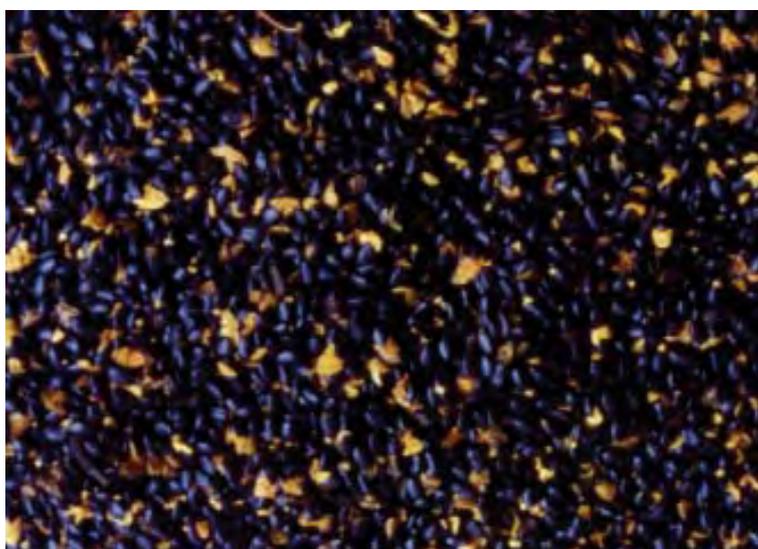


# LAO TREE SEED PROJECT



*SPECIES MONOGRAPH NO. 1*



*Acacia auriculiformis*

Northern Black Wattle, Coast Wattle,  
Ear Pod Wattle, Japanese Acacia

(Leguminosea, Mimosoideae,  
Bean or pea family)

Mai Ka Thin Na Loong

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## Published species monographs

1. *Acacia auriculiformis*
2. *Acacia crassicarpa*
3. *Acacia mangium*
4. *Azalea xylocarpa*
5. *Ailanthus triphysa*
6. *Albizia lebbeck*
7. *Albizia procera*
8. *Alstonia rostrata*
9. *Alstonia scholaris*
10. *Anisoptera costata*
11. *Anthocephalus chinensis*
12. *Aquillaria crassna*
13. *Azadirachta indica*
14. *Bauhinia variegata*
15. *Betula alnoides*
16. *Bischofia javanica*
17. *Carpinus poilanei*
18. *Castanopsis echinocarpa*,  
*C. hystrix* and *C. ceracantha*
19. *Castanopsis tribuloides*
20. *Chukrasia tabularis*
21. *Dalbergia cochinchinensis*
22. *Dalbergia cultrata*
23. *Dipterocarpus alatus*
24. *Eucalyptus camaldulensis*
25. *Gliricidia sepium*
26. *Gmelina arborea*
27. *Hopea odorata*
28. *Keteleeria evelyniana*
29. *Leucaena leucocephala*
30. *Melia toosendan*
31. *Nyssa javanica*
32. *Ormosia semicastrata*
33. *Paramichelia baillonii*
34. *Peltophorum dasyrhachis*
35. *Pinus kesiya*
36. *Pterocarpus macrocarpus*
37. *Quercus griffithii*
38. *Quercus serrata*
39. *Sapindus rarak*
40. *Schima wallichii*
41. *Sindora siamensis*
42. *Spondias axillaris*
43. *Swietenia mahagoni*
44. *Toxicodendron (Rhus)*  
*succedanea*
45. *Tectona grandis*
46. *Toona ciliata*
47. *Vatica harmandii*
48. *Wrightia arborea*
49. *Xylia xylocarpa*
50. *Zanthoxylum rhetsa*

**This species monograph is prepared by:** Chanhsamone Phongoudome

**Design by:** Chongkham Phonekeo

## Description

### Remark

Mai Ka Thin Na Loong is an exotic species introduced from Australia, Papua New Guinea and Indonesia. It often hybridises with *Acacia mangium* (Mai Ka Thin The Pha), producing straight, good quality stems. It is widely cultivated in the tropics.

It is a medium sized evergreen tree up to 20 m tall and 0.6 m in diameter, but often harvested when 8 m tall and 0.3 m in diameter. In its natural habitat it often mixes with *Acacia mangium* (Mai Kha Thin Thepa) and *Acacia crassicarpa* (Khatin Casicapa). Flowering is in July–October and fruiting is in November–April (in the South to June).

### Use

The wood can be used for furniture, general construction, carving, charcoal, fuel wood, paper pulp, agricultural implements and packaging. The deep tap-root and dense root system stabilises erosion, but also competes with agricultural crops. Its fast growth and ability to out-compete grasses as well as its ability to fix nitrogen makes it an ideal species for rehabilitation of degraded land. The species has the ability to out-compete the *Imperata cylindrica* (Yha Kha) grass. It has also been planted in windbreaks and as an ornamental or shade tree. The bark produces a high quality tannin. The leaves produce a good fodder for cattle, as well as good mulch. The nectar from the flowers is a source of bee honey.



