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The **Cut Flower**

Q U A R T E R L Y

Association of Specialty Cut Flower Growers Inc.

for growers of field and specialty greenhouse cuts

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From the **PRESIDENT**

Vicki Stamback

As I sit here writing this column on September 1st for the fall *Quarterly*, I am just hoping we will have seen a change in our weather by October. I believe this has been a challenging year for a lot of ASCFG members.

Between droughts, floods, heat, late spring freezes, earthquakes and hurricanes, many ASCFG members have had some extreme situation or another to deal with this year. Ours has been relentless heat and drought. This year we blew out all the old records from the 30s (Dust Bowl) and 1980, when we had 50 days that summer of over 100 degrees. This year we had 62 and we have been in an exceptional drought all summer. The really bad thing is I know Texas has been worse. I know there are places in southern Oklahoma and in Texas that the number of days over 100 degrees is around 105.

If you want to know more about the Dust Bowl and some history to go with it, read *The Worst Hard Time* by Timothy Egan. I'm sure it will enlighten you to many things you didn't know about the Dust Bowl or the people who survived it.

I think that in the 17 years I have been growing flowers, this has been the most challenging year. We have been watering 24/7 since June. The flowers are alive and blooming and look very good but I have never seen water bills like this: \$3,000 and \$3,600 respectively and we are

not finished yet. My normal water bill in the summer is \$500 a month.

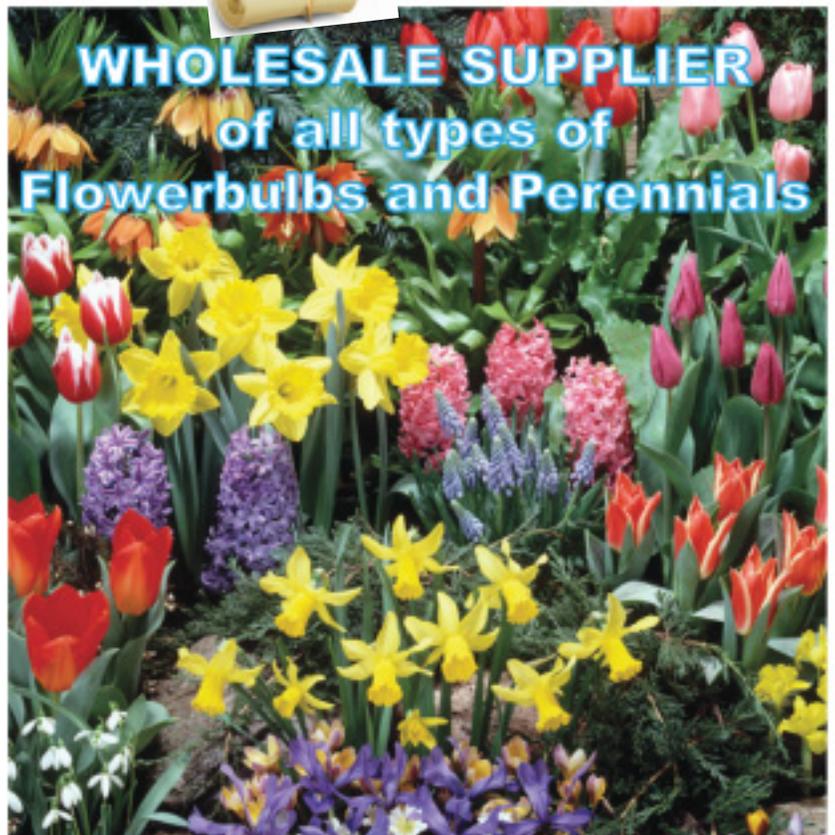
Then there are the deer. I've never had deer issues at my farm before, but this year they are starving. We have always had deer at the farm, but they have never bothered anything because there has always been plenty for them to eat without eating the flowers. Overnight they ate 10,000 sunflowers to the ground. We counted 17 deer in the field the next evening. Pepper spray which always works did not this time. I'm going to look into a sprinkler with a motion sensor that I've heard rave reviews about. You can get it on Amazon and it's called a scarecrow motion-activated sprinkler. When any animal gets within 25 feet of it, it kicks on and scares them off. That could be good for lots of things.

But it could always be worse. Our lakes and ponds are very low but in parts of Texas, they are dried up completely. It will take a hurricane coming up from the gulf to break this drought. And with everything so hot and so very

dry, there have been huge fires both here in Oklahoma and in Texas. Some of those fires have been in the national news. I really feel for the firefighters in this heat and for the many people who have lost everything they own in the fires. I just can't imagine fighting a fire that is running

around 800-900 degrees in the 105 degree heat of the day. My hats off to all the firefighters!

The National Conference is right around the corner and it looks to be great, as usual. I hope to see everyone there and to learn as many new things as possible. I do hope everyone's growing season was not filled with too many challenges and that everyone is looking forward to next year, I know I am.



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What's New with Hydrangea?

An Overview and Suggestions for Blue Hortensia (Hydrangea) Cut Flower Production

by Juergen Steininger

It is August, nearly September, and I am setting up for my forcing programs. The final touches: checking on coolers and equipment and stocking up on potting media and containers. An unexpected phone call from a supplier; seeing the number on the display, I was getting a little anxious, wondering about which cultivar would not be available. I prepared for discussing possible substitutes and consequently the extra work of making adjustments to the production schedule.

As it turned out this call was not going to be about my orders. I was asked, "Do you know how to grow hydrangea and turn them blue?"

My reply: "Excuse me – hydrangea?" The supplier's answer: "Yes – hydrangea. A brand new breeding line consisting of high-performing cultivars is being released by an American company. I think you have heard of Plants Nouveau during the OFA short course?" I was very surprised, yet pleased. In my opinion hydrangea is underused while there is a potential market looking for a wider selection of high quality crops. Until now, it was next to impossible to get properly prepared rooted cuttings for a blue hydrangea program in the U.S. Perhaps this is why high quality pot hydrangeas and well-grown cut flowers

are rarely seen in the standard assortments. I thought "It's about time to get a potentially high margin crop back into production."

Soon thereafter was a request from the ASCFG for a paper with an emphasis on blue hortensia for cut flower production. Now I am trying to organize my culture notes, summarizing as much information as possible since so little has been written about hortensia in the last few years. In my opinion, it is not enough to throw a great crop back into the trade without some additional information. To growers, including myself, and especially for consumers, it is of little interest if one cannot

identify with the product. Sure, hortensia are a great-looking crop if grown well, but how do I grow it? Why bother going through the trouble of changing my assortment and production schedule? Why take on this risk? Interestingly, the questions of growers and consumers are similar. A consumer might wonder "What am I supposed to do with this flower – how can it be used, what will it do for me?" Below, you may find a few answers – basic background information on hydrangea as well as a simplified production protocol for how to grow your own blue hydrangea crop.

What are hortensias?

The florists' hydrangea. Some of you may know this plant by the name of mophead hydrangeas, or big-leaf hydrangea; the scientific name is *Hydrangea macrophylla*. The international market designation is "hortensia". To be consistent and to avoid potential mixup with other important horticultural crops such as oakleaf hydrangea (*Hydrangea quercifolia*) and panicle hydrangea (*Hydrangea paniculata*), I prefer the name hortensia, since it is specific to the breed and the name is grand. This is important since unlike the other species of hydrangeas, hortensia is designed for intensive forcing programs that include both pot and cut flower production.

Learning how to grow hortensia was one of the major assignments of my apprenticeship many years ago. Hydrangea at that time was part of the core assortment of floriculture crops – it was essential to study and to successfully grow hortensia. An apprenticeship takes place in a trade school and commercial greenhouse operations; there apprentices (junior growers) are trained and supervised by guild masters. Hortensia was a challenging crop, yet it became one of my favorites to grow. Hortensia is what I would call a model crop which requires thorough knowledge of production methods. An apprentice learns how small differences in soil pH affect flower color. Water management and crop timing are very important factors that require attention to minute detail by the junior grower.

Unlike bedding plants, hydrangeas need a significant time investment and they are not forgiving. If an apprentice makes a mistake it will show. Bad nutrition, water management, or insufficient vernalization will leave their mark. For instance, a muddy blotchy color of the flower is the result of bad pH management as well as mistakes in fertilization.

The characteristic of a high-quality hydrangea flower is the clear coloration (blue) which is perfectly contrasted by the dark green foliage. Depending on the product line the time investment may take up to 15 months, sometimes more, to grow a market-ready product. Single stem standards and large patio containers certainly fall into this long-term category. Pot production on average requires 9 to 12 months production time. Perhaps the largest time investment is developing a cut flower program. I would estimate 3 years from propagation to a plant size that supports profitable cut flower harvests. More detail on culture and production planning will be discussed in the production chapter below.

The Relevance of Hortensia

I had been growing hydrangea frequently throughout the years, eventually it dropped out of the product assortment. This was mainly due to problems with obtaining high quality propagation material. Writing about this crop brings back memories and it reminds me, as strange as it may seem, of "old world" cooking. This is because the heavy clay pots

were moved from the cold frame to the forcing house in the winter, from December through January. It is the season we used to get Powidltatscherln (the Austrian spelling is Powidltascherln) for lunch, a Bohemian specialty unfortunately completely unknown in the U.S. I only can recommend ordering some when you happen to be in Europe (Austria or Czech Republic); they are a definite must when visiting – they are so good. Similarly with hortensia, few flowers achieve this timeless splendor and show. Seeing well-grown hortensia is just as pleasing as enjoying some Powidltatscherln – a delight to the senses. Both food and flowers play an important role in defining cultures.

Most of you may know hydrangeas are grown as potted plants for sales from Valentine's Day through Easter. In Europe a few additional

occasions, such as weddings and holidays include massive hydrangea sales, many of which take place in May; the Pentecost or Whitsun holiday; and Corpus Christi. Infrequently, in the last few years, I have seen white cultivars in the Christmas assortment. In various parts of this world, feast days are associated with special dishes and flowers, foremost hydrangeas. Although pot crops are an important segment of sales, weddings and religious festivals demand huge amounts of cut flowers. Therefore, the main uses of hortensia based on volume are cut flowers as well as pot plants.

Hortensia: A New Cash Crop?

The account above tells about feast days and celebrations, expressions of culture and lifestyle. The American culture and lifestyle have changed and keep on changing. Trends are fast;



products that fit this development become extremely popular and profitable, e.g. Apple products, or Google and Facebook. Where is the opportunity for the floriculture industry? Is there going to be a floriculture iPad? Why are flowers, especially cut flowers, losing out? There is opportunity; hortensia is not yet a commodity, postharvest traits of cut hortensia are acceptable but have limitations. Often it is the locally-grown material that is of much better quality than flowers shipped halfway around the planet. This characteristic especially should provide opportunity for small and medium size operations serving a regional market – a market traditionally underserved with top quality local flowers. You have the opportunity to grow a great product, there is a market and demand, and it is up to you to develop a message with which to reach, engage, and most importantly – a message consumers can identify with – the perception about the product (brand) needs to fit the current lifestyle. Just a quick review – a logo is not a

brand – your brand is how your customers and your competition perceive your company – it’s up to you to answer this question for yourself: Is your assortment current, attractive and good quality? Are you helping your costumers solve questions and problems in regard to home decoration, garden design, gifts, and holiday decorations? Are you selling your customer (pushing) a product only; or are you actively trying to improve your costumer’s perceived lifestyle? Look at your assortment – and perhaps hortensia is a product that some of your customers will perceive just to be the right thing – but it is up to you to position it.

Background Information for the Grower

Hortensia is a group of cultivated varieties of the genus *Hydrangea*. There is conflicting information regarding the number of named cultivars, which is estimated by some to range in the hundreds. Formerly this genus was included in the Saxifragaceae; today they have

been assigned to their own family, the Hydrangeaceae. The genus *Hydrangea* includes some 70 species, many of which are native to East Asia, and can be found in countries such as Japan, China, and Korea.

Hydrangea macrophylla is native to Japan and was cultivated for some time prior to its first description by Carl Peter Thunberg in the 1700s. Thunberg discovered these early cultivars near Nagasaki on the Japanese island of Kyushu. Due to some confusion during categorization, these plants were classified with the genus *Hydrangea* and not as initially proposed hortensia. Since the discovered materials were cultivars and not species, an interesting debate occurred.

Systematics is a fascinating topic and I can recommend reading the stories of early explorers – they are not boring scientific papers. Most are written in prose and are, at times, very witty. Between 1790 and 1800 some plants were brought to Europe where they were used as the initial breeding stock. Much of the early breeding occurred in France where plants were grown in botanical gardens and by some plant collectors. By the late 19th century hortensia found its way into the horticulture trade.

In a relatively short time, hundreds of new cultivars were bred in floriculture hotspots such as Belgium, the Netherlands, Germany, and France. These new western cultivars were eventually brought back to Japan, where they are called Seiyou-ajisai, and are popular additions to the original assortment. Western, as well as the original

Japanese cultivars, will grow into attractive, several-foot tall shrubs in the garden. Surprisingly, potted plants for the house or the patio which may be later transplanted into the garden are little used in the marketing of pot crops. For example, which average consumer would know to use hortensia as an indoor plant in the winter, to transplant it into the garden after the frost, and eventually harvest cut flowers from this plant for indoor decoration for years to come? I think enlightening consumers about the various uses of flowers may eventually generate interest and lead to additional sales.

