

**Title** Effects of the cutting stage, cold storage, and holding solutions on the postharvest quality of the cut flower stalks of *Hippeastrum vittatum* L cv. 'Minerva'

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### **Abstract**

In order to reduce the potential mechanical damage and to improve marketability of the large showy cut flowers of *Hippeastrum vittatum*, this study was conducted to investigate the effects of cutting the flowers at early stages of flower bud development, three cold storage periods, and three holding solutions on the postharvest quality of cut flower stalks of *Hippeastrum vittatum* L cv. 'Minerva'. Flower stalks were cut at either tight bud stage (flower buds are tight and enclosed inside the sheath), semi-tight bud stage (flower buds showed color and expanded out of the sheath), or early open bud stage (petals showed color and the buds started to unfold). Flower stalks were, then, placed in three different holding solutions (distilled water, 200 ppm 8-hydroxyquinoline sulfate, and 200 ppm 8-hydroxyquinoline sulfate plus 3% sucrose); immediately after cutting or after 3, 7, and, 14 days of cold storage at 7°C in the refrigerator. Results showed that flower stems cut at either tight or semi-tight bud stages and placed immediately in distilled water had longer vase life than those cut at early bud opening stage with similar flower quality. The solutions containing 200 ppm 8-HQS or 200 ppm 8-HQS plus sucrose resulted in better solution uptake but did not improve vase life compared with the distilled water. Vase life and quality of flower stalks held for three days in cold storage were comparable to those placed immediately after cutting in the holding solutions. Flower stalks held in the refrigerator for 7 days had shorter vase life and less quality than either those placed immediately in the holding solutions or those stored for 3 days. The flower buds of stalks held in the refrigerator for 14 days failed to open regardless of the development stage or the holding solutions.