

And need good initial weeding. Herbicides are not used as they may affect the induced roots.



Plate 6: Eucalyptus clones
inter-planted with groundnuts

Clonal Eucalyptus has an advantage over the local type due to its faster growth. You can get firewood after 2 years, charcoal 3 years, telephone poles 6 years, building poles 4 years, electric poles 8 years, timber 10 years.



Plate 7: Eucalyptus clones
5 months after planting (Ngetta)



Plate 8: Eucalyptus clones
7 months after planting

For More information

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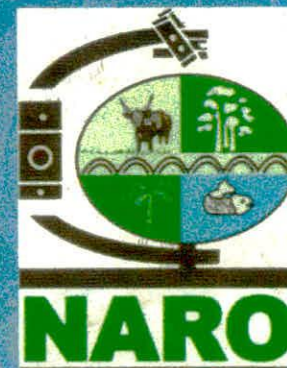
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Tree Biotechnology Research for forestry plantation Development Uganda



**Forestry Resources
Research Institute
(FORRI)**

Tree biotechnology research for forestry plantation development in Uganda

Introduction

Plantations and woodlots are important sources of fuel wood, building poles, medicines, oils and timber. The current major tree species used to grow plantations are conifers and eucalyptus. There are however other potential tree species for development of plantations including Markhamia (Nsambuya), Senna, Moringa, Muvule and Mahoganies.

Constraint

Tree crops by nature have long rotational ages depending on the end use. Muvule and Mahoganies for example are known to have rotation ages of up to 80 years if they are to provide mature timber. This discourages investments in this sector. Another major constraint is pest and diseases particularly in plantations. The muvule gall fly has been a major constraint in the establishment of muvule plantations. Of recent the exotic species of pine and cypress plantations were devastated by the pine woolly and cypress aphids respectively. Plates 1 and 2.

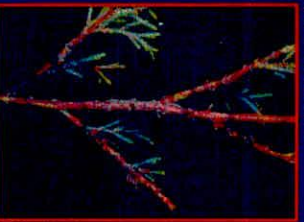


Plate 1: Cypress attacked by cypress aphid

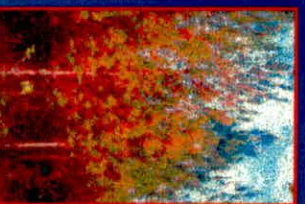


Plate 2: Damage from pine woolly aphid

For some plantation trees such as eucalyptus, various species have naturally hybridized while isolated ones have undergone self pollination leading to highly variable germplasm and therefore variable and poor growth forms.

Interventions

The current conventional tree breeding approaches can take a very long time. However with support of biotechnology quantum gains can be obtained on growth, pests and disease, and conservation.

NARO/FORRI is currently implementing a clonal tree biotechnology project on Eucalyptus. It has established one mother garden (clonal hedges) at Kifu and demonstration trials for site matching at (14 sites) Ikuwe, Serere, Ngetta, Abi, Kifu, Ntungamu, Kabale, Kabarole, Kiboga, Kumi, Katakwi.



Plate 3: Mother garden at Kifu

The planting materials (clones) were imported from Mondi Forests in South Africa under a pilot agreement for trials and demonstrations.

Altogether 12 clones were brought and consisted of hybrids of CxG, GxU and pure Grandis (CG, GU, Pure Grandis). They were brought in specially wax coated carton boxes.



Plate 4: Planting materials (clones) imported from South Africa

Before the clones were planted out, the ground was ploughed twice to remove weeds. In the mother garden the hedges were spaced at 1m while in the trials the spacing was 2.5m x 2.5m. Assessment is done against local Eucalyptus (control).



Plate 5: Field Trial

The seedlings in the field can be inter-cropped with crop legumes such as beans and groundnuts. During the early age of establishment the clones are sensitive to weeds