



USE OF *Agrobacterium rhizogenes* FOR THE INDUCTION OF “HAIRY ROOT” IN MAIZE

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Embrapa Milho e Sorgo – Rod. MG-424, Km 45 – Cx. Postal 285 – Sete Lagoas – MG.

Agrobacterium rhizogenes is the pathogen responsible for the excessive proliferation of roots at the site of infection. The ability of *A. rhizogenes* to cause the formation of these roots is determined by the root inducer plasmid Ri. The natural transformation via *Agrobacterium* occurs only in dicots; monocots are not hosts for this bacterium. However, in recent decades the process of *Agrobacterium*-mediated transformation has been clarified and new protocols have enabled the transformation of monocots such as maize. The transformation of maize via *A. rhizogenes* has advantages such as: (1) transformed adventitious roots can be generated in a short time, facilitating the study of functional genes and promoters expressed in the roots; (2) From the point of view of environmental biosafety, roots cultures genetically modified are easier to manipulate than the transgenic plants; (3) Roots generated by *A. rhizogenes* have the potential to be colonized by symbiotic and parasitic microorganisms enabling studies of these interactions. The aim of this study was to develop a transformation protocol for maize zygotic embryos via *A. rhizogenes*. Strains 8196, 15836, 2659, 9402, 4842, LBA, MSU44 and R1601 were used to infect immature maize embryos. The embryos were maintained on MS medium for 14 days. Roots were isolated between 14 and 50 days, whereas those that had higher growth rates were selected for molecular characterization by PCR, seeking confirmation of the presence of virulence genes (*rolB*, *rolC* and *vir D1*). PCR analysis confirmed the presence of these genes in roots originating from the transformation with the strains 9402, LBA, 4842, MSU44 and R1601.

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