*Mai Ka Thin Na Loong is used for fuel-wood and the leaves are good cattle fodder.*

## Site requirements

### Climate

Mai Ka Thin Na Loong grows on altitudes of up to 600 m. Annual rainfall ranges from 700–2,500 mm with a dry season of up to 7 months. Mean annual temperature is 17–34 degrees Celsius. It does tolerate a light frost when older and is drought tolerant, but not against strong wind or shade.

### Soil

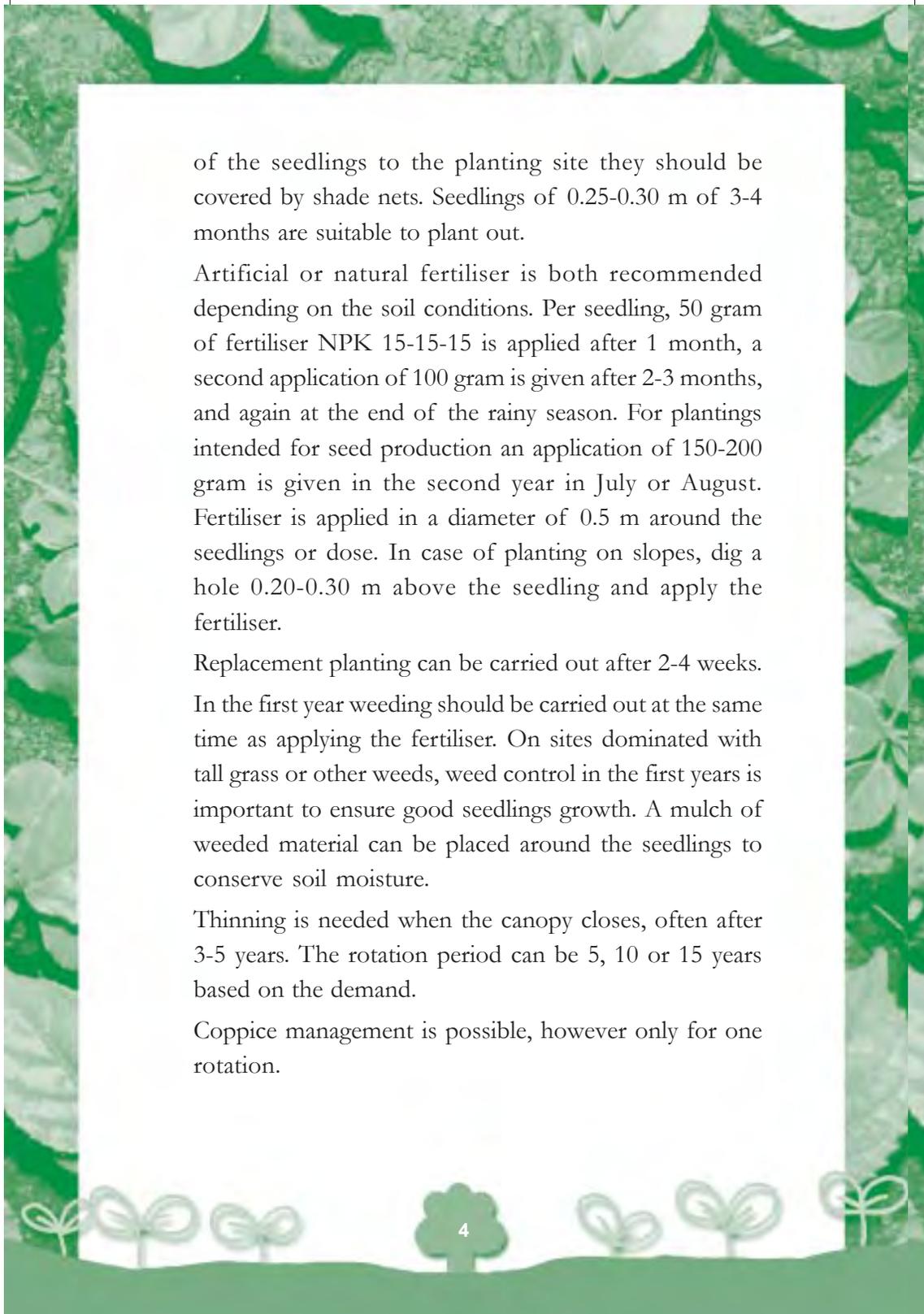
Mai Ka Thin Na Loong grows on sandy or rocky soil. It tolerates acid, calcareous poor or waterlogged soils.

### Establishment of plantation

Site preparation should be carried out between February to April, by ploughing and digging of planting holes.