A Botanical Profile of Hortensia

Plants are deciduous. The opposite, dark green leaves are large and to some degree serrated. The typical florist’s hydrangea produces a large inflorescence on the end of relatively long stems. The spherical bloom is massive and may have a diameter of 5 to 10 inches. The flower head can be described as an umbelliform cyme consisting of numerous small florets. Most interestingly to growers, a modification of the florets resulted in sepals being the dominant part of the flower and it is the sepals that are responsible for the showiness of the flowers. The petals, on the other hand are small, insignificant, and frequently completely missing. The blooms are white, pink, deep rose nearly red, and blue. Unlike petals, the size of sepals may be modified through cultural practices. In other words, a grower can



specifically modify the pigmentation of the flower (except white cultivars) as well as increase the size of the sepals with improved cultural practices.

General Environmental Requirements

The native habitat of hortensia is wooded areas near the ocean, where it is an understory shrub protected from the elements such as too much direct sunlight and wind. The climate is mild, perhaps with a touch of northern temperate. Winters are cool, with temperature remaining just above freezing. The summers are warm yet some level of precipitation continues and the relative humidity is high, essential for hydrangea. As the name may suggest, they require a constant supply of water. The linguistic root of the prefix Hydr(o) is the Greek ὑδῶν (*hýdōr*) the name of water. Another anecdote I read some time ago, I am not so sure about. Hydra is a Greek mythological figure with many heads. Indeed, hortensia has a lot of flower heads per plant. In my mind, this is about as far as this allegory should go. Hydra was of such unworldly



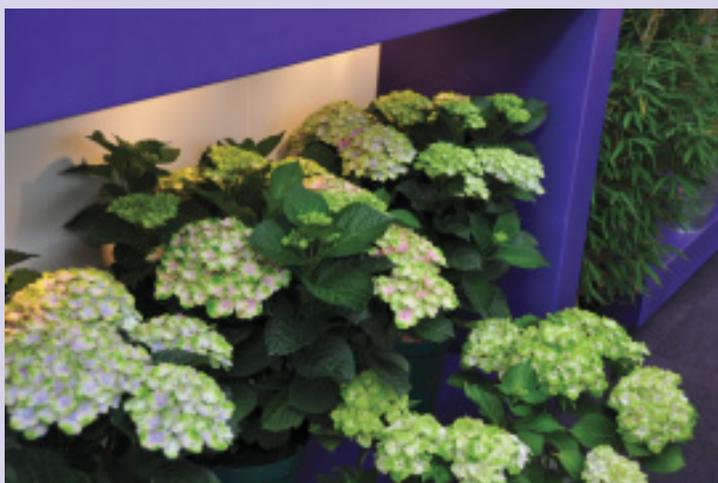
abhorrence that anyone looking into her face would instantly turn to stone. Well, one can only wonder how these parallels arise.

I encourage my production students to be inquisitive enough to discover the origin of their crop plants. The botanical name, and information about the native habitat provide valuable hints for what might work in the greenhouse; the differences of cultivars withstanding, it reveals clues to cultural requirements

and the temperament of the plant. In the case of hydrangea, the very specific environment hortensia evolved in became imprinted into the species, even into the current cultivars. Hydrology, soil composition, and temperature range of the natural environment define hortensia. Modern cultivars thrive when these environmental factors are met.

For example, flower initiation occurs in the late summer or early autumn as soon as average day temperatures range 55°F to 60°F – the optimal temperature is 59°F. Unlike temperature, photoperiod does not seem to be an obligatory factor; while some questions remain, for the trade this debate is of little applicable interest. The bud remains dormant throughout the winter and requires temperatures just above freezing to complete vernalization. It will produce a flower the following spring. Frost and untimely pruning

destroys the flower buds and the plant will fail to bloom the following spring. Some remontant (ever-blooming) strains will set new flowers in the spring but are generally not well suited for forcing. Cultural practices and the greenhouse environment should approximate these demands. For example, a good potting media should exhibit similar properties as forest soil: plenty of organic matter, good water retention to retain moisture, yet well draining to prevent water-logging. The plants prefer acidic media to facilitate iron uptake, while pH affects flower pigmentation. This information is obtained simply by learning about the natural habitat as well its history and cultural context. I believe it to be the foundation of appreciating a crop, the privilege of a grower.



PRODUCTION OF BLUE HORTENSIA

Propagation

Rooted cuttings should be bought from reputable suppliers only, particularly if your goal is to produce blue hydrangea. Finding such a supplier can be challenging: sometimes the material is badly conditioned, unsuitable for blue hydrangea production; other times cultivars are mixed up, or a cultivar is unavailable (sold out). Since obtaining high-quality propagation material can be tough, some operations maintain their own stock in-house. Having stock certainly has advantages such as not being affected by availability of certain cultivars or quality issues. However, more and more of the new cultivars are protected by breeder rights and patents. Taking cuttings from such material is prohibited. Check thoroughly before establishing your own stock plants and make sure to work with free market cultivars only. Violations of breeder rights and/or plant patents can result in serious legal trouble.

Purchasing rooted cuttings may be the least complicated option for starting your hydrangea cut flower program. Rooted cutting liners should be available for delivery in late autumn; weather permitting winter shipment is okay too. Make sure your supplier is not sending plants when outside temperatures are too low – your liners may arrive frozen. Upon arrival unpack and place liners into your greenhouse. Transplant swiftly since the plants need space and crowded conditions encourage gray mold and mildew. I like to transplant rooted cuttings into a moderate size pot before going into the final pot size. Especially in the winter, plants may be a bit more sluggish and if the pot size is too large, the media may stay too wet for too long. If you choose to plant into a 6-inch pot or 8-inch pot, grow them on until the young plant is fully established and the pot completely rooted through, at which time transplant into the final container. For cut flower greenhouse production, pot one plant per 3 to 5 gallon container, depending on how vigorous

your cultivars are. If the climatic conditions of your area allow field production skip the last step and plant the well established plants outdoors.

Potting Media – Greenhouse Production

In contrast to most standard pot crops, cut flower plants frequently will stay in containers for several years. Selecting the right growing media is of paramount importance. You must select a media that does not shrink over time. As indicated above, hortensia require plenty of water without being submitted to waterlogged conditions. Potting media amendments may include coarse and stable materials such as haydite, pine-bark compost, and coarse sand. Peat moss should be used sparingly due to the fine particle size. In many of my long-term crops, including hortensia, I incorporate some percentage of topsoil into the potting mix. Frequently, I test a few formulas before settling, assessing recipes that work best under my growing conditions. The media should receive an initial starter charge and the pH needs to be adjusted if necessary. The final pH for blue cut flower production needs to be adjusted to 5.0 to 5.5. A pH over 6.0 inhibits the uptake of aluminum ions; the flower will not turn completely blue and often result in a muddy, blotched wine color.

Turning Hortensia Blue – Greenhouse Production

Choosing the proper cultivars is the most important aspect of setting up a cut flower program. The following are considerations for identifying suitable cultivars:

- Consult with your supplier and identify cultivars suitable for greenhouse cut flower production – they need to be sufficiently vigorous.
- White cultivars cannot be turned blue.
- Not all pink- and rose-colored cultivars will produce a clear blue, even under perfect conditions.
- Trial cultivars in small numbers - not all cultivars perform equally in different climatic zones.

Pigmented hydrangea flower either pink, dark rose, or some cultivars nearly red. Depending on cultivar and the intensity of the pigmentations, flowers may turn blue; some cultivars produce an almost violet/purple. Changing the color from pink to blue depends on the pH and concentration of aluminum ions present in the media. Nonetheless, not all pigmented cultivars make great blue flowers. Consult with your supplier to identify the best cultivars for your area.

Once you have identified suitable cultivars for blue cut flower production, adjust the pH and apply alum. Make sure to maintain the proper pH throughout the growing cycle. Adjust the pH with lime or alum to a value between 4.8 and 5.5. Alternatively, aluminum sulfate works just as well and can be used to correct the pH down. When growing blue flowers, the pH should never exceed 5.5. On the other hand, reducing the pH below 4.8 may damage plants and growth is impaired. At a pH over 6.5 not only will flowers not turn blue, but iron becomes unavailable; consequently the foliage may become pale and chlorotic.

In short, both aluminum potassium sulfate (alum), the chemical abbreviation is $KAl(SO_4)_2$, and aluminum sulfate, $Al_2(SO_4)_3$, are essential tools in manipulating the flower color of hortensia. They are used to control pH and to add sufficient quantities of aluminum ions to the media. Since the optimal concentration is based on pot size and cultivars, consult with your supplier and extension agent for appropriate rates. In addition to the initial treatment, you need to apply alum or aluminum sulfate in September and November, and again in March and May. A missing and/or untimely application of alum frequently results in a muddy blue color. Follow the schedule and increase the amount of alum in situations where irrigation water is alkaline (containing high amounts of calcium). Under some circumstances it may be advisable to use rain water or chemically softened water to limit the calcium accumulation in containers.

Managing Water and Light

Proper water management is essential for growing excellent hortensia. The availability of water affects sepal size, which can be manipulated by providing the optimal amount of water. However, the threshold between optimal and too much water is slim. At best, excessive water will lead to blind stems and flower bud abortion. Most commonly *Pythium* blight will take hold in your greenhouse. To prevent fungal disease, watering with drip irrigation is preferred – avoid overhead irrigation. Keep irrigation zones small to allow custom watering schedules. Make sure your containers are free-draining and have plenty of drainage holes. Elevating the pots onto a low table can help. Alternatively, placing pots onto a gravel bed helps drain extra water away. Make sure the bed includes a drainage system as well – a French drain will do the job. Many hydrangea cultivars are highly susceptible to root rot, and *Pythium* especially thrives in waterlogged conditions. Free-standing water and splashing may quickly spread this pathogen throughout your greenhouse.

Although hydrangea requires medium-high light levels, too much direct sun will damage foliage and flowers. Supplemental lighting may improve early growth of the crop during the low light winter months. As soon as days get longer and the intensity of the sun is increasing, provide shading. Protect flowers from wind drafts and direct sun. For most areas a 50% shade cloth will do the job. Direct sun, overhead irrigation, and (wind) draft are the most common mistakes, causing (sun or wind) burn and fungal infections of flowers and foliage.

Temperature

High-performing forcing cultivars do not tolerate frost. Freezing temperatures may damage the flower buds. Maintain a range of 35F to 40F during vernalization. Hortensia need about 1,000 hours or about 6 weeks of cold treatment to complete vernalization. This is a rough estimate and works for many cultivars;

however, the actual duration depends on cultivar. Your supplier ought to give you cultivar-specific instructions. Forcing can start in February allowing harvest of the first flowers for the early season cutting dates. Raise the greenhouse temperature to 65F during the day; drop the night temperature to 60F.

This temperature range will initiate shoot growth. It will take about one week to see the first signs of development. The flower bud will enlarge and start to break open. Once the first small foliage becomes visible, drop the night temperature to 55F (the day temperature remains at 65F). After about 3 weeks, a short shoot should have grown; now you can lower the daytime temperature to 55F. This will conserve energy as well as improve quality of the crop. Forcing at low temperature increases the strength of the stem. It is a good practice to remove excess and weak stems. Try to limit the number of stems to 10 to 15 per plant, removing the weakest stems first.

By bringing on the flowers slowly and limiting the number of stems per plant, the size and the quality of flowers are enhanced. A zero DIF environment promotes stem elongation; a greenhouse temperature in which the day temperature is the same as the night temperature. Lower forcing temperatures are possible if you need to hold your crop for a later cutting date. If you invest in several compartments, temperature can be used effectively to schedule harvest over a longer period, essentially spreading out harvest from April through July. Hortensia should not be pruned after August since flower bud development for the next year will begin then. Depending on cultivar, flower harvest needs to be stopped earlier to allow sufficiently strong stems to develop in the subsequent year. This is



cultivar-dependent and your supplier ought to give you guidance what to expect from a specific variety.

A good relationship with your supplier and experts who have experience growing hortensia is very beneficial. As indicated above, over the years an enormous number of cultivars were released into the market. Some are very specific in purpose and are designed to perform only as a potted hortensia crop. Others may work only for outdoor or field production since they may not tolerate confinement in containers. Your supplier and perhaps your extension agent might be good resources for selecting cultivars.

Space and Production Requirements

On average, plants are spaced to one or sometimes two plants per five square foot, depending on cultivar. Make sure to include ample space for access pathways. A good estimate is a width of two feet. The flower bed should be 4 to 5 feet wide; dimensions need to be adjusted according to the vigor of different cultivars. Netting should be installed to support the large flowers. Standard wire netting is sufficient or any 8x8 or 10x10 netting will work. On average, a well-established hortensia plant produces 10 to 15 stems per season.

Harvest and Postharvest Guidelines

Limit harvesting to the morning when it is still cool; essentially you should be following the cutting rose protocol. Adding postharvest flower preservatives (Chrysal) to the water works well. During peak season expect to harvest fresh flowers 2 to 3 times a week. When cutting flowers make sure you leave 4 to 6 inches of the stem. This will serve as the foundation for the next year's shoots. Make sure these stems will not be cut again, especially not after August, otherwise you can expect a lot of blind stems the following year.

