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Screening of baobab collection for rootstock selection

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Abstract

Baobab (*Adansonia digitata* L.) is an underutilised multi-purpose resilient tree with potential of contributing to food security, climate change mitigation and biodiversity improvement. The possible uses are very diverse, but one challenge is the late fruit set of the trees. This can be overcome, for example, by grafting the young trees. Suitable genotypes must be found for this. There are 113 accessions of baobab at the genebank of the Ho Technical University (HTU). As part of the aim of identifying unique genotypes for specific purposes, nine of them were screened for their suitability as rootstock materials for rapid seedlings development. The experiment was conducted in the nursery at HTU and laid out in randomised complete block design with four replications. Analysis of variance was performed on the data. The traits assessed included the number of leaves, plant height and stem girth at soil level and were taken six weeks after germination to 11 weeks at which time most of the seedlings were grown enough for grafting. The results revealed significant differences among accessions in terms of plant height and number of leaves from week six to eleven. However, there were significant differences among the accessions in terms of stem girth in only weeks six and seven. Although those plants with higher number of leaves and height could be considered as fast growing and suitable as rootstock, their stem girths were not superior. Screening of more accessions is recommended to identify better rootstock materials if available in the collection. The results of this work should help to increase the attractiveness of replanting baobab trees in rural areas.

Keywords: Biodiversity, climate change, food security, plant height, resilient tree, stem girth