

## ***In vitro* regeneration of cocona (*Solanum sessiliflorum*, Solanaceae) cultivars for commercial production**

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**ABSTRACT.** Cocona (*Solanum sessiliflorum* Dunal) is a solanaceous shrub native to the Amazon region that produces an edible fruit. This species has numerous advantages, particularly a high nutritional value and productivity. However, due to irregular germination and rapid loss of seed viability, there are few plantations for production on a large scale. Development of alternative propagation strategies is essential for the production of homogeneous seedlings of genotypes with superior agronomic performance. We developed techniques for *in vitro* regeneration of the cocona varieties Santa Luzia and Thaís for large-scale production of healthy plantlets. Twenty days after seeding, seedling segments germinated *in vitro* were used as explant sources. Three successive experiments were performed: one to test the effect of the explant source and combinations of two growth regulators, auxin (indole acetic acid, IAA) and kinetin (KIN), on the morphogenetic response; another to investigate the effect of the combination of growth regulators on the morphogenetic response of hypocotyl segments, and another to evaluate

how sucrose concentration affects the development of adventitious shoots. The best shoot induction was obtained using hypocotyl segments and stem apices, while rhizogenesis was greatest in leaves with a petiole. The number of adventitious shoots per explant on hypocotyl segments increased with 10 and 20 mg/L KIN, combined with 0.02 mg/L IAA in the variety Santa Luzia. Sucrose combined with these growth regulator levels increased the average number of calli; these were optimally produced when 45 g/L sucrose and 0.01 mg/L IAA + 20 mg/L KIN were applied. Only sucrose concentration influenced shoot proliferation in the two *S. sessiliflorum* varieties, with a maximum at 17.5 g/L.

**Key words:** Organogenesis; Tissue culture; Regeneration; *In vitro* culture; Explants; *Solanum sessiliflorum*