



# Griffin Gazette

Industry Information To Help You Grow



Summer 2012 Issue

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## Griffin Locations

Cheshire, CT  
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Bridgeton, NJ  
Ewing, NJ  
Auburn, NY  
Brookhaven, NY  
Schenectady, NY  
Morgantown, PA  
Knoxville, TN  
Richmond, VA

## Event Dates

**Griffin Day at Landisville Field Trials**  
July 31, 2012  
Manheim, PA

**Griffin MA Grower Expo**  
August 15, 2012  
West Springfield, MA

**Griffin PA Grower Expo**  
September 12, 2012  
Lancaster, PA

**Griffin TN Grower Expo**  
September 26, 2012  
Knoxville, TN

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Summer is here! It's official...the weather is hot, the days are long and as promised, we are working very hard to deliver Exceptional Customer Service to you.

By reviewing orders and verifying ship-to addresses we are making sure our customers are getting the products they need when and where they need them. There are changes in every business and because of that we are gathering and updating all contact information for your account. This vitally important step will be done by our Customer Service team this summer. We will be reviewing all of our accounts to ensure your information is up to date and accurate so all your orders are delivered error free and in a timely manner. Here at Griffins, we are doing everything we can to help grow your business! Our team will also be reaching out to our customers that have open quotes to ensure we get these turned around for you as quickly as possible or at the very least updated in our system as open or closed.

The GRIFFIN GROWER EXPOS!!! This is the year you don't want to miss. For over 30 years, it has been our pleasure to organize our Grower Expos. We hold these Expos so that we may provide the best opportunity for our customers to book their spring orders and save some money!

### Save the date and don't miss out:

- Springfield MA – August 15, 2012
- Lancaster PA – September 12, 2012
- Knoxville TN – September 26, 2012

If you have not attended one of our Grower Expos in the past, you are in for a real treat this year. If you have attended you know just how great these events are and don't want to miss our 2012 season. We have over 100 vendors participating, offering Day of Show Special Discounts only for those customers that attend the Expo. We have a great assortment of vendors to answer all your questions regarding some of the most exciting and innovative products in our industry, come see what is NEW and EXCITING. We also offer Grower Seminars that you will not only find educational, but will also be able to use to improve your business or operations while receiving pesticide credits. While you are at the Expo, make sure you take the time to stop at our Customer Service Booth. Our Griffin Customer Service team will be at all three shows and look forward to meeting you. Sign up for VIA and manage your account online, put in orders whenever you like, see all account information, see available inventory and much more. As an added bonus, just for stopping by our booth and speaking with us, you will receive a very valuable coupon redeemable for a FREE TRUCK DELIVERY. We look forward to seeing you!

Remember the Show Specials are good only at the show...so make sure you mark your calendar and come on out for an enjoyable day of camaraderie, education, great bargains and have lunch on us!

### Call our Expo registration line at 866.307.8142 to reserve your spot

Most of all, we want to hear from you.....We want to know what we are doing well, and what we can do better for you.

As always, we have multiple ways for you to contact us:

### Call in; Walk in; Click in!

- Call Customer Service – Speak to a live CSR **800.659.4346**
- Walk into any of our 12 locations
- Email us any time of the day or night – [orders@griffinmail.com](mailto:orders@griffinmail.com)

Just click on this icon on Griffins.com and tell us what you think!  
We look forward to servicing you and providing **Exceptional Customer Service.**



My name is Christine Layne, Corporate Customer Service Manager, please contact me personally at [clayne@griffinmail.com](mailto:clayne@griffinmail.com) or **978.513.7023**, with any issues, comments or concerns you have with Griffin Greenhouse Supplies Inc. I look forward to hearing from you!