Common Diseases and Pests of Hortensia

Diseases and pests affecting hortensia include spider mite, aphids, mildew, gray mold and *Pythium*. Good water management and sanitation are your first line of defense against *Pythium*, gray mold, and mildew. Since a number of cultivars are extremely susceptible, you should work with your supplier to identify cultivars that perform best in your climate. Some new cultivars are more resistant to these diseases. Frequent applications of fungicide for *Pythium* and *Botrytis* may still be necessary. If you had problems with *Botrytis* the year before, make sure all dead foliage has been removed from pots, tables, and floors. A preventative application of fungicide is strongly suggested before starting to force the crop. Contact your extension specialist for which treatments are available and legal in your area.

"CLASSIC" CULTIVARS RECOMMENDED FOR CUT FLOWER PRODUCTION



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Everlasting™ Coral

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Everlasting™ Garnet

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Everlasting™ Harmony

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Everlasting™ Ocean

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Phlox paniculata

Phlox paniculata is a garden favorite often used as a bright light in a perennial border, and some of us grow it specifically for cutting. Its flowers are generally very fragrant, and as a perennial it can be left in the ground for several years and still produce a nice crop of flowers. Cut flowers can last well up to ten days. Blooms can be cut with just one floret open and the other buds will open. The colors are sensational; there are bicolors and solid colors, and very bright colors and lots of softer lavenders, pinks and whites. In the past few years double phlox have shown up on the market, many of which have an especially long vase life. The sterile flowers in the Feelings series last for weeks.

One disadvantage is that while the total bloom lasts a long time, individual florets drop off and can be messy. This is not a problem with flowers of the Feelings series. Another common problem is powdery mildew. Cultivars can vary in their mildew resistance; look for the best varieties for your area. This is not a problem in the Pacific Northwest, where it can be conquered by moving the plants to a new location with plenty of air circulation. This may not work in regions where powdery mildew is rampant.

I love phlox, and since most people are happy to share a start with an admirer, it's often passed from gardener to gardener or grower to growers. It can also be started from seed, and seedlings are often the source of new plants. Therefore, I must admit I haven't any idea what the names of most of mine are. The phlox in my perennial beds have formed huge clumps three to five feet across.

I've always had a short row of 'Miss Pepper' (pink with a darker pink eye) and 'Ice Cap' (white) and I use them a lot. Last year I made cuttings of some of my favorites when the mother plants were actively growing and about four inches tall. I pinched the tops 2-3 inches and put them in 72 plug trays filled with greenhouse quality soil. Within four weeks on a heat cable, they had rooted and filled out the plug trays, and I transplanted them outside into plastic mulch a couple weeks later. Plugs of 'David's Lavender' and 'Nicky' were also planted into plastic mulch.

Although all the plants from cuttings flowered the first year, the stems were longer the second year; some were even *too* long. The first year all the phlox continued to send up stems and bloom until killing frost in the middle of October. The amazing thing I learned



Photo by Itsaul Plants (Saul Nsy., Atlanta GA)

having all my phlox in one place was that there was a lot of variation in bloom time. 'Nicky', a very dark purple, is the first to flower. It seems that it keeps flowering all season, but the flowers fade making the blooms look shabby. This happens on a lot of the dark-colored varieties.

'Miss Marjorie', a small-flowered lavender bloomed next.

'Miss Pepper' bloomed three weeks after 'Nicky'. It is by far our most popular phlox; with its hot pink eye and pleasant fragrance, it's the only phlox that consistently sells by itself at our farmers' market.

‘David’s Lavender’ has large flowers which bloom after ‘Miss Pepper’. The waxy white flowers of ‘Ice Cap’ are great for weddings. There are other white phlox that bloom earlier so having two or three white phlox with different bloom times makes sense. I love ‘Cocktail Sherbet’, though it looks a little dirty, which turns off some farmers’ market customers. It’s also a little on the late side, so I think I will try it again for wholesale buyers.

Since catalogs don’t tell you if it’s an early or late blooming phlox you pretty much have to try a few until you find those that flower at different times. Phlox can be purchased from plant producers and nurseries, after you’ve checked out your neighborhood to see which varieties perform well in your area.

Our second-year phlox are a good four feet tall and some are closer to five feet, but even so they have good stiff stems that we have never needed to stake. The best quality flowers come from young plants so they should be divided every three to four years; actually it is much easier to take cuttings and transplant in new young plants. Be sure to get cutting stock from healthy plant stock.

The first flush of blooms is the most profitable and we usually cut each cultivar for two weeks. They may send up more stems but it’s never like the first flush. They last well with just clean water, and although they can be ethylene sensitive we’ve never had a problem with ethylene and haven’t treated for it.

We generally sell our cuts a day or two after cutting, but they can be stored in the cooler in water for a few days. Some of the double-flowered varieties require caution as the extra petals hold moisture and may mold in the cooler or outside in wet climates. The Feeling series lasts for weeks, though they may not be as beautiful and stately as old-fashioned phlox. Their sterile flowers can look distorted, but because they are so different – and have such a good vase life – they are especially useful for cut flower growers.



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Phlox paniculata hybrids are definitely worth having for mixing in bouquets; the large cluster of flowers adds a splash wherever they’re used, and a bucket of them is a beacon light. Having a variety of cultivars will ensure a long season of these beauties and their admirers, your customers.

*Janet Foss, J. Foss Garden Flowers,
 is a specialty cut flower grower in Chehalis, Washington,
 and a long-time contributor to The Cut Flower Quarterly.*

Back to BASICS

Kathleen Hatt

A Primer on Wireless Credit Card Processing

More farmers are accepting credit cards for the products they sell at the farm and at farmers markets.

What can you do to capture farmers market sales from customers who won't leave home without their credit cards but who never carry cash? There has to be a better way than pointing to the nearest ATM.

Some farmers market vendors, such as Carole Soule of Miles Smith Farm in Loudon, N.H., are finding a solution in wireless credit card processing. She uses wireless credit card processing for sales of Scottish Highland beef at farmers markets and in her farm store.

"I'm thrilled with it [wireless processing]. I think of it as an employee – it works so hard for us!" she says.

Chuck and Diane Souther of Apple Hill Farm in Concord, N.H. agree. They use their wireless credit card processing system at farmers markets as well as in their pick-your-own operation, where it saves a trip from orchard to farmstand when cashless customers need to settle up.

A bonus to this convenience is that the system is fast. It takes about half the time of a land line system, according to the Southers.

Soule likes that all data is entered at the point of sale and that the system immediately



The machinery for wireless credit card processing

recognizes invalid cards. The wireless credit card processing also enables her to print a receipt for customers, something that cannot be done using her smart phone app to scan credit cards.

Wireless credit card processing terms

Before signing up for wireless credit card processing, it is important to know service, fee and device basics. The basic wireless credit card processing device is a hand-held terminal with a credit card reader and a keypad.

After data on the card is collected by the terminal, it becomes part of the credit card processing system. Then funds for a purchase are transferred to the seller.

Terms for the primary components of a credit card transfer may differ, but they likely are:

- *Card holder* – Customer or purchaser
- *Card issuer* – Bank that issues the credit card to the card holder
- *Card association* – Visa and MasterCard, Discover, or American Express. American Express is generally not used for farmers market type purchases.
- *Wireless credit card terminal* – Using the same technology as cell phones, this device processes credit card transactions
- *Merchant* - Seller
- *Processor or Acquirer* – Processes credit card transactions on behalf of merchants.

The inner workings of wireless credit card processing

Transfer of funds from a purchaser's account to your account begins when you key in the amount of the sale and swipe the purchaser's credit card. The credit card machine connects to the processor through the same technology as that of a cell phone.

Over this data network goes information collected by the credit card machine's magnetic sensor which reads tiny magnets on the credit card's magnetic strip. Among the data collected are the card's account number and expiration date.

Synthesized by the terminal, this information becomes a wireless signal which is communicated across a secure wireless data connection to a designated processor. The processor then passes the information to the bank which issued your customer's credit card.

If the card is valid and the customer is within the dollar limit of the card, the bank earmarks funds for the transaction. An approval number is then sent back to the designated processor, and the processor passes the information back to your wireless credit card terminal.

When the card and the sale have been approved, your wireless credit card terminal will print a receipt which the customer signs. Depending on the wireless signal, the entire process may take 8 to 12 seconds.

Wireless credit card processing without cell phone service

Even though cell phone service may not be available at all farmers markets, most wireless credit card processing machines will continue to work, albeit on a delayed basis. Using a feature called Store and Forward, card transactions will be sent as soon as you are again in an area with cell phone service.

Before selecting a wireless network, check out cell phone coverage in the places you would potentially use a wireless credit card processing device. After choosing the network best suited to your needs, you are ready to select a wireless credit card terminal. Most wireless terminals are available in different network-compatible versions.

The cost of going wireless

A new wireless credit card processing terminal may cost \$300 to upwards of \$600. Added to the cost of the terminal are annual, monthly, and per-transaction fees. Fees and fee structures can be quite complicated.

“There are some 50 pages of documentation about various fees and how they may-would-could-do operate in various situations,” says Joel Breton of MJM Associates Inc. of Hooksett, N.H. MJM Associates is one of many merchant account services whose specialty is sorting out fees.

Others, such as Merchant Warehouse which Soule uses, are available on the Web. Soule paid an initial \$300 per terminal for a ready-to-use system. She also pays \$20 per month per terminal + fees.

“If you are already processing credit cards, adding a wireless credit card terminal could add about \$15 a month to your fees – or it could lower them,” says Breton. “Most wireless transactions have a transaction fee of 5 to 10 cents built into the price.

“If yours is a seasonal business (as many farmers market vendors are), you should pay only for the months you use your system.”

During the winter, Soule uses one of her terminals in her farm store and at winter farmers markets and discontinues service on the other.

Annual, monthly, and per-transaction fees

- *Annual fees* are usually assessed once a year.

A programming fee, also known as a download fee, could be attached to your application for a merchant wireless credit card account. This fee may be part of the wireless terminal account activation cost.

A compliance fee - Payment Card Industry Data Security Standards (PCI DSS) may be assessed annually or monthly and is sometimes hidden in processing fees. This fee (up to \$250/year) is charged by processors to keep their networks updated.

- *Monthly fee*, also called account on file or statement fee, is a fixed amount assessed monthly. It is in addition to the cost-per-transaction fee.

A monthly minimum fee may or may not be only for the months you use wireless credit card processing. It is levied when the processor has not made a minimum amount on your monthly processing fees.

- *Per-Transaction Fees* may range from zero to 30 cents per transaction and may be assessed as part of authorization or processing fees.

An authorization fee may be part of the cost of approving a transaction or it may be hidden in processing rates. Like a transaction fee, an authorization fee may range from nothing to 30 cents per transaction. Processors usually assess either a transaction fee or an authorization fee.

A per item rate is similar to an authorization or transaction fee.

A processing fee may be charged by the processor to cover handling costs.



Wireless credit card devices were demonstrated at a recent meeting of the New Hampshire Farmers Market Association by MJM Associates, Inc. of Hooksett, New Hampshire

The swipe rate is the fee assessed for running a traditional credit card through the terminal and reading all three of the card's magnetic tracks.

A batch fee is assessed each time a seller submits a number of wireless credit card transactions to the processor, usually when the seller settles the terminal each day at the close of business.

The interchange rate is set on each transaction based on several factors including which of some 250 different card types is used – credit, debit, purchasing, retail, rewards, and corporate. Other factors determining the interchange rate include how the transaction is entered (swiped or keyed), whether the address verification system (AVS) is used, and whether or not the terminal is settled at the close of business each day.

Bundle pricing is not the most cost effective pricing plan, according to Breton. Bundle pricing may hide several fees and conceal others which are based on the way transactions are entered and the risk involved in collection.



Wireless credit card processing speeds sales of Scottish Highland for Carol Soule of Miles Smith Farm at the Concord (N.H.) Winter Farmers' Market.

The cost of processing wireless credit cards

Your effective wireless credit card processing rate will vary with your monthly sales volume. To calculate the effective percentage rate of your wireless credit card processing transactions, begin by totaling the dollar amount of your monthly wireless credit card processing fees. Add that amount to the dollar amount of your monthly fees coupled with the monthly pro-rated annual fees.

Divide the total fees by total sales to find the percentage that represents the effective rate of processing your credit card transactions. For example: total fees/month (\$89.79) divided by total sales/month (\$2,598.93) gives an effective wireless credit card processing rate of 3.45 percent.

“If your effective rate is over about 3.25 percent, you should review your system,” says Breton. “If your average ticket is in the \$40 to \$50 range, your effective wireless credit card processing rate

The Cut Flower Quarterly

should be no higher than 2.5 percent,” he says. He notes, however, that tickets averaging a small amount will result in an increased effective rate.

What about security?

Some say that wireless credit card processing terminals using high level data encryption are secure. Others disagree.

Jacques Breton, founder of MJM Associates, believes a wireless system can be tapped. For wireless processing, he recommends an encrypted web-based gateway which communicates via a third party processor.

“Do not use WiFi,” he says. “Most secure is a landline.”

A few suggestions

Start the process of obtaining and using a wireless credit card processing system before the farmers market season begins. Following completion and approval of your account application, a merchant account service can generally have your system up and running within 24 to 48 hours. However, Breton recommends giving yourself at least a week to test the system before using it.

The fees associated with processing a debit card transaction can be minimized by asking your customer to enter the account’s PIN number.

Alert your wireless credit account processing service when a spike in activity is anticipated – such as the time seasonal farmers markets begin. If not, a sudden spike in account activity suggests a stolen credit card processing terminal and may result in a temporary freeze on your merchant account.



