

PARTICLE BOMBARDMENT-MEDIATED TRANSIENT TRANSFORMATION OF *Coffea arabica* CALLUS INDUCED BY PICLORAM. Barros EVSA, Cunha WG, Cruz ARR, Cid LPB and Brasileiro ACM. Embrapa - Recursos Genéticos e Biotecnologia. [erikavsa@cenargen.embrapa.br](mailto:erikavsa@cenargen.embrapa.br)

Biotechnology is currently being used to overcome the productivity problems presented by *Coffea sp.* culture. The genetic transformation is an important technology used to insert interest traits in elite genotypes. This methodology enhances traditional breeding programs by the reduction of time and other barriers to the introduction of genes with great agronomic impact. The use of *Agrobacterium* has been recently reported for the obtention of transgenic *C. arabica* secondary embryos. However, there is a lack of an efficient transformation protocol for *C. arabica*, the most important agronomical species of the genus *Coffea*. We are investigating different approaches to establish the transformation of *C. arabica*. The biolistic method is being successfully used to transform important crops as bean, soybean, papaya and cotton. In this work, we have studied the influence of osmotic treatment on transient expression of bombarded *C. arabica* callus during the incubation on induction medium. Somatic embryogenesis is reported in different plants, such as avocado, myrtle, palm, and barley, submitted to treatments containing picloram. Since the tissue culture protocols described for *C. arabica* leaves still give low yields of somatic embryos, picloram induction may constitute an alternative method. The callus induction of *C. arabica* CV. IAPAR59 leaf explants was performed by incubation in MS containing 4mM picloram medium for 8 weeks. Three bombardment experiments were developed after 4, 6 and 8 weeks of incubation. We tested the effect of osmotic treatment for 4h or 16h before and 24h after bombardment in MS medium containing mannitol 0.25M, picloram 4mM and phytigel 8g/L. Results showed a 6- to 7-fold improvement over the number of blue spots obtained with 4 weeks-old callus pre-treated for 16h, compared to the control without osmolarity pressure. Órgão Financiador : Consórcio Brasileiro de Pesquisa e Desenvolvimento