## Cover Photo

Pericallis Spring Touch Grape



**Supplies and Support  
all in one tradeshow...**

# 2012 Griffin Grower Expo

**MA Expo  
August 15, 2012**

Eastern States Expo  
Center  
West Springfield, MA

**PA Expo  
September 12, 2012**

Lancaster Host Resort  
Lancaster, PA

**TN Expo  
September 26, 2012**

Knoxville Expo Center  
Knoxville, TN

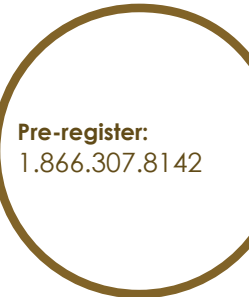
It's time to announce this year's Grower Expo dates. Once again the tour will work its way south beginning on Wednesday, August 15 in West Springfield, Massachusetts. Held at the Big E exposition site, the day's entire slate of activities take place under a single roof. The trade show, education program, lunch, and white elephant sale will occupy each corner of the hall and fill every square foot.

From Massachusetts the tour heads south to Lancaster, Pennsylvania on Wednesday, September 12. Familiar to all of our customers in the area, the Host Resort will once again serve as our site. The trade show, lunch, and white elephant sale will be housed in the indoor tennis facility while the education program will take place a short walk away in the hotel's main conference center.

The final stop of the tour will take place on Wednesday, September 26 in Knoxville, Tennessee. This is the youngest stop on the tour and growing in size each year. The education program for all three stops will be world class once again. The very best of new plant varieties will be presented by Griffin's own plant department experts with reports from this year's California Pack Trials.

Griffin's GGSPRO technical services team will handle the timely topic of new pesticide products and recommendations. Members of the team will also be present throughout the day to answer crop culture and pest management questions. This year's featured speaker is Rick Segel. Rick's infectious enthusiasm and thorough grasp of customer service will offer new ideas for merchandising, selling, and servicing customers all aimed toward maximizing profitability.

So mark your calendar for the Expo stop nearest you. As has become Griffin's Expo trademark, day of show specials are an absolute must and reason alone for attending. Bring your lists, plant material, supplies, equipment, technical questions, and don't forget your appetite! You'll have a day to remember and savings too good to pass up.



**Pre-register:  
1.866.307.8142**

**Get \$50 off...or win \$1,000**

Look for a special coupon that will be mailed to you this summer for \$50 off of a purchase at the expo OR use it to be entered into a drawing to win \$1,000.

Top Industry Exhibitors, Educational Seminars, Pesticide Credits, Super discounts for attendees only, Many "buy now pay later" programs, Huge savings on clearance items, Free Lunch, Great Giveaways, Enter drawings for free prizes!

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Over 90 pages of detailed technical information with charts and photos.

Each section is designed to give subject identification with a picture along with control recommendations. In addition, we have included our very popular Insect/Disease/Herbicide & new BCA reference charts right in the book! These charts have Mode of Action, Active Ingredient, REI, Application Rates and Measurement Conversion Tables. The sections include Insects, Diseases, Weeds, BCAs and PGRs.

**Reference Guide**

Item #	Price
98-401	\$99.00 + s & h

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# Griffin Day

at the Landisville Field Trials



The Landisville Field trials in Manheim, PA have been in existence since the late 1980's. During that time it has earned a well deserved reputation as being one of the best places in the country to go to evaluate the new vegetative plant introductions alongside the current industry standards. Entries include many of the latest introductions from top breeders across the globe. People from all across the U.S. as well as several foreign countries come to see the gardens each year. Over 1,100 varieties are entered in the trials for this summer.

GPS Hort, Griffin's plant services division is planning a special day at the Trial Gardens exclusively for Griffin customers. Attendees have their choice of a guided tour of the gardens, exploring on their own, or a little of both. The trials are a great place to evaluate weather tolerance. The plants in the trial will have seen heat, humidity and their fair share of thunderstorms. Demonstration projects overseen by the staff of the research center will also be available for viewing. Three speakers will be presenting throughout the day and pesticide recertification credits will be available.

### Registration Fee: \$25

Registration includes access to Field Trial, Seminar Program and lunch.

### Call to register: 1.866.307.8142

Registration is limited to the first 300 people. Registration fee is non-refundable.



