

# Special Research Report #426: Postproduction

## Optimizing Postharvest Life of Cut Rudbeckia

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### BACKGROUND

Each year a large number of new cultivars and species are made available from plant breeders, propagators, and suppliers. Specific postharvest information must be obtained for these new species as they are made available to the market. One new cut flower, the rudbeckia 'Indian Summer' (Photo 1), produces large bright yellow daisy-like flowers which can be used either in single species bunches or in bouquets and arrangements. This study determined the optimum handling procedures to extend the postharvest life of cut rudbeckia stems.

### MATERIALS AND METHODS

Trials were conducted in 2003. Rudbeckia 'Indian Summer'

cut stems were subjected to a wide range of tests to determine optimum cold storage duration and the effects of pretreatments and pulses, vase solutions and substrates, and commercial preservatives. After treatments, stems were placed at  $68\pm 4^{\circ}\text{F}$  under approximately 200 ftc light for 12 hrs/day.

Stems were harvested when the outer petals were fully open. Flowers were monitored daily to determine the end of consumer vase life. The end of consumer vase life occurred when the stem collapsed or the petals began to turn brown.

Photo 1. Rudbeckia 'Indian Summer'



### RESULTS

Rudbeckia had a vase life of up to 36 days and no treatments extended the vase life.

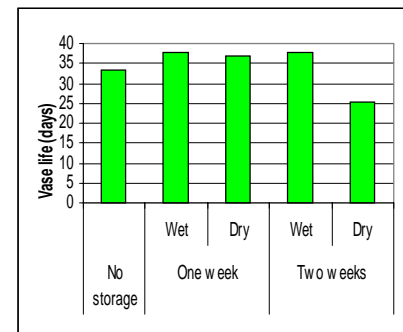
#### *Pretreatments*

No pretreatments increased vase life. The only pretreatments that reduced vase life of this long-lived species were 24-hour 10 or 20% sucrose pulses.

#### *Cold Storage/Ethylene*

Stems could be stored wet or dry at  $35^{\circ}\text{F}$  for up to two weeks with either no decrease in vase life or an 8 day decrease in vase life, respectively (Figure 1). Treatment with STS and 1-MCP had no effect.

Fig. 1. Effect of wet or dry cold  $35^{\circ}\text{F}$  storage on vase life of rudbeckia 'Indian Summer'.



#### *Holding Solutions*

Floral foam reduced the vase life by 50% but 13 days is still a respectable number of days for a floral arrangement.

Interestingly, a few stems of rudbeckia formed roots in vases containing only water (Photo 2). Stems placed in commercial preservatives did not form roots. On the other hand, a few stems wilted and died rapidly no matter what treatments were used. These wilted stems should be removed before marketing.

Fig. 2. Effect of floral foam on vase life of rudbeckia 'Indian Summer'.

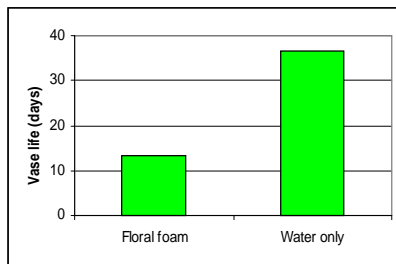


Photo 2. Rooting of rudbeckia 'Indian Summer' cut stems placed in water.



## CONCLUSIONS

Rudbeckia 'Indian Summer' (Photo 1) is a long lasting cut flower that requires no special handling for a long vase life of

13 or more days. Cut stems into clean water and remove the small percentage of wilted stems before bunching and marketing. After harvest stems can either remain in water throughout the marketing period or can be stored dry for up to 2 weeks. Due to its long postharvest life and tolerance to cold storage, rudbeckia is suitable for wholesale marketing.

The optimum handling procedures for cut rudbeckia 'Indian Summer' are to:

1. cut into clean high quality water,
2. discard the small percentage of flowers that remained wilted after hydration,
3. cold store wet at 34 °F for two weeks or less,
4. cold store dry at 34 °F for one week or less.

## IMPACT TO THE INDUSTRY

The rudbeckia 'Indian Summer' makes a bright addition to bunches, bouquets, and arrangements. It is critical to the industry to maintain a constant supply of new, successful cut flowers with proper postharvest handling information.

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