

Title Effects of ethylene and 1-MCP (1-methylcyclopropene) on bud and flower drop in mini *Phalaenopsis* cultivars

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Abstract

Phalaenopsis frequently exhibits bud drop during production and in response to adverse postharvest conditions. The effect of exogenous ethylene on bud drop of mini *Phalaenopsis* was studied and ethylene sensitivity of four cultivars was compared. Water content, membrane permeability and ABA (abscisic acid) content in floral buds and flowers were determined after ethylene treatment. Exogenous ethylene induced flower bud drop in all tested *Phalaenopsis* cultivars and the different cultivars showed distinct differences in ethylene sensitivity. The cultivar Sogo 'Vivien' exhibited the highest bud drop, water loss and change in membrane permeability in floral petals, while Sogo 'Berry' showed the lowest sensitivity. The ethylene inhibitor 1-MCP (1-methylcyclopropene) reduced ethylene-induced floral bud drop in the cultivar Sogo 'Yenlin'. ABA content in floral buds was increased in response to ethylene and 1-MCP pretreatment inhibited the ethylene-induced increase in ABA levels efficiently. This finding suggests that the observed increase in ABA content during bud drop was mediated by ethylene. The interaction between ABA and ethylene is discussed.

<http://www.springerlink.com/content/27643x23823p5p61/fulltext.pdf>