

Protein Content During Maturation of Somatic Embryo in Papaya

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Biotechnological techniques have been widely used to support the improvement of papaya (*Carica papaya* L.) production. Somatic embryogenesis is pointed as an important biotechnological tool with potential to clonal propagation and regeneration of genetically modified plants. This work aimed to study the changes in total protein content during the maturation of somatic embryos in papaya. Embryogenic cultures were induced from immature embryos of "Golden" and "Hybrid UENF/Caliman 01" varieties, using the MS culture medium supplemented with sucrose (3%) and 2,4-D (2,4-dichlorophenoxyacetic acid) (20 μ M). The maturation assay was carried out using the MS medium supplemented with different concentrations of PEG (polyethyleneglycol) (0, 3 and 6%) combined with AC (activated charcoal) (0 and 1.5 g.L^{-1}), resulting six treatments. After 30 days in culture, soluble and insoluble protein were extracted using phosphate buffered saline (PBS) and Tris-HCl buffers, respectively. Proteins contents were quantified by Bradford method. As result it was observed that the Golden and Hybrid showed similar pattern in soluble and insoluble protein content among the maturation treatments tested. In both, Golden and Hybrid, it was observed a predominance of soluble proteins. The treatment supplemented with 6% of PEG allowed the best rate of somatic embryo maturation in both papaya, Golden (100%) and Hybrid (83.3%). The PEG induced an increase in the synthesis of soluble protein with 8.7 mg.g^{-1} fresh matter (FM) (Golden) and 9.4 mg.g^{-1} FM (Hybrid) and insoluble with 2.5 mg.g^{-1} FM (Golden) and 2.1 mg.g^{-1} FM (Hybrid). These results indicated that PEG was essential for papaya somatic embryos maturation and it was associated with an increase of soluble and insoluble protein contents. (Supported by CNPq)