

DEVELOPMENT OF PLANT TISSUE CULTURE PROTOCOL FOR THE PRODUCTION OF AVOCADO (*Persea americana*) PLANTING MATERIAL

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Avocado (*Persea americana* Mill.) cultivation in Sri Lanka benefits from ideal climatic conditions across various regions. However, its expansion is limited due to a shortage of planting materials. This study aimed to develop a protocol for producing avocado planting materials by refining surface sterilization for shoots of *Pollock* avocado variety and enhancing *in vitro* shoot multiplication. For surface sterilization, shoots were dipped in Thiophanate Methyl fungicide solution for 24 hours, washed with running tap water for 60 minutes, and brushed 3 times with liquid Vim detergent. They were then treated with neem oil and Tween 20, followed by immersion in 0.06% Thiophanate Methyl fungicide for one hour, 70% Ethanol for one minute, and immersed in 600 g L⁻¹ ascorbic acid for three minutes. Finally, washed with 10% H₂O₂ for three minutes. The sterilized shoots were subjected to twelve different treatments with varying concentrations of 0.1% and 0.2% (w/v) AgNO₃ for 15 minutes, followed by 5% and 10% (v/v) NaOCl in 5, 10, and 15 minutes of exposure in hormone-free Murashige and Skoog (MS) medium. A survival rate of 90% was recorded with 0.2% AgNO₃ + 10% NaOCl in 10 minutes after three weeks. Shoot multiplication was conducted with six concentrations of 6-Benzyl aminopurine (BAP) (0, 0.5, 1, 1.5, 2, and 2.5 mg L⁻¹) combined with 0.1 mg L⁻¹ of Naphthalene Acetic Acid. The highest mean number of shoots (1.93±0.98), average shoot length (21.6 mm), and shooting percentage (70%) were observed in medium with 1.5 mg L⁻¹ BAP ($p<0.05$). In conclusion, the *Pollock* variety achieved the best survival rate with 0.2% AgNO₃ +10% NaOCl in 10 minutes and the best shooting was observed in MS medium with 1.5 mg L⁻¹ BAP.

Keywords: 6-Benzylaminopurine, *Pollock*, Shoot multiplication, Survival rate