A customer prepares to sign her credit card receipt at the Miles Smith Farm booth.

“Understanding and controlling fees can be the difference between having wireless credit card processing work for you and your working to support your credit card system,” says Breton. “Know what all your fees mean.”

Understanding the basic process and issues of wireless credit card processing can help you can prevent or resolve problems, Breton says. He also suggests being aware that wireless credit card processing costs change frequently.

“Rates that you once checked and found high may have come down,” says Breton. “For merchants having average purchases under \$25, there are now lower rates.”

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SMALL Things Considered

Gay Smith

Peonies in Alaska

Remembering my years at the San Francisco market in the late 1970s and early 1980s, I recall the short season of peonies which flooded the market in late April to early May. With luck, availability lasted through Memorial Day. Long associated with Grandma's garden and grave decorations, peonies have traversed a path similar to callas; a garden beauty, inexpensive cemetery flowers to one of today's most desired blooms for wedding celebrations.

Somewhere in the mid to late 1980s, domestic production was augmented with imports from Holland, New Zealand and Chile, opening the heretofore limited availability period from spring to pretty much year-round (October to late May). Of course, global availability extended the sales window considerably. The so-called "cocooning" trend of the 1990s (as defined by Faith Popcorn) established a good foundation for the uptick in peony awareness. Cocooning favored home entertaining with an emphasis on garden parties. Linen and upholstery designs trended to floral patterns and Martha Stewart was busy teaching consumers the simplicity of DIY flower designing by filling jam jars with garden flowers cut to 5 inches. Showy bloom shapes, interesting colors and fragrance

made the re-discovery of peony panache a shoo-in. Peony fever took off faster than a New York minute and the interest still remains strong. Heck, a quick search on Martha's site gave 343 results for articles featuring peonies.

But is it possible to produce peonies in Alaska? Yes, absolutely! After attending the Alaskan Peony Growers 2011 summer conference, I know that it makes sense because the flower availability (June, July and early August) falls outside every other state or country's harvest window. Flower production coincides perfectly with summer wedding demand. With peonies, the first 3-4 years is a time of disbudding to build the plants. Removing buds allows energy to flow into roots and bulk them up. Because there is considerable time lag between planting and cutting commercial blooms, it should be some years before production meets demand. With the laws of supply and demand determining prices the world of cut flowers, Alaska peony growers likely won't be haggling with wholesale buyers in the lower 48 for \$.65-0.80/stem prices any time soon.

Summer production keeps this grower group in the price-maker rather than price-taker category, hopefully providing them a leg up on realizing

profits fairly early in their endeavor because peony growing is not for the faint-hearted. Cut stage is tricky, reliable coolers for temperature management essential, *Cladosporium paeonia* fungi love these plants, packing materials are pricey and the roots are expensive, so start-up costs are high. The short growing season is unforgiving to mishaps or wrong steps.



Cladosporium paeoniae



Peony fungi spots

All growers know the fickle nature of weather and transportation methods. Fed Ex has no cooling facilities for shipping temperature-sensitive perishables, making a roll of the dice of how your flower look after the stress of riding in a non-cooled delivery van on a 95-degree summer day.

The Alaska project originated from a comment Dr. Pat Holloway, University of Alaska Fairbanks horticulturalist, heard at a convention at the Georgeson Botanical Gardens about peonies being an untapped product in the global flower market. A light went on in her head, and soon she had secured

\$10,000 in Federal Ag money earmarked for crop research. In the early 2000s, Dr Holloway started with 30 varieties to see which of these cool-weather perennials gave best results in Alaska's short growing season.

Interest and production acreage has steadily gained momentum and now more than 30 growers belong to the Alaska Peony Growers Association, whose mission is "to provide support and assistance to its members in all aspects of growing, processing, transporting and marketing of peony plants and flowers...advocate for research, reasonable governmental regulation, public and private financial assistance, and technology transfer that supports its members and the commercial peony industry in Alaska." Power in numbers! Together these growers cooperate to overcome unexpected twists and turns of producing commercial cut peonies. The season is short, but the long hours of sunlight allow plants to thrive and flourish.

The keynote speakers at the conference were well-established growers from New Zealand, Tony and Judy Banks from Omeo Farms. Their discussions included the importance of temperature management, packing, grading,

transportation glitches, variety specifics and cut stage. Andre Weirstra from Oregon Perennials discussed 2nd and 3rd year maintenance of plants. I provided information about postharvest handling and market expectations. Dr. Holloway gave an update on research. Other topics included understanding soil tests, phyto regulations for exports out of country, and Fed Ex regulations. Of course, no grower conference would be complete without farm tours so the second half of each day found our group traipsing through farms in Homer and Soldatna on the Kenai Peninsula.

To prepare for my postharvest talk, I ran a rather extensive test comparing various treatments by taking the flowers through the grower, wholesaler and retailer stages, simulating rotation and transit at temperatures of 33—38F. Finally, the flowers went into the consumer phase at ambient temperature and were watched to the end.

Andre from Oregon Perennials was kind enough to supply 200 stems of 'Sarah Bernhardt' so I could make two replications of the test. He cuts bunches into plain water (well water with pH of 6.8). Flowers remain in the same water throughout the entire

rotation period, which can be as long as 6 weeks. His coolers are super efficient and run at 33F. Even though his temperature control was excellent, I felt confident that at least one



Tony Banks demonstrates packing peonies.

or more treatments would far outshine his plain water handling.

Everything was well organized with one replication of the test happening at his farm and the other at a Portland wholesale house—real-life workshops. After the flower life was over, I spent several days comparing my notes about bud development and comparing photos of the various treatments. I decided none of the grower pre-treatments proved particularly stellar. In fact, the best results were realized when flowers were first hydrated in water during cold storage, then placed in Professional #2 T-bag at wholesaler/retailer level and consumer flower food. Peonies are tough! In fact, because of our cool summer, Andre's super-efficient coolers, and ambient temperatures of 68-71F during consumer phase, the flowers were almost bullet-proof!

Take-home message to peony growers: cut flowers into clean water, be super-diligent about temperature management and make sure your wholesale or retail customers treat blooms in a

display food solution or vase food solution rather than letting them sit dry until selling or designing with them.

Remind them to mix solutions with cold water or better, pre-chill to keep the flowers from opening too fast. Sugar (flower food) is the key to peony longevity. If selling directly to consumers, I highly recommend selling a handling kit with care instructions and 2 T-bags to process the bunches, and 2 consumer sachets per 10 stem bunch for vase solutions. Peonies are big drinkers and the food made the difference of 3-5 days longevity not to mention customer success.

Make a point of meeting members of the Alaskan group at our next ASCFG conference. Not only are they fun people, they can provide tips on how to keep moose out of your fields.

Gay Smith is the Technical Consulting Manager for Chrysal USA. Contact her at gaysmith@earthlink.net



Andre Weirstra

IPM Update

David Clement and Stanton Gill

Evaluation of Control of Powdery Mildew and Alternaria and Bacterial Leaf Spot on Zinnia

Following up on preliminary data from 2009 field trials of low-risk materials, in 2010 the University of Maryland conducted research on zinnia leaf diseases, with the assistance of a grant from the Association of Specialty Cut Flower Growers Research Foundation. This is a report on the findings of that 2010 field trial.

The 2010 trial was set up at Farmhouse Flowers in Brookeville Maryland. The new low-risk materials tested were supplied by BioWorks Inc., Victor, New York. One product tested was the biofungicide Cease, which is an aqueous suspension of *Bacillus subtilis*. It has been reported to have multi-site modes of action on both fungi and bacterial diseases. SuffOil-X is a highly refined, high paraffinic, low aromatic oil. This product has shown efficacy on powdery mildew. The standard control was the copper-based product Phyton 27, which is effective on a broad spectrum of bacterial and fungal diseases.

Plants of Benary's Giant series, mixed colors, were transplanted into the field in early June of 2010. On June 16 the trial was set up with 5 randomized treatments, including a non-sprayed control, replicated 6 times, sprayed along one meter of plant row for each product, alternating with one-meter buffer sections within 2 raised planting beds of zinnias. Low levels of bacterial leaf spot were already observed at the start of the trial. Weekly sprays were applied starting on June 21 and continued until September 29. The trial was concluded on October 7. We converted the labeled spray rates to metric and applied the treatments with 2-liter handheld Solo pump sprayers.

Five treatments were used:

1. Cease was applied at the labeled high rate of 8qt/100 gallons of water. We sprayed at the rate of 19ml Cease/liter of water.
2. SuffOil-X was applied at the mid-range rate of 1.5 gallons/100 gallons of water. We sprayed at the rate of 14ml SuffOil-X/liter of water.
3. Cease and SuffOil-X mixture was applied at the rate of 19ml Cease and 14ml SuffOil-X per liter of water.
4. Phyton27 was applied at the rate of 1.8 ounces/10 gallons of water. We sprayed at the rate of 1.43ml/liter of water.
5. Control blocks were randomized untreated plants within the row.

We evaluated the trial 6 times starting on July 20 followed by August 10, 17, 31, September 20 and October 7. We used a 0-10 disease



rating scale with 10 having 100% of the foliage infected. The most predominant leaf disease in 2010 was bacterial leaf spot. This disease is seed borne and was very severe in this field. Alternaria leaf spot was observed by mid August.

Zinnias

provide some of the most popular summer blooms for specialty cut flower markets. Leaf spot diseases are common and often shorten zinnia production. The primary diseases examined in this trial were bacterial leaf spot caused by *Xanthomonas campestris* pv. *zinniae*, a fungal leaf spot caused by *Alternaria zinnia*, and powdery mildew caused by the fungus *Golovinomyces cichoracearum* (formerly *Erysiphe*).

Understanding Alternaria Leaf Spot

This disease is caused by the fungus *Alternaria zinniae*. The symptoms are large, reddish brown or purple spots. The spots enlarge and become irregular in shape. They eventually develop gray centers that usually drop out, leaving a hole. Severely affected leaves turn brown, become dry and brittle. The fungus can overwinter in leaf litter in the soil, becoming a seedborne disease. Seed treatments are time consuming and not completely effective.

Non-chemical Control of Alternaria Leaf Spot

Keep foliage dry and avoid overhead watering. Crop rotation may also reduce disease incidence.

Powdery mildew was not observed until September 20, which was considered very late in the season.

Over the duration of the trial both the Cease and Phyton 27 treatments looked the best for leaf spot disease control. The average rating for both of those treatments ranged from 2.0 in July to 5.0 by August. By contrast the non-sprayed plants had a rating ranging from 3.5 in July to 5.9 in August. The statistical analysis of all the evaluation dates showed that the Cease and Phyton 27 treatments worked equally well for both leaf spots.

Powdery mildew was best controlled by the SuffOil-X treatment, followed closely by the mixture of Cease and SuffOil-X. The average rating for those treatments in October were 0.5 and 2.0 respectively compared with the non sprayed rating of 5.8.

The 2010 season was unusually hot with many days above 90F. The only treatment where phytotoxicity was observed was the Phyton 27 treatment. We did not include a cost analysis or study the differences between treatments and harvestable stems. The best treatments did give a noticeable improvement in foliage quality and prevented diseases on the flowers. All treatments were relatively easy to apply with no sprayer issues and dried quickly with little or no foliage residue. Further studies need to be done to repeat these treatments.



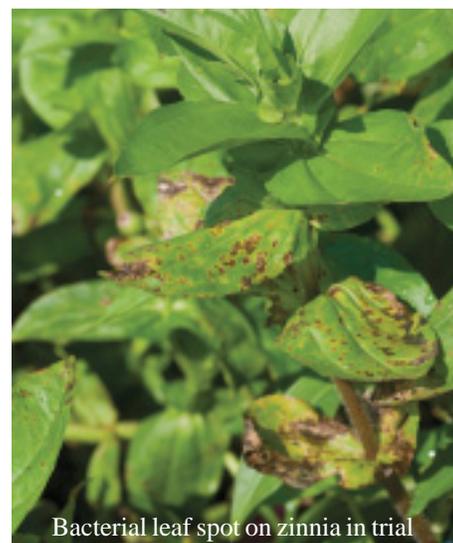
Zinnia plants on day of first treatment-June 21

Additionally, seed treatments for bacterial leaf spot should be investigated since once this disease becomes established it is very difficult to stop in the field.

Thank you to the ASCFG Research Foundation for its financial support of this project.

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Photos by Suzanne Klick.



Bacterial leaf spot on zinnia in trial



Making the first treatments on the zinnias

Non-chemical Control of Powdery Mildew

The best method of control is prevention. Avoiding the most susceptible cultivars, placing plants in full sun, and following good cultural practices will adequately control powdery mildew in many situations. Unfortunately, the most popular cut flower cultivars have little if any resistance to powdery mildew.

Understanding Powdery Mildew

This disease is caused by the fungus *Golovinomyces cichoracearum* (formerly *Erysiphe*). The powdery mildew fungus requires living plant tissue to grow and reproduce, and overwinters on decomposing stems and leaf litter. It grows as thin layers of mycelium on the surface of the affected plant parts. Spores that you can see with a hand lens are part of the white, powdery appearance and are produced in chains on upper or lower leaf surfaces, flowers, or stems. Environmental conditions that favor the growth of powdery mildew include sunny warm days followed by cool nights.

