
Postharvest Treatment of Specialty Cut Flowers

North Carolina State University Report for 2009

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Each year a vase life test is conducted on the most promising species/cultivars from the ASCFG Seed, Perennial, and Woody trials. This year we screened 17 new entries. There seemed to be a theme across many of the 2009 entries. With names like zinnia ‘Giant Wine’, monarda ‘Raspberry Wine’ and physocarpus ‘Summer Wine’ you can see the connection. All of these made excellent cut flowers and foliage. As growers of specialty cuts, you’re able to take advantage of maximum vase life when you sell direct to your customers.

One cultivar that really stood out this year was monarda ‘Raspberry Wine’. The unique shape of the inflorescence is a sight to see and bound to get your customers talking. The vase life is something to talk about too! With an average vase life of 8.7 days, with the shortest-lived stem lasting 7 days, ‘Raspberry Wine’ is a great choice for growers. Even once the jester hat-like florets have fallen off, the remaining parts are still quite attractive. We terminated this study when the top florets abscised, but the flowers would look fine in a bouquet for quite a bit longer. ‘Raspberry Wine’ benefits from the use of a holding solution, which bumps its vase life up to an average of 9.5 days.

A tried and true favorite of just about every cut flower grower is the zinnia. Many colors are available already, but ‘Giant Wine’ is a must-have addition to your list. ‘Giant Wine’ possesses all the traits that we love about zinnias: classic flower shape, vibrant color, average vase life of 10 days in preservative, excellent stem length and money-making productivity all season long. The gorgeous color of ‘Giant Wine’ would make anyone want to celebrate with nothing other than a giant glass of...well, you know!

When it comes to foliage, physocarpus ‘Summer Wine’ should be added to your collection. The deep rich burgundy coloration is absolutely gorgeous and adds depth to any arrangement. ‘Summer Wine’ had an average vase life of 14 days and a minimum of 9 days. Hydrator followed by a holding solution is recommended for maximum vase life. As the foliage aged the leaves rolled up and dried but kept their color, so like monarda ‘Raspberry Wine’ it has the potential to stay looking good in a vase for a bit longer.



The Technical Jargon

Field-grown flowers were harvested at the optimum stage of flower development and immediately placed into tap water (0.21 EC, 6.1 pH). Subsequently, stems were sorted and placed in the following treatments:

- * Hydrator only
- * Holding preservative only
- * Hydrator followed by holding preservative
- * De-ionized water only (control)

Floralife Hydraflor 100 (hydrator) was used at 8 mL/L and Floralife Professional (holding) was used at 10 mL/L. After treatment, stems were placed at 68±4°F under approximately 200 ftc light for 12 hrs/day. Minimum vase life for each cultivar was recorded when the first stem was terminated.

Our testing methods tend to produce the maximum vase life, which tells you the potential vase life of each species. We cut and process the stems rapidly, put one stem per jar, and use a postharvest temperature that is cooler than a typical home in the summer time (and warmer in the winter, but the field trials obviously take place in the summer). These procedures were set up to provide a consistent environment so that anyone else should be able to repeat our work and get the same results. All these factors typically add about 1 to 3 days to the vase life of some species compared to what a grower would usually get. For example, flowers with a vase life of 6 to 8 days in testing would probably last 5 to 7 days for a typical grower and flowers lasting 16 to 18 days would probably last 13 to 15 days.

We also listed the minimum vase life for several cultivars. We harvest and test up to 60 stems per cultivar and present the average vase life. For some cultivars most of the stems died about the same time. With others, flowers were terminated over a long period – thus the vase life of some of the stems was much shorter than the average. In those cases, we have included a minimum vase life.

Here's the Scoop

Basil 'Cardinal'

Another one of our favorites. We got two cuts from it and probably could have gotten more. It tolerated our heavy pruning well and had even better stem length and quality the second time around. Stems were sturdy and packed with broad leaves. It was also easy to handle, unlike some of the more branchy basil. Each stem is substantial and would serve as a great filler in bouquets, not to mention the delightful classic basil scent. The cardinal-red inflorescence went along well with our wine theme! 'Cardinal' had an average vase life of 14 days when pretreated with hydrating and holding solutions. Without those treatments the vase life dropped significantly, to 4.7 days.

