

**Title** Effects of s-carvone and nano-silver pulse treatments on vase life and water relations of 'Avalanche' and 'Fiesta' cut roses

**Author** Nazemi Zahra, Ramezani Asghar, Adamipour Nader, Ghorbani Elba, Salehi Hassan

**Citation** Abstracts of 7<sup>th</sup> International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

**Keywords** rose; vase life

### **Abstract**

This study was carried out to investigate the effects of silver nano particles (NS) and S-carvone on vase life and water relations of 'Avalanche' and 'Fiesta' cut roses. S-carvone is a potential inhibitor of wound related suberin formation, via inhibition of phenylalanine ammonia-lyase activity. Nano-silver is a pulse and vase solution treatment for cut flowers. It is relatively new and have demonstrated importance as an antimicrobial agent. Cut flowers recutted to  $35 \pm 2$  cm, and then tested in different solutions for a period of 20 days. Pulse treatments of NS at 50, 100 and  $200 \text{ mgL}^{-1}$  were carried out for 1h and the stems were then transferred to vases containing deionised water (DI). S-carvone treatments were applied at concentrations of 0.25, 0.5 and  $0.75 \text{ mgL}^{-1}$  in vase solutions. Their effects on longevity (vase life), leaf water content and water relations (relative fresh weight (RFW), and vase solution uptake (VSU)) were quantified. All NS treated plants maintained water uptake and showed suppressed reduction in fresh weight during the vase period and extended vase life of rose flowers significantly compared with control (DI). These improving effects were intensified by increasing the concentration of NS and the best concentration was  $200 \text{ mgL}^{-1}$ . However, the Scarvone treatments caused visible damage to leaves of cut roses and their early abscission, thereby resulting in shorter vase life than the control. Overall, the results had similar trends for both cultivars and there was no significant difference between the effects of treatments on them.