

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

**Authors :** Mohammad Bagher Hassanpouraghdam, Mohammad Ali Aazami Mavaloo

**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-friendly 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 (H<sub>2</sub>O<sub>2</sub>) 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 H<sub>2</sub>O<sub>2</sub> content.

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

**Conference Title :** ICAAECEGA 2016 : International Conference on Advanced Agricultural Engineering and Chemical Growth Agents

**Conference Location :** Prague, Czechia

**Conference Dates :** October 06-07, 2016