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FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

Dolichos Bean

Botanical name : *Dolichos lablab or Lablab typicus*

Family : *Fabaceae*

Chromosome No. : *20, 22*

Origin : *India*

Common name : *Indian bean, Hyacinth bean*

Area and production

- In India, it is grown all over the country but compact large acreage for commercial production is uncommon.

Economic importance

- It is grown for whole pod. Fresh seeds and dry seeds are used as pulse grain. It is used for pod, feed and green manure. It is very popular in villages as well as cities where less area is available for cultivation. Its fresh green pods contain 86% moisture, 3.8% protein, 6.7%, CHO, 0.7% fat, 0.9% mineral matter, Vitamin A 312 IU. It is good source of Vitamin B and C also.

Soil and Climate

- It is relatively a warm season crop. Some strains are highly drought resistant. The best temperature for its seed germination is 180C to 270C. It can be grown in almost all types of soils. Sandy loam, silt loam and clay loam are best suited.

Description of popular varieties/hybrids

Pusa Early Prolific (IARI):

- It is a pole type bean, suitable for autumn and spring season. It is an early variety, bears long, thin pods.

Blue Lake:

- It is an early variety. The colour of the seed is brown length of the pod is 6 to 8 cm. it becomes ready for harvesting 70-80 days after sowing.

Arka Amogh:

- Plants are medium tall, 50 % flowering in 40 days and pods are ready for harvest in 55 days. Pods are similar to Arka Jay and Konkan Bhushan. Yield: 19-20 t/ha.

Arka Jay:

- Developed through back cross and pedigree selection involving the Parents Hebbal Avare x IIHR 93. Plants dwarf, bushy, erect and photo insensitive. Flowers purple. Pods long, light green slightly curved, Without parchment. Vegetable type with excellent cooking qualities. Tolerant to low moisture stress. Duration 75 days. Pod Yield 12 t/ha.

Arka Sambhram:

- Plants are medium height, 50 % flowering in 40 days and pods are ready for harvest in 55 days. Pods are flat, light green, medium long (13-15 cm), medium width (1.5 cm). Yield: 19-20 t/ha

Arka Vijay:

- Developed through back cross and pedigree selection involving the Parents Hebbal Avare x IIHR 93. Plants dwarf, bushy, erect and photo insensitive. Leaves dark green, Flowers white. Pods short dark green. Seeds bold. Pods with

characteristic aroma, without parchment. Vegetable type with excellent cooking qualities. Tolerant to low moisture stress. Duration 75 days. Pod Yield 12 t/ha.

Arka Soumya :

- Plants are medium tall, 50 % flowering in 45 days and pods are ready for harvest in 55 days. Pods are slender (1.0 cm width), medium long (13-15 cm). Yield: 19 t/ha

Arka Sambhram:

- Plants are medium height, 50 % flowering in 40 days and pods are ready for harvest in 55 days. Pods are flat, light green, medium long (13-15 cm), medium width (1.5 cm). Yield: 19-20 t/ha

Hebbal Avare-3:

- Developed at UAS, Bangalore. It takes 70-75 days to harvest and grown in all seasons throughout the year. Flowers are Photo-insensitive. Seeds are brown, round and short duration (100 days)

Co-3:

- It is a pure line selection from Yanaikathu Avare

Co-4:

- It is a pure line selection from Shivappu Avare

Co-5:

- It is a pure line selection from local type Kozhikkal avare Characters: All are one pole type, photo- insensitive, pods are light green to deep purple. Yield about 8-11t/ha in 210-220 days.

Deepaliwal and Dasarawal:

- Released from PRKV, Akola, Maharashtra. Pole types beans, pods are extra long, whitish in colour in Deepaliwal whereas purple green in Dasarwal yields about 6-8t/ha in 200-210 days.

Pusa Sem-2 and Pusa Sem-3:

- Released from IARI,New Delhi. Pole type, pods are borne on separate spike in bunches above the plant canopy. Pods are dark green, tender, stringless, fleshy and borne in clusters of 11-13 members. Highly tolerant to anthracnose, YVMV, aphids, jassids, pod borers and frost. Yields about 13.7t/ha.

Konkan Bushan:

- Released from KVK, Dapoli, Maharashtra. Bush type, pods are tabular and green in colour, photo insensitive, yields 6-8t/ha in 100-110 days.

CO-13:

- It is a bush type, hybrid derivative of CO-9 (bush type) x Florika field. Photo insensitive, flowers white with long green pods, yields 10t/ha.

CO-2:

- Photosensitive. The pods are deep purple throughout, septate and fleshy.Yields 135 t/ha in 215-220 days.

Season

- Best time for sowing is June-July and February-March.

Seed rate and seed inoculum

- Seed rate for dolichos bean is 40-50 kg/ha. Seeds treat with rhizobium helps in quick nodulation on the roots, which fix atmospheric nitrogen.

Sowing

- Seeds are sown in rows 1-1.5 m apart. It is dibbled or drilled behind the ploughed at a distance of 10-15cm. It climbs on the roof tops.

Nutrition

- Although dolichos bean is a legume crop it responds well to the application of fertilizers, about 25t of FYM is applied to the soil at the time of final preparation of land. Application of 25 kg of N, 50 kg of P and 25 kg of K per hectare is recommended. Half of the N alone with the entire dose of P and K should be applied at the time of sowing. Remaining half dose of N should be top dressed 30 days after sowing.

Irrigation

- It is a hardy crop comes up well under rainfed conditions. Flowering and pod development period are the critical stages. Depending on the atmospheric conditions 2 to 3 protective irrigations are needed. For higher yields the crop should be irrigated regularly at 7-10 days interval.

Weed control

- Shallow cultivation during the early stages of crop is necessary to check the weeds and to facilitate earthing up. A pre sowing application of Fluchloralin @2lit/ha checks the weed growth for 20-25 days. At the later stages of crop growth, the weeds are kept under check due to the thick canopy of the crop.

Harvesting and yield

- In bush variety the crop is ready for harvest at two months after sowing and in pole types it takes 3 months for first harvest. Fully grown pods are harvested. Interval between two pickings is about 15-20 days. It produces an average yield of 60-80q/ha of green pods.

Seed production

- It is a self pollinated crop and requires only 25m isolation distance between 2 varieties. Three rouging should be done, before flowering, at the time of flowering and at the time of maturity. Completely matured and dried pods are harvested and seeds are extracted by threshing. Seeds should be dried completely and put in cloth bags or in tin containers at cool and dry conditions.