

## **Effects of Polyamines and Nitric Oxide on the Growth of Sugarcane Embryogenic Cultures.**

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The polyamines (PAs) play an important role in diverse cellular events and morphogenetic processes, like the somatic embryogenesis. Recent studies showed a relationship between the metabolism of PAs and nitric oxide (NO) in plants. This work aimed to evaluate the effects of the NO and PAs on the growth of embryogenic cell cultures of sugarcane. Embryogenic cultures from CB45-3 variety were transferred to MS medium supplemented with the different PAs putrescine (Put), spermidine (Spd) and spermine (Spm) and the PA synthesis inhibitor MGBG (methylglyoxal-bis-guanylhydrazone); the donor sodium nitroprusside (SNP), scavenger (PTIO -2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazoline-1-yl-1-oxide) and the NO biosynthesis inhibitors (Tungstate and L-NAME - N(G)-nitro-L-arginine methyl ester). After a period of 28 days, the fresh weight of the embryogenic culture was measured in order to evaluate the culture growth. Among the PAs, Put (100  $\mu$ M) showed the best growth response. The PAs inhibitor MGBG increased the growth at high concentrations (500 and 1000  $\mu$ M). On the other hand, SNP reduced the growth in embryogenic cultures. The scavenger and inhibitors of NO, at concentrations used, did not represent significant differences on cultures growth compared to the control treatment. These results indicate that such molecules can modulate cell growth in embryogenic cultures of sugarcane. (Supported by CNPq, CAPES and FAPERJ).