Growth performances of Cinnamon (*Cinnamomum verum* Presl) as affected by different levels of salinity

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There are large extents of salt affected lands in Sri Lanka, which are not used for productive purposes. Growing salt tolerant tree species is one way of rehabilitation of such lands.

Therefore, a pot experiment was conducted to study the effect of different salinity levels on growth performances of Cinnamon (*Cinnamomum verum* Presl.) at the Faculty of Agriculture, University of Ruhuna, Mapalana. There were 10 different concentrations of salinity i. e. 2, 4, 8, 12, 16, 20, 24, 30, 40 mmhos/ cm and untreated control (water with 0.13 mmhos/cm) were used as treatments. Experimental design was Completely Randomized Design with three replicates. Six months old seedlings raised in poly bags (10" x 12") were exposed to different treatments. The above concentrations were prepared by diluting sea water to different levels of salinity. Five ml of saline water at each salinity level was applied on Cinnamon plants twice a week up to 3 months and increased volume up to 10 ml from 3-6 months. Plant height, root length, and number of leaves per plant, shoot and root dry matter was taken at monthly intervals.

Results revealed that, plant height, shoot and root dry matter content were decreased significantly ($p \leq 0.05$) with increasing level of salinity up to 40 mmhos/ cm compared to the control, where normal water (0.13 mmhos/ cm)

was applied to Cinnamon. At early stage, the mortality rate was significantly increased with increasing salinity level. From 2nd month onwards mortality rate was increased even with lower salinity level (2 mmohs/cm). However, plants treated with sea water (40 mmhos/cm) were totally destroyed at 45 days after treatment.

Therefore, Cinnamon could be identified as less salt tolerant tree species. Further investigations are required to evaluate growth performances under field conditions.