A firebreak is made with 5–10 m wide strips, by ploughing, digging or controlled burning. Fencing is required to protect the seedlings against cattle.

The time of planting is from May to July. During transport



of the seedlings to the planting site they should be covered by shade nets. Seedlings of 0.25-0.30 m of 3-4 months are suitable to plant out.

Artificial or natural fertiliser is both recommended depending on the soil conditions. Per seedling, 50 gram of fertiliser NPK 15-15-15 is applied after 1 month, a second application of 100 gram is given after 2-3 months, and again at the end of the rainy season. For plantings intended for seed production an application of 150-200 gram is given in the second year in July or August. Fertiliser is applied in a diameter of 0.5 m around the seedlings or dose. In case of planting on slopes, dig a hole 0.20-0.30 m above the seedling and apply the fertiliser.

Replacement planting can be carried out after 2-4 weeks.

In the first year weeding should be carried out at the same time as applying the fertiliser. On sites dominated with tall grass or other weeds, weed control in the first years is important to ensure good seedlings growth. A mulch of weeded material can be placed around the seedlings to conserve soil moisture.

Thinning is needed when the canopy closes, often after 3-5 years. The rotation period can be 5, 10 or 15 years based on the demand.

Coppice management is possible, however only for one rotation.

## Seed handling

### Basic data

About 30,000-120,000 seed per kg. Per seed-pod about 3-6 seed. The germination rate is about 70-90%.

### Seed collection

Seed-pods can be collected from November to April when the pods become grey and start to open up. Collection of seed is directly from the tree by cutting the pods from the branches with a long bamboo pole. Seed processing should be carried out immediately. Green pods need to ripen in shade. Ripe pods and seed should also be dried in shade, or only for a short time in the sun. Dried pods can be pounded carefully in a mortar to remove seed. Beating the pods in sacks with sticks to extract seed is also possible. Seed is cleaned by winnowing.

*Beating of seed-pods in sacks  
to extract seed of  
Mai Ka Thin Na Loong.*



### **Storage**

The viability of the dried seed is maintained several years when kept in airtight containers in a cool and dark place.

### **Pre-treatment of seed**

Seed should be soaked in hot water for 1 minute and after that air dried or soaked in cold water for 8-10 hours. Then seed is kept in cotton bags in container in a dark room and covered with a plastic lit for 24 hours. Seed which start to open are sown immediately. When seed is not opening cut a little out of the seed-coat with a nail clipper or a sharp knife.



*Hot water treatment of seed.*

## **Nursery techniques**

### **Seed sowing**

Seed can be sown in germination trays (0.25 kg/m<sup>2</sup>) or directly 2 seed per container in January-March.

A mulch of grass can be applied immediately after sowing, to protect soil and seed from large water droplets. Remove the mulch when seed has germinated.

When it is known that germination rate is low, sow seed very dense in the germination beds. Seed should cover the soil almost completely. Press the seed in the surface with a flat piece of wood, add a little sand to cover the seed, press again and cover with mulch. After 3-4 days, remove daily all seeds with root of 5-10 mm long and sow them in pots with the roots downwards and deep enough for the seed coat just to be covered with soil.

### **Container**

Polythene bags of 3/5 x 7 inches are suitable to raise Mai Ka Thin Na Loong seedlings.

### **Soil**

The soil mixture used for sowing beds and potting mix should be 1 part forest top soil and 1 part river sand. Coconut husks can be added to improve the root growth.

### **Transplanting**

After about 11 days the seedlings reach a height of about 5 cm and have developed 2 leaves, they can be transplanted into containers.

Remove 1 seedling from the containers with 2 seedlings, and put 1 seedling in pots that have no seedling. Always leave only 1 seedling in 1 container, even when the second seedling has to be thrown away.

### **Fertiliser**

Fertiliser NPK 15-15-15 is applied after 2 weeks when new leaves have developed to improve seedling growth.

### **Weed control**

Manual weeding is done twice a month to decrease competition for the seedlings.

### **Root pruning**

No root pruning is necessary if the seedlings are planted out in the same year. When seedlings are planted out in the second year they should be pruned every 2 weeks, by cutting all the roots growing outside the container.

### **Hardening off**

The shade net is removed in May or at least 2 weeks before planting out to prepare the seedlings for planting them out in July.

### **Shade and shelter**

Mai Ka Thin Na Loong seedlings can be raised under 50% of shade or in almost direct sunlight. The leaves are hard and resistant against heavy rain and do not require protection.

### **Insects and fungi**

Fungi and insect attack is not a problem. When they are observed remove them by hand and destroy them.

### **Remark**

It may be necessary to add soil from older Mai Ka Thin Na Loong trees to the potting mix. In the soil *Rhizobium* bacteria give good growth of the seedlings. Add 10% of soil to the potting mix.

# LAO TREE SEED PROJECT



**Copies of the species monographs can be obtained from:**

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