

Coffee Tissue Culture as a New Model for the Study of Somaclonal Variation

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ABSTRACT

Coffee (*Coffea* spp.) is one of the most important agricultural commodities in the world. *C. arabica* and *C. canephora* are the principal commercial varieties of the genus. Somatic embryogenesis was first described in *C. canephora* by Staritsky (1970) and in *C. arabica* by Söndal and Sharp in 1977. Both systems are based on the use of growth regulators (auxins and cytokinins) to induce a de-differentiation stage and the formation of calli. We had modified the protocol described by Yasuda et al., (1985) to create a model that allow us: 1) to use “in vitro” cultured plants as starting material and thus generate lines from selected plants, 2) the induction of direct somatic embryogenesis avoiding the callus stage and 3) a rapid responding system (globular embryos are obtained at day 22) in contrast with other systems where they are obtained in 2 or 3 months. Histological studies using this system have shown that embryos are originated directly from the explant cell rather than from callus. When we analysed the regenerated plants, we could not find any somaclonal variation at the molecular level.