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A COMPARATIVE STUDY OF AVOCADO ZYGOTIC AND SOMATIC EMBRYOGENESIS

C. Sánchez-Romero¹, R. Perán-Quesada¹, B. Márquez-Martín¹, A. Barceló-Muñoz¹ y F. Pliego-Alfaro²

¹ IFAPA. Cortijo de la Cruz s/n. 29140 Churriana, Málaga, España. cifacruz@olinet.es

² Dpto. de Biología Vegetal. Universidad de Málaga. 29071 Málaga, España. ferpliego@uma.es

The embryogenic process in avocado zygotic and somatic embryos has been studied. In zygotic embryos, the histo-differentiation phase last until the embryo reaches 16-18 mm in length, with protein accumulation starting at this stage. A shift in metabolism, characterized by a decrease in growth rate linked to an increase in the accumulation of storage products, occurs in embryos 16-26 mm in length. After this stage, maturation traits can be observed, e.g., protein bodies are visible in the cotyledons and starch content shows a drastic increase.

Biochemical and histochemical studies have been carried out in somatic embryos at four different developmental stages. Similarly to previous observations in zygotic embryos, the PAGE analysis with sodium dodecylsulfate did not show any differences between somatic embryos at early stages of development. However, noticeable changes could be observed when the embryo changes from translucent to the white-opaque stage. Generally, a decrease in the number of bands as well as the appearance and changes in intensity of others could be noticed. The observed differences were more evident as white-opaque somatic embryos increased in size.