Calendula 'Maayan'

Harvesting was not pleasant due to the sticky residue the stems leave on your hands. The vase life was also unimpressive at 5 days. It did not matter if flowers were put in hydrating or holding solutions as all treatments had the same average vase life.

Callicarpa 'Welsh's Pink'

The average vase life of 'Welsh's Pink' was 21 days regardless of treatment. Stems need to be stripped to get the full view of the berries, but this is easily done. Minimal berry drop occurred as they aged and if done properly, this cut has the potential to dry well.

Delphinium 'Stiletto Indigo Blue'

Delphinium is always an eye-catcher and draws good prices. 'Stiletto Indigo Blue' has an impressive blue-purple color. Vase life was adequate at 9.5 days, which is when half the petals had dropped. There was no difference among the four treatments.

Campanula 'White Improved' and 'Lavender Improved'

Our wet spring did not serve the campanula well. The cups often filled with water, making them more likely to rot. The main stems were gorgeous and full of blooms; unfortunately, the side shoots weren't worth the time to cut for the most part. However, don't give up on campanula if you experienced similar problems, because it usually has an acceptable vase life if kept well hydrated. We experienced an average vase life of 10 days for 'Lavender' and 11 days for 'White'. There was no difference among the four treatments.





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Dianthus ‘Fandango Purple Picotee’

The color and pattern variation among plants of ‘Fandango Purple Picotee’ was quite interesting, resulting in many shades of purples with combinations of white. Some even looked like purple leopard print! The vase life was 11.7 days, which is quite good. However, we were unimpressed by the stem length (around 12 inches). There was no difference among the four treatments.



Pink-flower (*Indigofera amblyantha*)

This fun woody plant would make a great filler flower with a vase life of 7.9 days. It is recommended that a holding solution be used to extend vase life.

Monarda ‘Raspberry Wine’

A favorite of the whole group with its whimsical shape and beautiful color, monarda ‘Raspberry Wine’ is a wonderful flower. With an average vase life of 9.5 days with a holding solution and a minimum vase life of 8 days, you couldn’t ask for more.

Pepper ‘Hot Purple’

We were hoping for a pepper whose foliage you wouldn’t have to remove because we know how much of a pain that is, but unfortunately we still have not found one. The foliage on ‘Hot Purple’ is quite attractive with its white and purple marbling, but to keep stems looking good longer it must be removed. The peppers (without foliage) had an average vase life of a whopping 24 days regardless of treatments.

Physocarpus ‘Summer Wine’

‘Summer Wine’ had an average vase life of 14 days and a minimum of 9 days. A hydrator followed by a holding solution produced the maximum vase life of up to 16 days.

Flowering peach

P. versicolor had an average vase life of 7 days across all treatments. Although it was very pretty, we found that the flower buds popped off the stems easily.

Sunflower ‘Lemon Summer’

It wouldn’t be an ASCFG cut flower trial without at least one sunflower. ‘Lemon Summer’ had shockingly neon yellow petals that are sure to attract buyers. The vase life was satisfactory at 9.5 days, but lower than the other two sunflowers in the trials. There was no difference between the four treatments.

Sunflower ‘Zohar’

‘Zohar’ had a wonderful vase life of 12 days and did not react differently to holding and hydrating solutions. The rich golden yellow of ‘Zohar’ is stunning.

Sunflower ‘Tapuz’

Much like ‘Zohar’, ‘Tapuz’ had a golden yellow color, but a slightly shorter vase life of 10.5 days. Again, preservatives and pretreatments were not necessary to extend vase life.

Zinnia ‘Red Beauty’

Definitely a beauty! Possesses all the appeal of other zinnia varieties and offers a stunning red to boot. Vase life was 8.7 days, which was similar to average for most cultivars. Maximum vase life of 9.3 days was achieved with a holding solution. Excellent stem length and productivity.

Zinnia ‘Giant Wine’

‘Giant Wine’ was definitely a project favorite. Maximum average vase life was 10 days with a holding solution. Excellent productivity and stem length.