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Somatic embryogenesis and histological analysis of jaboticabeira (*Plinia peruviana* (Poir.) Govaerts)

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Jaboticabeira (*Plinia peruviana* (Poir.) Govaerts) is a Myrtaceae tree native to Brazil. The taste and medicinal properties of its fruits, including anti-inflammatory and anti-diabetic activities, give to this species great economic importance. Among the forms of vegetative propagation, somatic embryogenesis may be an alternative to obtain a large number of uniform plants in a short time. The aim of this study was to obtain somatic embryos (SE) of jaboticabeira and to verify SE anatomy by means of histological analysis. Fruits were unpulped and seeds were cut in half before *in vitro* introduction. In order to induce SE formation, the cotyledons and embryonic axes were cultured in MS medium containing 1 $g.L^{-1}$ of glutamine and several concentrations of 2,4-D (2.5, 5, 10, 25 or 50 μM). Furthermore, different exposure periods of the explants to 2,4-D (7, 15, 30, 45 and 60 days) were tested. For SE maturation, concentrations of 30, 60 or 90 $g.L^{-1}$ of polyethylene glycol 6000 (PEG 6000) were used. For conversion into plants, SE were transferred to media containing gibberellic acid (GA_3) (1.44, 2.88, 5.77 μM). The formation of somatic embryos started from the first month of culture in induction medium and higher percentages of proembryogenic masses and SE were obtained in MS medium containing 10 μM of 2,4-D. There were no significant differences in the formation of proembryogenic masses and SE between exposure times to 2,4-D. However, histological analysis revealed that SE exposed to 2,4-D for long periods (60 d) showed morphological abnormalities and formation of a healing tissue. This tissue was no observed in SE formed after 7 or 15 days in 2,4-D, indicating the deleterious effect of this plant regulator. After 30 days of SE maturation, the supplementation of 60 $g.L^{-1}$ of PEG 6000 in the culture medium was sufficient to obtain SE in more advanced stages of development. There was no conversion of SE into plantlets in any treatment with GA_3. This difficulty of conversion may be related to the abnormalities observed in the tissues of SE. Elimination of the auxin added to the induction medium is suggested as soon as the embryogenic responses are initiated in order to avoid its harmful effects on the SE.

Key words: anatomy, 2,4-dichlorophenoxyacetic acid, PEG 6000