

# Extending the vase life of cut flowers: Pretreatments and preservatives studied

July 1 2011

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Sunflowers (*Helianthus*) are a major specialty cut flower, shown here with roses, one of the most important cut flowers worldwide. Credit: Photo by J. Dole

Each year, a wide variety of new cut flower cultivars and species are evaluated in trials administered by North Carolina State University and the Association of Specialty Cut Flower Growers. The research, conducted at about 50 locations in the United States and Canada, provides valuable production and marketing information.

John M. Dole and a research team from North Carolina State University undertook a multiyear study designed to identify patterns of postharvest responses to commercial hydrator and holding floral preservatives among 121 [cultivars](#) from 47 genera. The team chose stems of "promising and productive cultivars" from the National Trial Program, pretreated them with either a commercial hydrating solution or deionized

(DI) water, then placed them in either a commercial holding solution or DI water. The results of the comprehensive 8-year study premiered in *HortTechnology*.

According to Dole, although there was cultivar variation within each genus, patterns of postharvest responses emerged during the study. The largest response category was one in which the vase life of 53 cultivars was increased by treating with a holding preservative. Consumer favorites in this category include: basil, bee balm, blackeyed susan, coneflower, coral bells, foxglove, lisianthus, ornamental pepper, shasta daisy, sunflower, [snapdragon](#), and zinnia, among others.

Interestingly, the researchers determined that holding preservatives actually reduced the vase life of 14 cultivars such as ageratum, false queen anne's lace, lisianthus, pineapple lily, yarrow, and zinnia. Hydrating preservatives reduced the vase life of 18 cultivars, including feverfew, lisianthus, ornamental pepper, pineapple lily, shasta daisy, sweet william, sunflower, yarrow, and zinnia. Application of a combination treatment showed that the use of hydrating and holding preservatives reduced vase life in 12 cultivars.

The researchers concluded that, for the majority of cultivars in the study, either all treatments produced a similar vase life or treatment with a holding preservative produced the longest vase life. They cautioned, however, that "a universal recommendation for use of a holding preservative cannot be made as it reduced the vase life of 14 cultivars". The study results also indicated that hydrator preservatives are "not advantageous" in extending the vase life of most of the cut flowers studied.

**More information:** [horttech.ashspublications.org/...t/abstract/20/6/1016](http://horttech.ashspublications.org/...t/abstract/20/6/1016)

Provided by American Society for Horticultural Science

Citation: Extending the vase life of cut flowers: Pre-treatments and preservatives studied (2011, July 1) retrieved 17 May 2024 from <https://phys.org/news/2011-07-vase-life-pre-treatments.html>

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