Wind carries powdery mildew spores to new hosts. Although relative humidity requirements for germination vary, all powdery mildew species can germinate and infect in the absence of free water. In fact, water on plant surfaces for extended periods inhibits germination and kills the spores of most powdery mildew fungi. Moderate temperatures of 60F to 80F and shady conditions generally are the most favorable for powdery mildew development. Powdery mildew spores and mycelium are sensitive to extreme heat and sunlight, and leaf temperatures above 95 F may kill the fungus.

Understanding Bacterial Leaf Spot

This disease is caused by the bacterium *Xanthomonas campestris* pv. *zinniae*. It first appears as small (1 to 2 mm), diffuse, translucent spots surrounded by broad yellowish halos. Under wet conditions the lesions slowly enlarge to about 5 mm in diameter. The spots become angular to irregularly circular and develop a reddish center. The lesions may merge to form irregular dead areas, 0.5 to 1.0 cm long, that may crack as they dry. During very humid weather, small brown spots may form on the ray flowers. If severe, the flower heads are seriously disfigured and may completely decay.

The bacterium will overwinter on decaying leaf litter and remain in the soil. Unfortunately, this disease is also carried on seed and seed treatments are time consuming and not completely effective.

Non-chemical Control of Bacterial Leaf Spot

Keep foliage dry and avoid overhead watering.
Crop rotation may also reduce disease incidence.

Zinnia

DISEASES

By A.R. Chase and Margery Daughtrey

	Disease	Pathogen	Stage of crop	Best cultural controls	Best product controls, based mainly on Chase Research trials
	Alternaria leaf spot	<i>Alternaria zinniae</i>	From plugs to landscape	Use pathogen-free seed and avoid overhead irrigation.	Chipco 26019, Daconil Ultrex (before flowers), Medallion and strobilurins (like Heritage)
	Botrytis blight	<i>Botrytis cinerea</i>	Any stage	Avoid leaf and flower wetting; remove infected flowers if possible; space plants and keep calcium levels optimal.	Chipco 26019, Daconil Ultrex (before flowers), Decree, Medallion (or Palladium) and Pageant
	Powdery mildew	<i>Erysiphe or Golovinomyces</i> spp.	Found on mature plants primarily, all season.	Scout regularly and maintain spacing; grow plants on open mesh benching and use fans.	Sterol inhibitors (like Hoist, Strike, and Terraguard) and strobilurins (like Compass O, Heritage and Insignia)
	Pythium damping-off and root rot	<i>Pythium</i> spp.	Any stage	Avoid poorly draining medium; use new media, flats and pots. Don't over-fertilize.	Drench with etridiazole (Terrazole Truban-or in Banrot), Segway, or Subdue MAXX (rotate: resistance to Subdue MAXX possible)
	Sclerotinia blight	<i>Sclerotinia sclerotiorum</i>	Late spring on mature plants	Avoid crowding and irrigating late in the day.	Decree, Medallion and Pageant
	TSWV	<i>Tomato spotted wilt virus</i>	Any time thrips are available as vectors	Keep Western flower thrips under control and rogue out any crop showing symptoms.	No direct controls are available for viruses.
	Xanthomonas leaf spot	<i>Xanthomonas campestris</i> pv. <i>zinniae</i>	Any stage from plugs to landscape	Irrigate when leaves will dry quickly and use pathogen-free seed. Discard trays of infected plugs.	Alternate a copper product with Cease and KleenGrow.

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RESEARCH Update

Megan Bame

Funding for this column is provided by the ASCFG Research Committee

Fresh Flowers Through the Eyes of Generation X and Generation Y

Generation X (GenX) consists of 44 million people born between 1965 and 1976. Generation Y (GenY) consists of 71 million people born between 1977 and 1994. Targeted marketing to these age groups could reverse the downward trend in floral sales if the industry can gain insight into their preferences and attitudes toward flowers. This study looked at flowers as gifts since more than \$100 billion is spent on gifts in the United States each year. Conducted using focus groups in Michigan and Minnesota (216 total participants), the study aimed to: 1) explore the positive or negative attitudes of GenX and GenY toward flowers as gifts, 2) explore

differences in perceptions about price, product, place and promotions among GenX and GenY, and 3) determine what actions the floral industry can take to improve the use of flowers as gifts by GenX and GenY.

The following actions were the top three identified as those actions that would increase the likelihood of purchasing flowers as gifts: 1) offered special discounts, 2) longer longevity, and 3) more price ranges. The study found that both GenX and GenY view flowers as “special” gifts. GenY displayed some reservations about enjoyment by the recipient and cost of the gift. The research suggests there is great potential to

position flowers as a well-received yet surprising birthday gift. The upper limit for spending on a birthday gift was around \$50, though the upper limit for spending on a floral gift for a birthday was around \$30. Targeting birthdays is ideal to increase sales across the calendar year.

GenY consumers indicated that their perceptions about flowers were that they are high-priced, difficult to obtain and not frequently advertised. Furthermore, they do not reflect the gift giver’s personality as well as other gifts such as a DVD, book or CD. GenX placed more value on flowers, citing greater enjoyment and confidence in choosing the correct floral gift.

Participants indicated a willingness to pay more for gifts that reflected their personality and knowledge of the recipients’ preferences.

Other potential strategies identified by the preferences of GenX and GenY in this study include sales promotions, proven longevity, more price point offerings, more unique or trendy flowers and packaging, and combining flowers with other products such as gift cards, food or media, such as a CD, DVD or book.

Rihn, A.L., C. Yue, B. Behe, C. Hall. 2011. Generations X and Y Attitudes toward Fresh Flowers as Gifts Implications for the Floral Industry. HortScience 46(5):736-743.

Postharvest Performance Relative to Transport Systems

Recent research on shipping cut flowers has focused on maintaining the cold chain since high temperatures can reduce vase life and make ethylene-sensitive species more susceptible to ethylene. The typical shipping method (from Central and South America) requires five to seven days utilizing air and truck transport. This research, conducted by the University of

Florida, evaluated the effect of three commercial transport systems on postharvest quality and vase life for cut alstroemeria, carnation, gerbera and rose.

The transport systems evaluated were 24-hour, 3-day and 7-day. The 7-day transport system included temperature controls while the 24-hour and 3-day trials did not utilize any temperature control methods. The trial was conducted

monthly for one year to include seasonal temperature fluctuations. Five cultivars of each species were harvested at commercial maturity, graded for uniform quality, combined into bunches, recut, hydrated, wrapped in sleeves and packed dry. The flowers were held overnight in a cooler at 2 to 3pC prior to shipping.

In most cases, the study showed that transporting fresh flowers within 24 hours to 3

days resulted in a longer vase life compared to a 7-day transport system. The results demonstrate that the five species tested were able to tolerate high and fluctuating temperatures (at times, substantially higher than is recommended for most cut flowers) for short periods without substantially affecting vase life and quality. The variation in temperatures through the year did not result

in a consistent trend in vase life among the floral species—the summer months, when exposed to the highest temperatures, did not result in the shortest vase life.

The researchers acknowledge that while all postharvest factors were as consistent as possible, there may have been preharvest variation that affected the vase life and postharvest quality. They also suggest that treatment with fungicides, anti-ethylene agents and commercial hydration solutions are beneficial to cut flowers exposed to high or fluctuating temperatures.

Leonard, R.T., A.M. Alexander, T.A. Nell. 2011. Postharvest Performance of Selected Colombian Cut Flowers after Three Transport Systems to the United States. HortTechnology, 21(4):435-442.

Nutrient Movement Through Plastic Mulch

Plastic or fabric ground covers help suppress weeds and retain soil moisture. A soil scientist with the Agricultural Research Service in Texas has evaluated how ground covers limit water penetration and affect carbon and nutrient levels in the soil; particularly when composted manures were applied after planting—a common practice in organic production.

Two materials were tested: needle-punched, double-layer fabric and tightly woven polypropylene. Two types of compost, poultry litter pellets and a cattle manure compost mix, were used. While water moved freely through the fabric cover, there was limited penetration through the polypropylene cover for the first two weeks. However, by the end of

the 30-day study, water moved more easily through the polypropylene cover.

The levels of beta-glucosidase were used to assess the biological activity in the soil. Beta-glucosidase levels can be used as a soil quality index to determine how the influx of soluble carbon affects soil microbial activity. Not only were the levels similar in the fabric and polypropylene covered soils, they were also similar to the control soil samples without ground cover. However, soil under both ground covers had somewhat lower levels of carbon, nitrogen and phosphorus than the control.

Perry, A. 2011. Good News About Ground Covers for Organic Gardeners. Agricultural Research, 59(7):22.

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GROWER Profile

Gay Smith

Chrysal Americas

Gay Smith is not a cut flower grower - has never been a grower - but unlike many of the growers profiled here, she has a degree in environmental horticulture. Just like those growers who come to the industry without a formal horticultural education, it's Gay's experiences and career opportunities that have shaped her rather unique role in the specialty cut flower industry.

You probably recognize her name. You can find her column just a few pages over, but she's more than a byline in the *Quarterly*. She's been involved with the ASCFG since its inception. She served as secretary for the organization's board in the 1990s and regularly works with ASCFG members solving problems related to postharvest handling.

Gay has been a technical manager for Chrysal Americas since 2001, but her career started in wholesaling in the early 1980s. She recalls that the exchange rate was such that one U.S. dollar bought four Dutch guilders. It was a good time to be a flower buyer. Working for a wholesale house in San Francisco, she had the opportunity to make connections with folks in the Dutch flower industry.

In the United States, retailers ordered by genus and color. Gay learned quickly that variety specifics are important to postharvest and the quality of product delivered to her customers. The product availability would come via Telex, a predecessor to the fax machine, with row after row of variety names. If Gay was looking to buy freesia, she would have had to choose from ten or more varieties. If she chose the wrong one, the shipment might be ruined by botrytis by the time it reached the retailer. She believes this moment of awareness was a pivotal point in her young career.



In 1985, Gay seized the opportunity to move to Holland where she found herself sitting on the clock at the Aalsmeer Flower Auction. For six months she learned “flower Dutch” by befriending an older gentleman she sat next to. When she arrived one day to find her tutor had gone on vacation, she picked up her *plaat* card and started buying. Gay recalls, “The auction was a gentleman’s club with very few women. I had to stand up for myself more than once.” When the exchange rate changed, she headed back to the United States, working again as a wholesaler in Los Angeles, then Seattle, before heading to the East Coast.

In Miami, Gay worked for CFX, now defunct, but once a top five importer of fresh cut flowers. The company wanted to be market driven rather than product driven, and Gay’s job was to work with more than 40 growers in Central and

South America developing seasonal programs that would coincide with market demand. It was the 1990s and Gay says, “Unlike now, there were enormous cost pressures on the economics of local products; land and labor in Colombia were cheap and lots of money floated through Miami.” The position gave her a valuable understanding of Latin American production and East Coast product movement. It allowed her to work with breeders to impart the importance of postharvest handling vigor for shipping.

Ultimately, the Pacific Northwest was calling her name and she headed back to a wholesaler position. When that company folded, she followed up on business relationships she developed at Chrysal, whose North American headquarters are in Miami. As a technical manager, her role is distinctly different from the sales force. The company

recognized that customers may be wary of taking technical advice from sales staff, and they acknowledge that sometimes, Chrysal may not carry a product that addresses a grower or florist problem. The bulk of research on Chrysal products happens in Holland, the UK and Colombia, so Gay can glean from a wide body of resource information for various treatment results on specialty cuts.

Her job includes answering individuals' questions, providing training workshops, developing reference materials, even shooting Flip videos. While Gay's resources might be posted on Facebook or e-blasted, she leaves all the outreach through social networking to "a very capable 25-year-old who works in Miami."

Gay says most of her time is devoted to supermarket clients, followed by growers and then wholesalers. She has observed that the wholesale market has changed dramatically over the years. "People used to wander around the wholesale house and buy five bunches of one flower, 10 bunches of another and so on," she recalls. "Today, it's all over-the-phone sales, simply filling orders with more consideration of price than flower quality." It's an odd shift, she reflects, since flowers are such visual buys.

Gay has found that she can be especially effective as a workshop leader for the supermarket sector. Being an outside expert brought into a special event setting, she can poke fun at common though ineffective practices, and be a little irreverent to make an impression on her attendees.

She addresses quality control standards, inspection guidelines, best practices and effective ways to identify and report quality problems.

No two weeks are alike and that's one thing Gay loves about her job, and a commonality she has with growers. She tries to be accessible to growers and their problems. "People often apologize for bothering me," says Gay, "but, really, it's no bother; it's my job and I want to help them find a solution." She doesn't claim to have all the answers, but since Chrysal is an international company, she can tap into technical support from managers in other countries where a species in question is more common. Although Gay sees a postharvest trend toward treatment-specific products (e.g., for roses, for gerberas, for bulbs) her experiences will



help her keep the big picture in mind to offer the best solution to help growers offer the best flowers.

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NORTHEAST

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Greetings from the Northeast!

I'm afraid the Greek Goddess of Peace will be a marked feature of 2011 (aka Irene, but unfortunately not the case when it comes to the hurricane form). As I write this I scan emails from farmer friends - photo after photo of them canoeing through their fields. Tiny plants stick out of the surface of the water in perfect lines, their feeble smiles "for the camera" show their shock and bewilderment. Many, many growers in our region and ASCFG community were affected, and I wish the best to you for your recovery.

