INITIATION OF *IN VITRO* CULTURES OF *HEUCHERA* × *HYBRIDA*

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Background: *In vitro* micropropagation is a branch of plant biotechnology that encompasses methods for propagating plants through cultures of cells, tissues and organs, offering efficiency far superior to conventional propagation techniques.
Aim of the study: The present study aimed to initiate and multiply *in vitro* the species ***Heuchera* × *hybrida*** to produce high-quality, genetically uniform and contamination-free planting material within a relatively short time.
Materials and methods: The experiments were conducted in the Embryology and Biotechnology Laboratory at the "Alexandru Ciubotaru" National Botanical Garden (Institute) of MSU. The cultivar 'Regina' was selected for inoculation, being appreciated for its ornamental qualities and suitability to the pedoclimatic conditions of the Republic of Moldova. This cultivar is fast-growing and combines attractive foliage with abundant flowering.
For *in vitro* culture initiation, plant material was collected from donor plants in early May, during active vegetative growth. Three types of explants were tested: apical meristems with leaf primordia, petiole segments and petiole segments with leaf primordia. Explants were excised and inoculated under strict aseptic conditions to ensure culture sterility and to initiate *in vitro* regeneration. The biological material was disinfected using a 0.1% diacid solution for 9 minutes.
Results: Multiple formulations of Murashige & Skoog (MS) agar medium, supplemented with the cytokinin 6-benzylaminopurine (BAP) at various concentrations (BAP 0.1–0.5 mg/L), were evaluated for culture initiation. The highest frequency of viable explants was achieved using petiole fragments with leaf primordia. No contamination was observed with this inoculation protocol. In contrast, explants consisting of apical meristems with leaf primordia exhibited a high contamination rate of 30-40%. Although the inoculation of petiole fragments did not show contamination, it failed to produce microclones, unlike the protocol using petiole fragments with leaf primordia.
Conclusions: Overall, the results suggest that the use of petiole fragments with leaf primordia, 1.0-1.5 cm in size, proved to be an efficient and proliferative material for the *in vitro* multiplication of this species.

Keywords: inoculation, explant, nutrient medium.

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