

EFFECT OF MATURITY STAGE AND INDOLE BUTYRIC ACID CONCENTRATION ON PROPAGATION OF GUAVA THROUGH STEM CUTTING

R.M.H.Y.N. Wickramasinghe¹, E.R.S.P. Edirimanna² and D.A.U.D. Devasinghe¹

¹*Department of Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.*

²*Fruit Crop Research and Development Centre, Kananwila, Horana, Sri Lanka.*

Guava (*Psidium guajava* L.) is a widely cultivated and nutritious fruit crop in Sri Lanka. Propagation of guava through stem cutting is an important option to maintain the quality of guava varieties. However, studies are limited in Sri Lanka on suitable type of the stem cutting and concentration of rooting hormone. Therefore, two factor factorial experiment was conducted to evaluate the performance of softwood and semi-hardwood guava cuttings on rooting at three concentrations of Indole Butyric Acid (IBA), 0 ppm, 1500 ppm and 3000 ppm. Treated cuttings were maintained in a mass propagator in a completely randomized design with three replicates. Survival percentage at two months of propagator period and root and shoot growth characters by destructive sampling at 3.5 months was recorded. There was no interaction ($p > 0.05$) between type of cutting and concentration of the rooting hormone on tested parameters. Survival percentage of the cuttings at 2 months was significantly differed ($p < 0.05$) by the type of stem cutting and the highest value showed in semi-hardwood (88.73%) followed by softwood cuttings (73.01%). However, there was no significant variation in survival due to IBA concentration. Shoot growth characters had no significant difference on type of cutting. The highest leaf number (8.59 ± 1.75), shoot number (2.26 ± 0.82) and shoot length increment (8.0 ± 0.73 cm) were observed in the cuttings treated with 3000 ppm IBA followed by 1500 ppm IBA and the lowest was in 0 ppm. The enhancement of root dry weight in 3000 ppm IBA by 61% and 163% compared to 1500 ppm IBA and 0 ppm IBA, respectively was significant. In conclusion, guava can be propagated using either softwood or semi-hardwood cuttings with 3000 ppm IBA concentration.

Keywords: Guava, Indole butyric acid, Propagation, Semi-hardwood, Softwood