

Polyamine Changes in Embryogenic and Non-embryogenic Cultures of Sugarcane

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An intrinsic and harmonized balancing of phytohormones regulates the maturation of somatic embryos. In some species, the polyamines (PAs) are directly related with the modulation of plant somatic embryogenesis. This work aimed to analyze the changes on endogenous contents of free PAs in embryogenic (EM) and non-embryogenic (NE) cultures during maturation of somatic embryos in sugarcane (*Saccharum* spp.). To maturation it was used the culture medium MS supplemented with 6-benzilaminepurine (BAP) (1 μ M) without 2,4-D (2,4-dichlorophenoxyacetic acid) (Maturation treatment) and, as control, the culture medium supplemented with 2,4-D (10 μ M) (Control). Initially, the cultures were kept at $25 \pm 1^\circ\text{C}$, in the dark, for 7 days. After that, half of the cultures was transferred to a photoperiod of 16h for 21 days and the other half was kept in the dark. Only the EM cultures maintained in maturation treatment, light and dark condition, were able to promote mature somatic embryo. Somatic embryo maturation was obtained together with an increase of endogenous spermine (Spm) and spermidine (Spd) levels, while putrescine (Put) levels did not change significantly. NE cultures did not produce somatic embryos, and this fact was associated with low and constant PAs contents in both maturation and control treatments. This work showed that somatic embryo maturation could be related with the increase Spm and Spd level, indicating the importance of these PAs metabolism to the embryogenic competence of sugarcane embryogenic cultures.

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