Substitution of Silver-Thiosulfate (STS) with Some Essential Oils on Vase-Life of Cut Carnation cv. Liberty

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Abstract : Due to the huge side-effects of chemicals; essential oils have been considered as suitable alternatives for keeping the vase-life of cut flowers mainly owing to the availability and environment-friend nature of these bio-chemicals. In the present experiment, 50% substitution of STS was achieved and tested on cut carnation flowers cv. Liberty by using the essential oils from four plants; Satureja sahendica Bornm., Echinophora platyloba DC., Tanacetum balsamita L. and Cupressus arizonica Greene., as CRD with five treatments and 3 replications. Vase-life and flower diameter were affected with 50% substitution of STS by essential oils from C. arizonica and T. balsamita. Membrane stability index, Malondialdehyde (MDA) content and Hydrogen peroxide (H2O2) amounts were affected by the substitution treatments as well. The main preservative effect belonged to the substitution with C. arizonica. So that, 50% STS substitution with Cupressus oil holds the highest membrane integrity and the least data for MDA and H2O2 content.

Keywords : Carnation, essential oil, Membrane stability index (MSI), vase life

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