EFFECT OF ROOT PRUNING ON ROOT AND SHOOT GROWTH AND SURVIVAL OF DURIAN

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Durian is a highly cross pollinated plant and thus grafting is practiced to produce true type plants. Although the success rate of grafting is high, the survival of grafted plants in field is poor. Therefore this study was conducted at the Fruit Crop Research and Development Station, Gannoruwa to evaluate the effect of root pruning on root and shoot growth and survival of Durian. Four treatments *viz.* 1.5 months old rootstock without root pruning: T_1, 1.5 months old rootstock with root pruning: T_2, 10 months old rootstock without root pruning: T_3 and 10 months old rootstock with root pruning: T_4, were arranged in a randomized complete block design with five replicates. Data on percentage of successful and survived grafts, increase in length and girth of the tap root, shoot length, number of newly emerged shoots and leaves per successful graft were collected. Four weeks after grafting (WAG), the percentage of successful grafts were significantly higher ($p<0.05$) in T_3 (96%), T_2 (90%) and T_1 (90%), compared to T_4 (76%). However, the percentage of survived grafts were not significantly different ($p<0.05$) among treatments at 14 WAG. Shoot length showed a significant increase ($p<0.05$) in T_2 (18.72 cm) compared to other treatments at 13 WAG. However, the number of newly emerged shoots were not significantly different between T_1 (2.87) and T_2 (2.85) though both of them different significantly from rest of the treatments. The number of newly emerged leaves were significantly ($p<0.05$) higher in T_2 (13.6). Tap root length and girth were significant highest value ($p<0.05$) in T_2 and T_3, respectively. In conclusion, the results of this study revealed that the root pruning at 1.5 months old rootstocks (T_2) could increase the root and shoot growth characteristics and the survival of grafted Durian plants.

Keywords: Cleft grafting, Durian, Root pruning, Shoot growth, Survival grafts