1.45 CRYOPRESERVATION OF COCONUT (COCOS NUCIFERA L.) PLUMULES BY ENCAPSULATION/ DEHYDRATION

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INTRODUCTION

First works on cryopreservation of complete zygotic embryoshave been reported in 1992 (Assy-Bah and Engelmann (1)). Meanwhile, complementary studies have been requested, through Cogent, by countries working on coconut. Previous histological studies have shown that only meristematic tissues survived to freezing. In this work we try to use for cryopreservation caulinary apices (plumules) excised from zygotic embryo where recent studies with photonic and electronic microscopy showed the different damages occurred in the cells and their degree of importance for their further survival (N'Nan (2), Malaurie et al (3)).

MATERIAL AND METHODS

Plant material was MYD disinfected endosperm bore enclosing embryo coming from CICY, Yucatan. Plumules 0.5-1mm long, excised under stereo microscope, were encapsulated in alginate beads. Encapsulation, sucrose pretreatment, dehydration process were those described on (Malaurie et al. (4)) adapted to coconut conditions. Pretreatment was done over 0.5, 0.75 and 1M sucrose and desiccation over 8, 10, 16 and 24h. Medium used along the process and culture was Eeuwens et al. (5) modified. Results were done according to observations at 1 and 6 months of survival.

RESULTS AND DISCUSSION

At the first month of culture the best result was obtained for 1M sucrose and 10h desiccation, with 40% survival. At 6 months culture, better results could be obtained with the two sucrose concentrations, 0.75 and 1M, from 8 to 16h dehydration. Other experiments are underway to confirm the good range of treatments over a large number of genotypes. Table 1: Effect of different treatments in survival rate of encapsulated plumules at 6 months (%).

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