

# Gauging Seedlings Growth of Certain Arid Lands Tree Species

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## ABSTRACT

This study was carried out to assess the performance of certain tree species of arid lands at the nursery stage. An experiment was conducted in Khartoum Forest Reserve on the eastern bank of the White Nile abutting the Mugran confluence. Six arid land tree species; namely, *Acacia ehrenbergiana*, *A. nubica*, *A. seyal*, *A. tortilis*, *Salvadora persica* and *Ziziphus spina-christi*, were chosen for this study. Seeds collected from Gedaref State, Red Sea State and Khartoum State were pre-treated for rapid germination, and the appropriate tests were done at Soba Tree Seed Centre. In the nursery, standard operations were used: Soil mixture of river silt and sand at 1:1 ratio by volume was packed into 10 x 20 cm polythene bags punctured at the lower  $\frac{2}{3}$  part. The filled bags were arranged in seedling beds and flood irrigated in such a way that the soil got wetted by imbibition. This allowed smooth wetting of the soil mix, and the seeds sown at the top got moisture without disturbance. Irrigation frequency was every other day in the beginning and reduced to twice and once weekly. The experimental design was completely randomized block with three replications. The results of the nursery tests revealed differences in seedlings growth between the tree species: *A. tortilis* and *Z. spina-christi* showed the highest survival percentage, and the highest shoot length was shown by *A. tortilis* and *A. ehrenbergiana*. The longest roots were found in *A. tortilis* and *A. ehrenbergiana*. This is important in arid lands since the long seedling roots tap water from deep soil layers. On the basis of height, root length and survival percentage, *A. tortilis*, *A. seyal*, and *A. ehrenbergiana* are most suitable for arid lands conditions. The other species *A. nubica*, *Z. Spina-christi* and *S. persica* come next. Therefore, it is recommended that in species selection to adopt the following preference: *A. tortilis* > *A. ehrenbergiana* > *A. seyal*. *A. nubica*, being unpalatable for animals and unsuitable for fuel wood. They may be used in stabilizing sand dunes and controlling sand movement.

**Key words:** Seedlings growth; *A.cacia ehrenbergiana*; *A. nubica*; *seya*;; *A. tortilis*; *Z. spina-christi*; *Salvadora perisica*