STEM CUTTINGS OF DIFFERENT MATURITY CLASSES OF TOMATO: A VIABLE OPTION FOR SEEDLINGS

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Tomato (*Solanum lycopersicum* L.) is an important vegetable crop for the farmers in Sri Lanka. The majority of tomato farmers rely mainly on seeds for cultivation. Propagation through stem cuttings provides a viable option to address the seed related issues such as genetic variations, poor quality, and high cost. This study was conducted during 2018 *Yala* season, to identify the suitability of stem cuttings as a propagation material. Stem cuttings of different maturity classes *viz*; softwood, semi-hardwood and hardwood of tomato variety *Thilina*, and three F1 hybrids, *Padma*, *Ceres*, and *Big beef* were evaluated for growth and yield, in a Completely Randomized Design (CRD), under protected conditions, in Hayleys Agro Farms (Pvt). Ltd, Divithotawela. Effect of variety, maturity class, and variety and maturity class interaction were not significant ($p>0.05$) at nursery stage for root length, root dry weight and shoot dry weight of plants originated from cuttings. Days to flower initiation and tomato yield did not show significant differences. Hence, all three maturity classes of stem cuttings of tested varieties can be used to propagate tomato. Flowering was hastened by five days (24 days ± 0.41) in variety *Thilina* which originated by cuttings compared to the plants of the same variety raised by seeds (28.67 days ± 0.67). Moreover, the yield of 2.2 kg/plant ± 0.22 in plants raised by cuttings was not significantly different from the yield of 2.17 kg/plant ± 0.14 in plants raised by seeds. Use of stem cuttings as a propagation material reduced the production cost by 12% compared to a crop raised by seedlings. In conclusion, in place of seeds, stem cuttings of any maturity class can be used to propagate tomato with no significant effect on fruit yield.

Keywords: Maturity class, Propagation, Stem cutting, Tomato