Studies on growth performances of three selected salt tolerant plant species as affected by method of establishment

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Use of appropriate agronomic practices is primarily important in growing plant species on salt-affected soils, because, most of them are currently lying barren. Absence of proper cultivation technologies, result in very poor growth or even complete failure of plants growth. Under this background, a field experiment was conducted at Hungama in the Hambanthota district to assess the effect of establishment methods on growth of three salt tolerant species, namely Ranawara (*Cassia auriculata*), Maliththa (*Salvadora persica*) and Wood apple (*Feronia limonia*).

Planting pits (30 X 30 X30 cm) were dug at 60 X 60 cm spacing and filled with sub soil (T_1), top soil (T_2), top soil and straw mulched (T_3) and sub soil and straw mulched (T_4). Three months old seedlings of selected species were planted and height increment was measured at three month intervals. Randomized Complete Block Design (RCBD) was used for the experiment with four replicates.

Results showed that significant ($P \leq 0.05$) height increment in T_4 was found in Ranawara at 3,6, 8 and 12 months after planting. However, height increment in Ranawara at a decreasing rate was observed in all other treatments. No significant differences ($P \leq 0.05$) in height increment were found in Maliththa under different treatments. Plant height was increased at an increasing rate in Maliththa up to 6 months and thereafter at a decreasing rate. Wood apple also exhibited a similar trend as Ranawara, showing significantly ($P \leq 0.05$) a grater height increment in T_4 at all the time, compared with other treatments. Wood apple was the only species, of which height was increased at an increasing rate throughout.

It could be concluded that instead of filling planting pits with top soil, sub soil from the same field would be used more effectively and the growth was enhanced further by mulching salt tolerant plant species such as Wood apple, Ranawara etc.

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