

# LAO TREE SEED PROJECT



*SPECIES MONOGRAPH NO. 5*



*Ailanthus triphysa*  
(*Ailanthus malabarica*)

Tree of Heaven  
(Simaroubaceae)  
Mai Nhom Pha

**NAFRI**

**DANIDA**



## Published species monographs

1. *Acacia auriculiformis*
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7. *Albizia procera*
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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*

Design by: Chongkham Phonekeo

## Description

Mai Nhom Pha is a large deciduous tree of up to 45 m tall with a diameter of up to 1 m. It is a light demanding and fast growing species often growing together with *Duabanga* spp. (Mai Ten), *Chukrasia tabularis* (Mai Nhom Hin) and *Gmelina arborea* (Mai So) in open mixed deciduous forests. Flowering is in August to November and fruiting in January to March.

## Use

The light and soft timber of Mai Nhom Pha is used for furniture, laminated wood, toys, pulp paper, plywood core and charcoal. Its resin, fruits and bark are used as a medicine. The resin is also burned as incense. The leaves are used as a dye. Mai Nhom Pha can also be planted as an ornamental tree.

## Site requirements

### Climate

Mai Nhom Pha is often found below 1,200 m with a mean annual rainfall of about 1,600-3,000 mm. It tolerates a dry season of 4-6 months.

### Soil

Mai Nhom Pha grows best on well-drained sandy or rocky soils. Planting in impenetrable soil should be avoided.

### **Establishment of plantation**

Site preparation should be carried out before May, by ploughing or digging of planting holes.

A firebreak is made with 4–6 m wide strips by ploughing, digging or by controlled burning.

Fencing is required to protect the seedlings against cattle.

Planting is in May-June with seedlings of 0.30 m tall and about 5 months old. During transportation of the seedlings to the planting site they should be covered by shade nets to prevent overheating and drying out.

Planting can be done in spacing of 3 x 3 m.

Artificial or natural fertiliser is both recommended depending on the soil conditions. Per seedling, 20 gram of fertiliser NPK 15-15-15 is applied after 1 month. A second application of 50 gram is given after 3 months,



*Firebreak making around the planting site by ploughing, digging or burning.*

and sometimes another 100 gram just before the dry season in October starts. Fertiliser should be applied in a diameter of 0.5 m around the seedlings. 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 done after 1 month.

Weeding should be carried out at the same time as applying fertiliser. It involves clearing all vegetation surrounding the seedling in a diameter of 1 m. Weeded material can later be used as mulch around the seedlings.

Thinning is needed when the canopy closes.

The rotation period for timber production can vary from 25-35 years.

## **Seed handling**

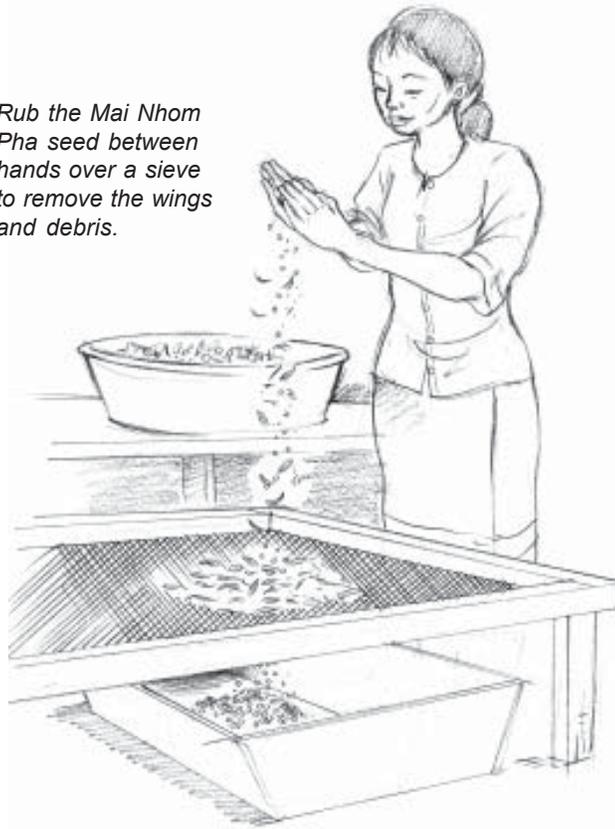
### **Basic data**

Approximately 26,000 seed per kg. Germination is usually about 60-100%.

