

Mucuna pruriens (Linn.) DC.

Syn. *Mucuna prurita* Hook.

Fam. Fabaceae

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| Ayurvedic name | Kapikachu, Atmagupta |
| Unani name | Konch |
| Hindi name | Gonca, Kauncha, Kavach |
| English name | Cowhage, Horse-eye Bean |
| Trade name | Koncha, Kaunch beej |
| Parts used | Seeds |



Mucuna pruriens

Morphological Characteristics

The plant is an annual, climbing shrub with long vines that can reach over 15 meters in length. When the plant is young, it is almost completely covered with fuzzy hairs, shed with age. The leaves are tri-pinnate, ovate, or rhomboid shaped. In young plants, both sides of the leaves are hairy.

Floral Characteristics

The flowers are arranged in axillary arrayed panicles, 15 to 32 cm long and each have two to many flowers. The accompanying leaves are about 12.5 cm long. The vines come into flowering after 120-125 days of sowing and continue to bear flowers and fruits till 180-200 days. *Mucuna pruriens* bears white, lavender or purple flowers. Its pods are about 10-20 cm long and are covered with loose white to creamish hairs that cause a severe itching if they come in contact with skin. The chemical compounds responsible for the itch are a protein, mucunain and serotonin. The seeds are shiny black, brown or spotted white in colour.

Pod Characteristics

Pods are 4 to 10 cm long, 1 to 2 cm wide at the time of maturity. The husk is very hairy and carries upto seven seeds. The seeds are round or flattened, uniform, ellipsoid, 1.0 to 1.9 cm long, 0.8 to 1.3 cm wide and 4 to 6.5 cm thick. The hilum, the base of the funiculus (connection between placenta and seeds) is surrounded by a significant arillus (fleshy seeds shell).



75, 50 and 50 kg/ha of N, P₂O₅ and K₂O respectively produce high seed yield. They are applied preferably in 2 to 3 doses. The fertilizers P and K are applied along with FYM at the time of sowing. The crop begins to produce mature pods after 140 days and 2 to 3 pickings of pods are taken at the interval of 20 days during pod maturing. The pods are plucked when they turn brown and appear drying.

- **Irrigation:** It is given fortnightly irrigation during dry season and one irrigation per month is required in winter during pod picking.
- **Disease and Pest Control:** Sometimes, collar rot during initial stages of seedling growth has been found which can be managed by applications of 2 kg Trichorich (a formulation of trichoderma in neem cake) and 2 kg *Pseudomonas fluorescens* mixed with 500 kg FYM and applied to the root region. Amongst insect pests, the leaf eating hairy caterpillar is found to damage the crop during pre-flowering stage. To control the pest, Neem soap is recommended to be sprayed at the rate of 5 gm/lit.

Harvest Management

- **Crop Maturity and Harvesting:** The crop matures in about 140 days after sowing. Mature pods are harvested to collect seeds from the pods. At the time of harvesting the pods turn to greyish-brown in colour indicating maturity for picking. Normally 3-7 seeds are found in a pod and 5-6 pods per inflorescence are generally available. Thus, about 25-30 bunches can be harvested per plant. Normally 100 seeds weigh 90-110 gm.
- **Post-harvest Management:** The pods thus harvested from the field are dried in the sunlight for 4-7 days; the seeds are further dried in shade to reach approximately 7-8% moisture in the seeds. The seeds are normally stored in gunny bags made of jute and then covered with polythene to protect from absorption of atmospheric moisture.
- **Chemical Constituents:** The seeds contain high amounts of L-DOPA that is used in the treatment of Parkinson's disease. It also contains lecithin, a glucoside and a number of alkaloids including nicotine, prurienine, pruriedine, the seed kernel contain fatty oil.
- **Yield:** Seed yield is high between 2.5 to 3.0 t/ha on large scale cultivation. The L-DOPA content from the seed range between 3 to 4%. A high yielding culture called "Zhandu Kanchha" is developed through crossing and selection by Zandu Foundation of Health Care. It yields high L-DOPA (4.5%) and high seed yield; the seed is devoid of stinging hairs. Rs. 20000/- is the cost of cultivation for one hectare.

Therapeutic Uses

Seeds are used as tonic, aphrodisiac and the in treatment of Parkinson's disease. The decoction of the seeds is used in rheumatic ailments. Farmers raise it as a fodder and green manuring crop in Central and Southern Indian States.