We let the storms' hype get our blood pressure skyrocketing and put our preparations at the forefront of our task lists. We took down an acre of high tunnel plastic, cultivated and hilled like crazy, bound the budded sunflowers together in bed-wide bundles, tied extra ropes across the greenhouse, put extra bags on the row cover, created water bars on the farm roads, harvested the asters and lisianthus hard, and strapped the dickens out of the chickens (coops, at least). My farm was spared catastrophe and major loss, but that is a guilt-laden reprieve. The storm took a more westerly track and left no stone unturned, swelling rivers to record-breaking heights in our history, and leaving many farms underwater, and later, after the rivers receded, fields of gravel and debris. A friend reported the stream by her house so large that she heard boulders moving within it.

So 2011 turns out to be (for many Northeast farmers) a two-part season: Before Irene and After Irene. I hope that optimism for picking up the pieces, salvaging and plugging along prevails. Best of luck.

This November's National Conference will be a great place to share stories, visit farms that will likely still have blooms, and learn from growers all over the country. After the weather we've experienced this year, I am especially interested in learning from growers who are used to tornadoes, hurricanes and droughts. They are cranking out crops in soaring temperatures, preventing crops from falling prey to winds, and riding it out like it happens all the time. Teach us! We're all ears!

We might not be able to predict the weather with absolute certainty, but we can predict that we will *try* to predict it. One nifty little trick that is amazingly accurate is to *listen* for the temperature. Cricket chirps correlate to degrees: Count the number of chirps in 14 seconds and add 40 to get degrees Fahrenheit. If you are a Celsius type, crickets can do that too! Count the chirps in 25 seconds, divide by 3, and add 4 to get the temperature. Is it the right temperature to direct sow

something that needs 65 degrees to germinate? Ask the cricket!

Please do not hesitate to contact me with topics that you would like covered in our next Regional Meeting. Email me at grow@oldfriendsfarm.com Happy autumnal growing! Hope to see you in Reston!

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They are cranking out crops in soaring
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MID-ATLANTIC

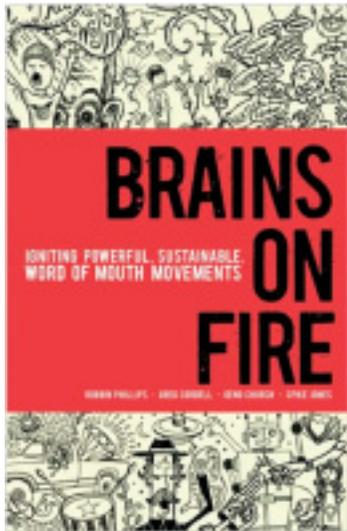
Becky Devlin

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I have always been an avid reader. As a kid, I read every night before bed, by choice. As a bookworm, I knew the librarian by name in my elementary school (as well as the names of her kids, husband and dog). In the past few years, life has gotten hectic and my reading has been limited to blogs, cookbooks (it counts) and magazines for the most part. Going into the summer, I vowed to read at least 5 books that have been on my list and have really enjoyed making time for reading again. My reading list was eclectic and all of my choices were chosen as ways to enhance my knowledge as a small business owner, a parent and a person.

My favorite so far is *Brains on Fire*, a book written by the South Carolina marketing and branding agency of the same name. I follow their blog www.brainsonfire.com on occasion,

a wealth of information for the small business owner. So, when they decided to put their wisdom into a book, I didn't hesitate to order a copy. The *Brains on Fire* crew makes it clear that conventional marketing and advertising is not the way to go when growing a business. Their out-of-the-box methods focus on creating a movement and building a tribe of loyal followers to spread the word about your business.



In the book, they talk about passion, how important it is to be passionate about what you

do, and how contagious passion can be in fueling word-of-mouth. They also offer a few "thought-starting" questions that business owners can ask themselves (and their employees) to determine whether or not the passion is there for your business. They are:

1. If we randomly chose one of your employees and one of your customers and put them in a room together, would a passionate brand lovefest break out between these two strangers?
2. If your company were (heaven forbid) to be hit by a bus tomorrow and exterminated, would your brand live on without you? In other words, is your customers' brand loyalty so strong that it is self-sustaining?
3. Can your brand cross its heart and make an ironclad promise to your customers? Do you know what that promise is?

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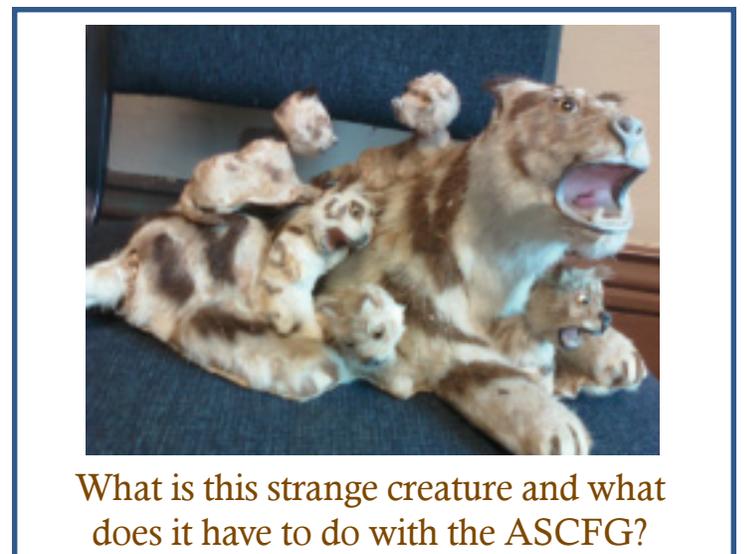
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4. Do you have talented people invading you with resumés? Are the best of the best dying to work for you?
5. If you threw an optional employee party, how many of your employees would attend?
6. Is the entrepreneurial inspiration that gave birth to your company still alive and well? Prove it.
7. Does the world know about your brand solely through traditional media advertising and promotion? Or do you rely on that effective and efficient word-of-mouth advertising?
8. Are your employees encouraged and empowered to speak their minds - or shut up and work?
9. Do your financial goals have a death grip on your trachea?
10. What is so important about your brand that you would work on it without compensation?

I hope this gives you some juicy food for thought in planning your goals and desires for the future!



What is this strange creature and what does it have to do with the ASCFG?



Charles Hendrick

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Our Southeastern Regional Meeting was held on August 15th in Charleston, South Carolina. We are most appreciative to each of our speakers and to all who attended. There is not a nicer group of folks than salt-of-the-earth flower growers! This Regional Report is a brief summary of information presented.

First was Alicain Carlson, doctoral student in the North Carolina State University Postharvest Research Program, where 121 species and cultivars have been studied over 8 years as part of the ASCFG Trials. Research includes the effects of hydrator only, holding preservative only, hydrator and holding preservative, or plain water on vase life. There was variation by cultivar, but in general holding solutions are beneficial to most cut flowers, while hydrators tend to be more detrimental.

Due to the variation, it was suggested that a chart listing what flower varieties like which and which can be detrimental would be most helpful. Alicain also pointed out that it is important to know what is in your water. She is studying the effects of salt and pH levels in water on vase life. Higher salt levels decrease vase life, but holding solutions can mediate the effects of higher salt levels. On the bright side, sunflowers are not sensitive to salt, and in the past have even been strategically planted to remove toxins from soil and water as part of phytoremediation research! In addition, the ideal water pH is 3 – 4, with a lower pH having lower levels of bacteria. Bottom line: good clean water is a must!

Alicain also reviewed new cut flower varieties, including the sunflower ‘Amber Glow’, which has an amber halo at the base and a ten-day vase life. Celosia ‘Tornado Red’ has huge heads and might be great dried because stem length is very short. Both of these are available from seed. Eucomis ‘Sparkling Burgundy’ has an amazing 30-day vase life. Alicain had one last three months! The leaves can be cut as well, and could eventually root in the vase. This is an excellent cut, grows 3 feet tall, and does not need any preservatives. Another pretty flower with a tremendous vase life is celosia ‘Orange Peach’. Other cuts with great potential are zinnia ‘Transformer’, ‘Giant Sungold’ sunflower, rudbeckia ‘Henry Eilers’, asclepias ‘Oro’ and cespedia ‘Sun Ball’.



Donna Mills, co-owner with husband Tim of Floral & Hardy Farm in Lexington, South Carolina, presented a great demonstration of her wreath-making skills. She actually made a wreath while explaining her process, the how-to's, and giving tips, which proves that she is a great multitasker! Afterwards, she showed slides of many gorgeous wreaths she had made using different, unique combinations of greenery and embellishments. Her favorite greenery to use includes: Leyland cypress, eastern red cedar, cypresses ‘Blue Ice’ and ‘Carolina Sapphire’, and boxwood. (*Donna's tip: your state's forestry commission may be a way to purchase very inexpensive seedlings. She purchased ‘Carolina Sapphire’, a fast grower, from the South Carolina Forestry Commission, where flats can be as little as \$1.00.*)

Donna generally starts most wreaths with a combination of Leyland cypress, eastern red cedar and ‘Blue Ice’ cypress.

(*Donna's tip: She does not use pine, which tends to brown quickly and does not hold up.*) A standard wreath is 24" on an 8" form. She makes up to 36". The smaller the wreath, the more difficult to make. Standard wreaths are sold to florists for \$20, and \$40 at farmers' markets. Embellished wreaths are \$45 and up. Donna uses a unique and imaginative variety of embellishments, including dried peppers, dried okra (try spray painting gold), fresh eucalyptus, smilax, holly, magnolia, pine cones, fresh fruit, dried hydrangeas, zebra grass, river birch, dried bupleurum, millet,



Quinton Tschetter

Tschetter's Flowers
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dried larkspur, dried cinnamon basil, dried 'Frosted Explosion' grass, and many more. She has even used a wasp nest to embellish a wreath! Christmas wreaths are soaked in water to give them a good long drink. They last well if kept out of direct sun. In January, she makes farkleberry wreaths, which are popular with her customers to hang until spring.

Donna provided all participants with a catalog from Maple Ridge Supply for wreath-making supplies. www.mapleridgesupply.com (*Donna's tip: Save yourself \$300 if you can make your own table. Tim made Donna's by modifying a table that belonged to Donna's grandmother. Another money-saving tip: Order rings directly from Mitchell Metal Products and get them for half the cost.*)

Although wreaths are most popular for Christmas sales (thereby extending your money-making season), Donna proves that wreaths can actually be made year round with as many ingredients as your imagination can conjure!

Plants Nouveau sells the most gorgeous and unique varieties of plant materials developed in the Netherlands. Linda Guy presented their stunning varieties of hydrangeas, hypericum, snowberries, rose hips, callicarpa, phlox and others. The company's motto is "Garden Candy – it's ok to drool!". Garden candy is no exaggeration. Their Everlasting Series of hydrangea was bred for the cut flower industry and has gorgeous antique colors, with equally stunning "fading flowers". The fading flowers are just as beautiful as the early flowers and come in many color combinations. The Everlasting Series of hypericum produces large fruits in many bright clear colors such as red, pumpkin, green, and white. These were also specially bred for cuts, with long stems. Some plants are now available in the U.S. If interested and for more information about these and other plant varieties, you'll be able to talk to Linda at the Reston trade show.

Another way to extend your sales is to take advantage of the variety of products that Mother Nature grows just for us. My presentation was about extending your sales through nature's bounty. Take advantage of anything that grows wild around you that florists will love for unique design work such as smilax, river birch, johnsongrass, lespedeza, Queen Anne's lace, bamboo, curly dock, lily blossoms and pads, lotus blossoms, Spanish moss, millet, cattails, and more. We showed pictures of how our florists have used these products in their design work.

The clouds parted and we had a very pretty day for the train tour of Magnolia Plantation and Gardens, where we saw 400-year-old oak trees, a prehistoric Indian burial ground, a lot of baby gators, and very pretty gardens. It was relaxing and fun to be surrounded by such rich southern history.

We would like to once again thank our sponsors Ednie Flower Bulbs and Geo Seed. We were happy that Dora Sowell and Ashley Stockton from Geo were able to attend the meeting, so that we could meet the nice folks we talk to on the phone.

Summer has come and gone and the harvest season has ended. Here's hoping that you all were able to overcome the elements as the season progressed and changed. In the Midwest, we faced a whole new set of challenges, just not the extreme problems faced by others, especially in the areas of extreme wet or dry.

Seems that this was the year for great Regional Meetings from all reports I have seen. And the Midwest meeting was no exception thanks to Megan Schoenfelt and those who helped her organize and hold to a schedule. Three days of content squeezed into a day and a half! The faculty members and others who presented information were great and much was gleaned from the information that they shared. Special thanks to Emma Locke and Michelle Jones (postharvest), Gary Anderson and Teresa Lanker (floral design), Andy Glaser (weed management), Luis Canas (IPM scouting) and Larry Phelan (healthy soils) for their presentations. Plus anyone else that I missed.

The tour of the Secret Arboretum was educational and enjoyable. Thanks to Ken Cochran for such an informative tour. It was interesting to see the repairs and progress made since the tornado went right through campus. I am impressed by how much information is taken home from these meetings.

The tours of the Amish farms were both entertaining and informative. To see how they have produced crops without some of the things that we take for granted was instructive and may



An Amish farm generously shared celosia flowers so growers could collect seed.

have given some of us new ideas about ways to try to make our operations more efficient. Thanks to the Miller and Weaver families, and to Sue Weaver for sharing the insights of their operations. I know that we, as the visitors to their operations, wish them the best in their efforts to grow and promote fresh cut flowers.

