Volume 27, Number 1 Winter 2015

The Cut Flower QUARTERLY

Association of Specialty Cut Flower Growers Inc.

for growers of field and greenhouse specialty cuts

Inside this Issue

Cover photo
Exochorda Magical Springtime
courtesy of
Plants Nouveau

Plant marker image courtesy of
GettingPersonal.co.uk

The Cut Flower QUARTERLY

is published by
The Association of Specialty
Cut Flower Growers, Inc.
MPO Box 268, Oberlin, OH 44074

Judy Marriott Laushman, editor.
Linda Twining, layout.
2015 ASCFG
ISSN 1068-8013

PUBLISHING SCHEDULE

ISSUE	DEADLINE
Spring	March1
Summer	June 1
Fall	September 1
Winter	December 1

All articles, features, and display advertising must be received by these deadlines for publication. *The Cut Flower Quarterly* welcomes advertising. Contact ASCFG for advertising insertion order form.

Contact Judy Laushman
(440) 774-2887 or ascfg@oberlin.net
www.ascfg.org

Subscription is included with ASCFG membership.

The More Things Change

Frank Arnosky

"I am convinced that the future of the florist business rests entirely in our hands. In no other part of the world is there a better chance to develop this industry than here, or a better market."

Fritz Bahr, *Commercial Floriculture*, 1922

Fort Davis, Texas sits at the top the Davis Mountains in the Chihuahuan Desert of west Texas. Nearby Presidio, Texas is often the hottest place in the nation, but because Fort Davis is located nearly a mile above sea level, it rarely gets above 90 degrees in the summer. They also get a bit more rain than the surrounding Big Bend area. There are a few ponderosa pines that grow there, and the small mountain springs shelter rare campanulas, columbines and other unexpected gems. Because of the climate, Fort Davis has a bit of tourist trade, limited mostly by the fact that you have to drive for hours through formidable desert to get there. As our kids were growing up, we would often take a camping trip there in the summer.

On one trip to Fort Davis long ago, we were killing time at a dusty old bookstore on the square. I like to collect old agricultural books and always give a quick look at the gardening and farming sections. I noticed a thick book with a worn brown binding that said *Commercial Floriculture*. The author was Fritz Bahr. Huh? I had never heard of the book nor the author.

I pulled it out, blew the dust off, and opened up what appeared to be the Dead Sea Scrolls of local flower farming! It was published in 1922, with subsequent revisions. There were chapters on starting your business, setting up a greenhouse, growing for retail, managing a florist business and more. Even more impressive were the crop-by-crop cultural sections for all the obscure specialty cut flowers that we were trying to grow: calliopsis, marigold, Chinese forget-me-not, lychnis, symphoricarpus, and more. Over 600 pages more! I breathlessly paid the five dollars and left the store before someone noticed that I had a priceless artifact.

Moving Ahead by Looking Back

Fritz Bahr wrote the book for what he called the retail grower. Mr. Bahr said: "As retail growers I class all those florists who are located around the larger cities or in their suburbs, in the smaller cities and throughout the country towns, and who grow a part of their requirements for retail sale to a local trade." What Mr. Bahr was talking about, nearly 100 years ago, was exactly what we are now calling the "farmer-florist". In Mr. Bahr's day, this type of operation made up the bulk of our industry. That changed as long-distance shipping became more available, and as we all know, most production eventually moved out of the country.

As evidenced by the wonderful success of the ASCFG's 2014 National Conference in Delaware, there is a huge groundswell of interest in the farmer-florist concept again. A google search of "farmer florist" brings up countless examples of people and farms growing and using locally produced flowers. The ASCFG membership has swelled with the ranks of local producers who also do floral design work, and the public demand for this seems to be at an all-time high. We sell wedding flowers directly from our farm, and we are sometimes doing several weddings or events a week.

Some of our ASCFG members are strictly local producers, while others are exclusively wholesale growers and shippers. Some of us do a little of both. At our farm we have a foot firmly planted in both worlds. We think of ourselves as mostly wholesale growers with a side business in retail. But sometimes it is necessary to rethink things. Every fall, after the last shipment to our grocery stores, we like to go over the year's numbers and break down the details by crop and customer. We dive into our QuickBooks program and try to look at every crop and every sale from all possible angles. Who sold the most sunflowers or bouquets? What crops should we increase or decrease. Who were our best customers?

Among all the stores that retail our flowers, we had one store that stood out from the rest by almost 40%. This store beat the next best store by nearly $20,000 in sales. The surprise was that it was our own self-serve farm market. We were our own best customer!

We had an unexpected surprise this year. Among all the stores that retail our flowers, we had one store that stood out from the rest by almost 40%. This store beat the next best store by nearly $20,000 in sales. The surprise was that it was our own self-serve farm market. We were our own best customer!

This fact is even more surprising when one considers that the market sits 50 miles from any major city, it runs without any staff, it's usually hotter than Hades out here and half the time we don't even get around to keeping it stocked! The market has been an afterthought while we focused on the wholesale business. We were succeeding in spite of ourselves.

Wholesale is still the majority of our overall sales, but we are constantly pulled in both directions. Are we wholesale growers or a retail grower? A shipper or a destination farm? Mass bouquet producer or wedding florist? What should we focus on?

The Best of Both Worlds

The ASCFG is a little like that, and sometimes it a tough balance. I have heard large producers say they didn't have a lot in common with our organization because the grower members were small and local. I have also heard smaller growers say they didn't want to tour large farms because they felt there would be nothing there for them to learn. They are both wrong, of course. The strength of this group is that we are all-inclusive; a big tent, so to speak.

We are following up the great Delaware conference with a San Jose, California meeting that will give us all some eye-opening chances to tour some of the big guys. Along with a great line-up of speakers for the meeting, we'll be able to tour some of the best growers in the Watsonville area, including Kitayama Bros., California Floral Greens, and Golden State Bulb. Golden State is famous for their calla production, and I, for one, am excited about this stop. I say that if you come away from these meetings with just one good idea, you'll pay for your trip, and I always get a lot more ideas than just one.

I think Fritz Bahr would be pleased to see the ASCFG membership today. He writes: "I am convinced that the future of the florist business rests entirely in our hands. In no other part of the world is there a better chance to develop this industry than here, or a better market."

He continues: "The money is there. People are spending it and paying more for service than ever, but as yet only a small part of the population "Say It With Flowers." The more they hear and see of them, the more they will use them. Even should all these predictions fail, most of us in business today know that good florists' stock is never sold at a higher price than at present, and that this is no time to retrench, but a time to go on, to build, to expand, to produce still better stock, to advertise, to give better and still more courteous service. Come what may, flowers will always be used, and there is absolutely nothing to fear for those who attend to their business and "watch their step"."

Post World War I optimism, still true today. You gotta love it!

Some Favorite Books

Commercial Floriculture
by Fritz Bahr.
A.T. De La Mare Company, 1922 to 1948

Florist Crop Production and Marketing
by Kenneth Post, Orange Judd Company, 1949

Commercial Flower Forcing
by Alex Laurie and D.C. Kiplinger.
The Blakiston Company, 1934 to 1948

Practical Floriculture
by Peter Henderson.
Orange Judd Company, 1887 to 1906 or later

Specialty Cut Flowers, Second Edition
by Allan Armitage and Judy Laushman.
Timber Press, Timeless

We've Got You Covered!

Cut Flowers by Sakata

Vincent® Sunflower
- Short crop cycle means quicker profits!
- Day length neutral—more flexibility in programming
- Round, overlapping petals on sturdy flower heads
- Two great options: Vincent® Choice and Vincent® Fresh

Bonita Aster
- Pompon type / flower centers completely fill in
- 2-inch flowers are held at a perfect angle for maximum impact
- Good flower presentation without center bud removal

Mariachi® Lisianthus
- Extra double large, camellia-like flowers
- Thick petals for long-lasting shelf life and easy transportation
- Ideal for winter sowing and summer harvest

SAKATA®

www.SakataOrnamentals.com

Sunflower 'Vincent Choice'
Round, overlapping petals form sturdy flower heads that hold up well during transport. Pollenless. Daylength neutral variety, allowing for the season to extend into early spring and late fall. Height 48-60".


'Vincent Choice'

***Daucus* 'Dara'**
Outstanding cut flower that's actually a carrot. Attractive 3½-5" lacy umbels atop strong, sturdy, upright stems. Flowers in shades of dark purple, pink, or white. Highly productive with 7-15 stems per plant. Long lasting in bouquets. Height 36-48".

Snapdragon 'Madame Butterfly'
Unique double-petal type. Also known as an azalea type, double petals prevent pollination by insects, allowing the flowers to last longer than single-petaled flowers. Excellent cut flower. This mix consists of bronze/white, cherry/bronze, ivory, pink, red, rose, yellow and bronze blooms. For outdoor or greenhouse production. Height 26-36".


'Madame Butterfly'

Snapdragon Chantilly Mix
Large, open-faced flowers. This mix of pink, purple, orange, yellow, and white is suitable for growing in spring, fall, and winter in the greenhouse or in the field. Group 1-2, performs under short days and low temperatures. Height 48-54".


'Dara'

Sweet pea Elegance Mix
Early and prolific. Developed for flowering under short days, low light conditions, and in cool greenhouses. Suitable for spring or midwinter production. Long stems bear 3-5 blooms in seven shades of red, four shades of pink, two shades of purple, as well as blue and white. Formerly called 'Winter Elegance'.


Chantilly Mix

Lisianthus Mariachi Series
Carmine, Pure White, Blue, Lime Green, Pink, Yellow Improved, Lavender. Quadruple blooms are top flowering which reduces the risk of botrytis when sleeved, and makes a more eye-catching stem. Thick petals hold up to handling and transport. Group 2, for early spring to summer harvest. Height 24-32".


Elegance Mix


Mariachi Series

Sunflower 'Sunrich Orange' DMR
'Sunrich Orange' DMR is resistant to multiple strains of downy mildew (*Plasmopara halstedii*). This traditionally-bred DMR (Downy Mildew Resistant) variety provides substantial benefits with high yield results and the reduction of chemical use. Plant height, rate of growth, and flower shape and color are similar to the market leading variety, 'Sunrich Orange'. The DMR variety flowers 65-85 days after sowing, depending on growing conditions, and is suitable for spring to summer cultivation with growing and sowing under long-day conditions.

Snapdragon 'Legend Pink', 'Legend White'
This new series is a Group I-II snapdragon. Legend is ideal for extra-early winter production. Its desirable features include strong stems, dense flower spikes and strong petals. Stem length is 36 to 52 inches/91-132 cm, depending on time of year. New colors Pink and White join Yellow.


'Legend Pink'


'Legend White'


'Rosita 2'

Lisianthus 'Rosita 2'
'Rosita 2' is the standard in double-flowered lisianthus. With thick petals, top flowering and strong stems it is easy to transport the flowers without botrytis problems. 'Rosita 2' is suitable for spring and early summer flowering. Enjoy the excellent vase life with these medium-sized, rose-shaped flowers and more usable buds. Available in 12 gorgeous colors including new 'Blue Picotee'.


'Blue Picotee'


'Kolgold'

***Exochorda* 'Kolmaspirit' Magical Springtime**

'Magical Springtime' is NOT your ordinary pearl bush! In late spring, white flower buds swell from the soil line to the tips of every branch, regardless of how it was pruned, because this beauty blooms on the current year's growth, promising a reliable flower display year after year. It forms an impeccable vase shape, standing 5' tall with perfectly straight stems for cutting. And if that's not convincing enough for you to add it to your cut flower mix, the stems are easily forced for out-of-season flowers!


'Kolmaspirit'

***Forsythia x intermedia* 'Kolgold' Magical Gold**

This is the first forsythia to hit the market that blooms on both new and old wood. Imagine not having to worry if you cut your plants back too late in the season. Imagine never again having to wonder if there will be blooms. Perfect, iconic golden yellow blooms on long, straight stems are wonderful for cutting and bringing indoors. Ideal for early spring forcing.


'Everlasting Desire'

Magical Hypericum

We guarantee beautifully colored fruits on perfectly formed plants, whether it's in the garden, as a lovely addition to any floral bouquet, or a brightly colored accent on your doorstep in the fall. This new line of St. John's wort gives you breakthrough, saturated colors that have never been seen before. We promise these new plants will fill your fall garden with interest and your floral arrangements and containers with large, shiny long-lasting fruits!

Hypericum 'Kolmades' Magical Desire

'Everlasting Desire' dons long-lasting, peachy-pink fruits reminiscent of a basket of freshly picked ripe peaches. This new rust-resistant selection will add a bright, yet soft color to your autumn planting and decorating palette. Pair 'Desire' with deep maroon and blue flowers for a bold combination.

Hypericum 'Kolmivo Magical Ivory'

Long-lasting, luscious, creamy-white berries follow bright yellow flowers on a tough, rust-resistant plant. The fruits of this plant look like mini cones topped in French vanilla ice cream. Pair this soft, yet bright color with purple and orange flowers and deep green or maroon leaves for a stunning display.

Hypericum 'Kolmali Magical Limelight'
The intensely illuminated, bright greenish-yellow berries of 'Limelight' look like they are fit for the stage. Use 'Limelight' in your mixed bouquets with deep blues and silvers for an exciting display of color, or use a single spray in boutonnieres and corsages for a modern, minimal look. The fruits will last for weeks as a cut flower. A multi-faceted plant, for sure!

Hypericum 'Kolmaref Magical Red Fame'
This new hypericum is adorned in long lasting, fire engine red fruits that pair perfectly with autumn's oranges, maroons and yellows. Everlasting Fame is a rust resistant selection adorned in plump, elongated fruits that show well against the dark green foliage in late summer and early fall. It's also perfect for holiday bouquets and winter weddings.

Hypericum ' Kolmatri Magical Triumph'
Like a ripe, juicy watermelon, this new rust-resistant selection has large, rounded lipstick-red berries from late summer into fall. The fruits contrast well with the deep green foliage. Hypericums fruit much earlier than hollies, so you can extend your holiday berries with 'Triumph'. Mix these with silver-leaved dusty miller and purple asters for a stunning fall arrangement.

Hypericum 'Kolmavi Magical Victory'
The fruits on this rust-resistant selection look like mini Granny Smith apples. Shiny and leaf green with a plump, round shape, they are sure to please even the most discerning customer. The fruits are incredibly showy, displaying well against the grass green foliage. Pair 'Victory' with purple flowers and foliage for a super stylish and trendy combo.

***Philadelphus* 'Snowwhite Fantasy'**
'Snowwhite Fantasy' (a.k.a. 'First Editions Snow White') is a versatile shrub with a wide growing range. The pure white, deliciously fragrant flowers are but one great attribute of this underutilized spring-flowering shrub. Attractive foliage on graceful, long arching branches guarantees this beauty easy placement in the garden and in spring bouquets. Deep green foliage makes a lovely backdrop for the bright white flowers.

***Symphoricarpos doornsbosii* 'Kolmprid Magical Pride'**
Snowberries make excellent cuts for floral arrangements. 'Magical Pride' is a well-branched, upright form with plump, dark pink berries that cluster along the stems. These long-lasting fruits make perfect accents for summer weddings and other festive occasions. When most other summer blooming plants are yellow and red, 'Magical Pride' adds dimension with its perfectly pink hues.


'Kolmali Magical Limelight'


'Kolmaref Magical Red Flame'


'Kolmatri Magical Triumph'


'Kolmprid Magicall Pride'


'Kolmavi Magical Victory'

Ageratum 'Red Flint'
Tall upright type with red flowers that is suitable for greenhouse or outdoor production. Nice specialty cut flower with good vase life. Height 24 inches.

Aster Bonita Series
Premium professional cut flower. Fully double inch-inch pompons are 100% colored all over. Plants exhibit a vigorous habit and the abundant flowers are held at a perfect angle of maximum impact. Has fusarium tolerance similar to 'Matsumoto'. Cut flower crop time about 15 weeks. Height 36 inches. Colors include blue, light blue, pink, rose, scarlet, white, and a mix.


Bonita Series


'Red Flint'

Calendula 'Tall Double Cut Flower Mix'
A mixture of many tall types spanning a range of bright colors, patterns and bloom types. Very diverse material for use in floral arrangements or for interest in borders and landscapes. Economical as field-grown specialty cut flowers and can easily be direct sown. Height 24 inches.


'Tall Double Cut Flower Mix'


'Sunny Reggae'

Dahlia 'Sunny Reggae'
From rich shades of oranges and scarlets to apricots and peachy bicolors, 'Sunny Reggae' adds a sunny color combination to floral arrangements. Large blooms with a second cluster of smaller petals around center like a collar for semi-double effect. It is an easily field-grown and long-flowering specialty cut flower. Height 20-25 inches.


'Spencer Mixed Stripes'

Sunflower Vincent Series
'Vincent' Sunflowers are pollenless and daylength neutral, giving growers a shorter crop cycle (8-10weeks) for faster production and better availability. Round, overlapping flower petals provide better-filled, attractive flowers. The five-inch flower heads form at a 45° angle on strong stems for pronounced presentation in arrangements. Small upper leaves and strong stems make it an excellent shipper. Stem length 5-6 feet. Varieties include 'Vincent's Choice', traditional deep orange with dark center, and 'Vincent's Fresh', deep orange with green center giving growers a crisp alternative.

Sweet Pea 'Spencer Mixed Stripes'
Formula blend of 'Spencer' striped and flecked bicolored sweep peas. The large, wonderfully ruffled petals make them a nice novelty cut flower for mixed bouquets. Vines to 6 feet.


Vincent Series


'Sugar Stars'


'Black Cumin'

Nigella 'Black Cumin'
Ornamental herb grown for its aromatic black seed used as a spice and medicinal purposes. The delicate "whitish" flowers with a slight bluish tint yield inflated seed capsules with five compartments, each topped by a spike. Dried seed pods add curiosity to mixed arrangements. Good field-grown cut flower. Height 18 inches.

***Phlox drummondii* 'Sugar Stars'**
Striking, novelty cut flower displaying striped flowers in shades of violet-blue with white starred centers. Showy and fragrant with tall stems and long vase life. Height 18-25 inches.

***Seseli gummiferum* moon carrot**
Large, white umbels up to 4" across are produced in succession above finely cut, silver-gray foliage. Blooms start pale lavender in young stage to show both colors on the plant then fade to white. Excellent novelty cut flower with long shelf life and tough stems. Short-lived perennial. Height 24-36 inches.


Cupcake Series

Zinnia Cupcake Series
Fully double, 2" blooms open into an unusual, fluffy crested flower form in several unique shades. Upright stems make them an excellent choice for field-grown cut flowers. Great addition as colorful filler among larger flowers and whole-plant bouquets. Height 30-32 inches. Colors include cream white, deep orange, pastel shades, pink, red, rose, yellow, and a formula mixture.

Zinnia 'Mazurkia'
This striking zinnia produces mostly double, bicolored three-inch flowers of scarlet red with petals tipped in creamy white. Sturdy, multi-branching plants grown to 30 inches.


'Mazurkia'

Aster Bonita Mix
Bonita Mixture is a nice complement to the Matsumoto series with lovely, fully double pompon flowers and rich color throughout the entire flower. Fusarium-toler¬ant plants flower about one week later than Matsumoto, allowing you to sow both series at the same time for a longer flowering period. Mixture of blue, light blue, pink, rose, scarlet and white. Height 30", 10-12" spread.


Bonita Mix


'Garland Orange'

***Daucus* 'Dara'**
This is intriguing novelty produces 4-5" flower panicles that are typical of carrot flowers, but with an intriguing color range of pale pink to dark purple. 'Dara' is an excellent choice for filler in mixed bouquets to lend an airy touch. Height 40-42"; 24-28" spread.


'Dara'

Marigold 'Garland Orange'
Cut flower growers have been requesting a tall marigold that is suitable for cutting to use in bouquets at farmers' markets and roadside stands. We believe this African marigold will fit the bill, with its tall stately plants and flower stems that are long enough to cut and arrange. 'Garland Orange' is a prolific bloomer, producing attractive 3½ to 4½" bright orange fully double flowers. Height 28-48", 30-40" spread.

Orlaya 'White Finch'
Here is an interesting novelty cut flower to add to your cut flower repertoire. Large 3½" umbels produce lacy white flowers with larger outer petals that offer an attractive appearance. 'White Finch' has a long vase life and is slightly fragrant for additional appeal. Height 14-16", 20-22" spread.


'White Finch'

Sunflower 'Helios Flame'
We have trialed this variety for a few years, and each time the flower color and cleanliness of the flower head impress us. A pollen-free sunflower, 'Helios Flame' produces golden yellow flowers adorned with a dark mahogany ring towards the center, and a clean dark disk. Tall sturdy stems and an excellent vase life make this new variety choice for cut flower production. Matures in approximately 45-50 days. Height 42-48", 10-15" spread.


'Helios Flame'

Sunflower 'Sunrich Summer Limoncello'
The Sunrich Summer series differs from the main Sunrich series in terms of timing and height. With maturity days at around 50-65 days, the Sunrich Summer varieties fall right in between the Sunrich (55-70) and Premier (45-55) series. This year new Limoncello joins Lemon and Orange, offering vibrant lemon yellow petals and creamy lemon tips w/dark disk. Height 48-54", 10-15" spread.


'Sunrich Summer Limoncello'

Sunflower Vincent Series
Vincent has been bred to be less sensitive to daylength, offering greater flexibility in programming and high quality stems and flowers for early, mid and late season sales. Better height is achieved under short days, yet plants will not grow too tall under long days. Our trials supported the breeder's claim of an extra ring of rounded overlapping petals that provide better flower fill for a more attractive appearance and a higher percentage of salable stems. Matures in approxinately 60 days. Height 60", 10-15" spread. 'Vincent's Choice' is golden orange with a pollen-free dark brown disk. 'Vincent's Fresh' is a golden orange with a pollen-free crisp green disk.


Vincent Series

Zinnia 'Macarenia'
Novelty sells, and that is what growers can expect with this interesting bicolor zinnia! Mostly double 3" flowers produce scarlet petals with golden tips. The strong plants exhibit excellent branching allowing multiple cuts. Height 25-30", 12-15" spread.


'Macarenia'

Tulip 'Evergreen'
Suited for outdoor or high tunnel cut flower production, these triumph tulips grow 18-20" tall with sturdy, long-lasting sturdy stems. They are able to withstand extreme spring weather, and bloom early to mid-spring. The unique green flowers (currently trendy) have soft yellow edges and are perfect for both arrangements and bouquets. Available in October 2015.


'Evergreen'

Parrot Tulip 'Victoria's Secret'
These beautiful tulips are suited for outdoor or high tunnel, greenhouse or forcing including cut flower production. The purple, velvety soft looking tulips work well in arrangements/bouquets as well as in mass plantings. They bloom mid to late spring and grow 16-18" tall. Available in October 2015.


'Victoria's Secret'

Asiatic Lily 'Lily Allen'
Suited for outdoor, high tunnel, or greenhouse cut flower production, these lilies are great choices for cutting gardens, bouquets and arrangements. They are of comparable character and habit to the popular Asiatic hybrid 'Brunello' (including forcing time of approximately 85 days), and grow to a height of 37-39". Available in January 2015.


'Lily Allen'

Dahlia Karma Fox Series
As an addition to the Karma dahlia series of vegetatively-propagated dahlias from virus-indexed tissue culture, we introduce the Fox varieties: 'Maroon', 'Orange', 'Purple', and 'Red'. Their ball-shaped flowers add a new form to this series that already includes cactus and decorative types. The Karma Series is characterized by its strong, uniform stems, upright flowers, long flowering period, and high productivity. The series is suited for both indoor and outdoor production. Depending upon where the Karmas are grown as cuts, 6 to 14 stems per square foot can be expected. This series (an ASCFG favorite) is a winner and a great return of your investment!


