Pectin-derived oligosaccharins effects on flower buds opening, pigmentation and antioxidant content of cut lisianthus flowers

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Abstract

Most flower buds do not open after the cut flower has been separate from the plant without having an external energy source. Sugar added in vase solutions usually has positive effects; however, it can also elicit and generate greater senescence. The objective of this paper was to determine the effects of sucrose, another external elicitor such as oligosaccharins, and the synergy of these compounds applied in vase solutions on the opening and pigmentation of lisianthus (*Eustoma grandiflorum* cv. 'Mariachi blue') flower buds. Different vase solutions were applied, including a negative control (water alone) and a positive control (commercial Floralife Crystal Clear®). The treatments were sucrose (4%), pectin-derived oligosaccharins (Pectimorf® at 1 mg L^{-1} and 2 mg L^{-1}), and the combination (2 mg L^{-1} oligosaccharins and 4% sucrose). Physical and biochemical parameters were evaluated in flowers and leaves. Results suggest that oligosaccharins and sucrose synergy caused greater bud opening (12% greater than negative control) and flower diameter (74 mm, 20% greater than negative control), produced more intense color in young flowers, and modified antioxidant compounds content. These effects allow for prolonging vase life, maintaining the appearance, and increasing the color and flower size of lisianthus during postharvest as compared to water or sucrose alone treatments.