INFORMATION BOOKLET ON

Package of Nursery Practices for *Litsea glutinosa* (Maida lakri)

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Package of nursery practices for *Litsea glutinosa* (Maida lakri)

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Description

- *Litsea glutinosa* (Lour) C.B. Robinson is semi-evergreen, multipurpose, drought resistant tree species and belongs to family Lauraceae.
- In India, it is commonly known as Maida lakri.
- It is small to medium-sized tree.
- It is polymorphic, twings are slender and branched.
- Leaves are foliage type; possess 10 - 12 pairs which are lanceolate, elliptic, ovate, oblong and pubescent in shape and in alternate order.
- It is dioecious in nature.
- Bark is corky, viscid, brownish and yellowish grey in colour.
- Wood is moderately hard, fairly durable and of good quality.

Distribution

- *Litsea glutinosa* is native to India, Southern China, Malaysia, Australia and the Western Pacific islands.
- It is found throughout Asia, including several regions of Bhutan, China, Nepal, Myanmar, Philippines, Thailand and Vietnam.
- It grows at an altitude of 500-1900m above sea level, in forest margins, stream sides, sparse forests. It colonizes all open areas but also survives in more shaded areas and undisturbed forest.

Common Names

- Hindi - Maida lakri
- Sanskrit - Medasakah
- Punjabi - Chandna
- Himachali - Raiyan
- Jhonsari –Nauna
- Oriya- Jaisanda
- Bengali- Garur
- Telgu- Nara mamidi

Trade Name: - Maida lakri


Uses

- Young leaves are used as a fodder by livestock.
- Mature leaves are soaked in water to make a slimy or glutinous liquid and used as a traditional shampoo.
- Crude extract of leaves is used as a biological controller against *Ades aegypti* larvae (Dengue).
- Branches hang over the roof of the cattle-shed to keep away insects.
- Bark is used for treatment of stomach disorder, diarrhea, dysentery, snakebite and leucorrhea.
- Stem bark paste is mixed with goat milk and plastered over bone fracture.
- Decoction of bark is used in sores, scabies, aches and pains.
- Veterinary medicine, stem bark paste is applied and bandaged over bone fracture area and bark decoction feed to cow to cure diarrhea
- In pharmaceutical industry, bark mucilage gel is used as a binding agent for tablet formation.
- Jigget (bark product) is used in Agarbatti industry.
- Agarbatti making, the paste of the powdered bark is used as a binder for making incense sticks and cones due to its excellent viscosity and adhesive properties which aid in continuous burning.
- Seeds contain aromatic oil (35%) which is used for making candles and soaps.

Status of the species

- IUCN (International Union for Conservation of Nature and Natural resources) listed the species under endangered category


and also reported under red listed and considered as critically endangered in some part of India.

- It is reported in Uttarakhand state under near threatened category, and in Himachal Pradesh, Uttar Pradesh and Madhya Pradesh states under vulnerable category. However, in Jammu and Kashmir state under endangered category.

Flowering and fruiting

- Inflorescence is umbel type. Flowers are whitish or yellowish in colour and appear in rainy season.
- Fruits are black globose drupe and ripen in the months of september - october.

Seed characteristics

- Seeds are recalcitrant in nature.
- Average weight of 100 seeds is 29.85g.
- Average number of seeds are 3358/kg.

Nursery techniques

- Fruits are collected in the months of september – october and extracted manually. Fresh seeds are used in nursery.
- Before sowing of seeds in nursery, seeds are treated with Bevistin @ 0.2% and line seed sowing is done at the depth of 1 cm.
- Seed germination is completed within six weeks with 30.04 per cent germination are recorded in nursery. However, the seeds are treated with Gibberellins (500 ppm) and give 41.48 per cent germination under controlled conditions.
- After seeds sowing, watering is done as and when required.
- Seedlings are transferred in polybags (22 x 11cm) filled with soil: sand: farm yard manure (FYM) mixture in the ratio of 1:1:1.
- Two years old plants fit for planting out in the field.


Factors responsible for poor seed production

- Isolated and fragmented nature of the population.
- Species is dioecious in nature where male individuals comprising a greater proportion in comparison to female individuals resulting poor seed setting.
- Adult individuals normally produce good seed crop at an intervals of 2 -3 years.
- Seed production is very low due to heavy lopping of species for fodder.

