Title Effects of thyme essential oil on vase-life of two cut carnation cultivars

Author Mostafa Arab, Sheno Amini, Mahmoud R. Roozban, Majid Rahemi

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Abstract

Two experiments were carried out to evaluate the effects of thyme essential oil (TEO) on longevity of two cut carnation cultivars including 'Sensi' and 'Beaumonde'. In the first experiment, the concentrations of 250, 500 and 1000 mg l^{-1} TEO besides distilled water (Control) were used as pulse method. Based on the results, the concentrations up 250 mg l^{-1} ofTEO decreased the vase life at both cultivars. Thus the second experiment was designed with lower concentrations of TEO including 0 (Control), 50, 100, 150 and 200 mg l^{-1}. Based on the latter experiment, 'Beaumonde' cultivar had a weak reaction to TEO in case of vase life longevity, while application of 200 mg l^{-1} ofTEO, significantly extended longevity in 'Sensi' cultivar by 2.3 days. Also the relative fresh weight and total solution uptake for both cultivar, flower diameter for 'Beaumonde' and anthocyanin content of petals in 'Sensi' were not affected significantly by the treatments. The concentrations of 50 and 200 mg l^{-1} of TEO in 'Sensi' had a positive effect on flower diameter and showed significant difference compared with control. Also, TEO at 200 mg l^{-1} increased the anthocyanin content in 'Beaumonde', significantly. Flower diameter as an index of flower development had a significant positive correlation with vase life in both cultivars. The correlation of vase life with relative fresh weight and total solution uptake was not significant; also there were insignificant negative correlations between fresh weight and solution uptake in both cultivars.