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## MAESOPSIS EMINII:

### A fast growing shade tree introduced in cardamom estate

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By

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Cardamom is a psiophyte (shade-loving plant) commonly cultivated as an under growth in the tropical wet and moist ever-green forests of the Western Ghats of South India. Proper and adequate shade regulate soil moisture and temperature of the garden.

In recent years indiscriminate felling of trees has disturbed the natural ecosystem to a considerable extent. Added to this, natural felling of old shade trees in the estates is not an uncommon problem. Hence, in certain areas cardamom plants are devoid of adequate shade. Therefore, it is highly essential to plant some of the growing shade tree species which can put up sufficient flush and canopy to provide a suitable microclimate in the open areas of the estate. The main considerations while selecting the shade tree species are adaptability to the climate, rate of growth, ease of establishment etc.

*Maesopsis eminii* Engl.  
Synonym, *M. berchemoides* A. chev., Family-Rhamnaceae, commonly known as African shade tree is an exotic from Uganda and a recent introduction in cardamom estates in India. It can be grown in areas receiving an annual rainfall of over 1500 mm. It is grown in coffee estates in Hassan District, Karnataka State at an elevation of approximately 915 M with a rainfall between 1200-2500 mm, very successfully as a shade tree

#### Botanical Description:

It is a fast growing deciduous tree, usually 15-27 M high, sometimes attaining 42 M, Bole shortly and bluntly buttressed, cylindrical, straight, free from

branches for 9-21 M. Bark is thick, pale grey to almost white, deeply fissured. Slash is pale red merging to yellow white. Crown is rounded when mature and usually flattened in young tree, where the leading shoot is generally at a lower level than the surrounding branches. Leaves are glossy, remotely toothed, measuring 7.5-15 cm; long 2.5-5.0 cm broad, and petiole about 0.83 cm long. Flowers are small, green, in rusty-pubescent axillary cymes. Drupe is yellow, turning black on falling, oblong, about 2.54cm long. Sapwood is nearly white, sharply defined upto 7.6 cm thick, heartwood bright yellow-green when freshly cut, usually turning pale golden brown on exposure. It is scentless when seasoned, fairly soft but firm, medium and even in texture".

The tree starts bearing 5-6 years after planting. It bears every year. The fruits ripen during October-November. After maturity, the seeds fall to the ground and are collected manually.

#### Seed Germination:

It is better to take up sowing as early as possible once the seeds are collected from the bearing tree. About 700 seeds weigh one kg. Since the seed coat is hard, it is better to soak the seeds in water and then set in polythene bags filled with fertile soil or usual nursery mixtures for germination. shade is to be provided by erecting a pandal. Regular watering is to be continued. Normally germination takes place within 3-4 weeks. Raising seedlings directly in polythene bags is a convenient

practice and it avoids transplanting shock. The seedlings normally attain 25-30 cm height at transplantable age. Seedlings when they attain 2-3 months of age are planted in the field.

#### Planting in the estate:

Seedlings may be planted in the estate taking into consideration the topography and the monsoon pattern. The best time for planting is end of May to end of June when adequate rain is experienced. In low lying areas planting may be taken up from August onwards when the heavy rains will normally be over. Adequate drainage provisi-

ons may be made in such areas before planting.

Planting distance could be adjusted according to the openness of the estate and shade requirement. No particular after-care is required other than keeping the immediate surroundings of the plant clean, by removing the weeds.

#### Rate of growth:

The observations carried out on 3-5 years old *Maesopsis eminii* trees in the cardamom estates at the Research Centre, Appangala are as follows:

Place of Planting	Height (cm)	No of branches		Total	Girth of the trunk at 0.5 M above the ground. (cm)
		Existing	Pruned		
1. Roadside and open areas*	552.7	21.05	15.72	36.77	24.20
2. Lightly shaded areas**	494.2	18.10	16.30	34.40	19.70

\* observations made on 40 trees

\*\* observations made on 21 trees

There is a remarkable rate of growth for trees planted in the roadside and open conditions as compared to the trees planted in the lightly shaded conditions within a span of 3-5 years.

The local site factors seem to have a pronounced influence on the growth of *Maesopsis eminii*. Although *Maesopsis* is able to grow on different soil types, drainage seems to be the limiting factor. Being a recent introduction in cardamom estates no much information is available on the performance of this shade tree. It appears worthwhile planting this tree in the open areas and in lightly shaded conditions in view of its fast growth to get an adequate shade in cardamom estates. *Maesopsis eminii* grows much faster and can withstand the shade from neighbouring trees to a considerable extent. Unlike other shade trees it is not found to harbour leaf eating hairy caterpillars which often cause considerable damage to cardamom plants.

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