Fox Series


Antibes Series

Snapdragon Antibes Series
Gloeckner introduces four new series of greenhouse cut flower snapdragons, one for each flowering group; Antibes series Group 1, Avignon series Group 2, Cannes series Group 3, and Orleans series group 4. Each of these varieties displays improved vase life, stem quality, and flower form. Seeds in these series have a good germination rate and excellent vigor. The flowers stems have thick spikes, and flowers are spread over the full length of the spikes. Spike length is about 8 inches, and stems are strong and hard. Leaves are relatively small, and well divided over the entire stem until the first flowers of the spike. The vase life of each separate color is excellent. The following colors are available: 'Antibes'–magenta, orange, pink, red, rose, white, and yellow. 'Avignon' – magenta, pink, rose, and white. 'Cannes' – light bronze, orange, pink, red, rose, and white. 'Orleans'–pink, red, white, and yellow.


'Jaybird'


'Spectator'


'Tiger Specs'

Oriental Lily 'Jaybird'
This exclusive new release has nice light pink flower petals with deep pink center stripes and with a light raspberry color sprinkle touch. Excellent flower count can be achieved with the 16-18 bulb sizes. Flower buds do color up nicely for presentation in the bucket before opening.

Oriental Lily 'Spectator'
New, unique, and an exclusive Zabo Plant variety. This is by far the most unique and delicious looking Oriental stripe color flower introduced in the market. It has a good flower bud count when using the 16-18 bulb sizes. This flower color is just astounding.

Oriental Lily 'Tiger Specs'
One fantastic looking flower! A yellow center flows into a pink flame radiating with raspberry sprinkles, on a pure bridal white flower petal. We have been looking for this type of new hybrids for many years, as this type of look was common in the mild-century hybrids and early Oriental hybrids. We have now come full circle back to somewhat of a retro look in lilies due to improved breeding.

Oriental Lily 'Solution'
This is a new selection that has the potential become an ultimate staple flower in the North American cut flower market. The stem is very sturdy and it has plenty of flower buds in production from a 16-18 size flower bulbs. This variety has come through the breeding tests in Holland with high grades.

Asiatic Lily 'Dixie Jazz
This is one of the most exciting releases in the Asiatic hybrid line in recent years. Thinking for some time that Asiatic hybrids were to become a dying breed of lilium, then we get introduced to this beauty. Great color combination of raspberry and white, and great new option for floral designers. You can work with this variety in all 4 bulb sizes 10-12, 12-14, 14-16 and even 16-18. Zabo Plant USA has a few bulbs of these on their inventory list. 1 crate per grower is the limit.


'Solution'


'Dixie Jazz'


Desert Penstemon

Penstemon pseudospectabilis **(desert penstemon)**
A wonderful species adapted to growth in dry climates. Native to the Southwest United States, this lovely species grows to 2-3 feet tall with inflorescences held on three-foot stalks. Beginning in May, rosy pink flowers grace the blue green foliage. This species is a Plant Select® winner for 2015.

Salvia nutans **(nodding sage)**
Here is an unusual species with interesting nodding flower heads of a lovely intense violet blue beginning in June. The basal rosettes grow to about 18 inches with the graceful flowers towering to 4 feet or more. For zones 5-8.


Nodding Sage

A networking event for flower farmers, farmer-florists and designers with cutting gardens

Monday February 16, 2015
9:30 a.m. – 3:30 p.m.
Polly Anderson Field Station
Denison University
Granville, Ohio

Join fellow flower farmers from across the state of Ohio for a fun, informal "Meet-Up" on the grounds of Denison University in quaint Granville, Ohio. Don't miss this great opportunity to network with fellow flower fanatics, share ideas and tips of the trade, and get psyched for spring planting season! Space for this event is limited and pre-registration is required.
http://tinyurl.com/ohioflowerfarmers

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2014 ASCFG Cut F

John M. Dole, Ingram McCall,
Alicain S. Carlson, and Judy M. Laushman

This year's Trials could be summarized by the phrase "back to basics", since all the cultivars tested were typical specialty cut flowers: aster, celosia, delphinium, ornamental cabbage, marigold, snapdragon, sunflowers, and zinnias.

A classic garden plant and cut flower, marigolds are native to the Americas and have a long, rich history. Marigolds were used by the Aztec people, who also began breeding and selecting types for larger flowers. After Spanish explorers brought marigolds back to Europe, they became established there. Two main categories exist: "French", for the dwarf, "crested" types, and "African" for the tall, large-flowered types. The popularity of marigolds spread to Asian countries, where they became important in religious ceremonies and weddings. Back in Mexico and Latin America, marigolds became popular in All Saints Day and All Souls Day celebrations, October 31 to November 2.

Why has the marigold become so popular around the world? It has large, bright yellow to orange flowers, is easy to grow, and produces a ton of flowers—the same characteristics that make it a great cut flower. Of course, every cut flower has a drawback and for the marigold, it is the fragrance, or smell, as some members of our research group describe it. Some people love it and some hate. The scent/odor is most obvious during cutting when harvesters are enveloped in it. However, the fragrance is much milder and enjoyed by some when marigold flowers are used in arrangements and mixed into bouquets.

Of the five marigold cultivars in the trials, all from AmeriSeed, the highest ranked cultivar was 'Jedi Deep Gold' for its yellow-orange color, large flowers, and productivity—an average of 14 stems per plant with trialers reporting anywhere from 6 to 22 stems harvested per plant. Trialers also reported an excellent vase life of 11 days, and stem length averaged 18 inches, with a range of 12 to 36 inches. The other four cultivars, 'Babuda Gold', 'Babuda Yellow', 'Jedi Gold', and 'Optiva Orange', were also very productive and produced similar stem lengths. 'Jedi Gold' had strong stems at our trials, but the color was only a shade lighter than "Jedi Deep Gold'. One trialer called both Jedi cultivars a "workhorse flower in bouquets".

One of the mainstays of cut flower production, the zinnia's broad range of colors has made it a versatile and popular cut. We have trialed many new zinnia cultivars over the years and this year we had one of the most distinctive series seen in the trials. The elongated disk florets characteristic of the Cupcake series (Gro N' Sell/Floragran) create a very different look. Vase life was good and plants were productive. Unfortunately, the "cupcaking" trait showed up in only a small percentage of the flowers. The majority of the blooms were attractive, but unexceptional, single flowers. The other potential problem is that the flowers were small, smaller even than the Oklahoma series. This flower type is available under other names in the trade at other companies. So, is it a good cut flower? Let's say it is a great start. If the cupcaking trait could be made more prevalent and/or the flower size increased, it would be a blockbuster. At this point it is a lovely curiosity that will work for some growers.

lower Seed Trials

All three celosias in the trial were uniform and very productive, producing an average of 10 or more stems that were 18 inches or longer. 'Sunday Yellow' (Kieft Pro-Seed) was the top scoring cultivar with a plume color variously described as shimmery yellow or light orange. While some growers wished the stems were longer, another grower wrote that his problem with it was that he "didn't have enough". The companion cultivar 'Sunday Orange' was awarded the ASCFG Fresh Cut Flower of the Year last year. 'Celway Red' and 'Celway White' (Kieft Pro-Seeds) had smaller plumes that were closer in style to wheat celosia. 'Celway Red' was a knockout with its rich rosy-red color and burgundy foliage. The "neutral" color of 'Celway White' was a positive for many trialers, less so for others that noted the heads turned brown too quickly.

Would it be an ASCFG National Cut Flower Trials without sunflowers? Well, we won't have to answer that question for at least one more year. There were two classically colored sunflower cultivars in the trials this year: 'Jua Maya' and 'Jua Inca' (PanAmerican Seed). 'Jua Maya' had dark brown centers with golden yellow petals, and 'Jua Inca' was a golden/rusty bicolor with brown centers. Both were uniform, consistent, fast to flower, and not sensitive to short days, according to Chris Wien, Cornell University, who performs the sunflower photoperiod testing. Flower heads were small to medium size on short stems—short for a sunflower anyway. Trialers recorded stems lengths of 24 to 63 inches, with an average of 30 to 34 inches. In the olden days, we would have heralded two cultivars that were so good, but these days with many excellent cultivars available, it is harder to get noticed.

We had only one snapdragon cultivar in the trials this year—'Calima Deep Pink' from Sakata. The cultivar was a "beautiful bubblegum pink color" according to one trialer, and it had strong stems, averaging 18 inches, with some trialers getting up to 32-inch long stems. Many growers grew them as single stems, and others pinched to get up to 14 stems per plant.

Asters are a difficult field crop for many growers due to their sensitivity to aster yellows disease, which is mainly a problem in the center of the United States, and exacting photoperiod requirements—long days followed by short days. So it was nice to see an aster, 'Bonita Light Blue' (Sakata), score so well in the trials. One trialer stated that it was the "best plant in the trial". Trialers reported an average of 7 stems per plant, but the number includes some who harvested the whole plant as one stem, and others who got up to 16 stems per plant. A couple of trialers also commented that they not only cut multiple stems per plant, but all at the same time. Stem length ranged from 10 to 36 inches, with an average of about 20 inches, very nice for a field aster. To prevent aster yellows, one trialer reported excellent results by covering the plants with row cover to prevent leafhoppers, which transmit the disease, and then taking off the cover just as the plants started to flower.

In summary, we had 21 cultivars from five companies. Based on trial results, the top five commercially available performers are automatically nominated for the ASCFG Cut Flower of the Year. The rankings are based on the combined ratings score: market appreciation + repeat again + ease of cultivation. Thus, from the 2014 trials, aster 'Bonita Light Blue, celosia 'Celway Red' and 'Sunday Yellow', marigold 'Jedi Deep Gold', and zinnia 'Queen Lime' are nominated for the Cut Flowers of the Year and will join other nominations from ASCFG members.

Interpreting the trial results: The numbers reported are averages of all the respondents. Many factors will affect the success of any plant species. Our participants are growing and harvesting the trial plants in a wide variety of ways. After looking at the average, check the range of responses listed below each number to see how the cultivar performed at its best and its worst. If the range of responses in the ratings is narrow and high, i.e., 3-5 or 4-5, the plant was a winner for most of the respondents and is likely to do well for you. The 'Repeat Again Rating' is particularly important because it indicates if the trialer would take the time, money, and space to actually grow the cultivar again. Review the trial results carefully. If a cultivar sounds interesting but did not appear to do well, try it anyway. The cultivar may work well for you.

Acknowledgments: A hearty thank you to all of the 18 evaluators who returned their trial reports, and to the seed companies for providing such great cultivars. Congratulations to Nanette Dietmeyer for being the first trialer to return the evaluations. We would also like to thank Kendyl Finley, Logan Haislip, and Christiane Martins for assisting with the NCSU trials. In preparing the report we did a bit of editing of the comments for space and clarity; apologies if we've altered the tone or content of anyone's comments.

Participating Seed Companies

AmeriSeed
Lompoc, California
www.ameriseed.com

Gro 'n Sell Floragran
Chalfont, Pennsylvania
www.gro-n-sell.com

Kieft-Pro-Seeds
Venhuizen, Netherlands
www.kieft-pro-seeds.com

PanAmerican Seed
West Chicago, Illinois
www.panamseed.com

Sakata Seed
Morgan Hill, California
www.sakata.com

Participating Growers

Cynthia Alexander
Quarry Flower Farm
Celina, Texas

Leon Carrier
PlantMasters
Laytonsville, Maryland

Tanis Clifton
Happy Trails Flower Farm
Dennis, Mississippi

Connie Dam-Byl
William Dam Seeds
Dundas, Ontario

Nanette Dietmeyer
Fox Ridge Flowers
Buckner, Kentucky

Dave Delbo
Dave's Flowers
Elysburg, Pennsylvania

Michelle Elston
Roots
Carlisle, Pennsylvania

Peggy Huff
Johnny's Selected Seeds
Winslow, Maine

Barb Jewell
Island Meadow Farms
York, Prince Edward Island

Ingram McCall
John Dole
North Carolina
State University
Raleigh, North Carolina

Carrie McCann
Fernrock Farm
Hillsborough, North
Carolina

John Milligan
Prickly Pair Farm
Round Rock, Texas

Lynn Rapp
Cultivating Joy
Oreland, Pennsylvania

Carolyn Snell
Carolyn Snell Designs
Bar Mills, Maine

Rodger Tschanz
University of Guelph
Trial Garden
Guelph, Ontario

Cheryl Wagner
Wagner's
Homestead Farm
Belleville, Michigan

Chris Wien
Cornell University
Ithaca, New York

Susan Wright
Shady Grove Gardens
Vilas, North Carolina

Summary of Comments

The number in a parenthesis refers to the number of respondents who made the comment. If no number is present, only one person made the comment. Comments by each individual are separated with a semicolor (;). Note: many respondents did not make specific comments on each cultivar and in some cases, comments have been shortened because of limited space.

ASTER

Aster 'Bonita Light Blue' (Sakata)

Good Qualities: Good color (5), different than other darker blues; Long, strong stems (3); Uniform flowering bloom time, spray habit; Good double flowers, even colour; Healthy plants, only one wilted, can cut the entire plant, used a lot in bouquet work and arrangements, liked the shape, size, and colour of this aster, plan to grow in 2015, really like this series from Sakata; Taller than Matsumoto, can harvest whole plant as one branchy spray; Gave a "pop" to mixed bouquets.

Problems: Aster yellows (2); Most plants died in the field, it's too hot here; Bug and disease problems, must be grown covered here; I did not have a good germination rate with this plant, I did not get any seedlings that lasted long enough to plant; Aster rust.

Similar Cultivars: 'Matsumoto Light Blue' (4); Other Bonita colors.

Postharvest Recommendations: Clean water, fresh cut (2); Flower preservative and cold water.

Comments: Best plant in the trial (2), florists loved them, cut whole plant at one time, already had seed ordered to grow this variety, I will definitely grow again; Covered the asters with row cover to prevent disease spread by leafhopper, I took the cover off just as they started to bloom and had excellent cut flowers; 6 x 6 inch spacing; We cut the whole plant, so that is why we only listed one stem, the colour seems deep for a light blue, but we were cutting it as the days got cooler, which might affect the shade, sadly, the deer also enjoyed this variety; Would make several sowings to extend the bloom period; Nice aster!; Nice addition to bouquets, like the branching of the plant, full branches fill up a bouquet quickly; Never grew to fruition, succumbed to aster yellows; I did not use any different techniques with theses seeds so I'm not sure if I had bad seeds or what.

CABBAGE

Cabbage 'White and Pink Center' (Sakata)

Good Qualities: Strong stems (3); Good germination rate (3); Color (3); Very useable size (3), other flowering cabbage I have grown have been too large to use in arrangements; Vigour, liked the interesting markings and the different, oblong-shaped central leaves, definitely a change from the usual Crane varieties, not as much insect damage with this variety compared to 'Lucir', the latter must be "very tasty"! significant insect damage on it, but it has some lovely traits; Late season, long vase life, ease of growing; Sort of a tie-dyed look, great for fall bouquets, arrangements, centerpieces; Sturdy growth.

Problems: Cabbage worms (4); Other cut flower kale varieties we have in trial are nicely flowered, but this variety has mostly cabbage-like heads; This cabbage is taking WAY longer to color up (over a month longer) than the Crane series and 'Lucir White', to date (11/4) we still have no pink color despite many nights at 38-40 degrees in the high tunnel, all other cabbages have had good color for over 3 weeks; Would have liked longer stems, have had the same problem when I've grown other cabbage cut flower types, the heads are large and I find it difficult to use too many in a mixed bouquet; Not really a problem but I did find this variety grew a lot larger than the other varieties I typically grow, they seemed to be extra large, which is fine if that's what you are needing, they were planted the same close spacing as the others, and they still grew bigger than I would feel comfortable putting into a bouquet, both the top bloom and the stem diameter, therefore I would recommend it for larger arrangements, will probably grow again as I enjoyed the change in foliage; Direct sown late in the season, never showed

Aster 'Bonita Light Blue'
photo by Christiane Martins

pink, just white centers, even with very cold weather, needs two levels of support, planted one per six-inch square caused large flower heads, plant 2 or 3 per square; Eaten by animals; Ours were a bit short, but we planted them in our later planting of kales, and they still got nice sized (medium) heads on them; We planted them at 6 x 6 inch spacing, but still had 43% forming heads, color development was late or not at all, those that showed a little white had no pink color developing, other varieties like 'Lucir White' and 'Lucir Red' had no problem forming good color in the same trial.

Similar Cultivars: Crane Bicolor.

Postharvest Recommendations: Chrysal OVB; Flower preservative and cold water; Plain water; Clean cut, fresh water, remove outer leaves if beginning to yellow; Chlorine pill to minimize odor.

Comments: I accidentally planted the seedlings in the hoophouse, they grew very well but since I don't use any pesticides, the bugs demolished them, and I wasn't able to use any of them; Grew in high tunnel with all other cabbages on 6-inch spacing; Started seed 7/15, bumped to 72 tray on 7/22, transplanted to hoophouse with shade cover in August to prevent cabbage worm problems, they did not put on

much growth even when days became short, maybe a soil problem, fertility, not sure, no harvest; Nice addition to bouquets, color was nice; Will grow again, but will watch spacing very closely to avoid large bloom and keep fertilizer at a minimum; As of October 12, no pink center, leaves turned more of a light yellow instead of white, still nice coloring; Great plant except for lack of pink center coloration; Transplanted 9/9/14 at 6 x 6 in. but no useable stems; Would like to give this another try and see what it looks like; Nice kale!

Celosia

Celosia 'Celway Red'

(Kieft-Pro-Seed)

Good Qualities: Great colour, deep pinky-red (8); Good branching structure (3); Strong stems (3); Productive (2); Good filler flower (2); Generous stem length and abundance of blooms, found 'Celway Red' very useful, a consistent go-to in bouquet making, lasting well both in the field and bouquet; Great foliage color; Very uniform maturity, fast from transplant to harvest (plant in field 6/23, harvest 8/18); Modest size for smaller bouquets if pinched; Dark red stems and leaves; Mid height plants; Stem length, great for drying and mixed bouquets; Long vase life, interesting "spiky" texture, florists like unique texture and color.

Celosia 'Celway Red'

Problems: Didn't seem to last as long as my other celosia in the field; Over very fast - all ready at same time so needs to be used within one week, lower part turns brown if not harvested at optimum time, side shoots are too short for our use, pinching may produce more uniform, usable stems; Poor germination, fungal disease; Nice color, but burgundy, not red; Not a clear red, more of a dark red; The relatively thin plume-type flower is not impressive, stem length could be longer; Very short.

Similar Cultivars: Other Celway cultivars

Postharvest Recommendations: Remove leaves (2); I do not put my celosia in the cooler, find it does not appreciate 38 degrees, I leave at room temp, cut only as required, using #2 holding solution; We cut all celosias into Chrysal OVB; Chrysal Pro2; I use a flower preservative and cold water; Floral preservative.

Comments: Next year I would cut out the central stem to encourage nice sides, found the central bloom will turn brown, due to age, perhaps if this was removed earlier, it would be prevented and encourage more consistent sides; I liked this celosia, the color was different than the other red celosia, it seemed to have a shorter life span preharvest than the other celosia though so I didn't get to use a whole lot of it; Successions would be very important since it's ready so uniformly; Only had a few seedlings survive, those died in the field; 6 x 6 in. spacing; Direct seeded in field, shorter "feathers" than the 'Celway White'; The Celway series is an easy source for abundant filler material for our bouquets; Very short, however, I believe that was my problems not necessarily the seeds - first, seeded 4/28 and did not transplant until 7/1 so it was root bound, second, I transplanted into a bed that we had just established in the winter after clearing a pine forest, the soil was heavy clay, nonamended and most likely heavily acid, the blooms went to seed before I could harvest.

Celosia 'Celway White'

Celosia 'Celway White'

(Kieft-Pro-Seed)

Good Qualities: Good neutral green-gray color (7), the neutral colour highlights the focal flowers in bouquets; Amazing number of stems (4); Long stems (4); Great textural element for bouquets (3); Strong stems (2); This plant is "whiter" than the palest celosia I've used in the past, it's not really white though; Uniform bloom time; Great germination, Long-lasting filler; Bees liked it; Staying quality in the field; Nice filler material; Easy to grow, dries nicely.

Problems: Flowers were off-white and turned brown very quickly (8); I found the color to be unimpressive - it faded into oblivion in my floral arrangements; it is good as a filler, but I don't think that's what you want from celosia, I probably

wouldn't grow it again; Longer spindly 'feathers' than the red; Flower is an aggregate of short, plump plumes that are light green, not white, stem length could be longer; Later to flower than 'Celway Red' by 5 days; Short side shoots.
Similar Cultivars: Other Celway cultivars, 'Sunday Yellow'.
Postharvest Recommendations: Strip as many leaves as possible; Chrysal Pro2; Floralife; I use a flower preservative and cold water; Floral preservative or just water. See also postharvest article in this issue for more information.
Comments: Suggest pinching or cutting out central stem to allow for even sides, also the center will brown up if left too long, I will definitely be growing again, I had it on my own seed order for 2014, so we had a nice amount, and it did not disappoint; It's a different colored celosia but I found it hard to fit in my colorful arrangements, since it's not really white it didn't fit in well with my white arrangements either; We prefer stronger, more saturated colors, this is way too pale, yet not white; 6 x 6 in. spacing 7/7 transplant date; Least favorite variety in the seed trials; This has a tighter flower habit and a lot more foliage than 'Celway Red'. The Celway series is an easy source for abundant filler material for our bouquets.

Celosia 'Sunday Yellow'
(Kieft-Pro-Seed)

Good Qualities: Nice shimmery yellow (9); Productive variety (2); Great stem length (2); Very uniform plants in habit and bloom time; Good head size, beautiful feather shape like 'Forest Fire' and other Sunday series, reblooming late (10/10) with shorter stems, good for vasework; Full stems; Excellent filler, plants were vigorous and healthy; Broad, showy plume, well extended above the foliage; This one sold on its own as a bunch; Strong stems, great for drying and mixed bouquets; Easy to grow, great plume flower.
Problems: Looked "dirty" quickly as it aged (3); Plants are not strong enough to hold up the stems, the plants have fallen over, larger center flower, pre-harvest life seemed to be shorter than other celosia; Not quite as full and large of a head as 'Sunday Orange', since head is not quite as dense, we prefer a bit taller stems, some selection could possibly yield this, direct seeding may yield taller blooms; Foliar disease; Plants should be taller, Didn't have enough.
Similar Cultivars: Other Sunday cultivars.
Postharvest Recommendation: We harvest all celosias into Chrysal OVB; Strip as many leaves as possible, cooler for storage; I use a flower preservative and cold water; Floralife; Floral preservative. See postharvest article in this issue for more information
Comments: We'll try pinching next year, center bloom was not as nice as side shoots, plus side shoots will hopefully be longer (2); I did not find the color or plant much different from what is currently available; We've been selecting our own celosias for several years now, I think some selecting for longer stem length would be helpful, we'll definitely be saving seeds of this one!; Great color; We found this colour to be more golden than yellow; As with all my flowers, we do not irrigate, once they are planted in the field, through black biodegradable plastic, they are netted and basically on their own, they survived a dry July and made up for it in the wetter than usual August, for this reason, I will plant them again, they seemed to be forgiving of harder conditions, also the only pests they seemed to attract were some late season aphids - we are surrounded by potato and grain fields, when these are harvested, they tend to come looking for my suns, snaps, celosia and peppers, we did spray occasionally with Bravo fungicide and Desis or Admire for the aphids; They reminded me of little paint brushes!; The large size heads were a nice filler in bouquets and the color was very nice.

