

## Effect of different levels of citric acid and salicylic acid at pre-harvesting stage on vase-life of rose (*Rosa hybrida* L.) cut flower

M. R. Hajireza<sup>1</sup>, E. Hadavi<sup>1</sup>, A. A. Zeynanlou<sup>2</sup>, M. H. Mirzapour<sup>3\*</sup> and M. R. Naeini<sup>3</sup>

(Received: 16 Jun-2013 ; Accepted: 23 Apr-2013)

### Abstract

Many efforts have been taken to increase the vase-life of cut flowers by using different methods and materials. In this research, the effect of applying citric acid and salicylic acid at pre-harvest stage on vase-life of rose (*Rosa hybrida* L. cv. Avalanch) was investigated. The factorial experiment was carried out as a randomized complete blocks design. Three levels of citric acid concentration (0, 2 and 4 mM) and salicylic acid (0, 1 and 2 mM) were applied as foliar spray at 5 pre-harvest stages on the leaves of roses grown under controlled conditions in greenhouse. The results showed that salicylic acid and citric acid increased longevity, water absorption, flower diameter and flower quality and delayed the effective weight loss of fresh rose flower. Maximum vase-life (with an average of 9 days) was achieved by combined foliar application of 4 mM citric acid and 1 mM salicylic acid. Also, the minimum vase-life (with an average of 7.3 days) was obtained at the 2 mM salicylic acid treatment. The higher vase-life of rose flower was accompanied with greater fresh weight and more water absorption.

**Keywords:** Longevity, Flower quality, Avalanch rose cultivar.

---

1. Dept. of Hort., Islamic Azad Univ., Karaj Branch, Karaj, Iran.  
2. Seed and Plant Improvement Inst., Karaj, Iran.  
3. Agric. and Nat. Resour. Res. Center of Qom, Iran.  
\*: Corresponding Author, Email: mhmirzap@yahoo.com