

Title Influence of ethanol on the storage life and bud opening of carnation (*Dianthus caryophyllus* L.) flowers during wet storage

Author A. Ebrahimzadeh, E. Hosseinzadeh, S. Jiménez and M.T. Lao

Citation ISHS Acta Horticulturae 847:259-264. 2009.

Keyword flower opening; pulsing; continuous treatment; vase life; ethanol concentration

Abstract

Ethanol is able to increase the longevity of carnation cut flowers by inhibiting ethylene biosynthesis as well as its action. The effect of different concentrations of ethanol on bud opening and storage life of cut carnation cv. Tabor flowers was studied. Carnation flowers were treated with one of the five levels of ethanol concentrations (0, 2, 4, 6, or 8% v/v) by two application methods (pulsing or continuous treatment). Cut flowers were stored in a cold room with a temperature of 4°C and 80-90% relative humidity. Flowers showed different responses to ethanol application methods and concentrations with regards to bud opening and storage life. Continuous treatment was significantly more effective in delaying bud opening and expanding storage life as compared to pulsing method. Ethanol applied continuously at 2% increased the storage life of cut carnations by 32% compared with untreated flowers. In terms of both increase of storage life and bud opening, continuous treatment (2%) was the most effective treatment followed by 4%, while high concentrations of ethanol (6 and 8%) decreased storage life and had negative effects. Ethanol at 2 and 4% increased bud opening duration whereas higher concentrations decreased this time and flowers could not open completely. Pulse treatments had not significant differences on bud opening procedure compared to control.