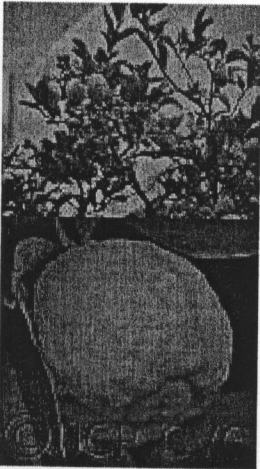


7.2.2.1 Mwansasu, Davies F. (2005). Performance of selected indigenous fruit trees in different nursery potting media. (Supervisors: Dr. M. Mataa and Dr. K. Munyinda).

There is an increasing concern about the loss of indigenous fruit trees from deforestation and other human activities that cause loss of biodiversity.

★★★★★★★★★★



Citrus jambhiri

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Hence the need to domesticate these trees and re-afforestate is imperative. A study was conducted at the Zambia Centre for Horticultural Training in Chapula near Kalulushi in 2004 to evaluate the plant height and leaf number of indigenous fruit tree species *Uapaca kirkiana* and *Strychnos cocculoides* and a common exotic fruit tree species, *Citrus jambhiri* in different nursery potting media, in two separate experiments. In the first study, garden soil, forest soil and sand were

compared as growing media for *Uapaca kirkiana*, *Strychnos cocculoides* and *Citrus jambhiri*. The experiment was arranged in a Randomised Complete Block Design with four replicates. In the second study, garden or forest soil was combined with sand and an organic amendment (water hyacinth, pine sawdust or kraal manure) in a mixing ratio of 0.5:1:1, 1:1:1 or 2:1:1 and potted in 15cm polyethylene bags. The pots were arranged in a split-split-split-plot design with three test species (*U Kirkiana*, *S. cocculoides* and *C. jambhiri*) as main-plot treatments, two soil types (garden soil and forest soil) as sub-plot treatments, three mixing ratios as sub-sub-plot treatments and three organic amendments as sub-sub-sub-plot treatments and each treatment replicated four times. In each of the experiments, ten seedlings of the plant were transplanted per treatment. The chemical and physical characteristics of the potting media were determined before planting. Twenty-four

weeks after transplanting, plant height and leaf number were measured or counted. The plant height for *Uapaca kirkiana* was higher ($P \leq 0.05$) in forest soil (19.3mm) when compared to garden soil (13.9mm) or sand (13.3mm). Plant height of *Strychnos cocculoides* was higher in garden soil (46.9 mm) and forest soil (37.7 mm) when compared to sand (16.4 mm). Unlike *Citrus jambhiri*, the indigenous tree species seemed to thrive in mixtures that had lower ratios of organic matter. Substrates containing water hyacinth generally showed higher values of nutrient elements compared to kraal manure and pine sawdust substrates and gave good plant growth. Plant height of *Uapaca kirkiana* was higher in water hyacinth substrates (15.4 mm) and pine sawdust substrates (14.1 mm) than in kraal manure substrates (11.75 mm). In *Strychnos cocculoides* plant height was highest in kraal manure substrates (35.8 mm) compared to that in water hyacinth substrates (23.1 mm) and pine sawdust substrates (10.43 mm). In *Citrus jambhiri* plant height was highest in kraal manure substrates (338.9 mm) compared to that in water hyacinth substrates (251.0 mm) and was lowest in pine sawdust substrates (8.2 mm). Plant height was significantly correlated to physical and chemical properties of the growth media.