FACTORS AFFECTING DEVELOPMENT OF WHITE-OPAQUE SOMATIC EMBRYOS IN AVOCADO

A-191

B. Márquez-Martín[1], C. Sánchez-Romero[1], R. Perán-Quesada[1], A. Barceló-Muñoz[1] y F. Pliego-Alfaro[2]

[1] Centro de Investigación y Formación Agraria. 29140 Málaga. cifacruz@olinet.es

[2] Dpto. de Biología Vegetal. Universidad de Málaga. 29071 Málaga. ferpliego@uma.es

Plant regeneration via somatic embryogenesis in woody plants, avocado included, is a well known process, although embryo conversion rate is generally low. These conversion problems are in many cases attributed to the abnormal morphology or the lack of maturity of the somatic embryos.

Our studies focused in the obtention of white-opaque somatic embryos, since these structures seem to have started the accumulation of storage products. Embryogenic cultures derived from immature zygotic embryos of cv. Duke 7 were used in our experiments. The friable fraction of the callus was selected and cultured into B5m medium (MS formulation with B5 macronutrients) supplemented with ABA, osmotic agents (PEG/ sorbitol) or different sources of organic nitrogen (Jensen aminoacids, glutamine, hydrolized casein, yeast extract). Media were solidified with 6 g l^{-1} agar and cultures incubated in darkness.

In several species, incorporation of ABA and/or osmotic agents to culture medium at early developmental stages of the somatic embryo inhibits the appearance of secondary embryos as well as the occurrence of morphological anomalies. However, in avocado, the presence of ABA generally inhibited the appearance of white-opaque embryos, while no positive effects could be observed when using osmotic agents. By contrast, incorporation of organic nitrogen, particularly Jensen aminoacids, improved the appearance of this type of structures.