

Title Effects of antioxidants on senescence of cut flowers of carnation treated with STS and *Eustoma*

Author Aki Inotsume, Kenji Yamane, Nobuaki Fujishige, and Yoshikazu T. Yamaki

Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords senescence; free radicals; antioxidants; vase life

Abstract

Information concerning free radicals involved in senescence of cut flowers is limited. In commercial production, ethylene sensitive flowers are treated with STS. Thus, the effects of antioxidants on senescence of cut flowers of carnation pretreated with STS and *Eustoma* was investigated. Cut flowers of carnations 'Renoir' and *Eustoma* 'Halley Fantasy' were held in 23°C, RH 60-80% and PPFD 10 mmol/m²/s (continuous lighting). Vase life was defined as days from cutting the flowers to the onset of 50%-petal wilting. Treatments with the radical scavengers; sodium benzoate, n-propyl gallate and melatonin slightly delayed wilting of petals by 2-3 days and 1-2 days for carnation and *Eustoma*, respectively. Ethylene production at 23°C by cut carnations 1 day after cold storage at 5°C for 4 weeks was significantly inhibited by the free radical scavengers from 58.5 to 1.5 nl/g FW/hr. The ethylene production declined 7 days and 14 days with or without the treatments. These results indicate that free radical scavengers prolonged shelf life of cut carnation pretreated with STS and *Eustoma*. And, free radicals could be involved in membrane deterioration during the final stages of vase life.