It has been my privilege to serve as the Midwest Director and trust that my successor finds his term as interesting and rewarding as I have. Thanks to all who have assisted me in these efforts and have a great winter season, whatever you are doing.



SOUTH-CENTRAL

Josie Crowson

Josie's Fresh Flowers
josie@josiesfreshflowers.com

Die-hard flower growers plus a good contingent of new growers braved the heat and drought for our Regional Meeting at Rita Anders' farm in Weimar, Texas. It was well worth the trip. Rita provided a great tour and lots of good food, and we had some terrific speakers. Many thanks to Rita and to her family and friends who helped make this meeting such a success!

Not surprisingly, many of our informal conversations at the meeting focused on the weather. We were all hoping that we would soon see a break in the heat and drought. That was not to be. Now a month after our meeting, conditions in our region are much worse. By August 31, for example, Austin, Texas had recorded 80 days of 100 degrees or more. Austin's historical yearly average is just 12 days of triple-digit temperatures. And, of course, while other sections of the country have faced massive flooding, we can't buy rain here.

Rita Anders (Cuts of Color) has "never looked at water use as I am this year." She has been struggling to use water from her wells more efficiently—installing more timers and drip



With a garden there is hope.

- Grace Firth

For me, here's a story that says it all: I provided flowers for a conference at the Nacogdoches Boys Ranch. This is a home for boys who have been abused and/or abandoned, many of whom have serious learning difficulties. These children have suffered a great deal in their short lives. For the conference, I brought one large arrangement and small arrangements for each of the dining tables. After the meeting, Bill, the director, put the large arrangement in his office and left the smaller ones on the tables where the boys have their meals. Bill wrote to me: "Now, a little over a week later, the large flower arrangement is looking well worn....However, when I went over to the kitchen to talk with the cook, there are still six of the little bouquets on the tables and every one of them looks as fresh as the

first day you brought them. Incredible! So, I paid attention at lunch time as the boys were cleaning up after they had eaten. They removed each bouquet from the table, took it over and carefully gave it fresh water. No one told them to, no one taught them how, they had just done it. My personal thought is that it comes from the innate love for beautiful things that is born within us all and these little boys whose lives have been so filled with ugliness and horror had instantly responded."

I treasure this letter. It means more to me than the most profitable sale I could ever make. I'm sure that many of us have similar stories. These are the rewards that make us willing to put up with heat, drought, critters, a bad economy and whatever else gets thrown at us.

tape—but "the lack of rain not only means constant watering, it draws the deer and birds to your yard to feed on your flowers." Rita says she now looks at "flower growing as a competition with Mother Nature." Along with the factors that have made growing flowers more difficult this year—heat, drought and critters—has come the sagging economy which has made selling them tougher as well. For many of us, this combination has meant working harder for less money. So why do we keep going? Because the non-financial rewards from being a flower farmer are so much greater than from, say, selling nuts and bolts. We see how our flowers lift the spirits of the sick, bring joy to the brides and smiles to the faces of those who are sad. These things inspire us and keep us going.

When Rita missed a market because the heat slowed flower blooming, her customers told her how much they missed their weekly flowers and how glad they were to see her the next week. That meant a lot to her and made Rita more determined "to somehow come out ahead and have those flowers for my awesome customers." Cynthia Alexander (The Quarry Flower

Farm) says “After working in the corporate legal world for 35 years, I’m finally able to ‘follow my bliss’ and spend my days doing what I love—growing and selling flowers. I’m still able to say this with joy and conviction, even after 3 months (so far) of Texas temperatures hovering around 105 with virtually no rain.”

Marilyn Arton (Les Dames de Fleurs) writes: “The thing that has touched us the most is the loyalty of our customers, week after week. It makes it all worthwhile! We usually bring extra flowers in a bucket and give them to the children, even if the parents don’t buy flowers. It is such a joy to see their little faces light up! We may never be rich financially, but we are rich in so many other ways!”

Along with the factors that have made growing flowers more difficult this year—heat, drought and critters—has come the sagging economy which has made selling them tougher as well. For many of us, this combination has meant working harder for less money. So why do we keep going? Because the non-financial rewards from being a flower farmer are so much greater than from, say, selling nuts and bolts. We see how our flowers lift the spirits of the sick, bring joy to the brides and smiles to the faces of those who are sad.

Of course, these difficult conditions won’t last forever. Hopefully, by the time this *Quarterly* reaches you, weather in our region will be more tolerable and maybe the economy will be looking better too. However, by this time, I will be fully retired and will have completed my move from Texas to Virginia. There I will be just a home gardener and no longer a commercial flower grower. My term as Regional Director is also coming to an end so this is my last Regional Report. It has been a great honor to serve the ASCFG in this capacity and I am so thankful to have had such a wonderful opportunity. Although this may sound like a big goodbye, it really is not. I will keep hanging around at ASCFG events and hope to see all of you at the National Conference in Reston in November.

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Christof Bernau

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California is a region of microclimates. Travel a short distance, be it in elevation change, proximity to the coast, north to south, east to west or simply in distance measured in miles, and you are likely to experience significant changes in temperature, precipitation patterns, exposure to and duration of fog. Driving from Santa Cruz to San Francisco, one typically goes from cool, foggy conditions to warm and dry, to hot, sweltering, back to cool, even cold, foggy, grey skies.

Here in Santa Cruz, these microclimatic differences are most evident in annual rainfall totals and the duration/intensity of fog-specific locations experience during the fog season, i.e. June through August. In Santa Cruz proper, situated on the edge of the Pacific Ocean, annual precipitation averages 30" per year. Boulder Creek, only 10 miles away in the Santa Cruz Mountains, averages 49" per year. San Jose, only twenty miles from Santa Cruz, but sitting in the rain shadow of the coastal mountains, receives only 15" of rainfall per year. Differences in the frequency and duration of fog cover are similarly pronounced.

In Santa Cruz the fog typically rolls in off of the coast by 6 p.m. and does not burn off until noon the following day. Upwards of three weeks a year, the fog does not retreat at all and entire days will be cool, overcast and unfavorable to the entire range of warm-season crops. In Boulder Creek the fog normally does not appear until well after sunset and burns off by 10 a.m. Rarely does the fog linger long enough to reduce the intensity or growing potential of the sun. Over the hill, San Jose is almost never affected by fog and, buffered by the Santa Cruz Mountains, will usually be 10-20 degrees warmer, a giant difference for heat-loving, sun-dependent, warm-season crops.

At this point you might be asking 'How is all of this relevant to flower growers?'. The "summer" of 2011 has been a particularly challenging one for coastal growers hoping to produce warm-season crops. Vegetable growers in particular have suffered from the "June gloom" through "Fogust" weather. Crops like gomphrena, celosia and pumpkin on a stick, which in warm years do reasonably well on the coast, have all been a disaster this year. Similarly, canopy diseases like rust, mildews and blight have all been thriving in our cool, damp conditions. As a result of microclimate differences, these challenges have barely cropped up for inland growers.

What can this teach us about our flower programs? Focus your crop planning and production around what produces best for you with the least amount of inputs and extra effort. Of course, these need to be crops with a strong market demand and that are profitable to produce, but if they are well suited to your environment, they will likely be less expensive to produce, both in terms of inputs, energy costs and labor from seed to harvest. A core principle of agroecology is to design agricultural systems that are based on your local and regional ecology, thus

A core principle of agroecology is to design agricultural systems that are based on your local and regional ecology, thus mimicking nature rather than struggling against that which we have little ability to control. This should be obvious, but often we strive to produce exactly what the market "expects" rather than what your climate genuinely supports.

mimicking nature rather than struggling against that which we have little ability to control. This should be obvious, but often we strive to produce exactly what the market "expects" rather than what your climate genuinely supports.

Of course, greenhouse, hoophouse and low tunnel production are an entirely different matter. Here, through the wonders of season extension, season enhancement and climate modification, we are readily able to produce that which might not easily grow outside. Here on the damp, cool coast, inside the dry warmth of the hoophouse, I have tomatoes thriving when all of our outside plantings have been overrun with late blight, and were disced into the ground weeks ago. Other growers in our area

are having similar successes with warm-season flowers under the cover of plastic. While I am not a big advocate of the supplemental heating and lighting, apologies to everyone who does benefit from these inputs, it is truly amazing what is possible, virtually year round and virtually in every growing region, with the addition of hoop houses in your growing regimen.



NORTHWEST

Diane Szukovathy

Jello Mold Farm
diane@jellomoldfarm.com

In 2005 I attended my first Regional Meeting at J. Foss Garden Flowers in Chehalis, Washington. By that time Janet Foss had already been in the flower farming business for 24 years and had a well-earned reputation around the Puget Sound area for fabulous quality cuts and an adventuresome array of offerings. This past summer she celebrated thirty years in business, a fitting time to shine the spotlight on this grower who has contributed so much to the confidence and skills of other flower farmers, myself included.

Janet got married in August of 1981 and started her first farm near Everett, Washington, three days later with a borrowed shovel. “How else do you start?” she says, with a laugh. Those who know Janet will tell you she works hard, doesn’t like a lot of hoopla and you won’t catch her tooting her own horn. But others do and over the years I collected tidbits from here and there, gained more than a few earfuls of wisdom sitting next to her on ASCFG tour bus trips, worked with her to help establish the Seattle Wholesale Growers Market and came to realize that she is nothing short of a treasure to our industry.

Janet has been a leader in setting a spirit of cooperation at our new market. Once I asked her about her remarkable generosity and she credited her grandmother who was never afraid to teach other people what she knew about flower growing. “If anyone wanted to grow flowers she’d give them plants and help them get started, saying ‘If they can grow flowers better than me, so be it.’”

Her grandmother, Katie Flock Larson, lived in a big white farmhouse just a few miles from where Janet grew up, near Chehalis. “Every flower bed was perfect and filled with flowers. People used to drive by just to see it because it was so gorgeous.” Like many farmers in those days, Janet’s grandparents did a little bit of everything—raised timber and cattle, sold milk, raised and sold vegetables, had a nursery, kept greenhouses and raised and sold flowers.

“She loved pretty things, but she also enjoyed making some money,” Janet remembers about her grandmother. “She had a florist shop at her house with carnations and everything and she did weddings. She would source some from the wholesalers but mostly used what she had in her garden.”

Gardening was a business as well as a pastime in Janet’s family. “When you got out of the car and went to any family gathering, the first thing you did was walk around the whole garden and admire it.” For her tenth birthday, Janet asked for her

own flower bed and her parents gave it to her, “front and center in the yard.”

Janet was the first of her immediate family to graduate from college, with a degree in home economics. When she wanted to start her own flower farm her grandmother encouraged her, helped her decide what to grow and gave her plant starts. “My mom did the same thing,” she says. Janet’s business took off and she quickly earned a reputation for being one of the best local growers around.

“I loved being the first person in Seattle to bring pollen-free sunflowers to the Pike Place Market,” she remembers. Janet sold for thirteen years at that market and was often a trend setter. “She always stood out down there,” says her friend and long time florist Beverly Burrows, describing Janet’s fabulous array of vines, berries, annuals and perennials.

“When she gets an idea in her head, she just goes for it,” Bev told me, thinking of the time she begged Janet to grow bittersweet for her. “There’s so much of it in the Midwest but we couldn’t get it around here. Janet was out there in the field with her magnifying glass hand pollinating it. Lo and behold we had bittersweet!”

Janet also sold to various wholesale houses in Seattle over the years, delivering several times a week during the growing season. About eight years ago she relocated from Everett back to the Chehalis area where she grew up. For the past few years she sold her flowers at a roadside stand and at local farmers’ markets in that area.

During all of her flower farming years, Janet has been an active and vibrant member of the ASCFG, reflecting her grandmother’s spirit of generously sharing her knowledge.

She joined the Association March 4, 1991 and has shared her plant wisdom since then. I’m pretty sure she has attended every National Conference, speaking at several of them. Her sessions are always standing room only. Besides hosting the 2005

Regional Meeting at her farm, she has been a presence at each Northwest meeting for years. She has served as ASCFG Secretary. We are particularly lucky that she has again started writing for *The Cut Flower Quarterly*, highlighting unique cut flower genera and cultivars.

This summer at the wholesale growers market, we put a spread out for Janet, celebrating “Thirty Bloomin’ Years” for J. Foss Garden Flowers. When I asked her what she sees in the future, she laughed and said, “I was never taught to retire. I can’t imagine not growing flowers. I’d like to train a couple of other people to grow cut flowers because I think it’s a good way to make a living and we need things like this for people to do especially in hard economic times.”

“It’s good for everyone to work hard, because it gives them a clue about life,” she says.



