

Title Influence of ethylene on postharvest behavior of 'Luo Yang Hong' tree peony cut flower

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Abstract

'Luo Yang Hong' tree peony is a suitable cultivar for being exploited as cut flower, and the former study has indicated that its flower opening and senescence process is associated with endogenous ethylene production. In this experiment, 'Luo Yang Hong' tree peony cut flower was treated with 10 ppm exogenous ethylene for 24 h and 1.0 mmol-L⁻¹ ethylene action inhibitor, silver thiosulphate (STS), for 2 h at 18°C respectively at harvest in the 1st opening index, and the influence of exogenous ethylene and STS on cut flower opening, senescence and ethylene production were studied during vasing. The results showed that in contrast with control flowers, both treated flowers opening process were significantly accelerated, flowers diameter increased rapidly and reached a maximum on the third or fourth day, however the vase life was not affected. The ethylene production peak of control cut flowers appeared on the fifth day of vasing, and ethylene evolution occurred concurrently with flower opening process. So control cut flower produced ethylene in a climacteric-like pattern. Ethylene and STS treatment restrained the peak value of ethylene production, however, no apparent difference of the trend of ethylene production in flowers between the treated and control was showed. These results suggest that the responses of postharvest behavior of tree peony cut flowers to ethylene do not show representative characters of climacteric, and are worthy for further study.