### Wednesday, July 31, 2012 | 8:00 - 3:00

Penn State SE Research & Extension Center  
1446 Auction Road | Manheim, PA 17545

- View over 1,100 vegetative and seed propagated annuals grown in containers
- Attend Educational Seminars with industry speakers
- Pesticide Credits Available
- Lunch Included

8:00 - 10:00	Registration & Refreshments
8:15 - 9:30	Guided Tour of the Trial Gardens
9:30 - 11:30	Field Trial Evaluation
11:30 - 12:00	Nematodes for Pest Control - <i>Virginia Brubaker, GGSPRO</i>
12:00 - 1:00	Lunch
1:00 - 2:00	New Plant Additions - <i>Meghan Owens, Syngenta Flowers</i>
2:00 - 3:00	Nightmare Crops and How to Tame Them - <i>Rick Yates, GGSPRO</i>
3:00	Pesticide Credits and Departure Pesticides credits available for PA, NJ, MD, DE, VA, NY and New England

# Converting to Natural Gas Heat

## Part 2

By Peter Konjoian



In the last issue I wrote about converting from oil to natural gas as a greenhouse heating fuel. That column included a discussion of how one compares the cost and consumption of both fuels in order to make an informed decision as to which is more economical. It also described my experience of converting a greenhouse from an old oil burner to a new, high efficiency natural gas burner. Finally, it reported a Connecticut grower's experience in performing the same conversion.

The greenhouse I renovated is a 25 x 100 foot Quonset structure covered with double poly using IR film for the inner layer. Both side walls, about four feet high, are covered with twin wall polycarbonate panels. All in all the house is pretty tight and also has a concrete floor. The heat set point was 65 degrees.

While my target date for firing the new heater was the first of the year, delays with the plumber resulted in firing on January 12. The table below summarizes the natural gas consumption from that start date through the end of April. This past winter was quite mild in Massachusetts as it probably also was in your area. My expectation is that the monthly consumption of fuel, measured in therms (one therm equals 1000 cubic feet of gas) will be higher during a colder, normal winter.

Month	Therms	Cost (\$)	Cost/therm (\$)
January	559	708	1.27
February	452	526	1.16
March	230	275	1.20
April	171	201	1.18
<b>Total</b>	<b>1412</b>	<b>1710</b>	<b>1.21</b>

The total monthly bill is presented in the column titled Cost, followed by the per therm cost obtained by dividing the total cost by the number of therms burned. The bottom row of totals yields a cost/therm of \$1.21 which represents the average calculated over the months of operation.

The numbers do not represent the entire heating season but one could fill in numbers for November and December by using February and March in those months to roughly estimate the season's heating cost. This fall will begin my first full heating season and a report will likely find its way into this column next year as this compelling discussion continues. Still, a couple of observations can be made.

The following paragraph is from last issue's article where the

cost per gallon of oil was compared to the cost per therm of natural gas.

*"With reference to oil at \$3.00 per gallon, if the cost per therm is less than \$2.14 natural gas is cheaper, if it's more than \$2.14 it's more expensive. As of this writing in Massachusetts oil is indeed in the \$3.00 range while natural gas is below \$1.50, a very compelling difference favoring natural gas."*

That article was written in February before I had received my first gas bill. From the data presented in the table it's clear that not only was the cost per therm of natural gas below the equivalent value of \$2.14, it was significantly below the referenced estimate of \$1.50. I don't have oil consumption data from past winters to compare this year's natural gas consumption to; however, some growers reading this may have heating costs for greenhouses similar in size to this greenhouse.

### Other benefits of burning natural gas compared to oil include:

- No fuel storage issues
- Significantly less maintenance
- Higher fuel efficiency
- Less air pollution

As in the previous article other growers have begun converting from old, inefficient oil furnaces to high efficiency natural gas units. Two operations here in New England are at various stages of conversion. Jacavone Garden Center in Rhode Island and Cecchi & Son in Massachusetts each purchased multiple Effinity 93 units, the same unit I installed, for installation in their respective ranges.

### Pressing ahead

My research program has expanded in the past year to include an exciting project studying locally grown hydroponic vegetable production. Qualifying for USDA assistance, this project involves approximately 12,000 square feet of my range, three greenhouses. Each will be converted from oil to natural gas this summer and additional electrical service will be brought in for supplemental lighting.

