EFFECTS OF SILVER THIOSULPHATE PRETREATMENTS ON HARVESTED LISIANTHUS (Eustoma grandiflorum) CUT FLOWERS

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Abstract (C2057)
This study aimed at developing postharvest pretreatments for improving vase life and display quality of lisianthus cut flowers. Equally spaced doses (0, 0.25, 0.5, and 0.75 mM Ag⁺) of silver thiosulphate (STS) pretreatments were applied for equally spaced durations of exposure (0, 2, 4 and 6 h) to harvested lisianthus cut flowers. STS pretreatment was followed by vase solutions containing 2% sucrose and 1.5% sodium hypochlorite (Jik). Pretreatment with 0.75 mM Ag⁺ for duration of 2 or 6 h improved vase life by 55% and 40%, compared to distilled water control and the placebo, respectively. The interaction effect of STS dose and duration of exposure significantly influenced water uptake, transpiration, and water balance rates. Vase-life constituted of duration to 50% wilted florets, or bent-necks, or chlorotic leaves; whichever came first. Out of the above recommended dosages and duration of exposure, 2 h was found less reliable than 6 hrs. The duration of exposure of 4 h was found to be detrimental for STS doses above 0.25 mM Ag⁺. The significant efficacy of STS at low doses and duration of exposure revealed in this study presents an immediate solution towards the gradual phase-out of STS which is a potent environmental pollutant due to the silver content. Further research is recommended to identify alternatives to STS.

Keyword: Lisianthus, Eustoma grandiflorum, Postharvest technology, Silver thiosulphate, Heavy-metal environmental pollutant, Water relations.