

Title Postharvest silver nano particles treatment extends vase-life period of cut alstroemeria flowers cv. Jamaica

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Abstract

This study was conducted to test the effect of postharvest silver nanoparticles (2, 4 and 6 mg L⁻¹ with 2% sucrose) treatment on vase-life of cut Alstroemeria flowers cv. Jamaica. Distilled water was used as control. Cut flowers were purchased from fully mechanized greenhouse in Varamin. The experiment was done at 23 ± 2 °C, RH= 60% and 12 μmol m⁻² s⁻¹ light intensity (white florescent tubes) under a daily light period of 12 h. The experiment was performed based on a completely randomized design (CRD) with three replications and three flowers in each replication. The measured parameters were longevity of primary and secondary flowers, whole inflorescence vase-life, the number of day to first petal abscission and the number of day to 50% petal abscission, relative fresh weight, solution uptake rate and leaf chlorophyll index. Results showed that silver nanoparticle treatments caused to maintain relative fresh weight and solution uptake rate during vase-life period compared to control and 2% sucrose solution. All nanosilver treatments also caused to increase the longevity of primary and secondary flowers and whole inflorescence vase-life and could delay 50% petal abscission. Silver nanoparticle treatments could also cause a delay in first petal abscission and maintained leaf chlorophyll index. There was no significant difference between different concentrations of silver nanoparticles in terms of studied parameters. Tow percent sucrose treatment was not effective in extending vase-life period.