

## SUMMARY

### ESTABLISHMENT OF AN INDIRECT ORGANOGENESIS PROTOCOL IN CHAYOTE [*Sechium edule* (Jacq.) Sw.]

In Mexico, Veracruz state is the largest producer of chayote of the smooth green variety. The area of national production as monoculture has increased; this has contributed to the appearance of phytosanitary problems. Plant tissue culture becomes a solution to this problem, by obtaining somaclonal variants in the first instance, and after performing *in vitro* selection techniques for disease resistant genotypes. The objective of this work was to establish a protocol for indirect organogenesis of chayote, in order to establish the bases for an efficient system of massive micropropagation of plants and for future studies of genetic improvement. For this, *in vitro* establishment was performed. The established plants were multiplied, to later evaluate different concentrations of 2,4-dichlorophenoxyacetic acid (2,4-D) (0, 0.5, 1.0 and 1.5 mg L<sup>-1</sup>) in the induction of callus tissue. For this, different types of explants, leaf segments and stem nodal segments were evaluated. In shoot regeneration, different concentrations of thidiazuron (TDZ) (0, 0.5, 1.0 and 1.5 mg L<sup>-1</sup>) in MS medium added with 1.0 mg L<sup>-1</sup> of 6-benzylaminopurine (BAP) were analyzed. For shoot elongation and rooting, different concentrations of 1-naphthalenacetic acid (ANA) (0, 1.0, 2.0, and 3.0 mg L<sup>-1</sup>) were examined and chlorophyll A, B, and total were quantified. Finally, the acclimatization of the plants was evaluated. The results that callus formation and its fresh weight increased as the concentration of 2,4-D increased, in both types of explants; however, a better response occurs in the stem nodal segments (generating compact calluses). For the regeneration from compact calluses, in the medium added with 0.5 mg L<sup>-1</sup> of TDZ and 1.0 mg L<sup>-1</sup> of BAP, a greater number of shoots is obtained. Elongation, rooting, number and length of roots were greater in the medium with the lowest concentration of ANA; The highest values in content of photosynthetic pigments were found in the medium without ANA and with 1 mg L<sup>-1</sup>. In acclimatization a 90% survival of the plants was observed.

Key words: 2,4-dichlorophenoxyacetic acid, thidiazuron, 6-benzylaminopurine, 1-naphthalenacetic acid, indirect organogenesis, chayote.