

Title The Study of Potato's Microtuberization Responded (*Solanum tubersum* L.) in Histological Tissue Culture Conditions to the Various Levels of Benzyl Amino Purine

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Abstract

The potato (*Solanum tubersum* L.) is one of the most important agricultural plants in the world which is propagated predominantly by asexual method (tubers and minitubers). This crop comprises more than half of the world's yearly cultivation of microtuberization. It is also considered as the primary portion of about one billion people diet in developing countries. Potato production during last thirty years was approximately 260-370 million tons, while the area of potato under cultivation in the same period has declined from 22 to 18 million hectares. Since this plant is of an exceedingly importance, one of the ways to for accessing normal plants is microtuberization in induction media in tissue culture condition. Therefore, the plants cultivated through mono-nodule explanation, were moved from shoot-formation induction media to MS induction media or the purpose of microtuberization of which the consistence/density of BAP (1, 2, 5 & 10 mg⁻¹) and Sucrose (30, 40, 60 & 80 mg⁻¹) were shifted in darkness. Notwithstanding no microtuberization was observed in the induction media containing 3% Sucrose, the number of white branches sprouted from peripheral buds were enhanced. Is is also observed that increase in BAP consistence on one hand led to decrease in the number of the aforementioned branches. In media containing 4% sucrose and with low BAP consistency (1 mg.l⁻¹, 2 mg.l⁻¹) shoot-formation (branching) was not perceived. While BAP in the levels (5 mg.l⁻¹ to 10 mg.l⁻¹) was augmented in the induction media containing 4% sucrose, the growth of lateral buds accompanied by delayed microtuberization was four weeks after induction. In such media, the microtubers were created from the alteration to the growth pattern in sub-apical area with positive geotropism. In BAP 10 mg.l⁻¹ consistency, 50% of tubers were attached to branches. In induction media containing 6% sucrose and BAP 1 & 2 mg.l⁻¹, the microtubers were grown on peripheral branches until the end of 2nd week. In these groups, no tubers bigger than 7 mm, was seen. In sucrose with 8% consistency, the highest percentage of microtuberization was perceived in BAP different consistencies (5 mg.l⁻¹, 2 mg.l⁻¹, 10 mg.l⁻¹ & 1 mg.l⁻¹). In BAP 10 mg.l⁻¹ consistency joined by 8% Sucrose, the maximal number of normal tubers attached to the pedicle/rhizome with large dimension was formed. In such induction media, the formation of microtubers in the 1st week was commenced and the 2nd week was completed. The growth of microtubers continued up to the 7th week. The latency of microtubers was protracted of which the duration was bout 30 months.