

**Title** Post-harvest vase life of cut rose flowers (*Rosa Hybrid cv. A valanch*) increased by foliar pre-harvest sprays of citric acid and salicylic acid conducted well before harvest

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### **Abstract**

Effect of foliar application of three levels of citric acid (0, 2, and 4 mM) and three levels of salicylic acid (0, 1, and 2 mM) on postharvest performance of cut flowers was investigated. The plants were hydroponically managed in a greenhouse. The experiment was conducted in a randomized design factorial arrangement (3x3), with three replications. Foliar sprays started after substantial growth of leaves and repeated every 14 days for four additional times. After harvest, the flowers were placed in vases containing 500 ml of tap water. The measurements were carried out in the 8<sup>th</sup> day of postharvest test and the vase life was determined as the number of days to onset of petal wilting. Factorial analysis revealed that citric acid caused the vase life to increase. The interaction effect between citric acid and salicylic acid was synergistic on reduction of wet weight loss and increase of water uptake, flower diameter and vase life. The combination of 4 mM citric acid and 1 mM salicylic acid caused the highest vase life (26% compared to control) along with highest water absorption, appearance quality, flower diameter and the lowest wet weight reduction, all together. This is the fourth report of effect of citric acid on postharvest performance of cut flowers and plants and the first one conducted in soil-less culture condition. We conclude that it could be used as a potent low-cost agent especially in situations that optimization of post harvest handling is not applicable.