

Effect of Eco-friendly Growth Media on Survival Percentage of Tea [*Camellia sinensis*(L.) O. Kuntze] to Mitigate Short Term Drought at Nursery Level

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Tea is generally considered to be a shallow-rooting plant, sensitive to the physical condition of the soil and thus growth media may help effectively mitigate short-term drought conditions. Therefore, this study was conducted to study the effect of growing media on soil properties and survival percentage of tea cultivar TRI 2023 during short term drought period at Tea Research Institute, Ratnapura. Six treatment combinations having three growth media (charcoal, paddy husk and refused tea) and two different application methods (3 inches high growth medium layer applied to the bottom of the pot and growth medium incorporated into the soil) were used in pot experiment under protected house condition. Each treatment was replicated four times and CRD was used. Initially, soil moisture status of all treatments was adjusted to a saturation point and after that irrigation was not done for one month. Water runoff and percolation were inhibited using bottom closed pots and evapotranspiration (ET) was considered as the only method for soil moisture loss. ET (mm) was measured using weight difference method and survival percentage (%) was calculated in all 24 pots weekly for one month. Then the second irrigation was done again to saturation point and the study was continued for another month. The results revealed that, there were significant differences among six treatments for both tested parameters. Further, the lowest percentage weight difference (11.2695%) and the highest survival percentage (89.8%) were observed in charcoal incorporated into soil at 1:2 ratio during the study period. Therefore, charcoal incorporated into soil (1:2) can be effectively used as an eco-friendly growth medium as it increases the water retention facilitating more survival of potted plants of tea cultivar TRI 2023 in nurseries during short term drought period.

Keywords: Evapotranspiration, Growing media, Short-term drought, Survival percentage, TRI 2023