EFFECTS OF FUNGICIDES ON ARBUSCULAR MYCORRHIZAE INFECTING *MELIA VOLKENSII* SEEEDLINGS.

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ABSTRACT

*Melia volkensii* is an indigenous species to East Africa and produces valuable timber that is known to be resistant to termite damage. It produces a range of useful products for communities living in arid and semi-arid areas of Kenya. Domestication of the species is prioritized and the pace of plantation establishments is low because of seedlings production constraints such as seed dormancy and germination difficulties due to fungal attack of young seedlings. These are among the challenges faced and uses of fungicides have been proposed as a mitigation measure. The use of fungicides may affect the rhizospheric microflora of most plants by altering their chemical nature and the quantity of root exudates, which may also lead to alteration of soil microbial populations. Plants take up nutrients through interactions with root symbionts; this uptake of nutrients can be affected by application of fungicides on fungal functions such as respiration and lipid synthesis. Of these root symbionts, arbuscular mycorrhizal fungi are the most common, likely forming associations with the majority of plant species as they facilitate plants’ uptake of phosphorus, a limiting nutrient in many soils. Despite numerous studies on the effects of fungicides on mycorrhizal colonization there has been no studies conducted on *Melia volkensii*. This study is set to investigate the effects of fungicides in preventing fungal attack to this plant, its effect on mycorrhizal colonization and other activities in growth of *Melia volkensii*. Samples will be collected from different major melia growing zones, characterized for mycorrhizae colonization and analysed using Genestat. A randomized block design experiment will be set to determine the effect of different fungicide on mycorrhiza colonization. Biomass production will be determined and the ability of melia to absorb nutrients established. The results of this research will enable give recommendations on the best use of fungicides that are effective at addressing the target pest and/or pathogen of interest, and those that will be effectively used on recommended rates in providing effective crop performance.