Title Benzyladenine and gibberellic acid pulse on postharvest of *Calathea louisae* cut foliage

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Abstract

Calathea louisae is an herbaceous ornamental plant native of Brazil whose cut foliage has potential to be used as a new product for the local ornamental market, as well as the international market, due to its decorative dark green leaves with greenish white splotches along midrib, and purple undersides. The objective of this study was to evaluate pulse treatments of benzyladenine and gibberellic acid for maintaining quality and extending keepability of foliage. The experiment was conducted in a complete randomized design with three replications (three stems in each vase) and seven treatments: distilled water (control) and pulsing cut petioles in benzyladenine or gibberellic acid for 4 h at 100, 250 and 500 mg L^{-1}. The senescence symptoms were characterized by leaf rolling and a decrease in the angle formed between leaf and petiole as a response to water stress. Gibberellic acid or benzyladenine pulse treatments (250 and 500 mg L^{-1}) significantly extended the longevity of cut foliage compared to the control. Gibberellic acid pulse (250 and 500 mg L^{-1}) maintained leaves' green coloration and brightness for a longer time compared to control and benzyladenine pulse. Pulsing with gibberellic acid or benzyladenine (at all tested concentrations) maintained upright leaves for a longer time, showing a significantly higher angle between leaf and petiole compared to control. Foliage pulsed with gibberellic acid (500 mg L^{-1}) showed a significantly higher leaf relative water content, a significantly smaller loss of accumulated fresh mass percentage compared to control and other gibbberellic acid and benzyladenine treatments.