

# STUDY ON ROOT PRUNING OF *Swietenia mahogany*

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## Introduction

Root pruning of tree grown in crop land is an essential practice to minimize tree crop interaction. Judicious pruning of trees help maintain sustainable production in all agroforestry system.

## Objective of root pruning

1. To minimize tree crop interaction for the better growth of forestry crop.
2. To facilitate the root development to the deeper soil layer.
3. To uptake nutrient from deeper soil layer.

## Root Pruning Guidelines

The following general root pruning guidelines are provided for your convenience:

1. A tree should be root pruned only if the problem can be solved by removing less than 33 percent of the tree's roots, with no more than 25 percent from one side.
2. For trees 30 cm in diameter and less, roots should not be removed within 1.2 m of the outer edge of the tree base. Trees with diameters over 30 cm should be allowed an additional 30 cm for every extra 7.5 cm of trunk diameter measured at a point 1 m above ground. For example, a tree with a 37.5 cm diameter trunk measured 1 m above the ground would require a minimum 1.55 m allowance around it. The following table provides a guideline for root pruning different tree sizes.

| Tree diameter<br>(measured 1.0 m above ground) | Distance from trunk |           |
|--|---------------------|-----------|
|  | Minimum             | Preferred |
| 15 cm  | 1.2 m               | 1.5 m     |
| 22.5 cm  | 1.2 m               | 1.5 m     |
| 30 cm  | 1.2 m               | 1.8 m     |
| 37.5 cm  | 1.5 m               | 2.1 m     |
| 45 cm  | 1.8 m               | 2.4 m     |
| 52.5 cm  | 2.1 m               | 2.7 m     |

Cut roots cleanly after excavation with clean, sharp tools, to promote callus formation and wound closure. Wounds may be dressed with a tree rooting hormone compound that is available at garden centres.

## Methodology

1. Root pruning was done in a five years old tree/pole in the field laboratory of agroforestry
2. At first the base of the tree was cleared and about 30 cm deep trench was made around the tree base laying a sharp shade 25-30 cm away from the tree.
3. The cut of root parts were removed from soil cut faces of root of tree and spaded soil were allowed to dry for at least one hour.
4. Soils were then pulverized and ring ditch around the tree was refilled with pulverized soil and pressed with spade and finally make slightly raised following weeding and cleaning.

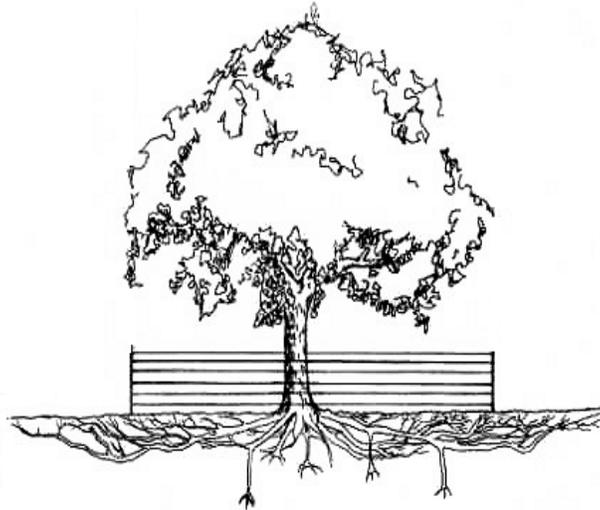


Fig. A tree with mature root system is ready to be pruned

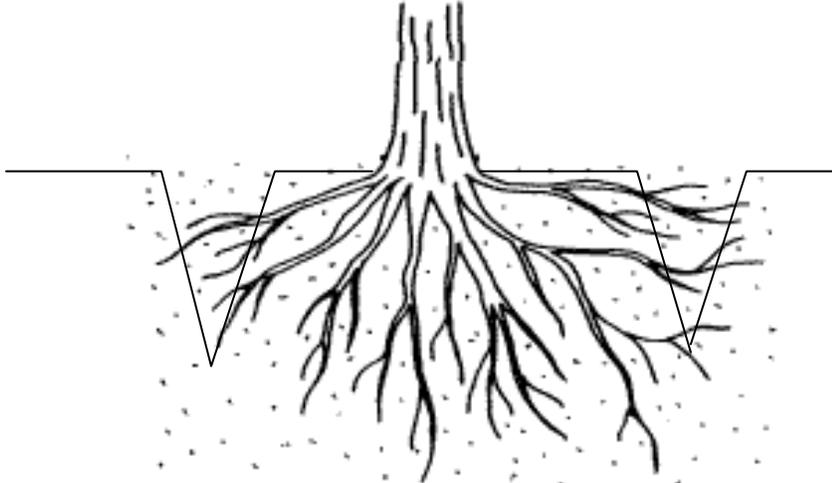


Fig. Showing root pruning of 5 years old *Swietenia mahogani* tree

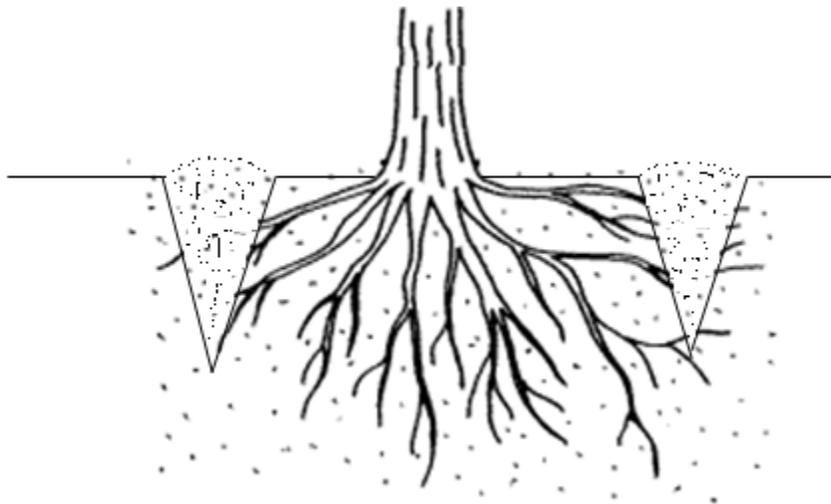


Fig. Showing refilled condition with pulverized soil