Title Determination of optimum concentration and treatment time of 1-MCP (1-methylcyclopropene) on vase life of cut carnation 'Tempo'

Authors D. Hashemabadi, Y. Mostofi

Citation ISHS Acta Horticulturae 755:197-204. 2007.

Keywords *Dianthus caryophyllus*; duration; dry matter; ethylene; postharvest

Abstract

1-MCP, as an ethylene action inhibitor, significantly delayed the wilting of the cut carnation (*Dianthus caryophyllus* L.). This study was carried out to determine the optimum concentration and duration of 1-MCP application on vaselife of cut carnation 'Tempo'. In this experiment 6 levels of 1-MCP concentrations (0, 20, 40, 60, 80 or 100 nl L^{-1}) as well as three levels of time durations (3, 6 or 9 h) were applied in a factorial randomized complete block design with 3 replications on vaselife, ethylene production, dry matter and flower opening index. 324 cut carnations were kept in postharvest room where the temperature was 20±2°C, 60-70% relative humidity, 15-20 µmol s^{-1} m^{-2} light intensity and 12 hours photoperiod. The results showed that difference between treatments according to vaselife, ethylene production and flower opening index at $P \geq 0.01$ and in dry matter at $P \geq 0.05$ were significant. The treatment of 60 nl L^{-1} 1-MCP with 15.49 days vaselife, 0.34 nl L^{-1} h^{-1} g^{-1} ethylene production and 19.75% dry matter, was better compared with control plants.