

Developing improved propagation materials from potential native tree species

Melia volkensii (Gürke)



Melia volkensii is a tree species native to Kenya and other east african countries.

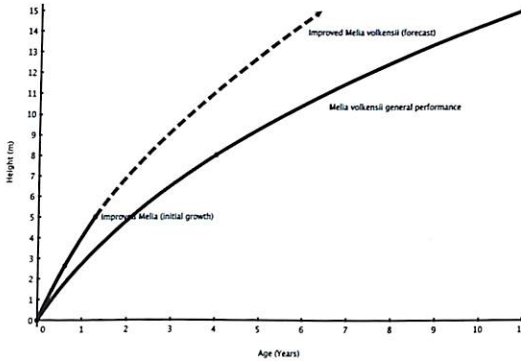
These days, planting of *Melia volkensii* become popular in semi-arid area of Kenya, because of its drought tolerant characteristics and its high value timber. However, majority of such plantations have been developed with locally collected seeds.

Kenya Forestry Research Institute (KFERI) in collaboration with Japan International Cooperation Agency (JICA) and Japan Forest Tree Breeding Centre (FTBC), started tree breeding of *Melia volkensii* since 2006, and it has developed systematically through the Project on Development of Drought Tolerant Trees for Adaptation to Climate Change in Drylands of Kenya (2011-2016)

How different is it? Improved *Melia volkensii*

The growth

This preliminary result shows the improved *Melia volkensii* grow faster than its ordinary trees.



Improved *Melia volkensii*

Ordinary *Melia volkensii*

How it has developed? Steps of improved *Melia volkensii*

1. Candidate Plus Tree Selection



100 Candidate trees are selected from 13 transects across the *Melia volkensii* natural range of 170 - 1,400m a.s.l. Kitui, Makueni, Machakos, Taita-Taveta, Embu, Tharka-Nithi, Isiolo, Garissa, Wamba, Garbatulla and Marsabit

2. Clonal seedling production

Scions from each plus trees are grafted on rootstocks for clonal seedling production.



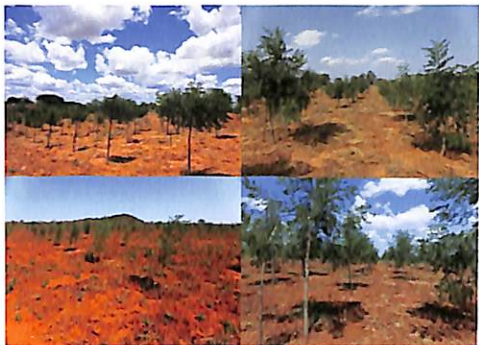
Farmers are learning the difference of improved *Melia volkensii*

KEFRI in collaboration with KFS is experimenting Farm Forestry Field Schools (FFFS) for extension and demonstration of improved *Melia volkensii*. These farmers are comparing the performance between improved and ordinary *Melia volkensii*.



The adaptability

Melia volkensii is draught tolerant species. Further research is on going to identify the most appropriate *Melia volkensii* varieties to particular area.



The traceability

Genotypes of all orchard trees were identified through DNA analysis. Now it is easy to differentiate improved *Melia* released by KEFRI to other ordinary materials.



seed production

3. Seed orchard establishment

Melia volkensii seed orchards were established in Kibwezi (Makueni) and Tiva (Kitui).



4. Progeny test and improvement



In total of 13.5ha of progeny test forests are developed in 12 different agro-ecological zones and the performances of every trees are evaluated in order to improve the seed orchards only with genetical superior trees.

Improved *Melia volkensii* propagation materials for all

Soon, improved *Melia volkensii* seeds and seedlings will be available in KEFRI Forest Tree Seed Centre and other stations. It will be also distributed through KFS, country nurseries and certified private suppliers to any users who wish to plant.

All users of improved *Melia volkensii* materials released are supposed to be either trained or instructed about the proper use of it.

