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摘要: 以萌发大豆幼苗顶芽为外植体，经纵切及农杆菌侵染后种植到大田中，转化植株用除草剂进行表型鉴定，存活植株进行PCR验证，并分析目的基因EPSPS在T_2代转基因植株中的遗传情况；总计获得草铵膦涂抹表型鉴定阳性T_0植株75株，草甘膦喷雾鉴定阳性T_1植株65个，PCR测序阳性T_1植株6个，PCR测序检测转化效率为0.14%；获得T_2代PCR阳性植株52个，初步证明目的基因EPSPS能在子代中遗传；该方法能有效解决基因型依赖及再生植株困难等问题，缩短转化周期，为根癌农杆菌阶段的大豆遗传转化体系的优化与改良提供了参考。

Abstract: In this paper, the terminal bud of germinated soybean seedlings were longitudinal cut and infected by Agrobacterium firstly, and then transplanted the seedlings into field. Eliminated the seedlings without branches on main stem, transformed plants leaves were painted or sprayed with 100 mg·L^{-1} glufosinate, 3 days later observed leaves reaction and accounted for the resistant plant number. All alive plants were identified by PCR and analyzed the expression of EPSPS gene in T_2 generation. There were 75 and 65 plants with resistance to 100 mg·L^{-1} glufosinate in T_0 and T_1 generation, respectively; 6 and 52 positive plants in T_0 and T_1 generation by sequencing the PCR product, respectively; the result showed that EPSPS gene could inherited in offspring. This transgenic method could short transformation cycle, enhance efficacy and provide reference for the optimization and improvement of Agrobacterium transformation.

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