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Title of Thesis : Post-harvest treatments on some cut flowers
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ABSTRACT

This work was conducted at the Ornamental Horticulture Department, Fac. Of Agric., Cairo University, Giza Egypt.

The experimental part of this study had been carried out at the laboratory of Ornamental Horticulture and Landscape Gardening at the Horticulture Research Institute Agric. Res. Center, for two successive seasons of 2001 and 2001 on *Gladiolus* sp. cv. "Manhattan" Family: Iridaceae.

Cut flowers of *Gladiolus* sp. cv. Manhattan treated with STS (1:4 mM) solution for 30 min and then stored in cold storage at 4°C in modified atmosphere (MA) at 10 % O₂ + 4% CO₂ + 86 % N₂ decreased weight loss percentage and naturally infection percentage of spikes caused by *Botrytis cinerea* as compared with other MA treatments.

Different storage conditions indicated that freshly harvested spikes and spikes stored in MA at 10 % O₂ + 4% CO₂ + 86 % N₂ were the best effective treatments for improving spikes quality and shelf life than spikes stored in MA at 14% O₂ + 7% CO₂ + 79 % N₂ and normal air, respectively.

Gladiolus spikes treated with STS solution for 30 min and then held in all tested vase solutions had increased quality and shelf life of spikes than untreated spikes. Preservatives solution containing suc (30 g /L) + 8- HQC (200 mg/L) + CA (200 mg/L) + GA₃ (10 ppm) exhibited higher effect on enhancing spikes quality and shelf life as compared with all tested vase solutions.

Dipping freshly harvested gladiolus spikes in STS solution and placed in preservatives solution consisting of suc + 8- HQC + CA + GA₃ showed the best trend of improving longevity of spikes (day), diameter of florets(cm), opening percentage of florets, water uptake (g/flower), water loss (g/flower), percentage of change in fresh weight of spikes, total, reducing and non- reducing sugars, anthocyanin contents in petals, chlorophyll a, b contents in leaves, carotenoids contents in leaves, count of bacteria in vase solutions and dry weight percentage of spikes, followed by spikes stored under MA at 10 % O₂ + 4% CO₂ + 86 % N₂ as compared with spikes stored under MA at 14% O₂ + 7% CO₂ + 79 % N₂ and normal air, respectively.

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