Delphinium

Delphinium 'Blue' (Sakata)

Good Qualities: Nice bright shade of blue (6), a bit lighter and brighter than belladonna; Airy plants; Awesome for mini bouquets; Good germination rate; Stem length, strong stems; Prolific bloomer, easy to grow, great for farmers' market sales.
Problems: Very short (6); No valuable stem production, in southern Pennsylvania, delphiniums do much better if fall planted, our summers get too hot too quickly for field-grown delphinium to perform well; Does not compete well with weeds, short harvest window; No useable stems, maybe planted out too late; Planted prior to hot dry spell most died upon transplant in spite of watering, these are better sown in summer for fall and spring bloom.
Similar Cultivars: 'Belladonna', see above; Short version of 'Butterfly' delphinium or 'Energy Blue'; 'Morpho Grand Blue'.
Postharvest Recommendations: I use a flower preservative and cold water; For longest vase life, harvest when top flower has opened and all other flowers are still in bud, all other flowers will color and open in postharvest.
Comments: I would definitely try this one again as a fall planted crop—color and form were nice; We had poor germination, but this might have been our problem, not a reflection on the variety; Nice to have a few in the mix, but will not be replacing 'Belladonna' any time soon; 9 x 9 inch spacing, good germination and strong seedlings; I had terrible germination with these seeds even with cold stratification, the few seedlings that I did get did not produce much, I am hoping they will come back next spring; This is too short for cut flowers, compact plants are best suited for landscape or container production; Didn't start them in time so seeded a month ago for the hoophouse; 1/16 seeded and cooled for 2 weeks, 2/6 placed on germination heat mat, transplanted to 72 tray on 2/20, transplanted plugs to hoop house, however, they were very frail plugs, they did not make it....total fail!

Delphinium 'Light Pink' (Sakata)

Good Qualities: Nice blush color (3); Good germination rate; Stem length, strong stems; Blooms over a long period of time.
Similar Cultivars: 'Morpho Happy Pink'.
Problems: Very short (5), most were not long enough to cut; Very pale, washed out pink color (2); Here in Pennsylvania, field delphiniums do much better if fall planted, our summers get too hot too quickly for them to perform well; Poor germination; Does not compete with weeds; Planted prior to hot dry spell, most died upon transplant in spite of watering, these are better sown in summer for fall and spring bloom; Okay for farmers' market.
Postharvest Recommendations: I use a flower preservative and cold water; Longest vase life if harvested when top flower is showing color but all other flowers are still in bud, buds will color and open in postharvest.
Comments: A good color if you need more blush flowers for boutonniere work or floral gowns or very short bouquets, otherwise, I'd skip this one; 9 x 9 inch spacing, slightly weaker than 'Blue; Didn't start them in time so seeded a month ago for the hoophouse; 1/16 seeded and cooled for 2 weeks, 2/6 placed on germination heat mat, transplanted to 72 tray on 2/20, transplanted plugs to hoophouse, however, they were very frail plugs, they did not make it....total fail!; Easy to grow, continued to bloom up to a hard frost; This is too short for cut flowers, compact plants that are best suited for landscape or container production, spur less; I had terrible germination with these seeds even with cold stratification, the few seedlings that I did get did not produce much, I am hoping they will come back next spring.

Marigold

Marigold 'Babuda Gold' (AmeriSeed)

Good Qualities: Nice golden yellow color (5); Very productive (3); Large blooms (2); Excellent vase life (2); Easy to grow (2); Good stem length (2); Fragrance, good branching; Has round fully double flowers; Good germination rate; Good in bouquets; Nice useable marigold; Strong stems.
Problems: Fragrance (3), overpowering when processing; Short branchy stems, very few long enough to cut; Japanese beetles liked it; Shorter than Jedi series, stems slightly weaker than Jedi, did get leaf spot a bit earlier than Jedi late in the season (late September); None; Stems were very short even after pinching, we started harvesting in August and then the rains came, all cultivars got botrytis after first harvest, stem neck too thin for size of flower head, heads often caused stem to bend and break.
Similar Cultivars: 'Jedi Gold'; 'Babuda Yellow'.

Marigold 'Babuda Yellow'

Postharvest Recommendations: Clean water (2), fresh cut; Strip leaves; I use a flower preservative and cold water; Floralife; Cut into Chrysal OVB, transfer into Chrysal holding; Chrysal Pro2. See also postharvest article in this issue for more information.
Comments: Marigolds are a tough sale for me, I did cut some of this variety Started 4/22, transplanted 5/7 spaced at 18 x 18 in.; For all the marigold varieties trialed, our customers were not eager for straight bunches, these were fine as part of mixed bouquets; If only 'Babuda' existed, it's a perfectly good marigold, 'Jedi' just seemed taller & stronger with same good gold color and abundant blooms, we grew all marigolds on landscape fabric and netted with a double layer of Hortonova, they held up beautifully; This variety was not different than what is currently available, stem length and color were good; Workhorse flower in bouquets; Nice addition to bouquets, color was nice, large flowers.

Marigold 'Babuda Yellow' (AmeriSeed)

Good Qualities: Beautiful sunny yellow (7); Big producer (2); Very uniform and compact plants; Fragrance; Perfect for mixing in bouquets, great round, double flower shape; Easy to grow; Great for mid-season work when you don't want orange/gold of other varieties, good repeat blooms; Lights up our bouquets; Strong stems.
Problems: Fragrance (3), overpowering fragrance when processing; Stems weaker than other cultivars (2) ('Jedi Deep Gold', 'Jedi Gold', 'Babuda Gold'); Short branchy stems, very few long enough to cut; Majority of plants have short stems with flowers beneath the foliage, the shortest of the marigold trials; Japanese beetle magnet; Got leaf spot the earliest of all marigolds, more stems seemed to flop compared to other varieties; Yellow doesn't seem to get as tall or produce as well as the orange or gold

colors, it also seemed to start browning up earlier in the fall than the orange and gold colors; None.
Similar Cultivars: 'Babuda Gold'.
Postharvest Recommendations: Clean water, fresh cut; Strip leaves; I use a flower preservative and cold water.
Comments: 'Babuda Gold' and 'Yellow' have very similar colors, marigolds are a tough sale for me; Started 4/22, transplanted 5/7, spaced at 18 x 18 in., All of our African type marigolds are loved by Japanese beetles; Our customers were not receptive to straight marigold bunches, these were fine in mixed bouquets; We like this one for early to mid-season, it definitely minded the cold nights more than the orange and gold ones and declined most quickly; This variety was very similar to what I already grow, good color and stem length; Workhorse flower in bouquets; Nice addition to bouquets, color was nice, large flowers, I have noticed that the gold color is especially attractive to customers; overall the plant grows better for me than the yellows I have grown in the past.

Marigold 'Jedi Deep Gold'
photo by Christiane Martins

workhorse of our September supermarket bouquets, nice branching, taller than Babuda series, our favorite of the gold marigolds, just slightly more orange than 'Jedi Gold', which was nice in fall bouquets, strongest of marigold varieties, last to get leaf spot in late fall; Good producer.
Problems: Fragrance (3), over-powering when processing; After days of mid-August rains, plants succumbed to botrytis, head too heavy for stem neck; None; Slower to flower than 'Jedi Gold' by 7 days; Japanese beetle magnet; Need to harvest when tight, or else necks will break, didn't seem to have quite as much rebloom as 'Jedi Gold' (but maybe just because we cut it the hardest since we liked it the most).
Similar Cultivars: 'Jedi Gold'; As tall as 'Optiva Orange'.
Postharvest Recommendations: Chrysal Pro2; Clean water, fresh cut; Cut into Chrysal OVB, transferred to Chrysal holding solution; Floralife; I use a flower preserver and cold water. See also postharvest article in this issue for more information.
Comments: Harvested a full week after all other cultivars trialed (74 days after transplant); I found myself cutting more of this marigold than the other colors, it is different and it looks good in arrangements, I will definitely grow this variety again; Marigolds do not sell well for me, probably should have pinched; Started 4/22, transplanted 5/7, spaced at 18 x 18 in.; This colour was slightly darker than 'Jedi Gold', not a huge difference; Our customers were not receptive to straight bunches, these were fine in mixed bouquets; Nice plants, great for landscape plantings and a good cut, yellow marigolds are sometimes a hard sell; Our favorite of the golds!; This was a great color and a joy to harvest!; Color was nice, large flowers, gold color is especially liked by customers, easily blends with many colors for bouquets, I think the Jedi series bloomed late into the season and didn't brown as quickly as the Babuda series did this year with all our rain.

> "I have noticed that the gold color of 'Babuda Yellow' is especially attractive to customers; overall the plant grows better for me than the yellows I have grown in the past."

Marigold 'Jedi Deep Gold' (AmeriSeed)

Good Qualities: Strong stems (4); Great color (3); Stem length was good also: Stems are longer than 'Jedi Gold'; Fragrance; Nice large flower head; Excellent vase life; Easy to grow; Tallest, sturdiest and best yellow of the trial; Very tall, strong performer, good second and third cuts from plants we transplanted into the field 7/1 and they were the

Marigold 'Jedi Gold' (AmeriSeed)

Good Qualities: Nice yellow color (3); Strong stems (3); Very tall (3), taller than Babuda series; Large-headed flower; Fragrance; Big flower; Great vase life, has long strong stems; Easy to grow; Nice; strong performer, good second and third cuts from plants we transplanted into the field 7/1 and they

Marigold 'Optiva Orange'

were the workhorse of our September supermarket bouquets, nice branching, good; Good producer.

Problems: Fragrance (3), overpowering when processing; Head too large for small stem neck; None; Plants fell over creating crooked stems; Late and low production, poorer heads, top heavy, shows age easily; Lots of beetles; Little color difference from 'Jedi Deep Gold', but slightly more yellow (especially as nights got colder), needed to be harvested somewhat tight to prevent neck from breaking.

Similar Cultivars: 'Jedi Deep Gold'; Similar height and vigor to 'Optiva Orange'.

Postharvest Recommendations: Chrysal Pro2; Clean water, fresh cut; Cut into Chrysal OVB, transferred to Chrysal holding solution; I use a flower preserver and cold water.

Comments: Rains caused botrytis to set in, only got about one harvest, all subsequent blooms browned and were small; I did not find this variety to be any different from what is on the market now, it had nice big flowers and stems that were long enough to use in arrangements, seemed to have a short blooming cycle meaning that this variety died back rather quickly; Only marigold in the trials to fall over; Started 4/22, transplanted 5/7; Colour is not much different than 'Jedi Deep Gold'; Good production, sales just okay; We love the Jedi series! excellent yellow/gold marigold; This comment goes for all 6 marigolds in the trial I think marigolds are enjoying a comeback of sorts, they are trendy, bold, herbal, and they last, we also dried the bunches that didn't sell and they are a welcome color after frosts, my wife commented the other day that they were selling better than the fresh ones!; Color was nice, large flowers, gold color is especially liked by customers, easily blends with many colors for bouquets, I think the Jedi series bloomed late into the season and didn't brown as quickly as the Babuda series did this year with all our rain.

Marigold 'Optiva Orange' (AmeriSeed)

Good Qualities: Excellent bright orange color (7); Stems were long enough to use in arrangements; The tallest marigold in the trials, good branching, fragrance, large blooms; Very productive; Double flower; Easy to grow; Good stem length, larger ruffled heads than 'Jedi Orange'; Tall and vigorous plants, good repeat bloom, and branching perfect for fall bouquet work—this is our favorite marigold!

Problems: Fragrance (2); Japanese beetles love this (2), but are easily controlled; None; Late producer, didn't bloom before end of season, heavy plant falls over if not netted, heads sometimes pulled off if not careful when harvesting; Sometimes center shoot is weak (like all marigolds) and benefits from being cut out; First cut was nice and large, next blooms were much smaller, this was the shortest overall plant and also stem length.

Similar Cultivars: 'Babuda Orange'; 'Jedi Orange' is taller with smaller blooms, but straighter thinner stems.

Postharvest Recommendations: Clean water, re-cut stems; Cut a bit tighter to avoid stem breakage, we cut all marigolds into Chrysal OVB, then into Chrysal holding solution; Floralife; Chrysal Pro2. See also postharvest article in this issue for more information.

Comments: I did not see much difference in this variety and what is currently available; Marigolds are a tough sale for me, I did cut and sell a few of this variety; Started 4/22, transplanted 5/7; All of our African type marigolds were loved by Japanese beetles; All varieties tested were easy to grow, all had problems with beetles, will grow marigolds again and use varieties tested, will reduce number of plants grown since not highly marketable as bunches; Great for mixed bouquets, bulk buckets, and wedding garlands; Will grow again for Indian-themed events for orange pompom garlands; This is our favorite marigold! very slightly weaker stemmed than Jedi, but you can't beat the bright orange color; This comment goes for all 6 marigolds in the trial, I think marigolds are enjoying a comeback of sorts, they are trendy, bold, herbal, and they last, we also dried the bunches that didn't sell and they are a welcome color after frosts, my wife commented the other day that they were selling better than the fresh ones!; Lost this variety early in the season due to a late frost, I thought I could get some plants out early and lost them; Pinched ALL five marigold cultivars, botrytis in all 5 varieties, only harvested for approximately 3 weeks before they succumbed to the disease.

Snapdragon

Snapdragon 'Calima Deep Pink' (Sakata)

Good Qualities: Beautiful vibrant colour (12); Strong stems (3); Stem length (2); Prolific, easy to germinate and grow; Florets are spaced closely on the stem; I always sow snaps at least 3-4 plantings per growing season, we had a very dry July

here (no irrigation), followed by a warm, wet August, my best snaps were mid July (typical for us) and again mid to late September, still harvesting 'Calima Deep Pink' on Oct 25, used several blooms in bridal bouquets, like the fact that it was tolerant of wet cold weather, had at least 6-8 stems per plant, and came back with more blooms suitable for bouquets; Color held well in heat, plant survived in field through summer, then rebloomed in early fall, however, pink was not as useful a color in fall as it was in late spring; Tall, upright stems, tight flower; Great form; Nice sturdy stems, good timing of bloom; Uniform growth, maturity, color, etc. fast bloom time - plant in field 5/6, begin harvest 6/10, excellent second flush of blooms 7/29 - we did have a cooler than normal summer for Pennsylvania, over 70% of second flush were marketable stems, this is unusual for field-grown snaps.

Problems: Germination; Medium pink with yellow throat—expected a darker deep pink, stem sturdy, but still needed netting; Variable heights and flowers seem to pass quickly; Seedlings slightly weaker than other snaps, used 9 x 9-inch spacing; Aphids; Not a popular color for me this year, requires netting for straight stems; None!; Needs to be staked otherwise they fall over and bend.

Similar Cultivars: A lot of the snaps have similar traits; 'Potomac Pink'; Similar color to 'Opus Pink', but faster time to bloom and more uniform.

Postharvest Recommendations: Floralife; I always treat snaps with Chrystal AVB, then put in #2 holding solution until sold, find snaps have better postharvest life in July and September, find August the stems are softer, and don't hold up as well; Careful to stand upright so stems don't bend; I use a flower preservative and cold water; Chrysal Pro2; Clean cut, fresh water; We harvest all snaps into Chrysal OVB. See also postharvest article in this issue for more information.

Comments: Will grow again, had 'Calima Ivory' and 'Deep Rose' as well, all consistent in bloom time, 'Calima Deep Pink' very similar to deep rose, a shade or two lighter, so close I would not grow both colours, either deep rose or deep pink but not both; Nice addition to bouquets, color was great and customers liked it a lot, large heads; 140 out of 200 germinated, unpinched stems harvested one week earlier than pinched, unpinched were large while pinched were smaller, but more stems per plant, harvested multiple times until plants succumbed to aphids, treated with organic "Worry Free" insecticide, but it was not enough; We loved this snapdragon and will definitely be trying more Calima colors, its uniformity and vigor were better than snaps we traditionally field grow (Opus, Rocket, Chantilly, Maryland); These were large, full-blooming snaps that I grew in the hoophouse, they also are reblooming in September, I loved the shade of pink, would definitely grow again and stake so that they grow straighter.

Snapdragon 'Calima Deep Pink'
photo by Tanis Clifton

Sunflower

Sunflower 'Jua Inca' (PanAmerican Seed)

Good Qualities: Color (3), consistent bicolor with rusty corona around black disk; Early blooming sunflower (4); Very vigorous germination, all heathy, no deformed seedlings, excellent germination, all sowed into 200 cell Speedling trays, first sowing May 20, bloomed July 22-25, very uniform; Stem length, strong stems, and mixed bouquets; Small flower heads; Sturdy; Good height-over 5 feet, but I didn't measure, just cut the stem length I needed for mixed bouquets; Upward facing, some even faced up toward the sky, shorter than most other one cuts I've grown; Bicolor with broad darker petal bases, petals relatively short and broad, standard maturity and conventional height, insensitive to daylength in our seedling screen test; Neck does not bend, strong stem, no petal drop, best bicolor we've ever grown, direct seeded 6/17 and harvested 8/6 - strong uniform flowering and bloom time, excellent germination, nice head size—5-6 inches; Good sized sunflower heads that were useable in arrangements; Love the bronze striping in the center, short crop time—59 days from May 14 seeding.

Problems: None (3); Varying shades of color, some are red/gold bicolor, solid yellow or yellow petals with varying shades of red streaks; Shorter and thinner stems than other cultivars at a similar spacing; Critters love to eat these; Center black disk oozed droplets of sap occasionally; Flower size is a little small, did not respond to short days, seeded second crop on 9/18 and transplanted in hoophouse on 10/5, as of 11/22 transplants are very small and just starting to form a bud on very short stems.

Similar Cultivars: 'ProCut Bicolor'

Postharvest Recommendations: I use a flower preservative and cold water; Remove all leaves except small collar leaves; Cut into Chrysal OVB then into Floralife; Used Chrysal Pro2.

Comments: The 'Jau' varieties are very consistent suns, certainly would recommend them for that, the colour is quite autumnal and I found I was hesitant to reach for it in summer bouquets, again, it would need to be harvested quickly, if left a day too long, in hot weather, you would be too late, recommend it for fall harvests due to the colour, I probably won't grow it again, not because of any growing issues, just personally do not like the color and the bloom set, prefer 'Vincent', 'Sunbright' and 'Sunrich' varieties, the later fall planting was not as tall, closer to 36 inches, rather than 48 inches earlier in season; A few days earlier to bloom than 'Jua Maya'; 6 x 6 inch spacing, 6/5 through 8/25 transplanted; My problem: grew in spring, next year better for autumn, will add this sunflower to my list; Sow 7/20 or later for fall bloom, too dark for summer use; I did not find anything special about this sunflower variety, it is a nice looking sunflower and the customers bought them quickly, but they were not unusual or eye catching to me, they had strong stems and a good germination rate; Transplanted on a 9 x 12 inch spacing.

Sunflower 'Jua Inca'
photo by Tanis Clifton

Sunflower 'Jua Maya' (PanAmerican Seed)

Good Qualities: Great color, very bold and vibrant yellow (4); Good looking, strong stemmed sunflower; Early to flower, nice flower size; Traditional looking sunflower, sold well to florists; Medium flower size is easy to bunch and use in mixed bouquets; Sturdy; Good height, over 5 feet, but I didn't measure, cut stems for use in mixed bouquets; Traditional sunflower; Useful medium size, nice upright posture on the stem, stem size not too thick (florists prefer slender stems); Quick crop, wide golden yellow ray petals around large black disk; Standard orange flower with dark disk, petals relatively broad and short, insensitive to daylength in seedling screen test, main season maturity and height; Good if looking for a smallish sunflower, short crop time of 57 days when seeded 5/14; Stem length, strong stems, and mixed bouquets; Very even bloom period, all consistent, no off types, free of disease; Nice shape flower, uniform maturity and size.

Problems: None (3); Shorter and thinner stems than other cultivars at a similar spacing; Critters love to eat these; Lowish petal count; Sticky disk when allowed to partially open requiring debris removal, late-season pest problems with smut and beetles; Flower petals unfurled unevenly; A bit erratic with germination compared to 'Inca'; We prefer gold or orange petals over yellow, but this is just a personal preference.

Similar Cultivars: Similar color to 'Sunrich Lemon', but this is 14 days earlier to flower; 'Sunbright' and 'Sunrich'; 'Sunrich Summer Orange', 'Sunrich Lemon' - similar days to bloom, size head, shape head.

Postharvest Recommendations: Chrysal Pro2; I use a flower preservative and cold water; Floralife; Chrysal OVB then Floralife, 2 of 3 stems collapsed after 8 days - water change may be important. See also postharvest article in this issue for more information.

Comments: I did not find anything special about this sunflower variety, it is a nice looking sunflower and the customers bought them quickly, but they were not unusual or eye catching to me, they had strong stems and a good germination rate, I would grow them again because they were easy to sell; A few days later to bloom than 'Jua Inca', 6 x 6 in. spacing, 7; Not as good in my opinion as 'Procut Orange' or 'Sunbright'; One of only a few standard orange varieties that is not sensitive to daylength, so could be grown under short day conditions; This is a nice smallish 3½ -4 inch sunflower with a dark center, does not respond to short days, grew very short and field transplanted on 10/21 and got a killing frost prior to harvest, they did great under row cover; I liked both sunflowers for their color and stem strength, nice size of flowers and long lasting qualities; This is a good sun, I grew it last year for the first time after a recommendation from our Ball Seed rep, I found it very uniform and very short bloom window, need to keep a very close eye as it will blow open quickly in the field, not really keen on the colour, I find most people like the typical orange colour, however, if I was wanting that particular colour of yellow, it would be a top choice, also for bouquet making a top/upward facing bloom is more desirable for my own use, best feature very uniform harvest window, harvest 80% the first cutting day.

Zinnia

Zinnia 'Queen Lime' (Gro 'n Sell/Floragran)

Good Qualities: Great lime green color (2); Nice medium sized head.

Problems: Shorter vase life than other zinnias (Benary) about 50% of flowers were single type, not doubles, these tend to show brown at the center more than the doubles, not as tall as Benary's, this could be due to transplanting vs. direct seed (see below); Over time, flowers get smaller and lankier, leaf spot near end of season.

Similar Cultivars: 'Benary's Lime', but 'Queen Lime' is more productive than 'Benary's Lime'.

Postharvest Recommendations: We cut all zinnias into Chrysal chlorine tablets; Floralife; Chrysal Pro2. See also postharvest article in this issue for more information.

Comments: We received the zinnias late in the season, they were planted in the field almost 2 months after we normally plant zinnias, so our yield was way down compared to zinnias we have had in the past; We tend to have stronger, taller plants from direct seeding zinnias vs. transplanting, we would try direct seeding next season, customers loved the lime color, but did comment that they were not holding up as long Benary's cut and sold same day (we sell all zinnias by the stem and mixed trial ones with our standard Benary's).

Zinnia 'Queen Lime-Red' (Gro 'n Sell/Floragran)

Good Qualities: Beautiful vintage pink, some center portions of flower had great green and deep pink contrast; Really fun antique pink color, customers appreciated the antique look and new color; nice medium size head.

Problems: Flowers varied in form. Some were multi petaled, some were single petaled; color was not consistent, all colors were beautiful, just inconsistent from each other; We tend to have stronger, taller plants from direct seeding zinnias vs. transplanting (Note – this cultivar was sent as a plug); we would try direct seeding next season, they seemed to get powdery mildew earlier than our Benary's, short vase life, customers did complain about this, but liked the color, hard to use with bright colored bouquets.

Similar Cultivars: None listed.

Postharvest Recommendations: Chrysal Pro2; Floralife; We cut all zinnias into Chrysal chlorine tablets. See also postharvest article in this issue for more information.

Comments: We received the zinnias late in the season, they were planted in the field almost 2 months after we normally plant zinnias, so our yield was way down compared to zinnias we have had in the past; At first we hated this flower! As we figured out how to use it with greens, purples and lavenders, it definitely grew on us, it is not a traditional bright colored zinnia, but does have interest for an antique look, we will definitely grow again.

> " 'Queen Lime Red' zinnia has a really fun antique pink color, customers appreciated the antique look and new color."

