

DEVELOPMENT OF ANTHER CULTURE MEDIUM FOR SELECTED GENOTYPES OF TOMATO (*Solanum lycopersicum*)

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Plant breeding Programmes can be hastened by producing double haploids. Anther culture technology is the quickest way to produce double haploid plants. Therefore, this study aimed to develop a suitable callus induction medium for selected genotypes of tomato. Four different treatments with three concentrations of Benzyl Amino Purine (BAP) 0, 1, 2, and 3 mg L⁻¹ on full-strength MS medium were tested and all four treatments consisted of a fixed amount of 2 mg L⁻¹ Kinetin and 1 mg L⁻¹ Naphthalene Acetic Acid (NAA). To initiate the experiment, flower buds from varieties NO-312, HT 05, *Bathiya*, L-33 and, 12-561 were selected at the stage where crown petals were nearly identical or slightly longer than the calyx. After washing with dishwashing liquid and tap water, the buds were refrigerated at 4°C overnight, and subsequently surface sterilization was done. Then the anthers were incubated in the dark for 14 days at 25°C to induce anther callus formation. Anthers were cultured, and the number of calli produced by each anther was recorded. Results revealed that the highest significant callus formation percentage (42.08±14.2%) was observed in the 0 mg L⁻¹ BAP treatment for variety NO-312. And the maximum percentage (14.28±14.2%) of callus greening, was observed in the 0 mg L⁻¹ BAP treatment in variety HT 05. The results revealed that the NO-312 was the best variety for callus formation and HT 05 was the best variety for callus greening. The medium which not consisted of BAP had effect on callus formation and greening for selected genotypes of tomato. This information helps refine anther culture methods for faster plant breeding.

Keywords: Anther culture, Callus greening, Callus initiation