

Advances in Genetic Manipulation of the Coffee Plant

C. A. OCAMPO, L. M. MANZANERA

Laboratorio de Investigaciones sobre la Química del Café, LIQC, Federación Nacional de Cafeteros de Colombia, Calle 26A # 37-28, Santa Fe de Bogotá, Colombia

ABSTRACT

Methods for the genetic manipulation of the coffee plant are being developed. We are focusing our attempts to apply plant transformation procedures based on *Agrobacterium tumefaciens*. The availability of such a system will allow the use of cloned genes of interest in plant biology to be transferred to the coffee plant. This will permit the access to new methodologies in coffee breeding, and will also allow using the modern techniques of molecular biology as an approach to study the biology of the coffee plant. We have observed infection of coffee hypocotyls with wild-type *Agrobacterium* strains. In those tissues, *A. tumefaciens* incites tumours, able to grow in a chemically defined medium (MS) but without hormones added. Methods for regeneration of coffee from these tissues have not been reported, so we are also working in this field. The capacity to incite tumours is an indication of the potential use of *Agrobacterium* to transform coffee. We are now using bar, NPTII and GUS genes as markers. Other tissues and cells are being used, like embryogenic cell suspensions, We report here advances obtained in the adaptation and optimization of procedures to genetically transform the coffee plant.