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GENETIC TRANSFORMATION OF TROPICAL MAIZE (*Zea mays* L.) USING *Agrobacterium* AND BOMBARDMENT.

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A program for development of a system for production of transgenic tropical maize genotypes has been carried out at the National Maize and Sorghum Research Center, CNPMS/EMBRAPA, in Brazil. The work has been concentrated on development of gene constructs to enhance nutritional quality and insect tolerance in tropical maize germplasm. One basic premise to obtain transgenic plants is to define the *in vitro* culture conditions necessary for regeneration of tropical maize genotypes, then develop effective biolistic-based and/or *Agrobacterium*-mediated gene transfer systems. We report here successful results of immature maize embryo transformation via co-cultivation with *Agrobacterium*, strain LBA 4404 (pTOK233), which contains a hygromycin resistance gene and the GUS reporter gene. Hygromycin resistant calli are being selected (10, 20 and 40 mg L⁻¹ hygromycin) and induced to regenerate transgenic plants. Also, transient expression of the GUS gene was observed when immature embryos were bombarded with the pBI121 plasmid, using an helium-driven biolistic device. Best results were obtained when embryos were placed 9.0 cm distant from the stopping screen, and helium pressure was adjusted to 70 Kgf cm⁻². Our results show that tropical germplasm can be efficiently handled in culture allowing easier development of transformation strategies directed to insertion of useful genes into tropical maize. Supported by: CNPq, FINEP/PADCT, FAPEMIG and EMBRAPA.