Zinnia Cupcake 'Deep Orange', 'Red', 'Yellow' (Gro 'n Sell/Floragran)

Good Qualities: Makes great bouquet filler in short bouquets; 'Red' had the best percentage of doubles of three cupcake varieties (75-80%), and was the nicest color of three varieties, was more of an orange than red; 'Deep Orange' had about 50% singles.

Problems: The majority of the flowers were singles, stems very thin; Leaf spot, inconsistent flower form, size, shape; We did not care for the form at all, small flower heads, tedious to harvest short plants, we do not have a use for such small flowers in general unless it's a time of year when there's scarcity of blooms, customers also did not care for this form, bordering on ugly, to be fair, we grow only Benary's, because we do not care for small zinnias in general.

Similar Cultivars: Similar to some 'Lilliput' zinnias.

Postharvest Recommendations: Chrysal Pro2; Floralife. See also postharvest article in this issue for more information.

Comments: Our 'Cupcake Deep Orange' and 'Cupcake Red' looked a lot alike; So disappointed that only about 30% were the actual cupcake form, transplanted plugs the day received, yet most budded at 4-inches tall, had to disbud/pinch all; We received the zinnias late in the season, they were planted in the field almost 2 months after we normally plant zinnias, so our yield was way down compared to zinnias we have had in the past.

Zinnia 'Queen Lime'

Zinnia 'Queen Lime–Red'

Zinnia Cupcake 'Red'

2014 ASCFG Seed Trial Results. The first row of data for each cultivar is the average and the second row is the range of responses. Note when only one response is listed, either only one person responded for that category or several responded and all gave the same rating. The single highest score and the single lowest score in each category for each cultivar have been dropped.

Species Cultivar Company	Yield (stems/plant)	Stem length (inches)	Market appreciation rating[1]	Repeat again rating[1]	Ease of cultivation rating[1]	Average postharvest life (days)
Aster 'Bonita Light Blue' Sakata	**6.6** 1-16	**19.5** 10-36	**4.2** 3-5	**4.4** 2-5	**3.9** 1-5	**8.3** 6-12
Cabbage 'White and Pink Center' Sakata	**1.0** 1-4	**21.5** 8-36	**3.3** 2-5	**3.0** 1-4	**3.8** 2-5	**12.1** 7-21
Celosia 'Celway Red' Genesis Seed	**11.6** 4-25	**17.7** 10-38	**3.6** 1-5	**4.1** 1-5	**4.4** 2-5	**8.2** 7-12
Celosia 'Celway White' Kieft-Pro-Seed	**10.9** 2-31	**20.0** 12-36	**2.9** 1-5	**2.8** 1-5	**4.5** 4-5	**9.3** 7-19
Celosia 'Sunday Yellow' Kieft-Pro-Seed	**11.1** 4-25	**20.3** 9-36	**4.3** 2-5	**4.1** 2-5	**4.7** 2-5	**8.9** 7-37
Delphinium 'Blue' Sakata	**4.0** 1-15	**12.2** 6-20	**3.8** 1-5	**3.1** 1-5	**3.1** 2-5	**6.0** 5-7
Delphinium 'Light Pink' Sakata	**3.2** 1-12	**10.8** 6-18	**2.2** 1-5	**2.4** 1-4	**2.9** 1-5	**5.5** 5-7
Marigold 'Babuda Gold' AmeriSeed	**11.6** 5-30	**15.1** 12-36	**3.5** 2-5	**3.6** 3-5	**4.7** 4-5	**11.4** 6-16
Marigold 'Babuda Yellow' AmeriSeed	**11.7** 8-30	**15.8** 12-36	**3.1** 2-4	**3.3** 2-5	**4.8** 4-5	**9.9** 6-14
Marigold 'Jedi Deep Gold' AmeriSeed	**13.7** 6-22	**17.6** 12-36	**3.8** 2-5	**3.8** 2-5	**4.9** 4-5	**11.2** 6-14
Marigold 'Jedi Gold' AmeriSeed	**12.2** 5-20	**16.4** 12-36	**3.6** 2-5	**3.4** 2-5	**4.9** 4-5	**11.0** 6-14
Marigold 'Optiva Orange' AmeriSeed	**10.6** 5-50	**15.3** 12-36	**3.1** 2-5	**3.5** 2-5	**4.2** 3-5	**13.4** 10-15
Snapdragon 'Calima Deep Pink' Sakata	**6.2** 1-14	**18.5** 12-32	**4.0** 4-5	**4.2** 3-5	**3.8** 3-5	**6.2** 5-8

[1] 1 to 5 scale, with 5 being the best. Market ratings are based on sales to wholesales, retailers, or final consumers direct.

2014 ASCFG Seed Trial Results. The first row of data for each cultivar is the average and the second row is the range of responses. Note when only one response is listed, either only one person responded for that category or several responded and all gave the same rating. The single highest score and the single lowest score in each category for each cultivar have been dropped.

Species Cultivar Company	Yield (stems/plant)	Stem length (inches)	Market appreciation rating[1]	Repeat again rating[1]	Ease of cultivation rating[1]	Average postharvest life (days)
Sunflower 'Jua Inca' PanAmerican Seed	**1.0** 1	**34.1** 24-120	**3.5** 2-5	**3.4** 2-5	**4.2** 2-5	**4.3** 3-11
Sunflower 'Jua Maya' PanAmerican Seed	**1.0** 1	**30.6** 24-63	**3.5** 3-5	**3.3** 2-5	**3.9** 2-5	**5.4** 3-13
Zinnia 'Queen Lime' Gro 'n Sell/Floragran	**13.7** 6-25	**17.8** 12-24	**4.7** 4-5	**4.3** 4-5	**4.7** 4-5	**7.3** 5-10
Zinnia 'Queen Lime-Red' Gro 'n Sell/Floragran	**12.7** 6-25	**16.2** 12-24	**4.7** 4-5	**5.0** 5	**5.0** 5	**6.7** 4-8
Zinnia Cupcake 'Deep Orange' Gro 'n Sell/Floragran	**7.7** 3-14	**12.3** 10-14	**2** 1-3	**2** 1-3	**4** 4	**7** 7
Zinnia Cupcake 'Red' Gro 'n Sell/Floragran	**7.3** 2-14	**12.3** 12-14	**2** 1-3	**2** 1-3	**4** 4	**7** 6-14
Zinnia Cupcake 'Yellow' Gro 'n Sell/Floragran	**10.5** 7-14	**12.8** 10-14	**2.5** 3	**2.5** 2-3	**4** 4	**7** 7

For more cut flower information, including twenty years of trials reports, postharvest research, and production material, spend some time at John Dole's NCSU cut flower site.

http://cutflowers.ces.ncsu.edu/welcome-2/

Postharvest Treatment of Specialty Cut Flowers

North Carolina State University Report for 2014

Alicain S. Carlson, Christiane Martins, John M. Dole, and Ingram F. McCall
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This project was supported by the Association of Specialty Cut Flower Growers Research Foundation, the American Floral Endowment, and numerous suppliers.
The authors would like to thank Kendyl Finley and Logan Haislip for assisting with growing and harvesting the cut flowers.

Every year we conduct vase life studies on promising species and cultivars from the ASCFG National Seed Trials. This year's Trial included 14 cultivars we tested for their postharvest potential.

The marigold has been under much debate here at NCSU. Its merits of high productivity, ease of production, and vibrant colors are outweighed by the pungent, unpleasant odor that some around here experience. The scent is apparent only when stems are being cut and foliage stripped, and soon fades. Some people think they smell good, while others are appalled, and still others don't even notice. We found it interesting that marigold extract is used in many very popular fragrances including Burberry, Dolce and Gabbana, and Obsession by Calvin Klein. Regardless of how you feel about the smell, their vase life is excellent, averaging 16-19 days. Marigolds generally benefit from a holding solution sometimes coupled with a hydrating solution. They are definitely something worth trying if you haven't already.

The Cupcake zinnias have a fun, new look for zinnias, but, unfortunately, were inconsistent in their "cupcaking" or doubling. They were smaller compared to the Queens and Benarys, but would be useful accents in arrangements when used like button mums. Late planting, herbicide damage, army worm munching, and cooler than usual summer temperatures held them back a bit here, but their vase life was still about 10 days regardless of the preservative treatments.

Finally, of course we trialed three new *Eucomis* cultivars. Eddie Welsh sent us some wonderful new selections from his New Zealand breeding program, and they produced solid stems with great color. 'Tugela Gem' was a favorite with its bronzy-green tones, and 'Tugela Jewel' produced seed pods that are a gorgeous jewel-toned deep red-purple. 'Megaru' is perfect for events that need white-green flowers. Vase life was up to par compared to other *Eucomis* cultivars (30+ days) and the stems don't need preservatives to extend vase life.

The Details

Field-grown flowers were harvested into tap water (0.21 EC, 6.1 pH) at the optimum stage of flower development. Stems were then sorted into 4 equal groups and placed in the treatments below for the specified time, then placed into vases of deionized water.

- Hydrator only (4 hours)
- Holding preservative only (2 days)
- Hydrator for 4 hours followed by holding preservative for 2 days
- De-ionized (DI) 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 DI water and held at 68 ± 2F under approximately 200 footcandles 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)/florets on the stem were brown, wilted, drooped over, etc.

What Are Hydrating and Holding solutions?

Some of you may be asking, "What is a hydrating and holding solution?" Floral preservatives can be categorized as either hydrating, holding, or vase solutions. Holding solutions contain a carbohydrate source (sugar) to encourage bud opening and/or flower longevity. They are applied for several hours for up to approximately two days, by either growers or wholesalers, before flowers get to the final consumer. Hydrating solutions are meant to be applied right after harvest, prior to a holding solution, to facilitate water uptake and do not contain a carbohydrate source. Hydrating solutions are usually used for a short time, such as four hours.

Vase solutions are generally applied by the consumer, commonly in those little packets, and contain a higher concentration of carbohydrates than a holding solution. While we do not test the use of vase solutions in these studies, it would be safe to assume that those flowers that perform better with a holding solution would likely last longer for your customers with a vase solution.

One More Thing

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 evaluation temperature that is a bit cooler than a typical home in a southern 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. These factors combined typically add about 1 to 3 days to the vase life of some species compared to what a grower would usually get. It is also important to note that these results do not replace in-house testing as there are many on-farm factors that affect vase life.

The Results

Antirrhinum (snapdragon) 'Calima Deep Pink'
Using a holding solution will add about 2 days vase life to 'Calima Deep Pink', bringing it up to 8 days from plain water. Stems were harvested when 3 florets were open so the sugars in the holding solution help the unopened buds open after being cut. Buds that opened after harvest tended to be a little lighter in color. Also, stems not held in a holding solution tended to lose turgidity and flop over.

Celosia (celosia) 'Celway White'
While floral preservatives did not have a statistical effect on vase life, using plain water had a slightly longer vase life of 31 days compared to using just a holding solution (27 days). As is the problem with many white flowers, the flowers of

'Celway White' look dirty very quickly, not desirable if you needed a clean white for a bridal bouquet.

Celosia (celosia) 'Sunday Yellow'
There were no benefits of using a floral preservative so using plain water is acceptable. The average vase life was 37 days. This yellow hides signs of aging very well and flowers stay well hydrated, contributing to their long vase life. Both celosias were harvested as the lower florets were mature, but before seed development.

Eucomis (pineapple lily) 'Tugela Gem', 'Tugela Jewel', and 'Megaru'
For 'Tugela Gem' using a holding solution increased vase life by 6 days to 38 days compared to plain water (32 days). However, the difference was not significant enough to warrant the use of a holding solution unless it is common practice on your farm anyway. For both 'Tugela Jewel' and 'Megaru' there were no benefits to using preservatives as the plain water resulted in the longest vase life. In plain water, 'Jewel' and 'Megaru' had average vase lives of 38 and 41 days, respectively. 'Jewel' showed a big decline in vase life, decreasing it by half, when both a hydrating and holding solution were used. 'Megaru' was less affected by preservatives. All of the Eucomis were harvested when at least 50% of the florets were open. If you can hold out on harvesting stems until the seed pods start to develop we can promise you won't be disappointed with the beautiful jewel tones.

Helianthus (sunflower) 'Jua Maya'
Using floral preservatives did not affect the vase life of 'Jua Maya', which averaged 12 days. 'Jua Maya' was harvested when the first petals began to lift from the disk. The petals were a beautiful yellow with a dark center; classic sunflower look.

Tagetes (marigold) 'Babuda Gold'
A holding solution improved the vase life of 'Babuda Gold' to 19 days as compared to 13 days for the plain water treatment. This is the same recommendation we gave for 'Babuda Deep Gold' that we trialed last year, which had a similar vase life.

Tagetes (marigold) 'Jedi Deep Gold'
While there was no statistical difference, the averages show that using both a hydrator and holding solution improved vase life to 16 days from 11 days when just plain water is used. However, using just a hydrator or holding solution did not improve vase life, so the benefit is in using them both together.

Tagetes (marigold) 'Optiva Orange'
Using a holding solution offered a slight benefit to 'Optiva Orange' although it was not statistically significant. Stems in holding solution had a vase life of 17 days while those in plain water lasted 14 days. This orange marigold is beautiful and bright! All marigold cultivars tested were harvested when one-half to one-quarter of the petals were fully expanded; they continued to fully expand in the vase making them look more lush and full.

Zinnia (marigold) 'Cupcake Deep Orange' and 'Cupcake Yellow'
Preservatives had no effects on vase life of either cultivar. Both cultivars had an average vase life of 10 days.

Zinnia (marigold) 'Queen Lime' & 'Queen Lime Red'
For 'Queen Lime' there were no differences between the treatments and vase life averaged 8 days. Using a holding solution increased vase life for 'Queen Lime Red' to 9 days compared to the plain water treatment of 7 days.

Molly Oliver Flowers

Brooklyn, New York

By Megan Bame

Urban farming is taking root in several locations. Two young growers take up the challenges of growing in the city, and sharing with children what they've learned.

Molly Culver and Deborah Greig co-founded Molly Oliver Flowers in 2012. Molly Oliver Flowers is not a farm, but a sustainable floral design business based in Brooklyn, New York. That said, Molly and Deborah are both farmers—technically farm managers—for separate one-acre urban farm projects. While the farms grow primarily food crops, they both grow flowers as well, and the design business is able to purchase from the farms, from other urban farms, and from regional growers in New York, New Jersey and Pennsylvania.

The duo handles floral work for mostly weddings, though they hope to branch out into other special events. What started as friends of theirs getting engaged and asking them to do wedding flowers has blossomed quickly into 25 weddings a year—a number that is at the upper limit of manageable, considering their day jobs.

From New York to California

Not only are they farm managers, they work for educational farms, so educational programming is a major component of their jobs. Molly shares that she and Deborah have a "bizarrely parallel story—we both worked at AmeriCorps Vistas for Just Food, a nonprofit here in New York City dedicated to connecting communities with resources to help make fresh, locally grown food accessible to all New Yorkers. We both worked with environmental justice organizations in the South Bronx to facilitate some of the first CSAs there. Deborah went on to intern at Hawthorne Valley Farm in the Hudson Valley, and I worked as a community organizer for a few years. We both ended up at the University of California—Santa Cruz training program for organic farmers from 2006 to 2008, where we were first introduced to cut flower production."

Fortunate to have UCSC Farm Garden Manager and fellow ASCFG member Christof Bernau as an early mentor in cultivation, postharvest, marketing and bouquet making, she says, "We fell in love with flower growing and floral design. So, our advocacy around healthy food access morphed into farming and food justice advocacy, and it brought both of us back to New York City."

From there, it was a natural outgrowth to incorporate their newfound love of flowers. Of course, with ready access to vegetables, you can be sure to find interesting vegetable and herb seedpods and foliage featured in their arrangements. Some favorites include flowers of arugula, chives, leeks, and fennel, radicchio leaves, chard stems, 'Redbor' kale, and garlic scapes.

Deborah is agriculture director for East New York Farms, one of the city's oldest urban agriculture organizations, while Molly manages The Youth Farm, located in Crown Heights, Brooklyn, going on its sixth season. Molly says, "We have dreamed of having our own cut flower farm in Brooklyn; time will tell if the right opportunity presents itself!" She explains, "The main challenges to urban farming right now (in New York City) are accessing land that is affordable, and being able to scale up to a point where you could sustain yourself just from farming. For me, it's not possible to make it on farming alone. Hence, the floral design business."

From the Liberal Arts to Floral Artists

Deborah graduated from Vassar and Molly from Barnard. While neither studied agriculture, both left college and almost immediately got involved with food justice work in the city. Wanting to get actively involved in social justice work, Molly says that she found that food and organic agriculture felt like the right place and space for that. Similarly, neither has formal training with floral design. Molly says, "I believe I developed my sense for form and shape from my mom, who is a multi-media artist, and avid, lifelong vegetable and flower gardener. Her knack for creating beauty out of whatever was available to her was instilled in me early on."

Molly Oliver Flowers, an independent business, purchases cut flowers from The Youth Farm and East New York Farms, just as other florists and restaurants do. The Youth Farm is a project of Green Guerillas, a 502 (c) 3 nonprofit that has operated in New York City for more than 30 years, mainly with community gardeners. East New York Farms is a project of the nonprofit, United Community Centers. Molly notes, "In some cases, our clients overlap. Some of our first clients of Molly Oliver Flowers were teachers and CSA members who teach at the High School for Public Service, our chief partner at The Youth Farm." One of the reasons clients like working with Molly Oliver Flowers is that when flowers are sourced from The Youth Farm or East New York Farms, that money goes toward supporting youth and adult farm education.

Deborah grows popular annuals and some perennials at East New York Farms, but her primary market is the immediate East New York community, and the majority of their growing space is devoted to vegetables (especially hot peppers, and other Caribbean crops). At The Youth Farm, a third of the growing area is in cut flowers, and they grow over 80 varieties. Their staple flowers include: tulips, daffodils, sweet peas, larkspur, zinnias, scabiosas, sunflowers, gomphrena, euphorbia, cosmos, basils, mints, calendula, dahlias, yarrow, tansy, hyacinth bean vine, and marigolds.

The Youth Farm has one 40'x20' hoophouse used for larkspur, but the majority of the flowers are grown outside in raised beds. Molly explains that using raised beds, "is really important in our setting for creating public awareness of where crops live and where people can walk. We have a sandy loam soil, so it's not entirely necessary, but it's also a point of instruction for our apprentices, in demonstrating healthy soil practices." They learn to call the pathways the "zones of degradation," and the beds the "zones of productivity."

Cultivation is done on a hand-scale level. Apprentices learn primary and secondary cultivation techniques like double and single digging and the incorporation of compost, all using efficient tools like the garden fork, broadfork, rake, etc. Nearly 70 beds were double dug when first created. After that, they adhere to minimal soil cultivation for healthy soil biology development. In the spring the cover crop will be weed-whacked, or turn into the soil. Then the beds will be single dug with garden forks or broadforks, then raked and tamped. Molly say, "We use 3' and 4' bed markers to maintain an even bed width, edge and tamp our sides. For transplanting, we are big fans of the dibbler available through Johnny's, as well as the 4-row seeder for salad mixes."

City Farming Isn't Like Country Farming

One challenge of urban farms is bringing in raw materials, like straw, fertilizer, and compost, without paying too much for transport. For the past three years, Molly has organized a cooperative purchase of organic potting soil from McEnroe Farm for eight different urban farms. She explains, "If we can put 20 pallets (40 yards) of potting soil on one flatbed truck the freight cost is much more affordable for our operations."

Urban farms find different solutions for irrigation water. East New York Farms collects rainwater from five adjoining homes, but most use city water. Gardens without direct access can hook up to street hydrants. The Youth Farm gets water from spigots on the outside of the school. They have several drip irrigation systems, some overhead sprinklers, and wands. Using chlorinated city water makes it sterile for rinsing, but there is potential for destroying some of the good bacteria in the soil.

Being in the city perhaps opens the farms to more scrutiny. Molly says, "We've all faced some question from the city and whatever agencies we are tied to about the safety or liability of what we're doing. We've had to work together to create safe standards for soil fertility and to build awareness of what soil health is and how to establish and maintain it."

Despite those generalized issues urban farmers face, Molly says one of their biggest challenges is balancing farmer training and education with field work. "Making sure we get to that first flush of weeds with the hula hoe, or getting Hortonova trellis up over a crop can be a challenge when you are training others."

Her position at The Youth Farm is a year-round, full-time job. From preparing soil in late winter to full scale production through spring, summer and fall, and finally updating records and setting new goals in late fall, Molly is always busy. She has found that her floral design work provides balance to her roles teaching and farming. She reflects, "It is a different kind of creative process, and I really love coming to the studio to focus on design after a long week of farming and teaching and so much interaction and movement."

While it's not unusual for flower farmers to dabble in floral design as part of their business, Molly Oliver Flowers is unique as a floral design business owned and operated by two urban farmers who farm for social justice.

A Little Background About The Youth Farm

The Youth Farm is situated in a low-income neighborhood, with the majority of people of West Indian or Jewish Orthodox descent. Many, or most, of our students are West Indian-American. Our main crops are grown for this community, so, plenty of hot peppers, bitter melon, callaloo, kale, collard greens, tomatoes, etc. We see our purpose at the Youth Farm as creating access to nature, to farming and gardening experiences, and high level training for those who want it, and to grow fresh, affordable produce and flowers for the surrounding community. At the same time, we aim to educate the community about the true cost of growing food and why our prices may be slightly higher than what they're accustomed to. As we are a combined production and educational farm, people who come to The Youth Farm get exposure to how production farming feels and works. There are also many skilled farmers and gardeners from the immediate community who can bring their families to the farm, and share their own knowledge and farming practices.

As the interest in urban farming grows, and as cities continue to expand in population, we believe urban farms will become vital places for people to retain some connection to the roots of their food sources—to beehives, vegetable and flower farms, chicken coops, and other small but valuable examples, as engaging with these things helps people to connect the dots between food and their overall health.

We are located on the grounds of the Wingate Campus, home to four high schools and a middle school in Crown Heights, Brooklyn. The project began as a vision for increased outdoor hands-on learning for young people at Wingate, and specifically our early and principal partner, The High School for Public Service.

We developed a year-round elective course that freshmen through senior students can elect to take, called Go Green; the curriculum is based in food justice, as this is the core value of The Youth Farm. The students who take Go Green learn about the environmental justice movement, the food justice movement and all issues involved, from migrant and farm labor issues to corporate control of food systems, as well as nutrition and cooking. Besides Go Green, we run an afterschool extra-curricular club with the art teacher called Farm Club, and are now running a Go Green class with another high school at Wingate.

For the past four years, we've been funded to run a Summer Youth Leaders program that employs 12 youth to work and help run the farm. These youth learn farming skills, community organizing skills, and marketing skills; they help plant and harvest, perform outreach for our market, and sell at our market, in addition to some team-building activities and cooking seasonal meals every day. East New York Farms runs a similar youth program, but year round. Finally, we are now developing a Youth Leadership Council thanks to new funding from State Farm; this group will be made up of some returning Summer Youth participants, Farm Club members and other youth volunteers. This group will help guide the activities of the farm and how they intersect and engage with the students at Wingate.

At the Youth Farm we run an Urban Farm Training Program, an intensive program for adults interested in farming and related careers. Six to ten individuals participate in a rigorous hands-on curriculum, 20 hours per week, from April through November, moving through rotations in Irrigation, Compost, Farm Management, CSA and Farmers' Market Management, Propagation, and Flowers, concentrating on key skills in each. At the same time we have a 25-member vegetable CSA, 25-member flower CSA, five regular restaurant accounts, and a weekly farmers' market, which all bring in important income for our project.

