

2017 NCSU Perennial Project Production and Postharvest

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What a difference a year can make. Perennials usually get bigger and better! Nine of the ten perennials tested for cut flower production increased in stem yield and stem length compared to 2016. In the second year the average stem length for all species was longer than 12 inches, but the longest stems (those over 20 inches) were obtained from *Agastache* ‘Blue Fortune’, *Monarda* ‘Jacob Cline’, *Perovskia* ‘Longin’ and *Rudbeckia* ‘Viete’s Little Suzy’. All four were also quite productive in both number of stems per plant, and winter hardiness, as 94-100% of the plants survived to the second season. *Helenium* ‘Ruby Tuesday’, *Leucanthemum* ‘Goldfinch’, *Leucanthemum* ‘Real Glory’, and *Monarda* ‘Cranberry Lace’ were not included in this article because the average stem length was less than 12 inches.

Agastache ‘Blue Fortune’ is easy and pleasing to harvest with its long, sturdy stems and fragrance. It also fits well into small places in arrangements or provides height. The lighter color blends well with many other flowers compared to the bright purple of *Agastache* ‘Blue Boa’.

Monarda ‘Jacob Cline’ is one of our favorites, because it is a great producer and it can be used in three different ways. First, stems can be harvested before flowers develop making the burgundy sepals the main focal point (Fig 1A). Second, if harvested just before full

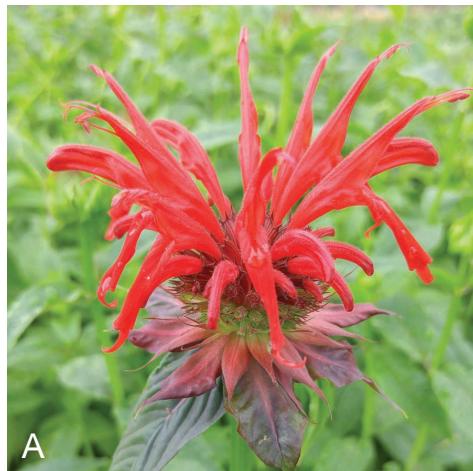


Fig 1. Above A. ‘Jacob Cline’ stem in full bloom with bright petals with burgundy sepals. B. Papery seed head.

bloom, the bright red flowers look like fireworks against the burgundy sepals. Finally, you might be able to harvest the older seed heads (Fig 1B).

An honorable mention is *Veronica* ‘Charlotte’. The variegated foliage on this plant is a bonus and the second year performance was worth the wait. The first harvest of the season produced the longest stems. The spike flower works great with *Veronica* ‘Tranquility’ and other pink flowers like *Delphinium* ‘Planet Pink’ from this year’s seed trial (Fig. 2).



Fig 2. Left Arrangement including *Veronica* ‘Charlotte’ and ‘Tranquility’ with *Delphinium* ‘Planet Pink’.

The Details: Rooted liners were received from Ball Horticultural Company during spring 2015. Three blocks of 12-16 plants were planted, and cut stems harvested during the 2016 and 2017 seasons. Production data consisted of the number of stems produced that were equal or longer than 12 inches, and the length of the first 100 stems (\geq 12 inches) harvested from each block. Stems were processed for postharvest vase life tests by recutting all stems to a similar length. The following treatments were used for our postharvest trial:

- 1) Hydrator only (4 hours)
- 2) Holding preservative only (2 days)
- 3) Hydrator for 4 hours followed by holding preservative for 2 days
- 4) Tap water only (as a control)

Floralife Hydraflor 100 was used as the hydrator at 1.0 ounce per gallon, and Floralife Professional was used as the holding preservative at 1.3 ounces per gallon (the rates listed on the packaging). After treatment, stems were placed in tap water and held at $68 \pm 2^{\circ}\text{F}$ under approximately 200 foot-candles of light for 12 hours per day. The vase life for each stem was recorded. Termination point was typically when 50% of the flower(s) or florets on the stem were brown, wilted, drooped over, etc. This study helps us provide accurate information on how long these flowers will last, and how to increase vase life. These perennials will be held over one more winter to get a better handle on their hardiness in North Carolina.

Don't be afraid to give perennials a try. They can be a great supplement to your annual crops, providing some interesting colors and habits while reducing preparation included in buying seed, nurturing seedlings, planting, and tilling fields. For more information on our postharvest trials or production research check out past articles in *The Cut Flower Quarterly*, or go to our website: <https://cutflowers.ces.ncsu.edu/>.

