

Title Efficacy of new inhibitors of ethylene perception in improvement of display quality of miniature potted roses (*Rosa hybrida* L.)

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Abstract

1-Octylcyclopropene (1-OCP) and 1-Decylcyclopropene (1-DCP), ethylene receptor inhibitors, analogues to 1-MCP, substituted with longer carbon chain in the 1-position were investigated in miniature potted roses cultivar 'Lavender'. All levels of both chemicals protected as compared to untreated plants. 1-OCP and 1-DCP were the most effective at concentrations 1000 and 1500 nl l^{-1} , which was five times higher than the concentration of 1-methylcyclopropene (1-MCP) (200 nl l^{-1}) used as a standard. The effectiveness of 1-OCP and 1-DCP was a function of time and temperature. At short (2 h) exposure times, the plants were highly sensitive to ethylene. Exposure time of 4 h for both 1-OCP and 1-DCP was sufficient to improve display life of miniature roses and longer exposures did not have any additional beneficial effect. Apparently, exposing miniature potted roses to various temperatures did not have an influence on the performance of both 1-OCP and 1-DCP while low temperature at 5 °C reduced their performance. The reasons for differences in the effects of these compounds are discussed.