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The effect of different levels of salinity on growth performances of some selected tree species

Four separate experiments were conducted by using four selected tree species mainly available in the salt affected areas, *i.e.* Tamarind (*Tamarindus indica*), Katiandara (*Acacia leucoploea*), Castor (*Ricinus communis*) and Wood apple (*Feronoa limonia*) at Mapalana, Kamburupitiya to assess the effect of different levels of saline water (i.e. 16, 20, 30, 40 mmhos/cm and pure sea water on growth performances of above tree species. all the experiments were arranged in a Randomized Complete Design with four replicates. One month old seedlings raised in 15 cm x 20 cm size polythene bags were used for the experiment. Seedlings were transferred to larger polythene bags (25 cm x 30 cm) at two months after planting to ensure the enough space to develop root system. Plant height, shoot and root biomass were measured at 1, 2 and 3 months after transplanting.

Results revealed that castor shows the lowest tolerance to salinity. All plants of castor were died off after few weeks even at 16 mmhos/cm salinity level, the lowest concentration used. Katuandara was the most tolerant species, which grew well even at salinity level of seawater. Tamarind was next to Katuandara with regards to tolerance to salinity, which can grow satisfactorily; up to salinity level of 30 mmhos/cm and growth was stunted with increasing level of salinity.

Results can be concluded that the four tree species, which were used for the experiment can be ranked according to the tolerance level of salinity as follows. Katunadara (*Acacia leucoploea*)>Tamarind (*Tamarindus indica*) >Wood apple (*Feronoa limonia*) >Castor (*Ricinus communis*) in order of tolerance to salinity.