

Chromosome number : $2n = 14$

Origin : *India*

Economic importance

- It is grown for green pods used as vegetable and dry seeds. It is also grown as forage and green manure crop. Some of the varieties are used for extraction of gum (Guar gum). It is one of the most important vegetable crops in northern India.

Climate and Soil

- Cluster bean is a drought resistant crop and can be grown successfully in areas where average rainfall is 30-40 cm. It is cultivated mostly as rainfed and warm season crop in semi-arid zones of northern India. It is a warm season crop, grows well in summer and rainy seasons. It cannot withstand water logging condition. It is photosensitive crop and comes into flowering and fruiting when sown in kharif season only.
- All types of soils are suitable for growing cluster bean, however, well drained sandy loams are best suited with pH range from 7 to 8.0.

Description of popular varieties/hybrids

Pusa Mausami:

- It is a selection from local cultivar of north India. Plants have densely branching habit. Pods are smooth, bright green and 10-13 cm long. It comes for first picking in 80 days after sowing. Suitable for sowing only in rainy season.

Pusa Sadabahar:

- It is a selection from a local cultivar Jaipuri of Rajasthan. It is non branching type suitable for both rainy and summer seasons. First picking starts 40-50 days after sowing.

Pusa Naubahar:

- Developed by cross between Pusa Mausami and Pusa Sadabahar. It combines the good traits of both the above cultivars. Pods are longer (15cm) and of better quality. Susceptible to bacterial blight and lodging.

Sharad Bahar:

- It is evolved on the basis of single plant selection from IC11704. It is branching type producing 12-14 branches.

Pardeshi:

- Produces long pubescent pods about 12-15cm long. Mostly grown in Gujarat.

Goma manjari:

- Resistant to Powdery mildew, Bacterial blight and Leaf spot

NBPGR identified the following cultivars:

P28-1-1: It is developed from cross between Pusa Naubahar and IC11521. It is photoinensitive, high branching can be grown both summer and rainy season. Yield 140-150q/ha.

Season

- June-July and Feb-March, in some areas it is grown during September-October

Seed rate

- 25-30 kg/ha seeds are required for one hectare of area. Seed inoculation with rhizobium helps in nodulation and nitrogen fixation.

Sowing

- Seeds are dibbled in row or drilled behind the plough sometimes broadcasting is also followed.

Spacing

- 45cm X 15-20cm

Nutrition

- 25tonnes of FYM is applied to the soil at the time of final preparation. Application of 25:75:60 kg of NPK is recommended. Half of N along with entire dose of P and K fertilizer should be applied at the time of sowing in bands about 7-8 cm to the side of the seed.

Irrigation

- Cluster bean is a hardy crop that comes up well under rainfed conditions. Flowering and pod development periods are the critical stages. For higher yield the crop should be irrigated regularly at 7-10 days interval.

Weed control

- One or two weeding are essential for kharif season crop. Weedicides can be used to suppress the weeds. At the later stages of crop growth, weeds are kept under check due to the thick canopy of the crop.

Harvesting and Yield

- Green pods will be ready for harvest at 45 days after sowing. Dry seeds are harvested when a large percentage of pods are full and most of the remaining will turn yellow. Yield is about 3-4t/ha of green pods.