

Pre-harvest foliar application of humic acid, salicylic acid and calcium chloride to increase quantitative and qualitative traits of *Lilium longiflorum* cut flowers

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Abstract

Lily (*Lilium longiflorum* L.) is one of the most important potted flowers, which is used largely as cut flower. An experiment, arranged as a factorial based on completely randomized design with three replications, was carried out to evaluate the effects of pre-harvest foliar application of humic acid, salicylic acid and calcium chloride on quality and longevity of lily cut flowers. Treatments included humic acid as factor a (0, 100, 500 and 1000 mg/L) and three salicylic acid concentrations (0, 150 and 200 mg/L) and two calcium chloride concentrations (300 and 600 mg/L) as factor b, which were sprayed at two stages before harvesting the flowers. Results showed that treating the plants with 500 mg/L humic acid increased water uptake and chlorophyll *a* content and decreased number of fallen florets. Application of 1000 mg/L humic acid increased total chlorophyll content. Pre-harvest treatment of flowers with 600 mg/L calcium chloride increased florets' diameter, relative water content, chlorophyll *b* content and shelf life, as compared to other concentrations and different salicylic concentrations. In this research, the highest shelf life was observed for flowers sprayed with 1000 mg/L humic acid and 300 mg/L calcium chloride. Therefore, pre-harvest foliar application of humic acid, salicylic acid and calcium chloride could have positive effects on quantitative and qualitative traits of lily cut flowers.

Keywords: Longevity, Electrolyte leakage, Relative water content.

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