### **Seed collection**

Collect the seed in January-March when the colour of the winged fruits turns from pink to red-brown and fruits become dry. The fruits need to be collected from the tree with a long bamboo pole before they are dispersed by wind. Dry the seed in the bags to prevent them from being blown away by wind. Dried seed are rubbed between hands over a sieve to separate seed from the wings and debris.

*Rub the Mai Nhom Pha seed between hands over a sieve to remove the wings and debris.*



### **Storage**

Storage of seed should be in airtight containers. The seed remain viable for only 4-5 months.

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

No pre-treatment is required for Mai Nhom Pha.

## Nursery techniques

### Seed sowing

Seed sowing should be done in seed beds. After broadcasting cover the seed lightly with about 1 cm of sand. Only a little watering is required. Best is to let Mai Nhom Pha seedlings develop in partial shade.

### Container

Polythene bags 3/5 x 7 inches are suitable to be used to raise seedlings of Mai Nhom Pha.

### Soil

The soil mixture used for sowing beds and potting should be 50% forest top soil and 50% sand. About 10% rice husks or coconut husks can be added to improve root growth.

### Transplanting

After the Mai Nhom Pha seeds have germinated after about 3 weeks and are 5-10 cm tall they are transplanted into containers. The roots are very vulnerable and need special attention when they are transplanted.



*Transplant the Mai Nhom Pha seedlings carefully into the polythene bags.*

### **Fertiliser**

One month after transplanting “Pui Laeng” (Urea) fertiliser is applied. Mix 100 gram in 20 litres of water which is sufficient for 1,000 seedlings. This is repeated after 2-4 weeks at the same time as weeding and pest control.

### **Weed control**

It is necessary to weed twice per month to decrease growth competition for the seedlings.

### **Root-pruning**

The roots of the Mai Nhom Pha seedlings should be pruned after 3 months of transplanting. A second pruning is carried 1 month before planting.



*Root pruning of  
Mai Nhom Pha  
seedlings*

### **Hardening off**

One month before planting the seedlings the shade net is gradually removed to prepare the seedlings for conditions at the planting site.

### **Shade and shelter**

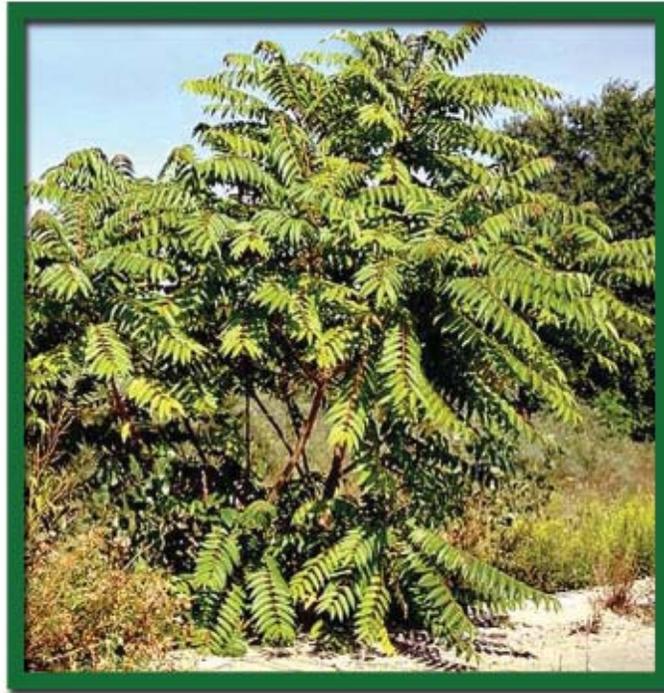
Seedlings should be kept in the shade of 50-70%. Protecting against heavy rain is not necessary.

### **Insects and fungi**

Fungi and insects may attack the seedlings. Therefore it is important to look after them daily and remove affected seedlings, insects and plant parts.



# LAO TREE SEED PROJECT



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

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