

Special Research Report #421: Postproduction

Evaluating the Vase Life of New Cut Flowers - Year 3 (2004)

F.L. Fanelli, J.M. Dole, W.C. Fonteno, B.T. Harden and S.M. Blankenship, Department of Horticultural Science, North Carolina State University, Raleigh, NC 27695-7609



Phone: 618/692-0045

Fax: 618/692-4045

E-mail: afe@endowment.org

Website: www.endowment.org

BACKGROUND

Each year a large number of new cultivars and species made available from plant breeders, propagators, and suppliers are evaluated in the National Annual and Perennial Cut Flower Trial Programs, administered by N. C. State University and the Association of Specialty Cut Flower Growers (ASCFG). These new cultivars are tested at approximately 40 locations in the United States and Canada, providing valuable information on yield, stem length, and market appeal. However, a new cut flower must also have a long postharvest life. This study screened 21 new cut flower species/cultivars to determine which ones have a long postharvest life.

MATERIALS AND METHODS

Field grown flowers were harvested at the optimum stage of flower development in tap water. The stems were subsequently sorted and placed in the following treatments:

Hydrator only

Holding preservative only

Hydrator followed by holding preservative

Distilled water only (control)

Chrysal Professional RVB Hydrating Solution (hydrator) was used at the 0.2% rate and Chrysal Professional #2 Processing Solution (holding) was used at the 1% rate. After treatment, stems were placed at 68±4°F under approximately 200 ftc light for 12 hrs/day.

RESULTS

Adenophora 'Amethyst' This species had long stems with pendulous blue bell-shaped flowers and a vase life of 11 days in water. A holding solution increased the vase life by 3 days.

Agapanthus 'MidKnight Blue'® This bulbous perennial had a 10-11 day vase life in high quality water. Commercial preservatives had no effect.

Ammi 'Casablanca' A 15-day vase life was obtained

with water. Commercial preservatives were not effective.

Campanula rapunculus 'Heavenly Blue'

The stems of this new annual were covered with many delicate light blue bell-shaped flowers. A 11-15 day vase life was obtained in water. Commercial preservatives were not effective.

Campanula takesimana 'Kent Belle'

– A hydrator only or hydrator plus holding preservative extended the vase life of this traditional deep blue perennial bell flower by 3-4 days over the control, which lasted 10-12 days. Florets did not drop as the stems matured.

Caryopteris 'First Choice'

This small shrub produced whorls of blue flowers, which lasted 14-15 days. Floral preservatives were not effective.

Dianthus 'Sweet Coral'

This Sweet William flowers rapidly from seed in the first year. Cut stems should be treated only with the holding preservative, which produced a 15-20 day vase life. However, using only water produced a 12-15 day vase life. Combining the hydrator with the holding preservative caused leaf browning.

Dianthus 'Sweet Red' Results were similar to dianthus 'Sweet Coral'.

Foxglove 'Camelot Lavender' This new series of foxglove flowers in the first year from seed. Placing the stems in holding preservative added only 1 day to those held in water, which had a vase life of 8-9 days.

Foxglove 'Camelot Rose' Results were similar to foxglove 'Camelot Lavender'.

Eustoma 'Twinkle Blue Blush' Placing the stems in water only produced a 17 day vase life. The holding preservative increased the vase life by 2 days.

Eustoma 'Twinkle Pink' Placing the stems in water only produced a 14 day vase life. The holding preservative increased the vase life by 3 days.

Heliopsis helianthoides
'Summer Sun' This bright yellow perennial continued to flower throughout the summer. Using only the hydrator extended the vase life 8 days beyond that of stems held in water, which lasted 11 days. The vase life was reduced to 7 days when treated with hydrating plus holding solutions.

Lobelia 'Fan Blue' The stems of deep blue florets with lustrous green foliage lasted 8 days in water only. A holding preservative only added 1-2 days.

Matricaria 'Magic Lime Green' Vase life in water only was 20 days. The holding preservative increased the vase life 4 days.

Hellebore hybrids Combining the hydration and holding preservatives resulted in a 17 day vase life compared with a 10 day life for the control. Harvest stage had no effect. The attractive seed pods continued to develop prolonging the vase life.

Sunflower 'ProCut Orange' This pollen free sunflower had 3-4 inch wide flowers, which lasted up to 12 days. Using hydrator plus holding preservatives decreased vase life to 5 days.

Sunflower 'ProCut Bicolor' This sunflower has a mahogany ring around the dark center disc and lasted 9-10 days regardless of treatment.

Persicaria 'Silver Dragon' Grown for its burgundy, green, and silver foliage, this species had a vase life over 3 weeks. As a result, stems tended to root.

Zinnia 'Oklahoma Carmine' All treatments resulted in a long vase life with no detrimental effects for this bright rose colored zinnia. The stems in water only lasted 19 days while the vase life was 20 days for stems pretreated with the hydrator and placed in water.

Zinnia 'Oklahoma Yellow' A vase life of 24 days resulted when using only the hydrator; however, stems in water lasted 22 days.

CONCLUSIONS

Over half of the cultivars evaluated had a vase life over 14 days, which is optimum for marketing and consumer enjoyment. They included adenophora 'Amethyst', ammi 'Casablanca', campanula 'Heavenly Blue', sweet william 'Sweet Coral' and 'Sweet Red', eustoma 'Twinkle Blue Blush' and 'Twinkle Pink', matricaria 'Magic Lime Green', hellebore hybrids, persicaria 'Silver Dragon' and zinnia 'Oklahoma Carmine' and 'Yellow'. Several other species had a vase life of 10 days or more, which is the minimum for wholesale production and handling.

IMPACT TO THE INDUSTRY

Cut flower producers, wholesalers, retailers, and consumers need to know the vase life of new cut flowers as they are made available in the marketplace. This research provides the industry with basic postharvest information on 21 new cut flowers.

For Additional Information Contact:
john.dole@ncsu.edu

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