

# *Premna mucronata* Roxb.

Syn. *Premna mollissima* Roth

Fam. Verbenaceae

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<b>Ayurvedic name</b>	Agnimantha (Brhat)
<b>Unani name</b>	Arni
<b>Hindi name</b>	Arni, Agethu
<b>English name</b>	Dusky Fire Brand Bark
<b>Trade name</b>	Agnimanth
<b>Parts used</b>	Root and Root Bark



*Premna mucronata*

## Morphological Characteristics

**I**t is a small tree. The branches are spiny; bark is thin, pale and exfoliating; wood is light brown and scented; leaves are ovate or ovate-oblong, long-acuminate, base rounded, cordate or tapering, entire or irregularly dentate; blade 7-15 cm long; petiole 2.5 cm long.

## Floral Characteristics

Flowers are arranged in terminal, corymbose, trichotomous panicles and are greenish in colour. Calyx comprised of 4 or 5 sepals, with rounded and nearly equal teeth. Corolla lobes are equal or bilabiate, upper lip retuse or emarginate, lower lip of 3 equal lobes and throat closed with white hairs. Fruit is a globose drupe, green when young, dark at maturity, 3.5-4.5 mm in diameter. The mature trees start flowering in April and fruiting in May & June.

## Distribution

It is a natural inhabitant of lower and outer sub-tropical, Himalayan tracts extending from Chenab in north-west India to Bhutan in the east and extending to an elevation of 1400 meter. It is also found in dry forests tracts of South-West Bengal, Orissa and coastal Peninsular India.

## Climate and Soil

The plant is well adapted to the sub-tropical hilly tracts in outer Himalayas with average



annual rainfall around 100 cm, and the tropical regions of eastern and Peninsular India. In north India, it is often found on dry slopes and large, natural, degraded soil bunds. The plant is able to thrive on average clayey or pebbled shallow soils. It has done equally well under experimental plantation on deep loamy soil with good drainage and a pH range of 7.3 to 8.0.

## Propagation Material

Seed is the best propagation material, even though it has a short viability of about three months. Seeds can be collected from mature plants from mid May to June.

## Agro-technique<sup>25</sup>

### Nursery Technique

- **Raising Propagules:** Seed should be sown in June, preferably in poly bags, immediately after collection and drying for a few days. The pulp of the fruit withers off after drying. As the seed is hard and stony, soaking it in water for a minimum of 72 hours is necessary. Seed germination is around 70%. Mechanical or acid scarification improves seed germination to 85%. About 100 gm seed is sufficient to raise plants for one hectare of land. Vegetative propagation through air layering and root coppices should be taken up during the rainy season in the month of July.

### Planting in the Field

- **Land Preparation and Fertilizer Application:** The land is cleared of weeds and vegetation and ploughed twice to loosen the soil. It may be left as such for few days, tilled again and planked to bring it in fine tilth. Pits, approximately of 1.0X1.0X1.0 meter size, are dug up uniformly at 4.5X4.5 meter distance in the field. 50 gm of Phorate 10 gm granules or 10 litres of 5% suspension of Chlorpyrifos in water are added to the pit as anti-termite treatment, before filling it with the soil mixture. The soil of each pit is mixed with 5-10 kg FYM, 90 gm nitrogen, 100 gm P<sub>2</sub>O<sub>5</sub> and 80 gm of K<sub>2</sub>O. The pit is filled up with this soil mixture up to the ground level. The growing plants are given 90 gm of nitrogen and 5-10 kg of organic manure after every 6 months.
- **Transplanting and Optimum Spacing:** Plants raised from seeds and vegetative propagation in the month of June are ready for transplantation after about 75 days when they acquire 5-7 leaves and become 25 cm tall. Transplantation at this stage has shown a sizable rate of mortality. However, plants retained in poly bags during winter season and transplanted in the following June-July months give over 90% survival rate. In all, 500 plants are required for one hectare.
- **Intercropping System:** The tree can be planted over bunds of fields which are used for growing fodder and vegetables, both in summer and winter months. In addition to its roots, which are used for medicinal purpose, the tree can be lopped for fodder in lean

<sup>25</sup> Agro-technique study carried out by National Institute of Pharmaceutical Education and Research (NIPER), S.A.S Nagar, Mohali, Punjab.





tree. Thus, about 3 tonnes of root is expected per hectare of plantation in the forest. Rs. 26900/- is the cost of cultivation for one hectare in the first year which comes down to Rs. 10,500/ha for subsequent years.

### **Therapeutic Uses**

The root is an important ingredient of “Dasmoolarishta” a traditional Ayurvedic preparation given as cure for obstinate fevers. It has febrifuge, cardio-tonic, and stomachic properties, and is considered a nervine tonic. Traditionally, the root preparations are valued for anti-inflammatory conditions and neurological problems.