Air- layering

- Air layering trials are carried out during march to may.
- Young, healthy, vigorously branches of same maturity stage having the diameter of about 1 cm are selected.
- Leaves on the selected branches are removed above and below the point where the cut is made (55cm below the shoot tip).
- Branches are injured by removing a 2.0 - 2.5cm length ring of the bark and cambium layer by making two parallel cuts and by joining those cuts with a single transverse cut.
- Subsequently, 500, 750 and 1000ppm IBA solution in the form of powder are directly applied on the wound using a sterilized brush.
- Treated wound sites are enclosed with moss- grass (about two handfuls) moistened with water by placing around the treated area and wrapped with low density polyethylene (150 gauges) sheet.
- Layers are tightly secured with polythene by cotton strings to avoid the escape of moisture.


- Afterwards each layer is enclosed with aluminum foil to reflect the excess light that reaches the layer thereby preventing the buildup of excessive heat inside the layer.
- Through this method only callus is developed but rootings are not initiated.

Cuttings

- Cuttings are prepared from juvenile plants and each cutting having 10 - 15 cm length and 4 - 5 nodes. The thickness of cutting should be 0.80 cm to 1.00 cm.
- Basal end of cuttings is treated by different root promoting harmones with different concentrations.
- Cuttings treated with 5000 ppm IBA solution gives the best results.
- Wax is applied on the upper end of cuttings to restrict the attack of pathogen and excess evaporation of water from the open end.
- Cuttings are planted in vermiculite medium under mist chamber at 25 - 35°C and 70% RH.
- 43 per cent rooting has been observed in six months.

Macro - proliferation technique

- Poor seed setting, low germination per cent, infertility and rooting in branch cuttings are some of the difficulties which encourage propagation of the species using root cuttings (thongs) through macro - proliferation technique.
- Root cuttings (thongs) are collected from natural populations and wrapped in moist gunny bag.
- After collecting the root cuttings, all the exposed parts of roots is tightly covered with soil to avoid any fungal infection and injuries to the population.


- Root cuttings are prepared with 8-10cm length and 2.0 - 2.5 cm diameter.
- Before planting the root cuttings, treated with Bevistin (0.1%) to avoid the fungal infection and treated by rooting hormone like IBA, IAA, NAA and Thymine in the range of 1000ppm to 5000ppm. Root cuttings are planted horizontally under vermiculite medium and placed in mist chamber at 25 - 35°C and 70% RH.
- After two months, sprouting is started and 2 - 4 plantlets are developed from each root cutting.
- Cuttings treated with 5000ppm IBA solution give the best result.
- After four months, these plantlets are carefully proliferated from vermiculite medium without damaging the roots and transplanted in polybags size (30x30 cms) filled with potting mixture of sand, soil and farm yard manure at the ratio 1:1:1: and place in natural environmental condition.
- After twelve months for further multiplication, juvenile root cuttings with 5.0 - 8.0 cm length and 1.0 - 1 .5 cm diameter can be taken from proliferated plants and treated with IBA (1000pm) and Bevistin (0.1%) solution and placed in mist chamber at 25 - 35°C and 70% RH.
- After six months, quality planting stock is produced from juvenile root cuttings.
- Plant raised by root cutting (thong) takes twenty four months to grow plantable size.
- It is cost – effective, eco- friendly and innovative technology.


Glimpses of *Litsea glutinosa* (Maida lakri)

Litsea glutinosa

Lopped population

Collection of leaf fodder

Leaf feeding to livestock

Marketing survey

Fruiting stage

Mature fruits

Seeds

Seed treatment with Bavistin

Germination trial in lab

Hypogeal germination

Line seed sowing

Seed germination in nursery

Seedlings

Planting stock

Planting stock

Remove the bark for air layering

Air layering

Callus formation

Advance stage of callus

Preparation of cuttings

Hardwood cuttings

Softwood cuttings

Planting of hardwood cuttings

Planting of hardwood cuttings

Sprouted cuttings in vermiculite

Sprouted cuttings in root trainers

Cutting prepared from Juvenile shoot

Observation on rooting

Root initiation

Rooting

Measuring of roots

Plant raised by shoot cuttings

Collection of root cuttings

Root cuttings treated by hormones

Sprouted root cuttings

Development of plantlets

Separation of plantlets

Measurement of plantlets

Transplant the plantlets

Separation of plant

Root cutting

Preparation of juvenile root cuttings

Planting of juvenile root cuttings with IBA

Planted juvenile root cuttings

Tagging

Sprouting of juvenile root cuttings (Stage-I)

Sprouting of juvenile root cuttings (Stage-II)

Sprouting of juvenile root cuttings (Stage-III)

Sprouting of juvenile root cuttings (Stage-IV)

Plantlets raised by juvenile root cuttings through macro-proliferation technique

Clump of Plantlets

Separation of Plantlets

Plantlets

Plantlets

Transplanting of Plantlets

Plants raised by juvenile root cuttings through macro-proliferation technique