Agastache 'Blue Boa'		
	Year 1	Year 2
Yield (per plant)	21 stems	26 stems (+24%)
Average length	14 inches	15.5 inches (+11%)
Vase life (2016)	8 days tap, 9 days holding preservative	
Survival	60% of plants survived winter	
Notes	<ul style="list-style-type: none"> • 100% of plants bloomed • Harvested with 1-3 flowers open • Multiple harvests • Fragrant with a floral mint scent • Pollinator magnet 	



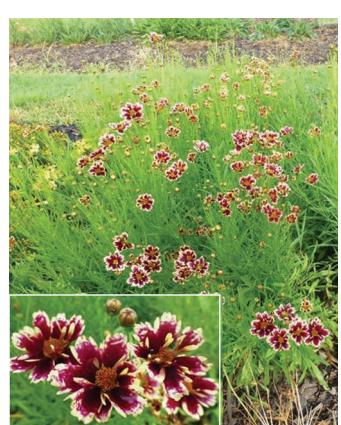
Agastache 'Blue Fortune'		
	Year 1	Year 2
Yield (per plant)	43 stems	55 stems (+58%)
Average length	19.5 inches	22 inches (+13%)
Vase life (2016)	8 days tap, 9 days holding preservative	
Survival	94% of plants survived winter	
Notes	<ul style="list-style-type: none"> • 100% of plants bloomed • Harvested with 2-3 flowers open • First crop uniformly developed • Long strong stems • Multiple harvests • Fragrant with scent of black licorice • Long strong stems • Pollinator magnet 	



Coreopsis 'Cerise'		
	Year 1	Year 2
Yield (per plant)	N/A	35 stems
Average length	N/A	16.5 inches
Vase life (2016)	11 days regardless of treatment	
Survival	100% of plants survived winter	
Notes	<ul style="list-style-type: none"> • 100% of plants bloomed • Significant improvement in production, stems were longer, straighter, and less branched • Harvested when one flower of spray fully open • Harvested over a few days (48 plants yielded 1,200 stems in 3 days!) • Secondary flowers rarely open on cut stems and lose color if they do open • Thrips deformed first flowers 	



Coreopsis 'Ruby Frost'		
	Year 1	Year 2
Yield (per plant)	53 stems	1 stem (-98 %)
Average length	15 inches	13 inches (-15%)
Vase life (2016)	8 days regardless of treatment	
Survival	21% of plants survived winter	
Notes	<ul style="list-style-type: none"> • 100% of plants bloomed • Majority did not survive winter • Surviving plants were small and unproductive 	



Monarda 'Jacob Cline'

	Year 1	Year 2
Yield (per plant)	9 stems	30 stems (+233%)
Average length	15 inches	23.5 inches (+57%)
Vase life (2016)	7 days in water	
Survival	100% of plants survived winter	

Notes

- 100% of plants bloomed
- Plants spread from original planting
- Unique flower shape and dark red sepals add extra color
- Stems can break easily and may need support
- Multiple harvests
- Powdery mildew mid to late summer
- Great for pollinators



Perovskia 'Longin'

	Year 1	Year 2
Yield (per plant)	23 stems	44 stems (+91%)
Average length	18.5 inches	20 inches (+8%)
Vase life (2016)	5 days regardless of treatment	
Survival	96% of plants survived winter	

Notes

- 100% of plants bloomed
- Very fragrant
- Flowers not super showy
- Harvested when one flower was open
- Multiple harvests



Rudbeckia 'Viereck's Little Suzy'

	Year 1	Year 2
Yield (per plant)	13 stems	44 stems (+239%)
Average length	15 inches	21 inches (+40%)
Vase life (2016)	18 days with hydrator, holding, or hydrator plus holding, 12 in water	
Survival	100% of plants survived winter	

Notes

- 100% of plants bloomed
- Harvested when color appeared on petals
- Flowers continue to color and develop in vase
- Stems can fall over with no support



Salvia 'Burgundy Candles'

	Year 1	Year 2
Yield (per plant)	8.5 stems	24 stems (+182%)
Average length	13.5 inches	14 inches (+4%)
Vase life (2016)	5 days regardless of treatment	
Survival	96% of plants survived winter	

Notes

- 100% of plants bloomed
- Larger plants developed better, had more stems
- Harvested with 1/3 of the spike fully open
- First crop in spring and starts to bloom again during the cooler fall
- Fragrant stems and leaves
- Pollinator magnet



Veronica 'Charlotte'

	Year 1	Year 2
Yield (per plant)	4.5 stems	33 stems (+633%)
Average length	12.5 inches	16 inches (+28%)
Vase life (2016)	14 days with holding preservative	
Survival	96% of plants survived winter	

Notes

- Stem length drastically improved
- Harvested with 1/3 of the spike fully open
- First crop consisted of long, sturdy, uniform stems
- A few stems reverted to green leaf pattern
- Stem length was reduced after multiple harvests

Veronica 'Tranquility'

	Year 1	Year 2
Yield (per plant)	13 stems	39 stems (+200%)
Average length	13.5 inches	15.5 inches (+15%)
Vase life (2016)	11 days regardless of treatment	
Survival	100% of plants survived winter	

Notes

- 100% of plants bloomed
- First crop developed the longest, sturdiest stems
- Responded well to multiple harvests
- Some flower tips became fasciated
- Pollinator magnet



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