

Title Postharvest behavior and endogenous ethylene pattern of tree-peony cut flowers
Author Pei Yi Jia, Lin Zhou, WenWen Guo, and Li Dong
Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.
Keywords tree-peony cut flowers; opening and senescence; endogenous ethylene metabolism

Abstract

13 cultivars of tree-peony were chosen as materials to investigate changes of postharvest behavior and endogenous ethylene concentrations during the opening and senescence. The flower opening index, diameter, senescence characters, ethylene production during opening and senescence during vase life of cut flowers were investigated to elucidate the basic behavior and the endogenous ethylene pattern of postharvest tree peony cut flowers. There were significant differences in ethylene production between the different cultivars and the 13 cultivars could be classified into 3 groups: (1) For ‘Luo Yang Hong’, ‘Ru Hua Si Yu’, ‘Bai Hua Cong Xia’, ‘Ceng Zhong Xiao’, ‘Chun Hong Jiao Yan’, ‘Yu Mian Tao Hua’, ethylene production increased gradually during opening and reached a peak at the full open phase, then decreased. This pattern was similar to that in climacteric cut flowers and fruits. (2) For ‘Tai Ping’, ‘Xue Ying Tao Hua’, ‘Rou Fu Rong’ and ‘Shi Ba Hao’, ethylene production and flower senescence decreased or remained at a relatively stable level from opening to senescence. This pattern was similar to that in non climacteric cut flowers. (3) Ethylene production of ‘Xue Lian’ and ‘Ying Ri Hong’ cut flowers increased during opening and reached a peak at senescence. This pattern was similar to the ethylene increase during later stages cut flowers and fruits. Similar patterns were found in ethylene production in flowers cut at different phases from the plants of most cultivars. However, ethylene production showed different patterns between vased flowers and naturally opened at plants in cultivars of ‘Luo Yang Hong’, ‘Bai Hua Cong Xia’, ‘Yu Mian Tao Hua’.