Education and production happen concurrently. It's challenging at times, but ultimately part of the goal is to have people really experience on some scale what it feels like to farm. We now have had 15 graduates. Many have remained in urban farming, as educators or starting their own farms, consulting businesses, etc. Some have gone on to work at larger farms outside the city.

Besides these two programs, the farm is open to all to come for open Volunteer Days twice a month to help out and get their hands in the dirt. We also run a field trip program, through which schools and other groups (special needs, afterschool, corporate groups, etc.) can book a customized tour or work day on the farm.

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Weed Control in Cut Flowers

Steve Bogash

"Specialty cut flowers" encompasses a wide range of flowering plants. Controlling weeds in production systems requires an equally diverse number of options.

Due to the wide diversity of genus and species among cut flowers, managing weeds often requires different approaches depending on the specific weed, specific flower or woody stem, time of year, and level of weed infestation. We are often trying to manage one weed while producing another for sale. Most growers use a combination of methods in order to increase soil organic matter, and avoid the buildup of pest and pathogen populations. These methods can be loosely grouped under the headings: Preplant Soil Preparation, Cultivation and Hand Removal, Chemical/ Herbicide, Barrier, and Flame.

Preplant Soil Preparation can include any of the following: sequential cover cropping, fallow ground with burn or plow down, and solarization. Cover crops are an excellent way to prepare the ground for cut flower production. This is especially true when you are taking ground from pasture or turf and trying to prepare it for production. Among the cover crops commonly used are cereal rye, buckwheat, rape, and various legumes. Each has inherent advantages and limitations a grower must factor in prior to planting. For example, while cereal rye is an excellent smother crop that yields 4,000-8,000 pounds of dry matter per acre, will tolerate very late season planting, and does an excellent job of scavenging nitrogen, it can suppress the germination of some direct-seeded flowers through the secretion of allelopathic chemicals, and can be difficult to work into the soil with small equipment. Once cereal rye is worked into the soil it is ideal for most transplants and does an excellent job suppressing the germination of oxalis, chickweed and purslane. Legumes are an excellent method to build soil nitrogen, increase soil organic matter and smother weed seedlings, but there is the potential to increase nematode, pest and pathogen populations. Buckwheat makes for an excellent fast turnaround, summer cover crop, but it is critical that it be either mowed or killed before any mature seeds are set or it can become a weed.

Fallowing ground, that is leaving it unplanted and regularly killing any germinating or emerging weeds, is an excellent tool for reducing tough perennial populations and reducing weed seed banks. Regularly tilling any weeds that emerge or the application of a contact herbicide such as glyphosate, Gramoxone, Scythe, Axxe, Finale, Reward, or 20% acetic acid (heavy vinegar) will generally reduce tough weeds that are very difficult to control in a cropping situation.

Soil solarization is an effective low-input tool that accomplishes many of the same goals as chemical fumigation. By covering the ground with clear plastic after tilling and a good watering in the summer, you can reach temperatures in excess of 120F at 6-8" deep under the plastic. This combination of clear plastic which allows weed seeds to germinate, and high heat to kill the seedlings can significantly reduce weed and pest populations. It is very important to maintain moisture levels under the plastic in order to get the deepest penetration of the heat. Unfortunately, purslane often thrives under solarization, so it may become necessary to remove the plastic long enough to use a burndown herbicide, then reinstall the plastic. Be sure to use a biological inoculant such as Actinovate AG or RootShield Plus to help reestablish a beneficial soil microflora after solarization.

Cultivation for cut flowers is no different than the practices used in vegetable production, with the added challenge of a high plant population to work around. Most cut flower farms are small (less than 2 acres) operations, making rototillers of various sizes very practical for weed control. Hand weed removal may be the only option when working in tightly planted perennial cut flowers.

Chemical Weed Control A number of pre- and post-emergent herbicides are labeled for use in cut flowers. See the table at the following URL as a starting point in selecting specific herbicides for cut flowers: http://ipmguidelines.org/GreenhouseOrnamentals/Chapters/CH07/default-7-24.aspx Considering the wide range of cut flowers grown, selecting a single pre-emergent may be impossible, but with careful selection of chemicals, you may be able to get by with just a few.

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Dave Dowling, Ednie Flower Bulb

The first column of a series dealing with the supply side of the cut flower industry. Suppliers are welcome to contact Dave with ideas and topic suggestions for future issues.

Transitioning from a cut flower grower to working for a company that supplies bulbs and perennials to flower growers has opened my eyes to a whole different world. It's a world that all growers need in some way or another, but often know little about. Cut flower farms need seeds, bulbs, plugs, perennials, soil, irrigation supplies, greenhouses, tunnels, support netting, fencing, fertilizer, buckets, etc. The list goes on and on and on. No one can do this without a host of suppliers for all the stuff it takes to make your farm work.

Over time, relationships are often developed between growers and their preferred suppliers. Most growers have a favorite seed company, plug grower, greenhouse manufacturer, bulb supplier, etc. This is often influenced by price, selection, service, or simply habit. And at the other end of the spectrum, there may be suppliers that you may do business with only because you have to. You may use these companies because they are nearby, carry what you need, or they are the only company in your area providing propane or oil to heat your greenhouse.

Planning Pays Off

Suppliers providing "seasonal" products such as seeds, bulbs, plugs, even wreath frames, must plan for the next season way before the grower is even thinking about ordering that product. Suppliers have historical data to use to help them plan, but just like farming, not everything goes as planned.

Imagine if everything worked perfectly in just one year; no bad weather, insects, or disease—think of how much your sales would increase. When dealing with seeds, bulbs, or plants, there is always some "crop failure" that will impact the supply in some way. Years ago there was basically no 'Blue Horizon' ageratum seed available because of bad weather at the farm producing the seed. When you're dealing with 200 varieties of tulip bulbs, there are going to be some that have a problem of some sort. If only 10,000 units of a product are available, but you have orders for 12,000, some adjustments will need to be made.

Ordering early is always the best option when planning what to grow each season. Try not to call the seed company in June to order your sunflower seeds. If you know you'll need 5,000 'ProCut Orange' seeds next summer, order them in January so the seed supplier can get enough seed for all its customers. If you'll be needing a larger than usual amount of something, contact the supplier early. Don't be looking for 10,000 'Red Charm' peony plants three weeks before you want to plant them. A good rule of thumb is to try to order items four to six months before you need them. This is especially important for things like plugs, perennials, seeds, and bulbs that by their nature have a limited supply and limited shelf life.

Habits Are Hard to Break

Suppliers which sell items like buckets, tools, vases, postharvest supplies, and other hard goods that can be stored in a warehouse sometimes indefinitely are more accommodating when you're ordering at the last minute, and can usually ship your products in short order. When all the peony roots are gone, or all the sunflower seeds are sold, they may be unavailable until the next year. With most suppliers you're not billed for your order until it ships. Some suppliers may offer early payment discounts, or extended terms for their established customers.

It's been said, "Don't put all your eggs in one basket." In the green industry, out of habit we tend to buy from our regular suppliers year after year. That's fine, until there is a problem. Growers should be aware of alternative suppliers for every product they use, and keep the relationship open with these companies, even if it means buying a few items from your second choice supplier every once in a while. If you're in a bind and need something, you'll want the supplier to want to help you out.

No matter how fine-tuned and tech-savvy a supplier may be, there will still be the occasional mistake with a missed order, damaged product, or other problem. Humans still do a lot of the work filling orders, counting bulbs, packaging product, and delivering packages. As hard as we try, we humans still make mistakes. Being prepared for these things can help prevent small problems from becoming large problems. The supply businesses you work with are often just like your farm: they have workers to manage, supplies to order, prices to calculate, money to juggle, bills to pay, phone calls to make, customers to visit, etc. It's just usually on a much larger scale. And like you, we have only 24 hours in a day to get it all done.

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Increase Lisianthus Yields by Growing Plants and Pinching Stems

Chris Wien

Perhaps lisianthus is tougher than you think, and can tolerate a little manhandling. Set up your own trial: squeeze a few more plants into your beds, knock stems back a few inches, and see if you get the same floriferous results as Chris Wien found.

The tiny seed size and glacially slow seedling growth of lisianthus have encouraged many growers of this crop to avoid producing their own seedlings, and to instead purchase plugs from commercial propagators. Since plugs can be expensive, we were interested to learn whether we could increase yields by pinching the stems, and then squeezing plants into closer spacings. The increased plant costs would then be offset by harvesting more stems from our fields.

Lisianthus plugs were purchased from a commercial plant propagator in 216-count trays, arrived on May 15, and were transplanted into 72-count trays into Cornell mix artificial soil. These were allowed to grow in the greenhouse until June 4, and were then transplanted to the field. Another set was planted in the high tunnel on June 18.The plants were spaced at 9 x 9 in. in four rows, or at 6 x 6 in. in six rows on the four-foot wide bed. In each treatment, plants were pinched to about 4 nodes in the seedling stage shortly after transplanting, or were left alone.

Spacing and pinching both increased stem yield per unit area, but the two combined had the most positive effect, boosting the number of stems per square foot by 80% (see table). We were concerned that by crowding the plants so much, we would end up with a lot of unmarketable stems with only one flower and no buds. Therefore, we culled the "bud-less" stems in the later harvests, and calculated the "net" yield. Poor flower quality turned out not to be a problem. Plants produced stems without buds in all treatments in similar amounts, and net yield was not significantly decreased (see table).

Stem length was not affected by spacing, but pinching stimulated it, especially at the close spacing. Pinching delayed flowering by only six days. Since the crop had a long flowering period from early August to early November, this was not considered a significant delay.

The results of this trial indicate that lisianthus can be considerably more crowded in the bed in both tunnel and field than with the 9 x 9 in. spacing we have been using, and will demonstrate significantly increased yields without hurting flower quality. The increased density can be achieved both by closer plant spacing as well as early pinching to induce more stems to form on each plant.

I gratefully acknowledge the expert help of Priscilla Thompson and Anna Enocksson in the conduct of this trial.

Lisianthus planting in the high tunnel (bottom) and in the field.

	Treatment Levels	Yield stems/ft.	Stem length, in.	Total Net
Spacing				
	6 x 6 in.	13.5	13.1	16
	9 x 9 in.	8.9	8.7	16
	Stat. signif.	***	***	ns
Pinching				
	None	10.0	9.6	15
	Pinched	12.4	12.2	17
	Stat. signif.	***	***	***
Spacing x Pinching				
	6 x 6 no	11.5	10.9	15
	6 x 6 yes	15.5	15.2	17
	9 x 9 no	8.6	8.4	16
	9 x 9 yes	9.3	9.1	16
	Interact. signif.	***	***	***

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Getting to the Root of Dieback in Lisianthus

by Louise Labuschagne

Lisianthus is an exquisite and delicate flower. The multi–million dollar pot plant and cut flower businesses that it supports globally attest that consumers all over the world are attracted to this beautiful flower. Transplants are equally delicate and produced by specialist nurseries, making this a high value crop, where yield and quality is critical to ensure profitability.

Lisianthus transplants with *Trichoderma asperellum* before planting.

Gross margins can be tight if the establishment of lisianthus transplants is poor, or it is feasible to get only one flush from the planting. It is not unusual for transplants to succumb to what some growers refer to as "dieback" or damping off. These symptoms are usually caused by a fungal infection from soil-borne fungi such as fusarium, rhizoctonia, phytophthora, or pythium.

Plant death from these diseases can be as high as 70% if the conditions are conducive to the disease. So it is important to understand where the disease comes from, how it is spread, and what can be done to reduce the risks.

Prevent spread of diseases in water

Although these pathogens are all soil borne, only phytophthora and pythium have motile zoospores (a spore with a tail for swimming). This means that free water on the leaf surface, either from condensation or overhead irrigation, will provide the water needed for the fungal zoospore to swim and spread the disease. Lisianthus suffers from downy mildew that also has a motile zoospore.

Controlling leaf wetness by careful sub-irrigation, good drainage, adequate plant spacing, and environmental controls will contribute to the control of this group of diseases. Cultural control is essential because these diseases are systemic within the plant and chemical fungicides are not always effective. Although there are breeding programs in progress to develop resistant varieties, this is not a guarantee of freedom from disease, if cultural controls remain weak.

Control insect vectors

Excess irrigation, high soil organic matter, and dirty irrigation lines could lead to buildup of algae on the soil surface. Algae are the primary food source for two groups of tiny flies that inhabit the soil surface where spores of soil-borne fungal diseases are located. These flies are known to transmit the disease spores within the crop, so control of these flies will have a significant impact on disease control.

Shore flies (Scatella sp.) look like very small domestic flies, and although their larvae are not thought to actively feed on the plant roots, their role as disease vectors makes them pests. If present in high numbers, shore flies can be a nuisance to workers and their feces may cause unsightly marks on the leaves.

Fungus gnats or sciarid flies (Bradysia sp.) look like small mosquitoes and are both a vector for diseases, and cause direct plant damage when their larvae feed on roots and burrow into stems.

For such small insects, they lay a lot of eggs! Females live for about 10 days and each can lay several hundred eggs during their short lives. There can be many generations in a year-round growing environment. Eggs are laid near the soil surface and hatch into small maggots in the soil. Sciarid larvae (3 mm long) are translucent with a dark black head.

Sciarid flies will feed on the roots during this period, while shore flies feed on algae and organic matter. Within two weeks, the fully fed larvae will pupate in the soil and eventually another adult will emerge and the cycle begins again.

Trap adult flies

Fortunately, adult flies of both genera are attracted to yellow sticky traps. This will provide an indication of their presence, although no guidelines exist on the economic thresholds needed before action is taken.

Flies may not be uniformly distributed in a greenhouse. Put traps at soil level and focus on areas where there may be wetter soil conditions, like near irrigation valves. If the traps are the type where parts of the sticky area can be exposed gradually in sections (and the previous week's sticky section is covered back up again), it is possible to record the rise and fall of adult fly populations. This at least will give the grower an indication of the effectiveness of any crop protection methods.

Control methods for flies, larvae and pupae

Generally, chemical pesticides target specific stages in the life cycle of a pest. In some countries, regular soil applications of diflubenzuron have been used to good effect. Over-reliance on one active ingredient is not recommended for reasons of resistance management. Combined programmes with Bacillus thuringiensis var israelensis help manage resistance.

A beneficial entomopathogenic nematode (Steinernema feltiae) is available commercially from Syngenta Bioline (Exhibitline). This species appears to be more effective than S. carpocapsae. These beneficial nematodes swim in soil water and infect the larvae, causing their death from septicemia in about two days. Entomopathogenic nematodes are likely to be compatible with both diflubenzuron and Bacillus thuringiensis. However, check the efficacy of the isolate in low soil temperatures before use. Entomopathogenic nematodes tend to be more expensive than biopesticides made from entomopathogenic fungi.

Sciarid larva.

Biopesticides such as Metarhizium anisopliae ICIPE 69 can infect all stages of fungus gnat and shore fly. Metarhizium is an entomopathogenic (insect-killing) fungus which occurs naturally in the soil, and has been formulated into a biopesticide to be used as either a soil drench (for pupae and larvae) or as a spray against adult flies. It is easy to use, as it can even be tank-mixed with insecticides or fungicides.

Real Metarhizium 69 is Registered in several African countries and is the product of research from the International Centre for Insect Physiology and Ecology (ICIPE).

Success in South Africa

The ideal crop protection solution is a cost-effective, prophylactic IPM program. Both the fungal diseases and the fly vectors need to be tackled at the same time.

Lisianthus growers in South Africa were facing severe losses from dieback until they implemented a preventative program which combined f Trichoderma asperellum, a fungus that controls soil diseases, with Metarhizium 69 as a soil drench for the fly vectors. Before this treatment, it was not possible to produce more than one flush per planting; this IPM program has enabled the growers to harvest three flushes from one planting, making it a more profitable crop.

Louise Labuschagne
hails from
The Real IPM Company
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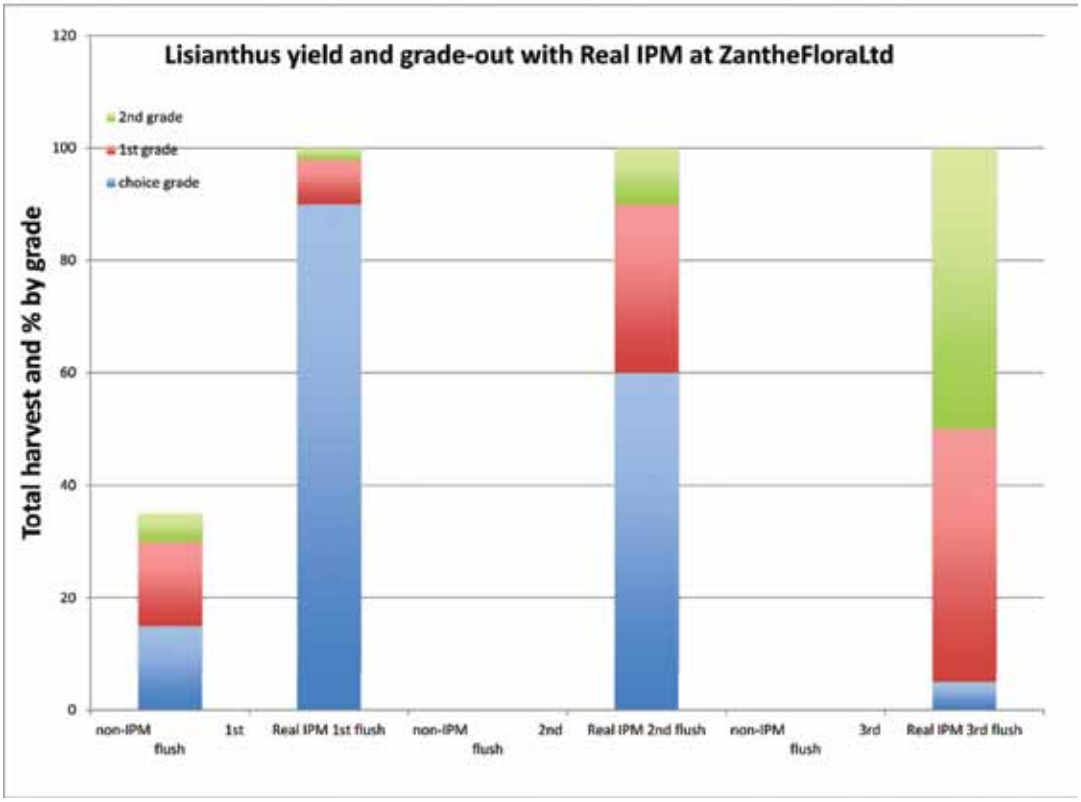

Quality Control Here and Abroad

Gay Smith

Compared to Dutch producers, American growers have more leeway in their choices of postharvest treatments. Proper selection and cleanliness are still essential.

Night strolls around my Portland neighborhood offer a great opportunity to gaze into lighted windows and check out the décor, a habit I picked up years ago when living in the Netherlands, where curtains are open and lighted windows beckon attention. When I mentioned to a Dutch friend how it felt nosy—but irresistible—to peer in, he told me that curtains are purposely left open so you "could look in on Monday and see through to Friday".

What always grabbed my attention was the myriad plants and flowers displayed on deep window sills. Not one or two pots, but literally half a dozen or more plants adorned every surface, and at least one or two vases of cut flowers were always visible. In Holland, Friday flowers are a given. This weekend tradition is obvious on buses and trams as people head home. Bouquets strapped on bike racks sound postcard perfect, but truly are common sights. Retail shops abound, but street stalls offering cash and carry bouquets are where the action is. Beautiful, eye-popping displays of grower bunches and premade bouquets feature the colors and products of the season; easy, convenient and fresh.

Interestingly, bucket prep at vendor stalls is minimum. Buckets usually contain water and a chlorine pill. This minimal care works because of the strident protocols mandated by auctions, including specific pre- and postharvest protocols, and strict grading standards for all flowers sold across the clock systems (including imported products). Inspectors check and record details daily, and quality control labs run tests to determine solution efficacy, counting bacteria forming colonies (CFUs) in stem tissues, and/or burning calyces to measure the amount of silver in blooms treated with STS.

Ongoing vase testing is conducted to provide buyers with longevity info. If products don't meet the required specs, they not allowed to be sold. A "three strikes—you're out" rule exists, meaning if a grower is caught claiming products are treated, but checks prove otherwise, that grower is banned from future auction deliveries. Rules cover product grooming, too. Roses without guard petals are not allowed to enter the clock. Growers must specify whether the blooms are grown under artificial lighting. Inspectors check and indicate if foliage appears dehydrated or has any disease or other kind of damage. Some product categories—chrysanths—for example, also have per stem weight specifications.

Many grading standards are the same requisites used in growing areas of the Americas, such as stem length and strength, bud and stem count per bunch, bloom diameter per grade and variety identification, but other stipulations are far more exacting. Unlike U.S. growers, who are free to decide on any treatment, growers delivering to clocks must adhere to specific treatment guidelines. Chrysal (the company I work for) worked in tandem with auction quality labs to develop, test and determine best treatments, which ultimately were adopted as official the auction guidelines. For example, growers are mandated to use silverthoisulfate (STS) on flower types sensitive to ethylene. All stems of *Euphorbia fulgens* must be pretreated with Chrysal SVB for foliage quality. Chrysal gerbera pills (called CVBn in Holland) is the bucket solution mandated for a range of flowers delivered to clocks. Specific food packets are also specified on bunches of bouvardia, viburnum, Prunus, and Syringa (lilac) sold across auction clocks, so that consumers are guaranteed full bloom development.

When deciding what postharvest products are best suited for your crops, consider a few basics, then use the solution that treats the weakest aspect of the flower type in question.

Is There a Chemist in the House?

Without a co-op auction system, U.S. growers must make their own choices on best treatments. Testing and comparing different products is critical in determining which treatments work best with your farm's starting water. TDS (total dissolved solids) refers to the measurement of water salinity or the soluble elements in water. These can include magnesium, sodium, calcium, chlorides, and sulfates and are measured in parts per million (ppm). High quality water for flowers should have a TDS measurement of less than 200 ppm. pH is another important consideration. It is the measurement of the acidity and alkalinity of water on a scale of 1 (acid) to 14 (alkaline), 7 being neutral. High quality water for flowers should be slightly acid, with a pH factor of between 3.5 and 5.0. Most city tap water is near neutral. Acidic water is taken up more readily by flower stems than are neutral or alkaline water.

When deciding what products are best suited for your crops, consider a few basics, then use the solution that treats the weakest aspect of the flower type in question. Even if you are using plain water, the first drink should always contain at least a germicide to knock down pollution. Bacterial blockage shortens vase life of any flower, fast! Do stems leak carbohydrates and organic juices into the water, causing it to become cloudy and turbid quickly? Are the stems smooth or hairy? Hairy stems tend to attract bacteria more readily than smooth, waxy stems. Is it a simple flower or one that consists of many florets (lilac or viburnum)? Are you cutting tight to extend the sales window? If so, a solution with glucose provides the energy needed for buds to open and florets to remain turgid. Is leaf yellowing an issue? Plant growth regulators help prevent premature leaf yellowing. Is it difficult to get the stem hydrated? Hydration solutions boost flow to turn on the plumbing system. Details matter.

Working clean is a given, but are your tools sharp? A ragged stem end leaks cells and juice into the solution, putting undue pressure on the clarifier. What about cleaning out the trash barrels? Airborne disease spores linger, just waiting to float around the processing area and re-infect other stems. When consolidating buckets, do you also consolidate solutions? Recharging a bucket with fresh solution is okay, but avoid pouring old solutions together, and never add ice. Ice dilutes the dose which basically provides a juice bar of sugar water for bacteria. What about allowing good air flow in buckets? Product that is crammed in tight usually suffers foliage issues.

Finally, keep food out of flower coolers. The ethylene produced by one ripe mango is sufficient to damage product and damage is irreversible.

