RAMA UNIVERSITY

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FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

Cowpea

Botanical name : *Vigna uniguiculata L. Walp. or Vigna sinensis*

Family : *Fabaceae*

Chromosome number : *2n =22,24*

Origin : *Africa*

Economic importance

- Cowpea is grown both for its tender pods and also for its dry seeds used as pulse for culinary purposes. The pods are rich in protein, vitamin and minerals. It is also used as a fodder and green manure crop. On dry weight basis the cowpea grains contain 23.4 % protein, 1.8 % fat and 60.3 % carbohydrates.

Soil and climate

- It can be grown almost in all types of soils with pH 5.5 to 6.5. It is a warm season crop and thrives best between 21 and 350C. It cannot withstand frost, heavy rainfall and waterlogging. It is a drought hardy plant comes up well under rainfed condition.

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Description of popular varieties/hybrids

Pusa Phalguni:

- IARI, dwarf, bushy, mature in 60 days. Suitable for February-March sowing, yields 5-10t/ha.

Pusa Barasati:

- IARI, suitable for kharif season, viny plant habit and comes to harvest in 45 days after sowing, yield about 9-9.5t/ha.

Pusa Dofasli:

- IARI, it is cross between Pusa Phalguni X Philipine selections. Photo insensitive, bushy cultivar and suitable for both summer and rainy seasons. The crop comes to harvest in 55-60 days and yields about 7.5-8t/ha.

Pusa Komal:

- It is selected through pure line selection. Photo insensitive, indeterminate, bushy cultivars. Pods are light green, 25-30cm long. It flowers in 40-45 days. Resistant to bacterial blight, comes to harvest in 60 days and produces 10t/ha of green pods

Pusa Rituraj:

- The variety can be grown in summer as well as kharif due to it's highly photo thermo insensitive nature, bushy type. Pods are 22-24cm long, thin and palatable. Dual purpose variety. Seeds brown. The harvest starts from 45-50 days. Average yield is 8-9t/ha green pods.

Arka Garima:

- Derivative of the cross T.U.V.762 x V.uniquiculata sub sp.sesquipedalis Developed by back cross and pure line selection. Plants tall, vigerous, bushy, with small vines and photo insensitive. Leaf colour light green.Flower colour

purple. Pods light green, long, thick, round, fleshy and string less. Suitable for vegetable purpose. Tolerant to heat, drought and low moisture stress. Duration 90 days. Pod Yield 18 t/ha.

Arka Suman and Arka Samrudhi:

- Bushy, photo-insensitive, pods medium long, medium thick, yield 15t/ha. Early variety (70-75 days).

Selection 263:

- Bush, photo-sensitive, yield 19t/ha

Narendra Lobia-1:

- Pusa Komal X Varanasi local. Determinate and photo-insensitive, green pods, 28-32cm long. Seeds bold with black hilum. Yields 9.0 t/ha.

Seed rate

- 20-25 kg/ha for summer crop and 12-15 kg/ha for winter season crop. Seeds are inoculated with Rhizobium species. It helps in the fixation of atmospheric nitrogen.

Spacing

- The seeds are dibbled in rows 45-60 cm and plant to plant distance of 10-15cm.

Nutrition

- Although cowpea is a legume crop, it responds well to the application of fertilizers. About 25 tonnes of FYM is applied at the time of final preparation of

land. Application of 25 kg N, 75 kg P2O5 and 60kg K2O/ha is recommended. Half of the N along with entire dose of P and K should be applied at the time of sowing Remaining half of N should be applied at the time of earthing up after 3rd week of sowing. Spraying micronutrients shall improve the quality besides increasing yield.

Irrigation

- Cowpea is a hardy crop comes up well under rainfed condition. Flowering and pod development periods are the critical stages. Depending on the atmospheric conditions 2 or 3 protective irrigations may have to be given. For higher yields the crop should be irrigated regularly at 5-7 days interval. Hardening during pre flowering for avoiding excess vegetative growth and will induce early flowering

Weed control

- Effective control of weeds in the first 20-25 days of the crop season is essential. Atleast 2 weedings or hoeing required to check the weeds. Pre sowing application of Fluchloralin @ 2l/ha is recommended.

Growth substances

- Spraying of maleic hydrazide at 50-200 ppm just before flowering increases the pod yield. Spraying of NAA 15 ppm induces fruit set.

Harvesting and yield

- Tender pods are harvested for marketing. Harvesting starts from 45-60 days and should be done at short interval before the pods become fibrous and unfit for marketing. Marketable pods are available continue up to 100 days in flushes. It produces about 5-10 t/ha green pods. Yard long beans varieties give 15-18t/ha. the yield of dry seed is 1.2 -1.5 t/ha.

Seed production

- It is a self pollinated crop and requires 50 and 250 metres. Isolation distance for Foundation seed and Certified seed respectively. The crop should be inspected thrice during the crop period. First, before flowering second at the time of flowering and finally at the time of pod ripening. Dried pods are plucked from time to time from the plant, these are dried and seeds taken out by beating with stick or on large scale by tractor.