

Title Delayed flower senescence of *Petunia hybrida* plants transformed with antisense broccoli ACC synthase and ACC oxidase genes

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Citation Postharvest Biology and Technology, Volume 46, Issue 1, October 2007, Pages 47-53

Keywords 1-Aminocyclopropane-1-carboxylic acid (ACC); ACC synthase (ACS); ACC oxidase (ACO); Antisense transgene; Flower senescence; Ethylene; Petunia

Abstract

Petunia (*Petunia* × *hybrida* Hort. Vilm.-Andr.) plants were transformed by *Agrobacterium* with antisense *BoACSI* (broccoli ACC synthase) and antisense *BoACOI* (broccoli ACC oxidase) coding sequences of enzymes involved in biosynthesis of ethylene in broccoli plants. The integration of these genes with an antisense orientation was verified by PCR analyses of kanamycin-resistant regenerants. The expression of transgenes and endogenous genes was further confirmed by RT-PCR analysis. Production of ethylene in shoot tissues was reduced among most transgenic plants. Flowers of transformants, especially excised flowers, generally remained fresh longer than those of untransformed controls. The delayed flower senescence was more pronounced with the antisense *BoACOI* than the antisense *BoACSI*. Transgenic tissues were, nevertheless, still responsive to ethylene. We conclude that the antisense *BoACOI* gene from *Brassica oleracea* is able to reduce ethylene biosynthesis and delay flower senescence of *Petunia hybrida* more efficiently than the antisense *BoACSI* gene.