

Special Research Report #420: Postproduction

Evaluating the Vase Life of New Cut Flowers - Year 2 (2003)

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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 production and marketing information, including yield, stem length, and market ratings. However, a new cut flower must also have a long postharvest life. This study screened 8 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 into 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.

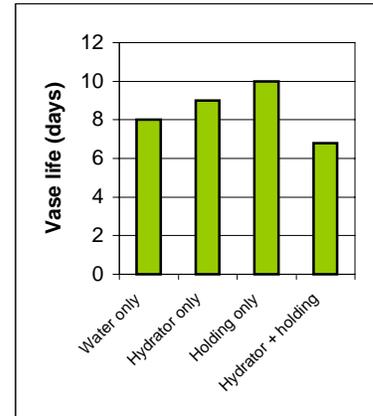
RESULTS

Annual sunflowers (*Helianthus*)

The best handling treatment for all four cultivars was to place them in plain water and transfer to a commercial floral holding preservative.

>**Full Sun**= This traditional appearing sunflower can be difficult to handle due to the very large head. Vase life averaged 7-10 days (Fig. 1).

Fig. 1. Sunflower 'Full Sun'.



>**The Joker**= (Photo 1) The petals discolored and curled from the tips to the base as the flower aged. The foliage also wilted and discolored along with the flower in all treatments. Vase life averaged 7-10 days.

Photo 1. Sunflower 'The Joker'.



>**Sunny**= The holding preservative caused some petal tip browning. Vase life averaged 14-17 days.

>Terracotta= The primary flower expanded and the color deepened as it aged. Side floral buds opened, which may increase the consumer vase life, but our testing focused on the main flower. Vase life averaged 12-15 days.

Perennial sunflower
Helianthus salicifolius **>First Light=** (Photo 2)

Stems should be placed into either water or hydrator and then into a holding solution. This treatment produced a vase life of 12-18 days. This cultivar has multiple 2-2 inch flowers that open from the base of the inflorescence. Stems were harvested when one or two flowers were open. They made impressive bright yellow sprays when fully open. Vase life was terminated when flowers wilted. No browning was observed in any treatment.

Photo 2. *Helianthus salicifolius* **>First Light=**



Rudbeckia

The three cultivars had a long postharvest life – a minimum of 13 days. **>Prairie Sun=** lasted the longest, over 21 days. While the optimum treatments varied with the cultivar, the longest vase life was generally obtained with the use of a hydration solution followed by a holding preservative solution.

>Autumn Colors= (Photo 3)

Place flowers into a hydration solution followed by a holding solution (Fig. 2). Powdery mildew developed on the foliage and outer flower petals of some stems as they aged. *Botrytis* was also observed on some stems.

Photo 3. *Rudbeckia* ‘Autumn Colors’.

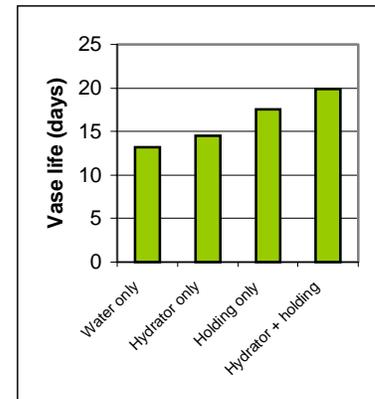


>Goldie Locks= Place stems into a hydration solution and then transfer to water. Stems were terminated due to wilting and/or stem collapse. Some *Botrytis* was observed in the flower center.

>Prairie Sun= All treatments produced long lasting flowers. Place in a hydration solution and then transfer to a holding

solution. Browning was not observed.

Fig. 2. *Rudbeckia* ‘Autumn Colors’.



CONCLUSIONS

Several of the species and cultivars had a vase life over 14 days, which is optimum for marketing and consumer enjoyment. They included: *Helianthus* **>First Light=** and *rudbeckia* **>Autumn Colors’**, **>Goldie Locks=** and **>Prairie Sun=**.

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 8 new cut flowers.

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