

Title The effect of 1-MCP treatment combined with different chemical on longevity of carnation cultivar Gioko

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Abstract

Carnation is an important cut flower nowadays as well. The vase life and quality of cut flowers depend on different effects such as the composition of the atmosphere and the chemical solutions of the preservatives. The most important effect on cut flowers is caused by ethylene. Cut flowers produce small amounts of ethylene after harvest, but a few days later it increases intensively. Because of this harmful phenomenon it is important to control the effect of ethylene production during the post harvest life of cut flowers. The pre-treatments of cut carnations with 1-MCP (1-methylcyclopropene) increased the vase life with several days. Other authors studied the different concentration of 1-MCP and found that its 0,5 g m⁻³ for 6 hours increased the vase life and minimized percentage loss of initial weight of cut carnation flowers. The aim of our research was to study the effect of 1-MCP on one of the carnation cultivars, which had not been investigated yet, and the interaction with different solutions of chemicals used in the preservative solutions. The effect of 1-MCP combined with Clorox and sucrose was studied. Cut flowers of *Dianthus caryophyllus* cv. Gioko were treated with 1-MCP 0.5 g m⁻³ for 6 hours at 20 °C. Distilled water was used for preparing all solutions. The control flowers were held in distilled water. Clorox at 2 mL⁻¹ was added to each treatment which contained sucrose 10-50 gL⁻¹ concentration. The treatments with 1-MCP increased the vase life with 5 days. All concentrations of sucrose had a positive effect on flower diameter, but it was the most effective in lower concentrations. In this respect 1-MCP treatment combined with 30 gL⁻¹ sucrose proved to be the best. The SPAD values of calyx increased till the 6th day. The 1-MCP treatment alone or with the lowest level of sucrose gave the best results of all (18, 33 days vase life) compared with control and spring as well.