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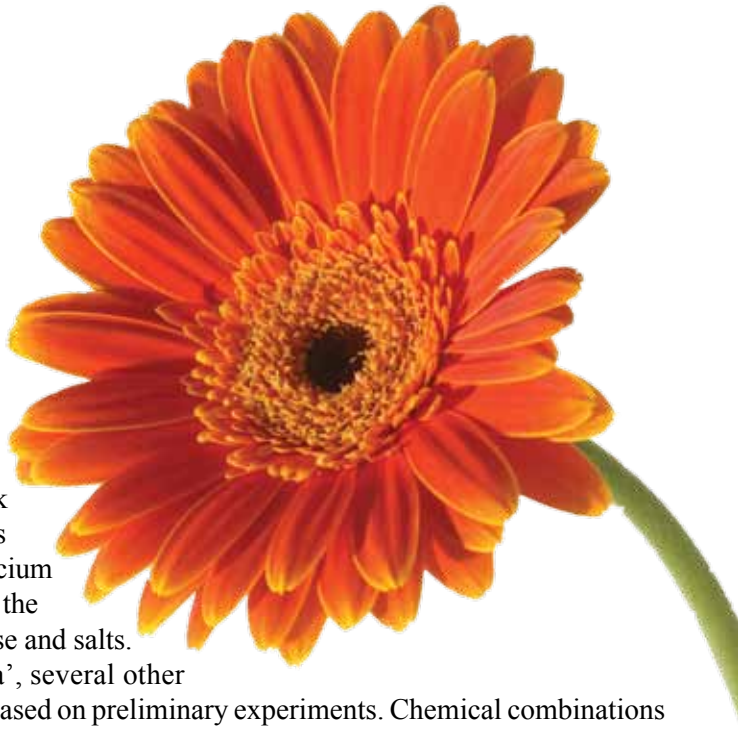
Megan Bame

Pulse Treatment to Inhibit Stem Bending



Vase life of several gerbera cultivars is often terminated by the occurrence of stem bending. While bacteria in the vase water leading to blocked xylem and reduced water uptake has been causally related to stem bending, other hypotheses for the cause of bending include lack of mechanical support due to failure or weakness in the stem cells. This research looked at the effectiveness of using a pulse treatment with calcium ions, which could increase the cell wall stiffness. Other components of the pulse treatments included antimicrobial compounds, surfactants, sucrose and salts.

While the primary cultivar used for this experiment was 'Tamara', several other cultivars were included; some more prone to stem bending, some less, based on preliminary experiments. Chemical combinations were either included in the vase water at the onset of vase life and not replenished, or applied for a 24-hour pulse directly after harvest.

This research showed delayed stem bending with a 24-hour pulse treatment at 20C with a solution containing 25 or 50 mM calcium chloride and 25g/L sucrose, together with a citric acid/K2HPO4 buffer at pH 3.5. Observation of individual components included: 1) A 24-hour pulse with calcium and potassium salts delayed stem bending, 2) Antimicrobial surfactants tested did not delay stem bending, 3) Sucrose in the pulse solution delayed stem bending, even when applied without and antimicrobial compound, and 4) Temporary dehydration drastically reduced stem bending.

Perik, R.R.J., D. Raze, A. Ferrante and W.G. van Doorn, 2014. Stem bending in cut Gerbera jamesonii flowers: Effects of a pulse treatment with sucrose and calcium ions. Postharvest Biology and Technology, *98 pp. 7-13.*

Cut Flower Guarantees

Fresh cut flowers are highly perishable, and research has shown that short vase life is a primary purchasing barrier for consumers. Not only does it decrease customer satisfaction, it also discourages repeat purchases. Research has also demonstrated that for potted plants, a guarantee decreased consumers' perceived risk and improved consumers' perceptions of the floriculture products' quality. This research at the University of Minnesota looked at the impact of guarantees on consumers cut flower purchases in general and their willingness to pay for cut flower guarantees.

The research endeavor started with two pre-study focus groups whose responses to open-ended questions guided the development of the formal survey questionnaire. Next, a choice experiment was set up. Mixed flower arrangements and single-species arrangements were selected as the target products. The attributes of longevity, guarantee, price, use (for self or for gift) and flower arrangement type were considered using 24 choice scenarios. For each scenario, participants were shown images of the cut flower arrangements and were asked to make one of three choices: Arrangement A, Arrangement B, or Neither. Following the choice experiment, participants completed a survey questionnaire asking about attitudes toward cut flower longevities, guarantees and socio-demographic data.

Fifty-five percent of the 525 research participants were women and the mean age was 43. Most were college-educated and came from a two- or three-member household. The presence of a guarantee increased the probability that participants selected the cut flower arrangement for both mixed and single-flower. They were also willing to pay a premium for a guarantee and they were willing to pay more for longevity of the flowers (as labeled).

The research also allowed for cluster analysis, which divided the participants into three clusters: guarantee seekers, value-conscious consumers and spenders. The socio-demographic descriptions of the clusters are intriguing, whereas the value-conscious consumers were mostly older women (compared to the other two groups) and spenders included more men, more people not in a relationship had a higher interest in guarantees on more expensive arrangements.

The researchers acknowledge predicting longevity and, furthermore, offering a guarantee, can be a challenge. They suggest that retailers 1) Source product from businesses with superior production and postharvest handling practices, 2) Educate staff on proper care of cut flowers from product arrival to post-sale, 3) Provide consumers with clear care instructions, and 4) Strive to promote an accurate longevity so that customers have reasonable expectations and dissatisfaction can be avoided.

Rihn, A.L., Y. Chengyan, C. Hall, and B. Behe, 2014. Consumer Preferences for Longevity Information and Guarantees on Cut Flower Arrangements, HortScience*, 49(6) pp. 769-778.*

Methods for Ethylene Control

Ethylene is a plant growth regulator involved in a variety of physiological processes including germination, growth, floral initiation and opening, senescence, abscission and fruit ripening. Responses to ethylene vary widely by plant species. Much is known about ethylene at the biochemical and genetic levels and numerous strategies have been developed to reduce ethylene production or inhibit its action to prolong flower postharvest performance.

Genetic Strategies

Genetic modification of genes such as ETR1 and EIN2, which have been identified as part of the ethylene signaling pathway, have been successful in enhancing postharvest performance, but there are several barriers to commercialization of genetic transformation in ornamentals. Some barriers include cost, complexity of the regulatory process and varied levels of acceptance across world markets.

Environmental Strategies

Reducing exposure is a key environmental approach. Removal, oxidation and absorption are three main approaches to reduce ethylene levels. Removal can be accomplished through adequate ventilation, membranes for filtration, small sachets, films for modified atmosphere and activated carbon. Oxidation relies on using an inert matrix impregnated with potassium permanganate. Reduced air temperature and ventilation are commonly used during postharvest storage and transport, often in combination with adsorbers or oxidizers.

Chemical Strategies

While ethylene biosynthesis inhibitors lead to the reduction of endogenous ethylene, the compounds are often too expensive for practical use and therefore used mostly in research. Ethylene action inhibitors are more commonly used to in the trade, including silver thiosulfate and 1-MCP (marketed under the trade names EthylBloc and SmartFresh). 1-MCP, was the first patented non-toxic ethylene action inhibitor, but there are application barriers to it as well, including its gaseous state and reduced effectiveness at low temperatures (0-5C). New application methods are continuing to be developed and show promise, including a sachet that is dipped in water just prior to packing in a box, releasing the 1-MCP into the box as the water diffused through the sachet.

Scariot, V., R. Paradiso, H. Rogers, and S. De Pascale, 2014. Ethylene control in cut flowers: Classical and innovative approaches. Postharvest Biology and Technology*, 97 pp. 83-92.*

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ASCFG Grower Grant Report

Research Supported by an ASCFG Grower Grant

Focused Radiant Heat to Control and Enhance Off-season Cut Flower Production

Tanis Clifton

Happy Trails Flower Farm, Dennis, Mississippi

In our years of growing Mother's Day oriental lilies in a high tunnel, we have had the unpleasant surprise of harvesting blooms one to five weeks after Mother's Day on a consistent basis. To add to this obvious problem, when we actually had the lily harvest come in, often the florists still had leftover lilies or did not need 500 of them all at once! If we were going to try to target this holiday, we had to come up with a solution.

This problem prompted us to apply for an ASCFG Grower Grant. We were thrilled to have our application approved. We could now begin to test our theory that focused radiant heat may control and enhance off-season flower production.

We believed that to deliver out-of-season flowers, in a time-sensitive manner, focused radiant heat must be applied to target areas within the hoophouse. The reason for this is twofold. First, it is more economical to heat small target areas of a hoophouse than to heat the entire structure. Second, multiple crops with various temperature requirements can be grown in the same hoophouse.

To address the issue of how to grow cool- and warm-season specialty cut flower crops simultaneously, we built a secondary hoop within the hoophouse, then installed a hydronic radiant heat system. This technology is currently being used to heat commercial buildings and homes as well as to prevent ice buildup on driveways.

Our objectives were as follows:

1. To control and maintain optimal growing conditions, regardless of weather, to a target area within a hoophouse.
2. For our small cut flower operation to have more than one climate within a single hoophouse.
3. To provide an economical and portable heat source for a target area inside an existing hoophouse.
4. To increase the likelihood of expected target harvest date for out-of-season flowers for holidays such as Valentine's Day, Mother's Day and Christmas.

As usual, we planted three varieties of oriental lilies in bulb crates on December 21, 2013. Oriental lilies were the flower choice for this particular experiment as they require more consistent temperatures to guarantee specific harvest dates. Our normal procedure is to water them in, and cool them in the walk-in cooler for 3 weeks. This would have meant that we placed the lilies in the high tunnel on January 11, 2014. Although the temperature was a comfortable 48 degrees F that day, within the week the forecast was for low temperatures in the teens. These low temperatures held true for the entire month of January. So we spread all the crates out in the cooler and added supplemental lighting because the bulbs had started to sprout. This protected them from potential damage from the cold temperatures outside. These extreme cold temperatures in January also prevented us from building the project on schedule.

The construction of the mini greenhouse finally commenced. The first step was laying double bubble insulation on the hoophouse floor. Then we built a structure that would be large enough to allow space for two rows of bulb crates. The actual dimensions of the structure were 40' x 45" x 6' high. We started the project with the intentions of using PEX tubing as our radiant heat pipe. We found that due to the small area that we planned to run the radiant heat, the PEX tubing was too rigid to bend at a tight enough angle to make the curves. We decided to try our theory with PVC pipe so we could get the right angles. The 1" PVC pipe was laid on top of the insulation, then connected to an inline water heater. (fig.1) The heater was an Electric Circulation Baptistry Water Heater. We used this because it was small, portable and efficient. We then covered the PVC with sand (fig.2), believing that this would transfer heat better than the air under the bulb crates. We then covered the entire structure with 3 mil overwinter poly. The

fig.1

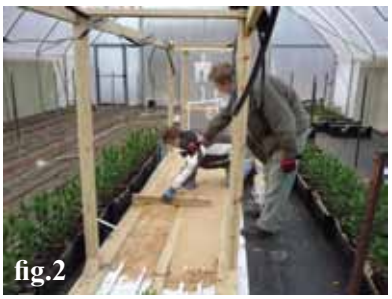

fig.2


fig.3


fig.4


fig.5

theory was that the water would be heated, circulated and returned to be reheated again, in a closed loop, through the PVC. The water temperature was controlled thermostatically with the hope that we could maintain an air temperature of 60 degrees F. We also added four heat lamps inside the mini greenhouse to supplement the radiant heat. Air was circulated using fans on either end of the structure. Roll-up sides were utilized to ventilate the structure on warm days. (fig.3) In addition we added supplemental light starting February 25, from 4:30-7:30 to extend the day. (fig.4)

The extreme cold temperatures seemed to break on February 1. At this point, all lilies had sprouted and had some length on them. (fig.5) We placed all lilies into the hoophouse on February 1. Six crates were designated as the control and placed in the hoophouse. The control was exposed to inconsistent temperature fluctuations influenced by daily weather. This is the existing standard. The remaining crates were placed into the mini greenhouse structure. Although temperatures were not as cold, growth was somewhat slow as outside temperatures in February were averaging between 23 degrees F to 48 degrees F. We started charting temperatures inside the hoophouse beginning March 1 through May 1 (chart). The temperature was monitored and noted daily using inline thermometers at the outlet and return of the heating unit. The mini greenhouse air temperature was also monitored and noted daily.


fig.6


fig.7

(fig.6) Ambient air temperature for the control group was monitored and noted daily as well. As you can see from the chart there was a significant difference in growth rate when comparing the mini greenhouse verses the standard hoophouse (control) setting.

It was obvious to us that the addition of bottom heat as well as the use of heat lamps resulted in an earlier harvest. However we had insufficient heat transfer from the tubing, due to the linear flow. Heat transfer may have been improved had we used more flexible tubing with a non-linear fluid flow. The reality was that although we realized an earlier harvest on one lily variety, it was not consistent with all varieties of oriental lilies that we planted. (fig.7) We still had quite a few lilies harvested after Mother's Day (chart).

All in all, with a little tweaking of lily variety and possibly a different heat source, we feel like we can still heat a small area within the hoophouse, thus saving energy costs and allowing plants with different temperature requirements to thrive in the same main structure. Next season we will be testing with LA hybrid lilies, which are much less sensitive to cool temperatures compared to oriental lilies. Maybe—just maybe—we can get a dependable harvest for Mom.

DATE	MINI GREENHOUSE HIGH/LOW TEMP	PLANT HEIGHT	CONTROL HIGH/LOW TEMP	PLANT HEIGHT	MORNING
2/1*	60/44	8"	60/44	8"	44
3/1*	90/48	20"	75/40	14"	50
3/2	60/60	20.75"	60/60	14.5"	60
3/3	60/50	21.25"	48/44	14.5"	22
3/4	60/40	22"	54/40	15"	23
3/5	50/40	23"	42/38	15.25"	34
3/6	74/58	23.5"	60/48	15.75"	45
3/7	60/40	23.75"	60/40	16"	38
3/8	68/48	25"	68/48	16.75"	48
3/9	62/52	25.5"	60/48	17.25"	50
3/10	68/54	26.5"	68/48	17.25"	48
3/11	75/46	27.5"	75/44	17.25"	40
3/13*	60/40	29"	50/34	17.5"	28
3/14	60/54	30"	48/44	17.5"	40
3/16*	60/58	31"	60/58	18"	58
3/18*	58/52	34"	52/48	18.75"	40
3/19	58/50	35"	52/50	19"	48
3/20	62/44	36"	60/40	19.75"	40
3/21	58/46	37"	52/48	19.75"	40
3/22	90/56	37.25"	90/50	20"	50
3/23	80/55	38.75"	80/55	20.25"	46
3/24	53/48	39"	48/38	20.5"	32
3/25	58/42	39"	50/46	20.5"	40
3/26	60/38	39.5"	45/38	21"	24
3/27	64/54	40"	60/54	21"	50
4/2*	62/58	42.5"	62/58	21"	60
4/5*	60/48	43.5"	60/48	21.5"	60
4/9*	60/48	44"	60/48	21.5"	55
4/16*	60/48	45"	60/38	22"	32
4/23*	80/60	46"	78/54	22.5	46
4/30*	70/60	47.25"	68/50	22.75"	50
5/7	90/65	48"	90/60	23"	60

*-indicates day(s) skipped

In Search of the Ultimate Mini-Sunflower

Paula Rice

BeeHaven Farm, Bonners Ferry, Idaho

The perfect mistake. That probably sums up a great many discoveries. And while I wouldn't want to portray the image of my flower farming practices as fly-by-the-seat-of-your-pants farming, I do keep a watchful eye out for perfect conditions that lead to great cut flowers solely by chance. Basically, it boils down to observation. When something shows up on the scene that either I did (by chance or by purpose), or Mother Nature did, I think to myself "Okay, you're really great." Why?

That is how the search for the perfect mini-sunflower came about. I was planting up the hoophouse several years ago and, in an effort to cram as much in there as I could (high-dollar real estate, right?), I planted 'Sonja' sunflower plugs about 6" apart every direction, and pinched them (soft pinch, they were pretty small) so they would branch. Later that summer I was picking tons of the cutest little sunflowers ever. In fact they were so abundant, cute, and small, I bunched 10 stems to group and sold them as straight bunches. I've grown them successfully for several years now in both the hoophouse and in the field. But it got me to thinking…I wonder if there are other branching varieties that would do the same thing and be an even more perfect mini-sunflower?

I wanted to stick with branching varieties because I was looking for:
1.) Uniformity among the sunflower heads (I don't want the nuisance of grading and sorting).
2.) Abundance per square foot.
3.) Strong, stiff stems.

Surprising Discovery #1. There was not much difference between head size from the 6" spacing to the 24" spacing. That is not what I read would happen. In my area, for the last two summers, we consistently had nighttime temperatures that dropped into the 50s. Perhaps this had some effect on head size. Personally, I thought this was great. Since I want as many heads per square foot and it didn't affect head size, I will go with the tighter spacing.

Varieties trialed:
'Giant Sungold' (110 days)
'Frilly' (65 days)
'Soraya' (85 days)
'Valentine' (70 days)
'Peach Passion' (55 days)
'Greenburst'(50 days)
'Lemon Aura' (60 days)
'Shock O' Lot'
'Sonja' (55 days)

All these were started as plugs so I could be more "scientific" about the spacing. I planned for two separate plantings in 4-foot beds. The first would be three rows per bed (18" between rows) and the second would be 4 rows per bed (12" between rows). All plantings were pinched to encourage branching and decent stem length.

Both plantings had four different spacings within these beds and included all the above varieties. Example: In Bed #1 (which had 3 rows) we would plant all of the 'Giant Sungold' but start with 6" spacing, then move to 12" spacing, then 18" spacing and finally with 24" spacing down the row. This was done so that, should the ultimate sunflower appear, we could know the "perfect" spacing.

We did the same with the second planting of plugs into the 4-foot bed with four rows spaced 12" apart. Because I am also going for productivity, I was curious to see how much difference that 4th row would make in quantity and head size.

The results were surprising. Not at all what I expected, because what I expected was exactly what I wanted, which is not what I got. But with the spacings I used, some interesting discoveries were made and we did still end up with a winner, so hang with me here a little while longer.

Surprising Discovery #2. Most varieties at this spacing produced small to medium heads, not minis. The entire crop looked exactly the same down the row. Head size and productivity did not change much from the 6" spacings to the 24" spacings for the 3-row beds as well as the 4-row bed. They could still be sold as 5-stem bunches or per stem.

Surprising Discovery #3. All branched nicely, with 5-6 stems per plant, again regardless of spacing. All except 'Peach Passion' had very acceptable and amazing stem length.

Variety Information

'Valentine' did not have a strong enough neck and of all the sunflowers, the flies were attracted to this light yellow and would mark up the petals so much that many were simply left in the field and not sold. Because of its weak head, I do not consider it a choice for the future.

'Giant Sungold'. I was really looking forward to a stellar harvest of 'Giant Sungold' (110 days). There were tons of perfectly sized (not-mini) heads swaying in the breeze. It was going to be my main crop for September. But we had an incredibly hard frost (24°) the second week of September which brought my business to a crashing halt. There were a ton of these uniform sunflower heads just waiting to mature enough to take to market. I could tell the necks were going to be a touch on the weak side, but still within acceptable standards for me. Next year, I will grow a pinched crop and a non-pinched crop, as pinching definitely put this behind schedule. If I don't get that hard frost, I'm in the game. If I do, that's just how it goes sometimes.

'Shock O' Lot' branched nicely, but the stems were not stiff and strong. But I will say this: I always sold out of it on the van for the florist route. Even though it would need to be wired for design work, they still wanted it. And compared to other red sunflowers, it wasn't as bad for dropping its petals. I will grow this as my red until I get something better, and continue to pinch it to get nice uniform-sized heads and uniform stem length.

Lemon Aura' was nice. It is a very different lemony/lime-greeny, teddy-bearish, type of sunflower that had nice stiff stems. It did have a higher percentage of deformity, but nothing too drastic. It didn't get as tall as the others, nor as long as stems but still very acceptable for creating straight bunches. This one, I think, may have the potential to make it into a mini category with more intense spacing.

'Shock O' Lot'

'Greenburst'

'Peach Passion'

'Peach Passion' was not acceptable at any level in my opinion. It simply did not perform at all once it had been pinched. It did its thing way too soon before any stem length could develop, the flower matured quickly, and the centers turned a dingy, mustardy yellow which I did not like. Though it did bloom sooner than everything else, a lot went to waste in the field because of no stem length.

'Greenburst' from Harris Seed was awesome. It had long, strong stems and averaged 5-6 stems per plant. Though I liked everything about it culturally, my florists and I had a hard time with postharvest. I stopped picking and selling it, which broke my heart to see all that color in the field. It may just need special postharvest treatment.

Won't Grow Again with This Technique

'Peach Passion', 'Valentine', and 'Frilly'. I really like 'Frilly' and successfully grow it un-pinched. It does have somewhat of a weak neck which becomes more pronounced with this type of cultural manipulation. I suspect that is the same with 'Valentine'. And though 'Greenburst' was really a great-looking sunflower and tolerated this type of pinching and intense spacing, I will look into my vase life problems before trying to grow him again.

Will Grow Again with This Technique

'Giant Sungold', 'Shock O'Lot', and 'Lemon Aura'.

And the Winner Is…

That leaves us with two candidates for the Ultimate Mini-Sunflower, the only ones which actually produced a mini size: 'Sonja' and 'Soraya'. Both are very sweet and could be manipulated with tight spacing to produce the most precious mini-sunflowers you have ever seen. While both have seriously outstanding upward facing blooms on strong, stiff stems (drum roll please), 'Sonja' is going to the top of the list because she is abundant, prolific, and easy to grow. 'Soraya' tends to come into harvest slowly and over a stretch of time, so there really isn't a "critical mass", at least nothing like 'Sonja'. 'Sonja' also has a shorter crop time so you can get in several harvests. 'Soraya' takes 85 days and with my cool nighttime temps, I can only get in one, maybe two crops, though I will admit that the blossom of 'Soraya' is more double than 'Sonja' and therefore a better flower in my opinion. If you live more southern (I'm in North Idaho so you probably do) it may be you would choose 'Soraya' over 'Sonja', she may perform better for you. I say try both.

Summary

So why the trial? Why didn't I just go/stay with 'Sonja' in the first place? Sonja isn't perfect; there are a few things about her I was hoping to improve upon by using a pollenless variety. She has pollen, not much and certainly within acceptable ranges, but it would be nice if she didn't. She matures very quickly, you must pick every day. I would sift through my buckets and cull any whose centers were fully developed. I liked a tight center and Sonja can go "furry" quickly. There is a fraction of blooms that are deformed or have oddly placed petals. I suspect this is due to the intense spacing and pinching. It isn't bad, but I was hoping not to have to throw any down.

NORTHEAST

Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont, Ontario, Quebec, and the Maritime Provinces

Diana Doll
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How are our fields looking these days? Not such a crazy question to be asking in the middle of winter. I'm walking the fields, ordering cover crop seeds, and putting their sow dates on the calendar. Better to think about it now rather than assume I'll "get to it" once things start rolling in the spring. If I have the seed in stock, I'm much more likely to sow it close to the scheduled date than if I have to drive to the feed store and pick it up, (provided it's in stock) and get it in the ground when the weather's right.

Some winters we have a lovely, consistent snow cover, protecting our tender (zone 5) perennials from deep freezes (sea holly, lavender, Shasta daisy). Our zone 4 perennials I'm not worried about; they overwinter even when the temperature remains well below zero. I also love a snowy winter to protect the soil from wind erosion on any beds that we didn't get a hardy cover crop on.