The ASCFG Welcomes its Newest Members

Mike Abshier, Abshier Farm, Carey, OH
Sandy Ashmore, That Guy's Family Farm, Clarksville, OH
Kristie Banner, Nacogdoches, TX
Stuart Cable, Watertown Greenhouse, Watertown, WI
John Chandler, Tierra Madre Farms, Rosanky, TX
Jim and Sue Cummings, Redwood Farms, Williamstown, NJ
Kendra Ferencak, Forget-Me-Not Flower Farm, Fergus Falls, MN
Erin Flynn, Green Gate Farms, Austin, TX
Cari Geraughty, Texas Petals, Dripping Springs, TX
Dan Hill, Byrne Farm, Wrightstown, NJ
Dean Hollis, Smithers-Oasis/Floralife, Walterboro, OH
Cynthia Holloway, Posh Posies, Bradyville, TN
Betty and Anthony Joslyn, Homer, AK
Cordelia Kaspar, Flower Girl Farm, Shiner, TX
Mary Marston, Plum Nelly - A Flower Farm, Haughton, LA
Vicki McCracken, WSU Econ. Science, Pullman, WA
Jean Mitchell, U.S. Botanic Garden, Washington, DC
David Raab, Roseville Farms, Apopka, FL
Andrea Racht, Racht's Blossoms, Hawley, PA
Jenny Ringwood, WSU Econ. Sciences, Pullman, WA
Gail Spurr, West Vancouver, BC
Barbara Storz, Texas AgriLife Ext., Edinburg, TX
Pamela Taheri, Cary, NC
Diane Van Acker-Hopp, Tyger Vally Farm, Woodruff, SC
Beth Ann Van Sandt, Scenic Place Peonies, Homer, AK
Dan Webber, Roseville Farms, Apopka, FL
Bob Willits, Cornell's Mann Library, Ithaca, NY
Mary Wood, Mary Wood Design, Santa Monica, CA
Robin Yeary, Knoxville, TN

MORE Praise for *Woody Cut Stems for Growers and Florists*

by Lane Greer and John Dole

A review from the editors of *HortIdeas*. Contact the ASCFG to order your copy.

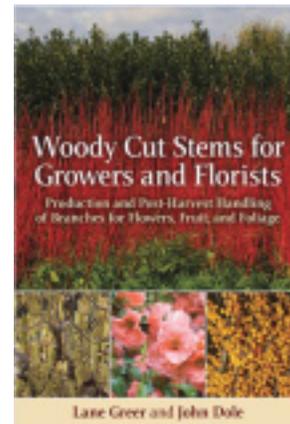
We apologize for the tardy review of this impressive book—we had planned to obtain a copy for review soon after it was published, more than a year ago, but we forgot to do so. But recently we happened upon a remaindered copy (only \$9.98!) at a discount book store, so here's a review, better late than never, we hope.

We used the word "impressive" already, but we really mean "hugely impressive." Not only is this a hefty tome, but its many pages are jam-packed with information gathered from the scientific and trade literature and from experienced growers of woody cut stems. It is surprising to us that this much is actually known about one highly specialized area of horticulture (although the number of species that can yield cut stems is quite high).

The authors have performed an admirable service just by compiling so much data. But that isn't all they did—there are many pages devoted to a distillation of current best practices, including chapters on getting started, general production guidelines, pruning and coppicing to boost yields, harvest and postharvest techniques, forcing, wildcrafting, and even annotated lists of species that might be worth trying (and a few that are not).

A "quick guide" suggests species with particular desirable properties. A list of plant sources, a long bibliography, and a thorough index complete this amazingly comprehensive book.

We think this book is a bargain at the publisher's price; if you can find it for \$10 or so, it's definitely a "no-brainer" if you are even slightly interested in woody cut stems.



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Have you updated your member page?

ASCFG Member and Flower Search

Our new online flower search serves several purposes. Replacing the printed Buyers' Guide, it will allow flower buyers to easily find growers and their products. Growers can quickly locate suppliers of plant materials, greenhouse and field equipment, and much more. Floral designers are listed along with their services such as weddings, funerals, bouquet subscriptions or deliveries.

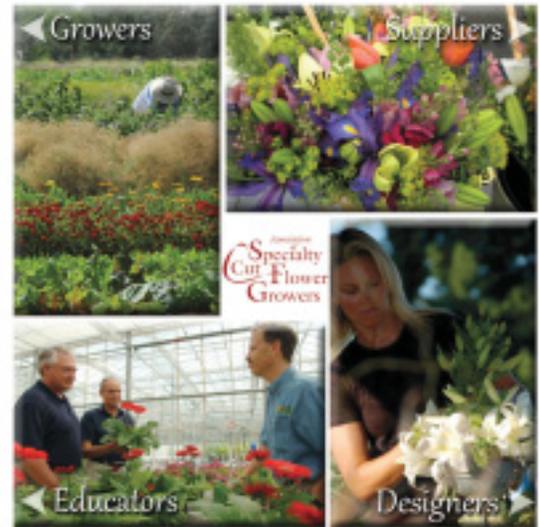
Best of all, you'll be able to modify your Member Page any time, as often as you'd like, with only a few clicks. No need to wait for a membership renewal, or Buyers' Guide mailing. If you change your email address or create an online show of your wedding designs, you can immediately update your ASCFG profile. Each member's page will list contact information, links to web sites and social networking pages, online photo albums, and price lists. As in the Buyers' Guide, growers' distribution ranges will be included. A photo of your farm provides a snapshot of your company to buyers.

Since many of you are not only growers, but also designers, the ability to be listed in more than one category is available. If you are a grower who also provides design or retail services, list yourself in the "Designer" section as well. If you supply plant material or equipment, check the "Supplier" box. Within those sections, be sure to indicate which services and supplies you provide. Remember to click "Preview and Save" at the end of each section.

This site will boost the search power of your own web site, as the ASCFG Flower Search will be promoted to buyers across the country. As more members update their information on the site, it will become even more useful to growers and those looking for their products.

The more complete and accurate each member's information is, the more useful the site will be to the entire organization. Please take a few minutes to visit your member page and update the information already there. The process is simple:

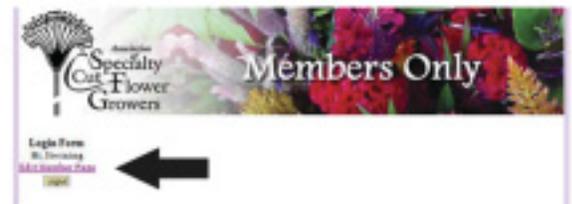
- Go to www.ascfg.org and log in to Members Only. If you can't remember your login information, write Judy at ascfg@oberlin.net
- Click "Edit Member Page". This will take you to your "ASCFG Member Page".
- Go through each section, adding new or changing existing information. Remember to click "Preview and Save" in each section.
- Under "Description of Business", please see "All Members: Click here to update your Business Type". This is where you may list yourself in any of the four categories. If you add another Type, be sure to then update your list in that category.
- Upload a photo or image to add a personal touch to your Member Page. If you cannot resize your image to upload correctly, please email it to ascfg@oberlin.net and it will be resized and uploaded for you.



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Old World Garden is a small, owner operated cut flower farm located in Dover, Massachusetts. We are proud members of the Association of Specialty Cut Flower Growers and the Massachusetts Association for Sustainable Agriculture. We are dedicated to providing our customers with the freshest, most beautiful flowers while supporting our farm, soil, environment, and helping other growers successfully grow and market flowers and the best growing practices. Customers, vendors, and growers are welcome to visit our farm and greenhouse. We sell our flowers online, local farmers markets, at our on farm stand and to select local florists. We offer "Specialty Cut Flower" (that only arrive directly with fresh, sustainable green flowers from Lilies and Lavender) Lilies and Lavender has been growing since 1988 with a general focus on their existing flowers for use in the garden. It is the owner's goal to create the most enjoyable, fun and profitable business for all who are interested in growing and marketing their flowers. We promise our flowers are designed to exceed our customers' expectations and are available for order. We have the freshest, most beautiful flowers available.

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- Delphinium

Services We Offer:

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FROM *the Director*

Judy M. Laushman

Three literary references in this issue caught my eye. Vicki Stambach mentions Timothy Egan's excellent book, *The Worst Hard Time*; Juergen Steininger recounts the stories of early plant explorers; and Becky Devlin explains her lifetime love of books. No matter how busy plantspeople are, it's clear that reading remains a priority in your lives. As one who can scarcely brush my teeth without a book in the other hand, I consider myself in good company.

I've read *The Worst Hard Time* three times, and recommend it to anyone interested in the Great Plains. Timothy Egan, like John McPhee, can make history seem personal and relevant. He does so here with first-hand accounts from those who lived through this ecological disaster. I hadn't known that topsoil lifted from Kansas was carried by windstorms as far east as Washington, D.C., where it coated buildings and new monuments — perhaps fortuitously, as lawmakers finally realized the scale of the problem and attempted various remedies.

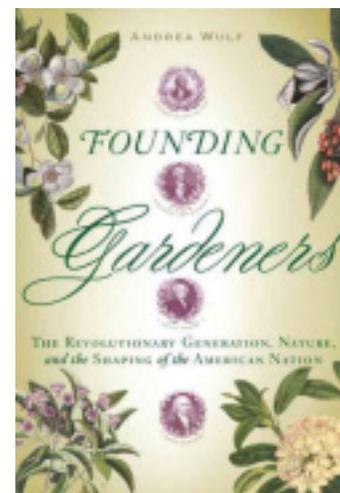
Another well-told disaster story from Egan is *The Big Burn: Teddy Roosevelt and the Fire that Saved America*. It's particularly relevant in 2011, when wildfires have destroyed so many acres in Oregon, Oklahoma and Texas. In 1910, three million acres of the Pacific Northwest burned, killing almost 100

people and destroying whole towns in only two days. The newly formed U.S. Forest Service was under attack from those who considered it Teddy Roosevelt's personal folly, and wanted public lands turned to private ownership. It took this catastrophic event to turn the tide, and, as Egan says "Roosevelt's 'Great Crusade' was saved."

A book about Roosevelt's interest in another part of the western hemisphere is *The River of Doubt: Theodore Roosevelt's Darkest Journey* by Candice Millard. It's difficult to imagine the hardships he and his crew endured as they traveled an unexplored tributary of the Amazon River in 1914. Despite injury, dangerous rapids, constant rains and near-starvation, Roosevelt kept copious notes of the new plants and animals the team encountered. A ravenous reader under any circumstances, he carried several pounds of books in his frequently flooded dugout canoe. The naturalists who accompanied him were equally passionate in their observations and collections of previously unknown species.

Well before those explorers marked their passage in Brazil, others had already traipsed across Europe, Asia and Africa. *The Species Seekers: Heroes, Fools and the Mad Pursuit of Life on Earth* contains some of the best stories ever told about the first explorers, naturalists, scientists

and downright oddballs. Who knew there was so much backstabbing, bickering and nastiness in the collection and naming of new species? Richard Coniff describes personalities and discoveries alike in great detail. Particularly interesting is the chapter on



women scientists like British naturalist Mary Kingsley, who decided against wearing pants to hike the jungles of Gabon. A good thing, too: when she fell into a 15-foot deep pit lined with sharp spikes, her voluminous skirts cushioned her fall and likely saved her life.

Perhaps most timely, I recently finished Andrea Wulf's *Founding Gardeners: The Revolutionary Generation, Nature, and the Shaping of the American Nation*. If I have time to slip away from the conference in Reston, Virginia (unlikely!), I'll head for George Washington's Mount Vernon and Thomas Jefferson's Monticello. How these men — as well as John Adams and James Madison — made time to cultivate their love for agriculture and horticulture while creating the United States is remarkable to consider, and beautifully told here. We were correct to use Washington's image on our conference brochure (apologies to Joe Schmitt for the anachronistic peony selection).

Now that fall is in the air, maybe we'll have a few extra minutes in the day to find something new at the library. Talk to me in Reston about some of your favorites. If you can't find me, check the gardens at Mount Vernon. I love a good book — and good company.



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Columbus

Sustainable, all naturally grown flowers are our focus. This year we are working on extending the flower season by testing a series of greenhouse and expanding the repertoire of product availability. Our summer growing season is July-October, and we focus on sunflowers, lilies, zinnias, and lots of other flowers for our mixed bouquets. Daily! And we are adding new flowers and are looking to get certified organic next year. We sell to online florists and other local growers, to florists, at farmers markets, and we also do weddings and other events. We also make handcrafted soap, so make sure to check our site weekly for holiday gift giving and wedding favors!

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The Cut Flower Experts!

Lilies and Lavender

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Colesburg, Mo
(270) 343-7242
(270) 343-4228 fax
www.kateadamsflowers.com
www.facebook.com/kateadamsflowers
Phone: (270) 343-7242

LILIES AND LAVENDER is a small, owner operated, cut flower farm located in Colesburg, Missouri. We are proud members of the Association of Specialty Cut Flower Growers and the Perennials Association for Sustainable Agriculture. We are dedicated to providing our customers with the freshest, most beautiful flowers while supporting our farm, soil, and environment. In keeping with our priority of sustainability we use only organic fertilizers and the least harmful pesticides. Customers, women, and jobs are daily in our fields and greenhouses. We sell our flowers at two local farmers markets, Sustainable Growth and the Westside Local Market. Lilies and Lavender has been printing local bouquets with a greater appeal for their wedding flowers for over 10 years. In the spirit of "to the farmer, thank the arrangements, you'll be in love and you'll be smiling something without and generous for your special day. We promise our flowers and designs will exceed your expectations! Cut and conditioned per order. We raise the freshest most beautiful flowers around.

Distributions:

- Local Supplier

Farmer's Market:
[www.kateadamsflowers.com](#)

Flowers We Grow

- Anemones
- Agapanths
- Antennaria

Services We Offer

- Events
- Functions
- Weddings

Association of Specialty Cut Flower Growers
The Cut Flower Experts!

Barking Cat Farm

Kim Marie Laurie Bostic
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We specialize in high quality, field-grown cuts. Our orders are delivered wet to the Dallas-Ft. Worth and surrounding areas of northeast Texas. We sell direct to retail florists.

Distributions:

- Local Supplier

