
EFFECT OF DIFFERENT LEVELS OF SALINITY ON GROWTH PERFORMANCES OF FOUR SELECTED TREE SPECIES

S Subasinghe and ID Liyanaarachchi

Department of Crop Science, Faculty of Agriculture,
University of Ruhuna, Mapalana

Salt affected soils are widespread in different parts of the world. In recent years significant amount of land extent were affected due to salinity rendering them biologically unproductive. The use of specific techniques for the amelioration of these lands for agriculture is taking place continuously. Reforestation of salt affected soils is possible given proper site preparation, choice of suitable salt tolerant species and their proper nursery and cultural practices are achieved. The potentials of these soils for growing trees and woody vegetation have not been fully explored yet.

Therefore, four different pot experiments were conducted by using four selected tree species mainly available in the salt affected areas (i.e. Tamarind (*Tamarindus indica*), Katuandara (*Acacia leucoploea*), Castor (*Ricinus communis*) and Wood apple (*Feronia limonia*) at the Faculty of Agriculture, University of Ruhuna Mapalana, Kamburupitiya during April to October 2001 to assess the influences of different levels of saline water (i.e. 0.13,2,4,6,8 and 12 mmhos/cm) on growth and development of above four tree species. All the experiments were conducted by using a Randomized Complete Design with four replicates. One month old seedling raised in 6"x8" size polythene bags were used for the experiment. Seedlings were transferred to larger Polythine bags (10"x 12") at 2 months after planting without damage to the root system to ensure enough space for root development. Plant height, shoot and root biomass yield were measured at every 2 weeks interval.

The result revealed that the plant height, shoot and root biomass yield were not affected significantly by different levels of saline water up to 12 mmhos /cm compared to the control where normal water (0.13mmhos/ cm) is applied in all crop species. Therefore all four-tree species, which were used for the experiment, may be recommended as salt tolerant tree species up salinity to the level of 12mmhos/cm.