Effects of spermidine and calcium sulfate on quantitative and qualitative traits and vase life of rose (*Rosa hybrida* cv. Dolcvita) grown in hydroponic system

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(Received: 9 May 2012 ; Accepted: 18 Oct 2012)

Abstract

In order to improve quantitative and qualitative properties and vase life of rose cv. Dolcvita, an experiment was conducted in a randomized complete blocks design with ten treatments and three replications in a hydroponic greenhouse adjacent to Yasouj city, Iran. Treatments included control, spermidine (0.5, 1 and 1.5 mM), calcium sulfate (2.5 and 5 mM), spermidine 0.5 mM+ calcium sulfate 2.5 mM, spermidine 0.5 mM + calcium sulfate 5 mM, spermidine 1 mM + calcium sulfate 2.5 mM and spermidine 1 mM + calcium sulfate 5 mM. Traits such as length of flower stalk, stem diameter, flower bud diameter, fresh weight of stem, chlorophyll content and vase life were measured. Results showed that effect of spermidine and calcium sulfate on all traits, except chlorophyll content, was significant ($P<0.05$). The highest and lowest length of flower stalk, stem diameter and fresh weight of stem was obtained in the 1.5 mM spermidine and control treatments, respectively. The highest diameter of flower bud was observed in the 0.5 mM spermidine and 2.5 mM calcium sulfate treatments. Flower vase life in the 0.5 mM spermidine + 5 mM calcium sulfate treatment was higher than that in the other treatments. Therefore, application of 1.5 mM spermidine is recommended for improving quantitative properties and combination of 0.5 mM spermidine with 5 mM calcium sulfate for increasing vase life of rose, cultivar Dolcvita, in hydroponic system.

Keywords: Cut flowers, Vase life, Hydroponic culture.

[DOR: 20.1001.1.20089082.1392.4.2.2.9]

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