In a dry winter, our fields remind me of the tundra; dry, rock hard, and crisp. Walk on the cover crop of winter rye/vetch and it crackles and snaps underfoot. I cringe at the sight of any bare soil, thinking "Next year, I've got to get a cover crop into these beds of late-fall annuals!" But how to establish a cover crop on beds still in production, in time to have it put on enough growth, but not so early that it interferes with the flower crop?

The first frost in September is usually light enough to affect only the most tender annuals: zinnia, basil, amaranth, celosia, gomphrena. As soon as these are touched by frost, they're compromised to where they won't hold up once cut, even though they might still look colorful at first glance. Time to mow, disc, and drill in a winter rye and vetch/clover mix.

The rye is amazing. As long as it has a week-long window of decent weather—fifty degrees and one good soaking rainfall—it will germinate, and sprout a tiny red tip. That's all it needs to overwinter and come on strong in early spring. The gamble lies in my tendency to wait until the tougher annuals are frost-affected, by which time the weather might not provide that crucial week-long window. These winter covers establish sufficiently if sown by late September. I love seeing those green fields all winter long, knowing that the root zones below are hibernating nutrient-retaining microbes that will come alive in mid-March.

One thing that resulted in a less than ideal winter cover is that I didn't prep the soil prior to drilling in the seed. I thought the grain drill would furrow deep enough to set the seeds without a surface till. But after drilling, I saw a number of seeds sitting on top of the soil, high and dry. Bird food. Fearing I might have wasted time and money, I dug around a week later and saw that many seeds had definitely sprouted….whew!

So what else to do about my dread of seeing bare soil all winter long? Buy seed now, so it's on hand to intersow into the frost-hardy annuals that carry us through October. I'm picturing us harvesting snapdragon, lisianthus, trachelium, craspedia and *Ammi daucus*, with a light understory of spouts on any bare areas. I haven't tried it yet, but since I can't quite bring myself to turn under these late fall workhorses while they're still producing, I'll give it a go next year and let you know how it turns out.

MID-ATLANTIC

Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia

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First, I have to take a few sentences here to thank everyone who came to the Delaware Conference, and for the many helping hands that made it such a success. I am always enthralled by the energy at the National Conferences, and this one was off the charts! I don't think I slept more than four hours the entire four days. I loved meeting so many of you, making new friends and hugging old ones. If it was your first time attending an ASCFG event, I hope you left feeling energized, educated, valued, and hungering for more! And you can in March at the Georgia Grower's Intensive! I'll be there. Will you?

In Georgia, we will be tackling more wedding design demos and discussions. One very important design element of wedding flowers is what I call "wearables". This fun category includes boutonnieres, corsages, flower crowns, and more unusual pieces like flower necklaces, rings, and belts. If you are a new farmer florist, these detailed designs that require a lot of mechanics might be a bit intimidating.

But, in reality, once you have the tools and techniques, they are easy, though perhaps time-consuming.

At the Grower's Intensive in March, I will demo some of these pieces in person, but for now, I thought a step-by-step how-to for flower crowns would be a good winter read. You can even get in a little practice with some dried flowers or evergreens while you have some down time. I will confess I rather enjoy making a crown randomly and wearing while I clean the house!

Flower crowns are a popular accessory right now for brides, bridesmaids, and flower girls. I could also see them becoming popular for proms this coming year. And it's not hard to understand why. They can be simply sweet or dramatically romantic, depending on the blooms and other elements used. And while flower crowns take time and need to be done just before the wedding, they really are not that difficult to make.

How to Make a Fresh Flower Crown

1. Gather all your supplies on a large work surface:

- Heavy "grapevine" wire (available at most craft stores)
- Sharp scissors and wire cutters
- Floral tape
- Floral wire (22 gauge or similar)
- Floral glue (optional)
- Lots of flowers (used in this tutorial were feverfew, poppy and nigella pods, eryngium, lavender, viburnum berries, and garden roses)
- Ribbon
- A small bottle or vase of water to hold snipped blooms while you work

2. Make a loop of grapevine wire that fits your head at the spot you want the crown to sit. Alternatively, ask your client to measure her head at the point she wants her crown to sit. Cut wire about two inches longer than the fitted loop. Fold the ends of the wire over and hook them together. If you need to adjust the size of the finished crown, just use these hooks to make it bigger or smaller.

3. Snip off the blooms you want to use so they have about a three-inch stem. Remove all foliage from the stems. Large-headed blooms (like garden roses and dahlias) will need to be wired so they don't snap off. Thread a small piece of floral wire up the "butt" of the bloom so that it comes out the center at the top. Fold the top of the wire over so it creates a tiny hook. Gently pull the wire back down towards the stem so the hook disappears into the bloom. Use floral tape to secure the wire to the flower stem.

4. Make lots of little bundles of flowers, mixing and matching elements as you like. Wrap snugly with floral tape, leaving about a two-inch tail of tape on each bundle. Snip off any excess stem from the bottom of each bundle.

5. When you have several bundles made, begin attaching them to the grapevine wire loop. Place the first bundle so that the flowers lie just over the top of one of the hooks. Use the tail of tape to secure the flower bundle to the wire, making sure it's snug the entire length of the stems.

6. Add your next bundle, laying the flowers over the taped stems of the first bundle so that the stems no longer show. Continue adding in this fashion, layering on your bundles, working in the same direction around the loop.

7. At the "front" of your crown, you may wish to add more or bigger blooms. This is a good spot for the flouncy garden roses. If desired, you can use the floral glue to adhere extra blooms on top of your taped bundles.

8. Finish adding flowers to the crown all the way around. Leave an open space for a ribbon loop if desired. Or, alternatively, you may glue a flower into the last spot so there is no empty space.

9. Spritz with Crowning Glory or a similar product. Store in a large plastic bag in the refrigerator/cooler until delivery time.

Photography for this DIY was provided by the talented Brooke Courtney.

SOUTHEAST

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee

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A Few of My Favorite Things

Every flower farmer I know looks forward to a little winter break, but deep down we just can't wait for spring. Well, warmer weather is right around the corner and here are a few of my favorite things that you might be interested in when spring finally does arrive.

Simple Bouquet Containers

At the farmers' market we use a lot of containers for ready-to-go bouquets. A favorite is dog food cans that we save and "dress up" for vases. Here's how we fix them up: Remove paper, use mineral spirits to take the glue off, spray paint, sand a little spot to affix your label, then fill with flowers. Voilà! Collect $15!

Using the same type of can, wrap in brown paper and hot glue various sticks to it, then wrap with a burlap ribbon or twine. This gives the container a rustic look which is very trendy right now. Although more time consuming, this method has proven to be a favorite with our customers. Hitting all the thrift stores and looking for not only cheap vases, china tea pots, old milk bottles and tins, but any interesting container that holds water, can be very lucrative. We live near a floral and gift wholesaler where we often get some real steals on charming vessels, ribbons and other goodies. With a little research, you can probably find some great wholesalers in your area.

Flower Crowns

Have you ever made a flower crown? If not, give it a try. These pieces are very popular and totally cool! There is a market for these if you do weddings, sell at farmers' markets, or supply florists and supermarkets. The crowns take some time and effort to create, however it's worth it to make someone feel like a "Flower Goddess"!

There are many ways to make a flower crown but all you really need is a structure (usually some kind of wire), some floral tape, and of course, flowers. To make everlasting crowns you will need to grow such flowers as *Xerochrysum bracteatum*

(strawflower), *Ammobium alatum grandiflorum* (winged everlasting), *Limonium* (statice), *Gomphrena globosa*, and *Gypsophila elegans* (baby's breath) to name a few. Fresh flower crowns, as with boutonnieres, use only flowers that will hold up out of water. Be sure to give them a little extra help by spraying with Crowning Glory or similar product. For more information and tutorials, I suggest you get online and check out the following pages: www.celadoncelery.com/floral-crowns and www.stonefloxbride.com/flowers

This is a link to Jennie Love's flower crowns, and offers a tutorial: www.designsponge.com/201/06/diy-floral-crown.html

Flowers and Foliages of the Season

It seems that we never have enough foliage or grass elements when we need them, so this year when we found a really great one, it went on our keeper list. These include: cinnamon basil, hibiscus 'Mahogany Splendor', dusty miller 'New Look' and 'Candicans', *Eragrostis tef* 'Ruby Silk', eucalyptus 'Silver Drop' and *Coix lacryma jobi* (Job's tears). Our "can't live without" annuals are: zinnia Queen series, *Celosia cristata* 'Cramer's Burgundy', *Celosia plumosa* 'Sunday Orange', *Helianthus* ProCut series, Cramer's 'Amazon' celosia, nigella 'Miss Jekyll', dianthus 'Amazon Neon', amaranth 'Dreadlocks' and 'Hot Biscuits', *Ridolfia segetum* 'Gold Spray', strawflower, delphinium Pacific Giants, lisianthus ABC and Mariachi series.

Job's tears

'Lucifer'

The perennial list is important to mention, however it usually takes a few years to establish before realizing a harvest. If you are new to flower farming, getting those perennials in as soon as possible is paramount. Favorite perennials grown on our farm are: yarrow 'Cloth of Gold', crocosmia 'Lucifer', and 'Emily McKenzie', eucomis 'Sparkling Burgundy', 'Tugela Jade', and 'Burgundy', tuberose, veronica, and a few select mums especially 'Seaton's J' Dore', 'Saba', 'Lexy', and 'Yoko Ono', to name a few.

Working with Judy and Linda

It has been great working with Judy Laushman and Linda Twining in the ASCFG office as we plan our next Grower Intensive Conference to be held on March 2-3, 2015, in Athens, Georgia. We are very excited about our line-up of speakers and tours. First, we are meeting at the Georgia Center which is on the campus of The University of Georgia (Allan Armitage's old stomping grounds). The convention center has recently gone through an extensive remodeling and is pretty awesome. Even the conference meeting space is modern, or as Judy puts it, "like the bridge of the Enterprise on Star Trek".

We will meet all day Monday "on the bridge" hearing topics such as the top ten flowers to grow, answers to postharvest questions, efficient farming, woody ornamentals, zinnia secrets revealed, wreath making, and a roundtable discussion. Hors d'oeuvres and refreshments will follow. The next day will be spent touring member farms near Athens. What a treat it will be to see Woodland Garden Farm, 3 Porch Farm, and Davis Floral, with a stop at Watson Mill Bridge along the way! This is definitely a "Don't want to miss" trip.

Also worth pointing out is the fact that the conference center is right next to the famed UGA Trial Gardens and their greenhouses which will be absolutely packed during the month of March. The Botanical Gardens of Georgia is nearby which would be a great sight to take in if you can afford the time. Stay tuned for more detailed information as the event approaches. This meeting is just the thing to motivate and excite you with spring approaching, so come on out and join us for all the fun!

NORTH AND CENTRAL

Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin, Wyoming, Manitoba, and Saskatchewan

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The 2014 National Conference in Delaware was outstanding! It was great to see so many new growers thirsty for the knowledge of how to be better flower farmers. The Growers Schools' "Speed Date a Pro" was a blast but totally exhausting by the end! The ASCFG Conference is so very exciting because most of the year we are alone in our fields hoping that we have all the right information, putting our best practices into play and praying nature deals us a good hand. This can be a very lonely place! The conference works because it gives us the opportunity to check in with other growers, get new information, go home and put it all into practice.

Some time ago I decided I needed more contact with other growers. I really don't remember how it started or who invited whom, but I formed a study group with two other flower farmers after the ASCFG 2012 Conference in Tacoma. This group has become invaluable to me. We have phone chats weekly, and more intensive phone dates November through December when we review the year and every item on our seed list line by line. We discuss growing conditions, spacing, organic pest management and pricing. We clarify, justify and defend each variety we grow. At times we remind ourselves of previous conversations about a crop, and add the newfound information to the conversation. We also discuss our record keeping, and always have an oath to do it better! It's perfect because none of us in our group are perfect!

One of my study partners is Barbara Lamborne of Greenstone Fields in Virginia. We have about the same growing conditions, and they plant by hand, have high tunnels, sell wholesale to florists and at farmers' markets just as we do at Urban Buds. The main difference is that they grow on a larger scale.

Once when we were at an impasse over the correct way to cut dahlia tubers, we patched Bob Wollam into the phone conversation for clarification. When we had questions about lisianthus we tapped in Laurie Hodges of the University of Nebraska.

The expert we tap into our phone group the most is Dave Dowling; he answers our questions about tulips, lilies and the like. These conversations turn into mini growers' schools, and the result is that I'm no longer alone in my field with just my own information, but I have created the flower farming universe network at the touch of my iPhone! I bring to the group not only have my knowledge base and network but also each of my study partners come with their own networks. This information and support instills confidence as I head out into the fields. "Each of us brings to the group our own knowledge bases, and information from our outside networks

Another result of my study group is that I am trying new items; crossed out in the past, they've now made their ways back to my seed list due to group discussion. 'Salmon' godetia and dill were two crops we gave each other last year and are back on our lists for 2015.

The study group is also a nice way to fill in the time spaces between ASCFG National Conferences and smaller meetings, and to keep the cobwebs out of my shrinking brain!

Finally, the very best part is the friendships that are formed within study group. I know ours is beyond measure.

If you're out there trying to figure it all out on your own, and you want to learn more information and stop questioning your decisions in isolation, this is one idea that has worked for me. Here are some tips on finding the right study partner:

1) Find a grower outside your market area.
2) Have similar growing and production systems.
3) Have close enough USDA hardiness zone numbers.
4) Look for someone with the similar commitment to professional development and time availability.
5) Limit the group to 2-3 persons (you will be able to structure it better and cover more ground).
6) Pick someone close to your knowledge level in flower farming (maybe a little smarter!).
7) It's great when you have similar daytime schedules. Example: I know during the growing season we can send a text and get an answer at 5:00 a.m.! We are both early birds.
8) And of course, select someone you want to become dear friends with because that is a natural outcome of the activity.

Happy planning, planting and creating your own flower farming study group!

SOUTH AND CENTRAL

Arizona, Arkansas, Colorado, Louisiana, New Mexico, Oklahoma, Texas, and Utah

Rita Anders
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As many of you have heard the National Conference in Delaware was a huge success, and I was so happy to see so many new and upcoming growers in attendance and all the faces of old friends. Even though I've been growing flowers for over ten years now, I always come away from these meetings learning something new. The priceless friendships and networking that goes on is awesome. I was so happy to meet many growers that I have gotten to know through Facebook and finally get to meet them in person.

My highlight was the afternoon of design sessions with Jennie Love and Sullivan Owen, as well as the wedding panel discussion. When the doors opened and all the attendees pretty much stampeded in to get their seats, I knew it was going to be spectacular. A huge segment of our ASCFG membership is doing event and wedding work, locally-grown design has become very popular, and it can be a profitable avenue for your flowers. It also can be very time consuming, and it's not for everyone.

So you have to live your life and make the choices that are right for you and your farm. Sometimes we think that we may want to do farmers' markets, and then find out it's not our cup of tea and find another way to sell our flowers, and that's okay. Family demographics, current employee situations, weather, health, and current trends can change and affect what direction you go.

Years ago when I started growing flowers, all I had was an ASCFG membership, the internet with snail-speed search capability, a couple of books, limited funds due to two boys at Texas A&M, and a huge desire to grow flowers and be successful. And let's not forget I was younger then.

There was no Facebook, Instagram, iPhones, YouTube videos of how to do about just anything, or high-speed internet. I didn't have a great group of flower friend mentors that I have now to call upon when I have questions. I firmly believe you get back what you put in. I strongly encourage you to attend meetings, learn how to use the internet, read, read and read, and learn how to use social networking.

As I'm talking and sharing with several members in my Region, I'm happy to say that most are adding greenhouses, adding more florists and farmers' markets, and some are dabbling in the wedding business. Being Regional Director for three years now, I've somehow progressed into this group of flower groupies who seem to talk all the time, and when I know the answers (or my opinion of what the answer is), I share but otherwise I try to point them in the right direction to who know may know the answer. I love that we've all become good friends thanks to social media and it's not just business anymore, it's lifelong friendships growing.

One grower in our Region, Denise Taft, had to retire because her husband hurt his back so through networking we sold off her greenhouse and pretty much all her supplies, thus helping Kim Stearns of Austin, another up-and-coming flower grower. This is exciting!

On my farm, our growth has been checked by the lack of water. We weren't able to add any more beds this year but made the ones we have more profitable. I touched briefly on our water situation in the fall 2014 *Quarterly*, but wanted to share a little more about why our water levels are dropping. In Texas there are a lot of fracking water wells being drilled, population levels are growing daily, and drought issues all contribute to why my two wells are producing half of what they were two years ago. There is also a shortage of well drillers available, which results in us having to wait till next year for our well to be drilled. It also will have to be at least 300 feet deep to find water.

Last November, "60 Minutes" aired a program about water shortages. It was very interesting and educational about how they know what areas of the United States have low groundwater levels. There is a NASA satellite called GRACE (Gravity Recovery and Climate Experiment) that measures this very thing, and maps out water shortages worldwide. They showed a map of the low water areas and California and our area of Texas were two areas of several.

Here is a link to the story: http://www.pbs.org/wgbh/nova/next/earth/space-weighing-groundwater-lost-irrigation/

I have always thought that whoever came up with bottled water is a genius, and now that very gallon of water may be worth more than a gallon of gas.

I also want to share some information on making a heated seed-starting table that Frank Arnosky talked about at the Conference. He also had told us about his system in March

at the Fort Worth Growers' School. I didn't need heat till recently so put that project on the back burner and decided to work on it now. I ordered the 100-foot cable from my Gloeckner rep who in turn had to get in touch with the main office to have it special ordered since they don't carry it on hand. I received the cable and then went down to the lumber yard and purchased two 4 x 8 x ½" foil sheathing because the cable is enough to do 50 square feet and placed the sheathing over a table that I already had. I took the cable as pictured and spaced it out back and forth over a sheet and half of the foil sheathing and I used fence staples pushed into the sheathing to keep it in place so they don't touch. I then put old trays over the sheathing and the cable as pictured. You don't need a thermometer because it seems to keep it at a steady temperature and it's working like a charm. It plugs into a normal 110 wall plug. The directions that you get with the cable say to bury in sand, and to ground to a piece of hardware cloth. I spoke with Frank, who says he doesn't do that, and has used the cable for 20 years with no problems, but if you want to go ahead and add the cloth and ground, you can. I have my table in a greenhouse that is minimally heated, closed and vented all winter. I've started one batch so far, and have almost 100% germination of stock and snapdragons which is all I planted this round.

A resource available to all ASCFG members is the online Community Network. It allows you to post pictures of your projects that worked or didn't work. Sharing these with other members saves so much time for those who don't know yet, and there is no use to reinvent the wheel if someone already has done it. So please use the resources available with your membership and please chime in on your experiences to help others too.

Another book I want to plug is *Cool Flowers* by Lisa Ziegler. If you've ever wondered "Can I plant this now and do I need to cover it or should I wait?" or "How do I start the seed to these cool flowers?" this book will answer those questions. You can find it on Amazon and I also believe you can buy it through the Gardener's Workshop Page store front.

I hope all of you have a successful year.

WEST AND NORTHWEST

Alaska, California, Hawaii, Idaho, Nevada, Oregon, Washington, Alberta, and British Columbia

Paula Rice
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My desk is covered and piled with in-the-works projects and projections. Notes on the previous year are littered everywhere as I re-evaluate successes and failures, and try not to forget to do the things I told myself I would do in the coming year. What follows is a peek at my desk, things I have discovered, crops I am predicting to be better sellers, crops that are such good sellers I need to grow more, my "to do" list of winter projects, and a couple of my favorite things that are shaping who and what I want to become as a flower grower.

Crops to Get Serious About

Foxglove. I'm predicting it will become way more popular, and am planning to grow a lot more. I'm optimistic that this crop will be in demand for event design as long as I stay in the muted colors. If I'm wrong? I won't be. There is one thing I have gotten really good at, selling what I have tons of.

Scabiosa. I am going to grow a TON more 'Fama' scabiosa! "Love" is not a strong enough word to express my feelings about this exceptional beauty. And to make sure it happens I'm ordering plugs—lots of plugs. I am not going to miss out this year. My florists are going to love me.

Bupleurum. This must be planted in serious amounts, regularly. This is a standard money-maker and I have been a fool not to have been more diligent about its propagation. This is an item that sells to each and every florist each and every week. I learned the trick to propagating this tricky guy from Erin Benzakein. Thank you, Erin. Seed it, cover it with a black plastic bag, and set it on the cool floor. You should witness fabulous germination rates within the week. It works amazingly well.

Carthamnus. I actually do not really care for the bloom of this but its foliage is awesome. I sell it as soon as it has any height and before the blooming stage (green). The florists really went for the texture it provided and when used in a bridal bouquet it pulls off the look of a mini succulent, and we all know they are the rage right now. I was sold out before any of it had a chance to bloom. This must be planted in serious amounts, regularly!

Carthamnus

Raspberry foliage. I'm just throwing this in here because you need to have some on your farm. It's like a cut-and-come again foliage. Diane Szukovathy and I have been growing raspberry for years. I have planted 15 rows of raspberries solely for the foliage. It sells great, makes awesome, long lasting filler, is elegant and beautiful, and is super easy. It provides cuts all summer and into the fall. I expect this to be an industry standard one day. Things you need to know: Get a thornless, suckering variety. Then mow between the rows to keep it from becoming a nightmare. Chas Gill came up with the idea of mowing the whole thing down in the fall so that he didn't have to deal with the second-year canes. That would eliminate a lot of work in the spring because those second-year canes would have to be staked and the old canes pulled out. I haven't done it, but I thought it was brilliant.

The Winter To Do List

Redo the website. I put a lot of effort into my website several years ago and it is definitely time for a serious overhaul and update. I've changed, and so has the business. We've gotten better and it's time to make sure that that image is coming across to our customers. We need to reword our offerings to reflect the direction we want to go. We've got better photos under our belt and a better idea of why people have come to the website in the first place. Things could be streamlined even more to make it easy for our customers.

Upload flower photos of what we grow. Many brides like to know what we have blooming around a certain time. Rather than send a list of flower names (about which they likely know little) via email, I would like to direct them to a photo collection of pictures each month. Not that we will necessarily create an order from that, but to give them a visual, concrete, assurance that, yes, indeed we do actually have flowers, and they can rest easy that a unique and fun variety will be available. It will help "seal the deal." Same with having photos of our work in a gallery.

Create "real-time" availability for my florists. Historically, I have pretty much sold straight off the van, with only a couple of designers having me build their orders from color ranges. What I didn't sell in an order went in the van for the route, a "What I have is what I have." type of thing. I've steered away from ever promising anyone anything specific.

Suddenly I have quite a few designers who trust me and want me to build their orders based on a certain amount of bunches and color ranges. And to top that off, they want to treat me like a wholesaler—you know, with standing orders. That creates a lot more stress, as I jumble several weddings in my head and try to manage pre-booked orders. I don't deny the adrenaline rush and excitement it takes to make it all come together, but the stress is not good and really that's their job. The ideal would be for florists to make orders online based on an availability I post on Monday, and the quantity would automatically decrease every time an order, without my involvement. I don't want to be on the phone going down a list from florist to florist. This is my hope to keep sales up and sanity stable. I will write about what I come up with and how it goes. Will I miss out on "impulse buying" that the van offered? Will I make more money or less money? We'll see.

Create a wedding design contract. This won't be too bad. I've been collecting bits of ideas for a few years now and it should come together pretty well.

Rework my farmers' market stand. I've clipped inspirations, ideas, and pictures. Now I just need to draw it out.

Rework my spring seeding schedule. After hearing Lisa Zeigler speak, visiting with her at the 2014 Conference, and reading her book, *Cool Flowers*, I definitely am not torturing my cool flowers enough. I'm going to push the limits and see what happens.

