

Characterization of Transgenic *Eustoma grandiflorum* Plant Expressing the Mutated Ethylene Receptor (boers) Gene and bar

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ABSTRACT

Eustoma grandiflorum is a very popular cut flower or ornamental worldwide and lack of effective weed control. *Eustoma grandiflorum* is ethylene sensitive and ethylene production of flowers increased with flower senescence. Control to delay flower senescence of *Eustoma grandiflorum* is a key factor in vase life. Transgenic plants of the *Eustoma grandiflorum* cultivar were produced following *Agrobacterium*-mediated delivery of the plasmid pCAMBI-3300-35S-boers, carrying the bialaphos resistance (bar) gene and the mutant broccoli ers (ethylene response sensor, boers) gene, which obtained through site directed mutagenesis by replacing the isoleucine with phenylalanine at the 62th residue, under CaMV35S control. Transformed plants were regenerated from transformed leaf wounded callus on MS medium containing 0.05 mg/l NAA, 1 mg/l BA, 100 mg/l and 5 mg/l gulfosinate ammonium. Integration and expression of the bar gene in transgenic plants was confirmed by Southern and northern blotting analysis. Transgenic lines were assessed in vitro and under greenhouse conditions for their resistant to the commercial herbicide (Basta), containing glufosinate ammonium as the active component. Plants spray with herbicide containing glufosinate ammonium up to 216 mg/l remained healthy and normal appearance. The expression of the boers gene in transgenic plants was also confirmed by PCR and RT-PCR analysis.

Keywords : *Eustoma Grandiflorum*、bar、boers、herbicide、*Agrobacterium*-mediated

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