

Title Ethylene production by gynoecium and receptacle is associated with sepal abscission in cut *Delphinium* flowers

Author Kazuo Ichimura, Hiroko Shimizu-Yumoto and Rie Goto

Citation Postharvest Biology and Technology, Volume 52, Issue 3, June 2009, Pages 267-272

Keywords 1-Aminocyclopropane-1-carboxylic acid (ACC); ACC synthase; ACC oxidase; *Delphinium*; Ethylene; Wounding

Abstract

Delphinium flowers are sensitive to ethylene, and exposure to ethylene is known to accelerate sepal abscission. The relationship of ethylene to sepal abscission in cut *Delphinium* flowers was investigated. The gynoecium and receptacle each contributed to climacteric-like increases in ethylene production whereas the sepals, petals and stamens did not. 1-Aminocyclopropane-1-carboxylic acid (ACC) concentration, ACC synthase and ACC oxidase activities in the gynoecium and receptacle increased in the senescing flowers. Wounding of the gynoecium or receptacle accelerated abscission of sepals, which was accompanied by a marked increase in ethylene production. Accelerated sepal abscission was counteracted by treatment with silver thiosulphate complex (STS), an inhibitor of ethylene action. The results of this study show that ethylene produced by the gynoecium and receptacle is closely associated with sepal abscission in cut *Delphinium* flowers.