University of Kentucky College of Agriculture
New Crop Opportunities Center

Extended Vase Life for Cut Stems of *Hydrangea paniculata*

Todd Leeson, Sharon Bale, R. Terry Jones, Winston Dunwell, and Robert McNiel, Department of Horticulture

Introduction

Hydrangea paniculata is available as a cut stem from the Holland market. Some *H. paniculata* are available in this country as a cut stem through farmers' markets. A national commercial wholesale source of this stem is not readily available. *H. macrophylla* cultivars are the flowers that are usually grown for the cut flower market. The other hydrangea species *H. arborescens*, smooth hydrangea; *H. paniculata*, panicled hydrangea; and *H. quercifolia*, oakleaf hydrangea, have been grown for landscape plants (1). Therefore, the ability to produce quality field-grown cut stems of the *H. paniculata* flower has the potential to offer an alternative income source to Kentucky farmers.

In 2001, preliminary studies were conducted at the University of Kentucky to determine the effects of irrigation and pruning influence on hydrangea for fresh cut flower production (2). Cutting the existing *H. paniculata* shrubs back in the fall produced strong straight stems the next season that had potential for the cut stem market. This study was to see the overall effects of floral hydrating and preserving solutions in dry cold storage (34C) versus no storage of *H. paniculata* cut flower stems.

In 1999, a hydrangea cut-flower cultivar trial was established at the University of Kentucky Research and Education Center at Quicksand, KY (2). In the late spring, summer, and fall of 2002, a study was conducted on three cultivars - *H. paniculata* '*Pink Diamond*', *H. 'Unique', and H. 'Tardiva'*. No information could be found on the best floral preservative to be used on these plants, nor was there any information on the effects dry storage would have on these stems. Dry storage in a cooler could mimic the effects of shipping time as well as the ability of a wholesale florist to "hold" the plant material.

Stems of *H. paniculata* cultivars '*Pink Diamond'*, '*Unique*', and '*Tardiva*' were harvested when the first or second row of sterile florets were fully opened. Sixty stems were cut, thirty of which were placed in a hydrating solution (Hydraplus) and then placed in a control using just tap water with a pH of 7.2 (Treatment 1), Aquaplus per package directions (Treatment 2), and Aquaplus with the addition of Flora Novus-XL solution in equal parts (Treatment 3). The other thirty stems were hydrated and stored for three days dry in a cooler (34C). On the fourth day stems were recut, hydrated and placed in a control using just tap water with a pH of 7.2 (Treatment 4), Aquaplus per package directions (Treatment 5), and Aquaplus with the addition of Flora Novus-XL solution in equal parts (Treatment 6). Stems remained in the treatments until the stem tips wilted or the sterile florets turned brown and the flowers were no longer of any commercial value. For example, if the stem in vase 3 failed to rehydrate and remained wilted after initial treatment, the vase life was considered zero days. If sterile florets started browning on the third day, vase life was over and considered to be three days.

Results and Discussion

No data was taken regarding stem length. A standard floral shipping box was used for dry storage as well as being the gauge of acceptable stem length. In every case 3 to 4 feet of stem was cut off in order for the stems to fit in the florist box. Stem length is not

an issue. The vase life of this study is of an acceptable length (Table 1). Dry cold storage for three days does not seem to affect the vase life of '*Pink Diamond*', '*Unique*', and '*Tardiva*' (Table 1). There also does not seem to be an apparent difference in vase life of various cultivars used in this experiment. Cultivars of 'Unique', and 'Pink Diamond' were cut on the dates of August 9 and August 23, while the cultivar 'Tardiva' was cut on October 9 (Table 1). The stems were then observed to determine what the average vase life was from the date they were cut off the plant. The stems that were stored in a cooler dry were stored in the cooler for three days, but those three days were subtracted from the overall days to simulate transportation. If the stem showed a nine-day vase life, it was actually a six-day consumer vase life. More work needs to be done to determine the maximum vase life and dry storage time for *H. paniculata.*

Additional work should be done to determine the maximum vase life of *H. paniculata.* First, how long can these flowers remain in dry cold storage before their viability is adversely affected? The pH of the tap water used in the control was very high (7.2). Would vase life be lengthened by altering the water pH? Does shipping and storage in a solution versus dry cold storage make a significant difference in vase life?

Significance to the Industry

This study showed that *H. paniculata* cultivars have the potential to be fresh cut flowers. This study could potentially develop a wholesale fresh cut flower market for *H. paniculata.* Changing production practices, storage methods, and observing flowers in different preservation solutions can result in a fresh cut flower market for hydrangea not normally available to growers interested in alternative incomes.

Literature Cited

1. Armitage, A.M. 1993. Specialty cut flowers. 1st ed. Timber Press, Portland Ore.
2. Dunwell Winston, Dwight Wolfe, and June Johnston. 2001. Hydrangeas for cut flowers: 2000 observations. UK Nursery and Landscape Program 2001 Research Report, PR-450:8-9.

Table 1: *Hydrangea paniculata* vase life results

Date	Trt 1	Trt 2	Trt 3	Trt 4*	Trt 5*	Trt 6*
8/09/02	5.35	6.1	6.95	5.45	5.8	6.5
8/23/02	5.2	6.5	6.6	4.8	5.7	6.5
10/09/02	5.57	6.3	7.26	5.23	6	6.8
Average	**5.37**	**6.3**	**6.94**	**5.2**	**5.8**	6.6

*indicates cold storage treatments