Title Vase life and electrolyte leakage of cut Lisianthus (*Eustoma grandiflorum*) after treating with sucrose, citric acid calcium sulfate and silver nitrate

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Abstract

The effects of treating cut Lisianthus cv.mariachi bleu fonce with solutions of sucrose, citric acid, calcium sulfate and silver nitrate on vase life and electrolyte leakage was evaluated. Preservative solutions with factorial combinations of four concentrations of sucrose (0, 20, 40 and 60 gL^{-1}), two levels of citric acid (0 and 160 mgL^{-1}), two concentrations of silver nitrate (0 and 120 mgL^{-1}) and two concentrations of calcium sulfate (0 and 240 mgL^{-1}) were prepared and applied to cut lisianthus and vase life, electrolyte leakage and the percentage of flower buds which opened were measured. The results showed that with increasing sucrose concentration the vase life of cut lisianthus increased and the highest vase life was obtained when sucrose was applied with concentration of 60 gL^{-1}. The vase life of cut lisianthus was 29 days in sucrose solution (60 gL^{-1}) as compared to 15 days for the water control. Application of citric acid and silver nitrate extended the vase life of cut lisianthus for 2 and 4 days respectively as compared to the water control. Application of 60 gL^{-1} sucrose in combination with 160 mgL^{-1} citric acid resulted in highest vase life for cut lisianthus which was 31 days as compared to 15 days for the water control. Addition of silver nitrate or calcium sulfate to solution with 60 gL^{-1} sucrose + 160 mgL^{-1} citric acid was not effective in extending the vase life of cut lisianthus to more than 31 days. The effects of sucrose, citric acid, silver nitrate and calcium sulfate on electrolyte leakage and the percentage of flower buds which opened have also been discussed, the color of petal that were in sucrose solution sustained during their life time also.