

**IMPROVEMENT OF MICROTUBER PRODUCTION
PROTOCOL FOR POTATO (*Solanum tuberosum*
L.) VARIETY GRANOLA TO INCREASE QUALITY
AND QUANTITY OF MICROTUBERS**

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ABSTRACT

Single nodal stem cuttings (micro cuttings) of potato cultivar CV."Granola" was cultured on a multiplication medium containing MS (Murashige and Skoog, 1962) medium was supplemented with 0.5 mg l⁻¹ BAP and 30 g l⁻¹ sucrose for maintaining the stock plantlets. The cultures were exposed to 22±2 °C temperature, 16 light/ 8 dark photoperiod in 75% relative humidity in a culture room for six weeks.

Plantlets from above stocks were treated with 30 ml of MS liquid medium supplemented with four different levels of sucrose (80, 100, 120 and 140 g l⁻¹) and three different BAP levels of (4.5, 5, 5.5 mg l⁻¹) in all possible combinations to promote microtuberization. Then each of them were kept in three levels of photoperiods (0 light/24 dark, 8 light/16 dark, 16 light/8 dark) under the 22±2 °C temperature and 75% relative humidity for one month and they were transferred to 0 light/24 dark condition. Factorial completely Randomized Design (factorial CRD) was used to analyze the data.

The highest number of microtubers were yielded from the 4.5 mg l⁻¹ BAP with 80 g l⁻¹ sucrose combination under the 16 light/8 dark photoperiod. Maximum tuber size was obtained from the combination 4.5 mg l⁻¹ BAP with 80 g l⁻¹ sucrose under the 0 light/24 dark condition. Lowest time for microtuber initialization was resulted at 4.5 mg l⁻¹ BAP with 140 g l⁻¹ sucrose under 0 light / 24 dark conditions.

According to the analyzed results it was concluded that the most suitable concentrations to obtain the highest number and the highest quality microtubers of potato Granola was 4.5 mg l⁻¹ BAP with 80 g l⁻¹ sucrose under the 0 light/24 dark condition at 22±2 °C.

Key Words –Potato, Microtubers, BAP, Sucrose, Photoperiod