

FRENCH BEAN

B.N.: *Phaseolus vulgaris*

Family: Leguminosae

Origin: South Mexico and Central Asia.

Economic Importance:

1. French bean is one of the most important leguminous vegetable crops of North eastern region.
2. Its tender pods are used as a green vegetable while shelled green beans and dry beans for preparation of special dishes.
3. French bean is a short duration crop and farmers get more profit in a short period.
4. French bean is highly nutritious containing about 23.0% of Protein, 1.3% Fat, 60.6% Carbohydrates and some minerals like Calcium, Magnesium, Phosphorous and Iron.

Area and Distribution:

It is grown in Brazil, Angola, Cameroon, Tanzania, Uganda, Africa, Turkey, China, India, Romania, Spain, Italy and Belgium.

Brazil rank 1st in respect of both area and production but highest productivity is reported in France, Italy and Belgium. In India it is cultivated in Himachal Pradesh, Jammu and Kashmir, Uttar Pradesh, Maharashtra Karnataka and Andhra Pradesh.

Classification:

The French bean varieties are classified in two group's viz. Dwarf or bush types and Climbing or pole types.

Climatic requirement:

French bean is grown during winter in plains, while it can be grown round the year except winter in hilly regions. The optimum temperature range is 20-25⁰C. French bean is very sensitive to frost, high temperature, fog and hail storm. Bright sunshine favors the crop.

Soil requirement:

French bean may be grown on wide range of soils from light sand to very clay. However loam soils are good for early varieties and clay loam to clay soils for late varieties. Optimum pH requirement is 5.5 to 6.5.

Seed bed Preparation:

Seed bed consist of one deep ploughing followed by two to three harrowing's and planking is necessary to level the field for proper and uniform distribution of irrigation water.

Seed & sowing:

1. **Seed treatment:** a. seeds should be treated with Thiram or Carbendazim @ 2.5 to 3 gm./kg of seeds.
2. **Time of sowing:** 15 Sept to 15 Nov.
3. **Method of sowing:** Putting the seeds behind country plough.
4. **Seed rate:** Bush type: 80-90 kg per ha and Pole type: 30-40 kg per ha.
5. **Spacing:** Bush type: 45x15 cm, Pole type; 90x30cm.
6. **Depth:** The seed should be placed 4-5 cm.

Manures & Fertilizers:

Apply 8 to 10 tons of FYM or Compost/ha at the time of land preparation. French bean is a leguminous crop but it does not nodulate the plants hence it requires higher doses of Nitrogen for better growth and yield. It requires 100-120 Kg N, 60 Kg P₂O₅ and 60 Kg K₂O/ha. Apply whole dose of P &K and half dose of N at the time of sowing. Remaining quantity of Nitrogen should be top-dressed at 30-35 DAS.

Water management:

French bean is a shallow rooted crop. It is sensitive to both excess water as well as water stress condition. Crop requires water at branching, pre-flowering and pod development stage. The irrigation should be avoided at flowering stage to avoid flower shedding and reversion to vegetative stage.

Weed control:

Weed causes serious problems in French bean losses are from 18-90% depending upon weed composition and density. Two hand weedings and two hand hoeing's enough to weed control. Herbicides are also effective in weed controlling Pre emergence application of Pendamethalin @ 1 Kg a.i./ha or Fluchloralin (Basalin): PPI @ 1 Kg a.i./ha.

Stacking: Stacking is a not necessary in bush type varieties. However, in pole type stacking is essential for proper plant stand and to avoid pods touching the ground. Stacking is also facilitating easy pod picking.

Pest & Diseases: Aphids, pod borer like insects while Anthracnose, Powdery mildew, mosaic are the diseases observed on French bean.

Harvesting & threshing:

The pods should be harvested before they are fully grown and seeds are small. For vegetable purpose the pods are picked when they are tender, immature and non-fibrous. Bush type of varieties ready for picking in 45 DAS whereas, pole type takes 70 days for maturity. Picking is done normally 6 to 10 days interval depending upon variety. In bush type 2 to 3 pickings and in pole type 3 to 5 pickings are obtained. Delay harvesting reduces the quality they become fibrous.

Dry beans are harvested when a larger percentage of pods are fully ripe and turn yellow. Harvesting is done by pulling the whole plant or cutting the plant close to ground level. Threshing is done after drying plants on threshing floor with trampling under the feet of bullocks or mechanical threshers.

Yield:

Green pods:

Bush type: 80-100 q ha⁻¹

Pole type : 100-140 q ha⁻¹

Dry seeds: 15-20 ha⁻¹

Varieties:

Pole type: Kentucky wonder, Pusa Himalata, VL-Lata bean-7, SVM-1, Lakshmi (P-37)

Bush type: (Dwarf plant)

Giant stringless, Contender, Pusa parvati, Arka komal, VL Boni-1, Jumpa, Bountiful, Premier, Pant Anupama, Pant Bean-2.