Finally, for some time now I have been collecting and reading vintage floral design books. It started out that I wanted to rediscover flowers traditionally used in floral design "back in the day". But while I was researching, and being charmed by their frank and curt writing styles, I began to learn a lot about the basics of floral design. Because the designs in this era (America 1920s–1970s) are mostly simple line and not mass arrangements, I was able to see and understand what these basic techniques meant. I started to get it. I think learning these basic principles and incorporating them into your designs takes it to the next level.

Don't get me wrong: the designs in these books were perfectly dreadful. (I think I've adopted their "curt frankness".) Looking at their rigid perfection put knots in my stomach. I could not enjoy anything so obviously and symmetrically spaced. However, if you take that skeleton of a design, those basic, important ideas of how to lead the eye and create harmony, and add in all the flair that the modern world has to offer—wow, vintage floral design takes on a whole new look. I feel inspired to coin a new word here but it won't come to me.

That is a very long introduction to my new favorites that I hope would inspire many of you, both farmer and designer. They are a couple of charming and inspiring modern floral books written by Vic Brotherson: *Vintage Flowers* (2011) and *Vintage Wedding Flowers* (2014). The author is based in London and where he runs Scarlet & Violet florist. Each time I open these books, the images stir something very deep in my spirit and make me think—yes, that is simple and so, so beautiful. She has blended perfectly, the vintage with the new in a most pleasing and uplifting way. I love both books, but if you must choose, let me help. Between the two, *Vintage Wedding Flowers* is awe-inspiring and would be my first recommendation to see if you even like the style. Then, if you dig old, vintage, shabby chic, rustic, bold, timeless and just happen to be a manic yard-saler or treasure hunter, try *Vintage Flowers*. A lot of what is in these treasures will give you ideas for staging simple ideas for your customers to see.

Whew! My desk will not be cleared off overnight. But one thing is more than no-thing, so keep pecking away at those projects, and enjoy the encouragement and inspiration these cold winter days offer.

The ASCFG Family Continues to Expand with These New Members

Dee Aldrich, The Anna Farm, North Stonington, CT
Dorothy Boles, Lakeside Tree Farm, Ina, IL
Tricia Borneman, Blooming Glen Farm, Perkasie, PA
Meghan Brady, Camden, ME
Flora Brown, Frinkle Pod Farm, Arundel, ME
Kathleen Claar, Lilies and Lavender, Philadelphia, PA
Betany Coffland, Chloris Floral, Petaluma, CA
Margie Cole, Monticello, FL
Susan Currie, Paoli, PA
Jenni Dickenson, Napping Cat Flower Farm, Maryville, TN
Todd Flynn, Ainsworth, NE
Elizabeth Rivera Goldstein, Peace Patch Farm, Port Townsend, WA
Sally Gordon, Dan Vella Flowers, Parma, MI
Leslie Grayson, Royersford, PA
Bailey Hale, Ardelia Farm & Co., Irasburg, VT
Lynda Heise, Brindle Hill Farm, St. Thomas, PA
Grace Hensley, eTilth, Seattle, WA
Sarah Hodges, Toronto, ON
Jane Hudon, Rancho Verde Flowers, Nathrop, CO
Elizabeth Jillson, Cedar Rock Gardens, Gloucester, MA
Bill Johnson, Old Cape Cod Flowers, Stafford Springs, CT
Robin Jordan, Robin's Flower Pot, Farmington, ME
Anna Keesling, Grayslake, IL
Sandra Lehning, Honeoye Falls, NY
Sarah Lewis, Graysville, TN
Shelley Lovell, Greenville, KY
Nan Matteson, Cincinnati, OH
Kristi Moss Ruggles, Greenup, KY
Gretchen O'Neil, Petals Ink Floral, Austin, TX
Rori Pierpont, New York, NY
Jennifer Pineau, Nature Composed, Rochelle, VA
Adrienne J. Ploss, Hickory Hurst Farm, Mayville, NY
Barbara Pumper, Gullywash Gardens, Belle Plaine, MN
Caryn Rickelman, Chagrin Falls, OH
Rene Rodriguez, Universal Greens, Miami, FL
Erin Scalli, Boston, MA
Rebecca Searfoss, Florence, TX
Tom Seibert, Fred C. Gloeckner & Co., Inc., Marietta, GA
Nichole Skalski, Sebastopol, CA
Robin Van der Schaaf, Flamingo Holland, Inc., Vista, CA
Kelli Walker, Country Bouquets Floral, Mount Vernon, WA
Pressly Williams, Renfrow Farms, Matthews, NC
Kathy Wirtala, Fredericksburg, VA
Joyce R. Young, Joyce's Jungle, Chatham, MA

Cool Flowers by Lisa Mason Ziegler

Reviewed by Joe Schmitt, Fairfield Flowers

Cool Flowers is the book most of our gardening grandmothers had in them but never got around to writing because…life. What Lisa Ziegler has done in *Cool Flowers* is to glean those countless bits of gardening wisdom, put them to the test, and serve up the best by the bushel.

As extended families scattered generations across the map in recent decades, the link to our grandmothers' gardens was dissolved. Much of the most interesting, rewarding, and magical aspects of gardening got lost along the way, until all that were left were uninspiring six-packs of dwarfed summer annuals. That's all fine if what you want to do is line a walkway or underpin a few yews.

But most of us want more, much more. We want flowers from early spring to late fall. We want layers and spikes and drifts and clouds of color and texture. We want armloads of blossoms to haul to the house. We want those cottage gardens Miss Marple walks through in St. Mary Mead. We want the grand borders of Downton Abbey… in downtown Akron.

Short of having Mr. Carson summon the gardeners from their cottage, I can think of no better way to take the next step toward your dreams than to buy *Cool Flowers* and spend some long winter evenings in your grandmothers' garden. It's a fact-packed short course in advanced ornamental gardening and a reference you'll utilize for years.

Awards Presented at the 2014 Conference

Two ASCFG members were surprised with well–deserved honors during the banquet at the Delaware conference.

Chris Wien is professor of horticulture at Cornell University. Although cut flowers weren't his original, or even primary research subjects, he's known to ASCFG members as the sunflower expert. Chris has contributed to the industry's cut flower body of knowledge with his research on cut flower daylength, ornamental peppers variety selection, and high tunnel production of several cut flowers species. He is a longtime contributor to *The Cut Flower Quarterly*, and has participated in the ASCFG's Cut Flower Seed Trials for several years. Chris' warm personal touch has made him an effective speaker at several cut flower events through the years.

Chris received the Allan M. Armitage Award for Outstanding Leadership, named for one of the co-founders of the ASCFG.

The ASCFG's Outstanding Service award was presented to Ko Klaver of the Botanical Trading Company, an international horticultural trading company that specializes in the North American market, with a focus on domestically grown plants and bulbs. Ko has served on the ASCFG Board of Directors, co-chaired the 2012 National Conference, and works tirelessly to help connect and inform cut flower growers across the country. His boundless enthusiasm and energy are his trademark. As well as his personalized license plate: Ko Knows.

The ASCFG is grateful for the support of these two floriculture industry leaders, and is proud to honor their contributions.

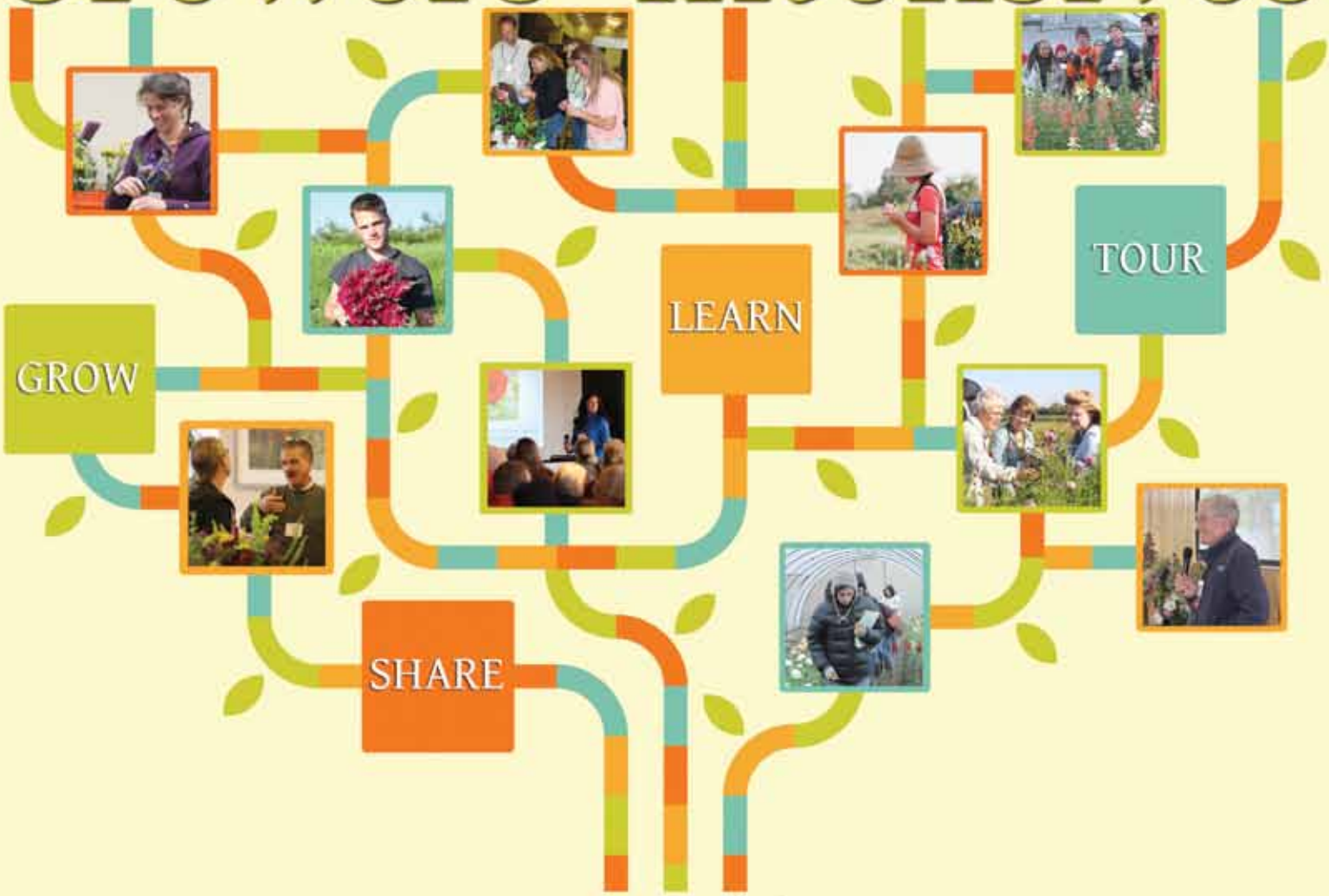
A Word of Thanks

To attend any ASCFG Conference always guarantees a great time, but then being presented with the ASCFG Outstanding Service Award was a great honor bestowed on me that I was certainly not expecting. For all these years being involved with ASCFG it has been my focus and determination to teach, coach, and promote the flower-bulb and perennial growing segment of our industry to the Association of Specialty Cut Flower Growers. Certainly, the ASCFG is one of the most dynamic and exciting group of flower growers to be a part of. Seeing young ones coming in and our more seasoned growers sharing the knowledge on how to become better cut-flower growers is always gratifying.

I personally want to give thanks to a few folks. First of all, my wife Donna and our four boys, who always stand by me while I am out on travels or working from home, developing crazy ideas like the Lilytopia event from a few years ago; never complaining rather always supportive of my work. Secondly to my mentor, coach, and colleague Ben Kneppers, who hired me on as one of his new young sales reps 25 years ago at Plants International, and has taken the time and effort to help me to become the person who I am in our industry today. A thank you to Dave Dowling for his kind words of introduction at the awards banquet. My thanks go out to the ASCFG board, and Judy and Linda for the honor. I'm looking forward to many more years together in supplying quality specialty cut flowers.

Regards, Ko Klaver

Growers' Intensives



Association of Specialty Cut Flower Growers

March 2-3
The Georgia Center
Athens, Georgia

September 21-22
Wollam Gardens & Greenstone Fields
Virginia

2015

March 23-24
Holiday Inn San Jose Airport
San Jose, California

October 5-6
Madison, Wisconsin

ASCFG Cut Flower Growers' Intensive

The Georgia Center, Athens, Georgia

March 2 - Sessions

8:00 a.m. Welcome

8:15 a.m. From Seed to Market: A Few of My Most Profitable Flowers
Rita Anders, Cuts of Color, Weimar, Texas

9:15 a.m. Answers to Your Burning Postharvest Questions
Alicain Carlson, John Dole, NCSU, Raleigh

10:45 a.m. Building Healthy Soils Means Getting Your Hands Dirty
Peter Hartel, Professor Emeritus, University of Georgia

11:45 a.m. Lunch (included)

1:00 p.m. Woody Ornamentals as Cut Flowers
Elizabeth Dean, Wilkerson Mill Gardens, Palmetto, Georgia

2:00 p.m. Are You an Efficient Farmer? Optimize Your Productivity with Proper Planting Density and Succession Planting
Travis Hootman and John Dole, NCSU, Raleigh

2:45 p.m. Zinnia Secrets Revealed
Alexa Wright, Travis Hootman and John Dole, NCSU, Raleigh

3:30 p.m. Wreathmaking Wizardry
Donna Mills, Floral & Hardy Farm Company, Lexington, South Carolina

4:30 p.m. Wrapup/Q and A

5:00 p.m. Close

March 3 - Tours

Woodland Gardens is a certified organic vegetable, fruit and cut flower farm in Winterville, just outside Athens. Established in 2000, we specialize in highly diverse production, growing over 80 different fruits and vegetables. Our focus is specialty production for chefs and market. We operate year-round, using heated greenhouses and high tunnels to extend our seasons and increase the quality of our 18 acres of production. We currently sell to 25 restaurants in Atlanta and Athens, through our 100-member weekly produce box program in Athens, and at the Saturday Freedom Farmers' Market in Atlanta, March through December.

While our cut flower sales make up less than 5% of our overall sales they have been wonderful to have on the farm. They're sold as an add-on option for our weekly produce box members and at our farmers' market. We have trialed many varieties over the years, and have narrowed down to the hardiest that thrive in our hot Georgia summers, and sell well for our market. Our main crops are lilies in crates, ranunculus, tulips, iris, stock, dianthus, larkspur, bupleurum, nigella, snapdragons, rudbeckia, ammi, peonies, lisianthus, zinnias, celosia, ageratum, sunflowers, Salvia leucantha, gomphrena, basil for filler, and tuberoses. The majority of our flowers are sold as mixed bouquets but we are focusing more and more on single variety bunches.

3 Porch Farm is a Certified Naturally Grown farm in Comer. Steve and Mandy O'Shea run a small boutique farm specializing in beautiful, local, seasonal flower arrangements in addition to fruits, and sustainably grown delights created in their certified kitchen. All products are grown and stored using solar power, and delivered to market in carbon neutral vehicles which run on vegetable oil recycled from local restaurants. Creating a viable business that contributes to a healthy world is the aim of the farm. Two options will be available here: a bouquet-making session with Jennie Love of Love 'n' Fresh Flowers in Philadelphia, and host Mandy O'Shea, and a demonstration of the veggie oil-powered vehicles and other equipment.

Davis Floral began in 1964 as a greenhouse tomato operation, and added cut flowers shortly after. Chrysanthemums, snaps, and carnations were the major crops. As cut flower production moved outside the United States, rooting geranium cuttings became a priority for the company. The product line grew to include New Guinea impatiens, coleus, begonias, poinsettias, and many others. From the early 1980's up until 2010, the principal business was propagating annuals, about two-thirds of sales. The other third was from finished spring and fall crops and poinsettias. Since Michael Davis took over the business in 2010, the finished crops have taken a priority and become a majority of sales, driven by sales to Pike Nurseries in Atlanta. The company has now roughly 3 acres under cover; two-thirds are under plastic and one-third is a glass range, with about a half-acre of field production.

Register online at www.ascfg.org or call (440) 774-2887

ASCFG Cut Flower Growers' Intensive

Holiday Inn San Jose Airport, San Jose California

March 23 - Sessions

8:45 a.m. Welcome

8:00 a.m. Peony Cut Flower Production Part 1
Rita Jo Shoultz, Alaska Perfect Peony, Fritz Creek, Alaska
The inimitable Rita Jo Shoultz is considered one of the nation's leading peony experts. She knows so much about peony production and marketing she needs TWO sessions at this meeting!

9:00 a.m. Oregon's Organic Flowers: How We Make it Happen
Joan Thorndike, Le Mera Gardens, Ashland, Oregon
Whether you're certified organic or simply growing your flowers as sustainably as possible, you can always learn more. Here's your chance to learn from one of the best.

10:00 a.m. Building and Maintaining Soil Fertility: Organic Practices for Everyone
Christof Bernau, Univ. of Calif. Agro-ecology Center, Santa Cruz
This workshop will cover a range of core soil fertility management practices that work in concert to optimize plant health and farm sustainability, comply with national organic standards and are broadly relevant to all cut flower growers, whether organic, sustainable or conventional. Christof is not only the Farm Garden Manager of UCSC's highly regarded Center for Agro-ecology, he's also a terrific teacher, mentor, and dedicated cut flower grower.

11:00 a.m. Sunflower Breeding
Tom Heaton, NuFlowers, Woodland, California
Everyone grows - and loves - ProCut sunflowers. Tom Heaton bred this outstanding series, and will explain how he brought it to market, and what he thinks the future will bring.

11:40 a.m. Lunch (on your own)

1:00 p.m. Going Crazy for Flowers
Lennie Larkin, Petaluma Bounty Farm and B-Side Farm, Sebastopol, California
The future of the domestic cut flower industry looks pretty bright, with young growers like Lennie Larkin stepping up. She'll explain how she got her business started, and what she's most looking forward to.

2:00 p.m. Australian and South African Plants
Diana Roy, Resendiz Brothers, Fallbrook, California
Diane is the dynamic marketing guru of Resendiz Brothers, one of the largest protea (and many other cut flowers) growers in the country. You may not need to be in California to grow some of these unusual flowering and foliage plants. Discover the possibilities!

3:15 p.m. Peony Cut Flower Production Part II
Rita Jo Shoultz, Alaska Perfect Peony, Fritz Creek, Alaska

4:15 p.m. Still Crazy After All These Years
Tom Wikstrom, Happy Trowels Farm, Ogden, Utah
If you can grow and sell flowers in northern Utah, you can do it anywhere, right? Tom will discuss how his growing practices have evolved over the last 25 years, including fertility and crop rotation, flower choices, and marketing.

5:00 p.m. Close

March 24 - Tours

Headstart Nursery, Gilroy
Long a supporter of the ASCFG, Headstart has been growing ornamental and vegetable plugs for more than 30 years. We'll get a behind-the-scenes look at how they maintain their constantly expanding product lines.

Continental Floral Greens, Watsonville
Ferns, ivy, several kinds of eucalyptus and willows, hydrangeas: these folks grow such a wide range of floral material there's not room to list them all here. A specialized IPM program helps reduce their chemical use.

Kitayama Brothers, Watsonville
Selling across the country, Kitayama Brothers has been considered a leader in the floral industry since 1948. They've implemented resource-savings programs such as using blended recycled wastewater and rain harvest systems.

Golden State Bulb Growers, Moss Landing
Callas – as cut flowers or potted – are staples of many growers' offerings. Golden State is a leader in breeding new varieties and production, and provies a incredible range of colors and forms.

Register online at www.ascfg.org or call (440) 774-2887

ASCFG Cut Flower Growers' Intensives

Fall 2015

September 21-22

Wollam Gardens and Greenstone Fields

Two days of on-farm learning!

You asked for it, you got it: irrigation setup and maintenance will be the focus of on-farm sessions. Ten high tunnels filled with a variety of fall cut flower crops will provide a great backdrop for serious season extension discussions. Tours of a large on-farm composting operation may be on the agenda. Expect dahlias and lisianthus to be only two highlights of this meeting!

October 5-6

Madison, Wisconsin

Another dynamic program is in the works! We'll show you how to keep insects out of your hoophouses. Area cut flower farms and nurseries will host us for tours of their late-season fields, and maybe we'll see a solar passive house. Much more will be on the agenda.

Watch for more details coming soon at www.ascfg.org

Looking for Employees or Interns?

Now is the time to find the best help for your cut flower farm.

Online classified ads are free for ASCFG members. Check out the "Classified" page under the Resources tab at www.ascfg.org. Whether you are hiring paid employees, or offering on-farm experience to interns interested in a cut flower career themselves, send the text of your ad to us at mail@ascfg.org and we'll post it for you!

"January is here, with eyes that keenly glow".

Judy M. Laushman

January is often considered a period of slowing down, of quiet reflection, and of generally recharging one's batteries. You can almost hear Sarah McLachlan thoughtfully strumming her guitar while you sip your herbal tea, as you gaze at the snowy landscape outside the your frosted window.

Not here at the ASCFG!

We had barely wrapped up and recovered from October's record-breaking National Conference in Wilmington, Delaware when we jumped with all four feet into the four 2015 Grower Intensives. The ASCFG Board of Directors decided to repeat the pattern of the last few years: alternate one large, multi-day national conference with four (usually two-day) smaller events, held throughout the country.

This system seems to please the majority of ASCFG members, as the multiple venues provide a wide range of topics on cut flower production, marketing, and floral design. The shortened format of the four meetings allows more growers more flexibility for travel considerations. Watch the ASCFG web site and your own inbox for details on this year's meetings.

We're still looking for that one ASCFG member who attends all four events in one year; he or she will receive special recognition!

At the same time, we were able to receive and process seeds for the 2015 ASCFG National Seed Trial well before the Christmas rush. Great thanks go to our friends at American Takii, AmeriSeed, Harris Seed, Johnny's Selected Seeds, Sakata Seed, and SeedSense for their speedy cooperation. We're already looking forward to that report in 2016.

In the meantime, you'll find the results of the 2014 Seed Trials on page 18. As usual, a wide range of comments on the positives and negative of 20 cultivars provide invaluable first-hand experience. We're grateful to the Trialers who spent time and care with their research plots, and to John Dole and his NCSU team for compiling the data.

We're also happily busy welcoming and processing the several new members who find the ASCFG is their best resource in the cut flower industry. Please be sure to give these young growers your own personal welcome when you see them in Georgia, California, Virginia, or Wisconsin.

Until then, enjoy your tea.

The ASCFG Research Foundation

is the only granting organization dedicated solely to cut flower research. It is supported completely by donations from growers like you. Without your contributions, the few researchers working on these vital projects will not be able to continue. Please help us keep the specialty cut flower industry vital by donating today.

We do the research so you don't have to. While you need to stay ahead of your competition, on-farm research takes time and money and distracts you from running your business. Researchers can test the latest in cultivars, production and postharvest handling techniques, and give you the synopsis of what to try. Help us help you make your business more profitable.

John Dole, North Carolina State University

Association of Specialty Cut Flower Growers Research Foundation

To donate today, contact the ASCFG at (440) 774-2887 or ascfg@oberlin.net

Working on cut flower species that are not the roses, carnations and mums of world trade can be quite a challenge. The ASCFG Research Foundation is key inproviding modest research funding that encourages the solution to these challenges. Since it is run by cut flower growers, there is also assurance that the projects supported are of importance to the cut flower growing community. The Foundation provides strong encouragement for researchers to be engaged in cut flower research.

Chris Wien, Cornell University

The ASCFG RF has provided funding for these research projects:

Postharvest of Specialty Cut Flowers

Petal Drop in Sunflowers

High Tunnel Lisianthus Production

Forcing Woody Cut Flowers

Potential of Dicentra as a Cut Flower

Cut Flower Productivity and Weed Control with Selected Herbicides

Wedding flowers

Normal bouquet

Mono bouquet

Lily-on-pot

Rose Lily

Double flower

No pollen

Very long vaselife

Zabo Plant

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