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Induction of haploid morphogenic calluses from *in vitro* cultured anthers of *Prunus Armeniaca* cv. 'Harcot'

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Abstract

Apricot (*Prunus armeniaca)* 'Harcot' anthers, were cultured *in vitro* for the production of haploid plants. The best androgenic response was achieved with Nitsch and Nitsch (1969) medium, supplemented with 4.52 µM 2,4-D, 4.52 µM zeatin, 2.85 µM IAA and 40 g l^{-1} sucrose. Cultures were maintained in the dark for 8 days, at 28 °C, followed by transfer to a 16-h photoperiod, with 35 µm m^{-2} s^{-1} light intensity and 24/22 °C day/night temperature. The androgenic response was correlated with the floral bud size, its phenologic stage and the level of microspore evolution. Anthers containing microspores at the tetrad/uninucleate stage were the most appropriate. The ploidy level of the calluses was evaluated by flow cytometry revealing that they range from haploid to octaploid. Mixoploid calluses have also been identified. Histological studies showed that the haploid calluses have their origin in the microspores. Nodular structures consisting of cells with dense cytoplasm and differentiated xylem elements were observed and were surrounded by an autofluorescent layer, probably due to cutin deposition.

Abbreviation: TDZ – thidiazuron