Shifting from a traditional floriculture focus to a broader horticulture focus will be the topic of my next column. I'll leave you with an opinion that has been percolating in me for a number of years as we trudge through this recession and its aftermath. I believe for many of us that growing flowers alone is no longer sufficient to sustain our businesses and livelihoods. I and others share a vision of the next generation of greenhouse operators who will remove the restraints associated with growing only ornamental crops and expand their activities to include edible crops. As the future unfolds before our eyes, many of us are about to evolve into horticulturists rather than floriculturists.

# Mum Pals for fall sales

Mums are a fall tradition and a staple in the grower's world, but there is much to be gained by adding more selections to your fall lineup. Be sure to add this to your planner for 2013. You can grow these crops from seed or bring them in as a 288 tray. But order early because they do sell out, and there's not much speculation to be had for the summer months.

**The following annuals and perennials will be good for use in fall production based on timing, habit and evenness using the schedule below:**

Ornamental Pepper Varieties  
Coreopsis Early Sunrise, Rising Sun and Sunfire  
Gaillardia Mesa Bright Bicolor and Bright Yellow  
Hibiscus Luna Red and Luna Swirl  
Dianthus Dynasty Orchid, Bouquet Purple

Plug tray size: 288 cell  
Transplant to finished container: 6/24  
Move from greenhouse to outdoors in full sun: 7/7  
Container size: 8" x 5" mum pot  
Number of plants per pot: 1-3 (ppp= plants per pot)  
Fertilizer program: Constant feed with 300ppm N, similar to mum feed  
No PGR used  
Plug crop time (288 tray): 6 weeks  
Transplant to saleable finish: 9-10 weeks sold green, or 12-13 weeks for full color around 9/1.

**The following annuals work well for fall color using a slightly altered schedule:**

Zinnia Double Zahara Fire and Bonfire Mix'  
Marigold Taishan Gold, Taishan Orange and Taishan Yellow  
Ornamental Millet Jester, Purple Baron,

Plant 6/17 for Zinnia, Ornamental Millet, and Marigold  
Plug tray size: 288 cells for everything except Millet – use a 72 cell  
Move from greenhouse to outdoors in full sun: 7/14  
Container size: 8" x 5" mum pot  
Number of plants per pot: 1-3 (ppp= plants per pot)  
Fertilizer program: Constant feed with 300ppm N, similar to mum feed

Plants remain saleable for the grower/retailer, and showy for the consumer, for many weeks until frost. In an 8" x 5" mum pot, 1 plant per pot yields suitable results, however 2 to 3 plants per pot will yield the best quality finished pot in the shortest amount of time.



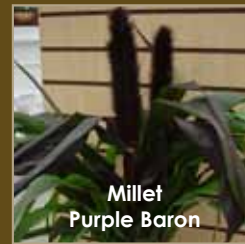
Dianthus  
Dynasty Orchid



Dianthus  
Bouquet Purple



Millet  
Jade Princess



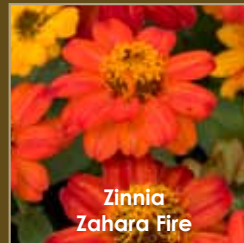
Millet  
Purple Baron



Coreopsis  
Rising Sun



Coreopsis  
Early Sunrise



Zinnia  
Zahara Fire



Marigold  
Taishan Mix



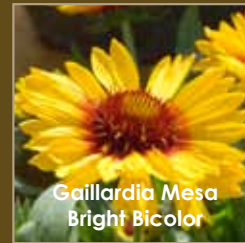
Orn Pepper  
Calico



Orn Pepper  
Orangina



Gaillardia  
Mesa Yellow



Gaillardia Mesa  
Bright Bicolor



Orn Pepper  
Chilly Chili



Orn Pepper  
Sangria



Hibiscus  
Luna Red



Hibiscus  
Luna Swirl

# How to Control Weeds through Summer into early Fall.

By Joanne Lutz, GGSPro Technical Support Specialist



Liverworts

A good weed control program will eliminate weeds before a crop is being planted and create a barrier to keep them from re-appearing. Identifying the types of weeds present helps to select the most appropriate herbicides. Weeds are classified by vegetative characteristics. There are four main categories of weeds: nonflowering spore producing, herbaceous broadleaf, grasses or sedges and woody weeds. Spore producing weeds include primitive plants such as liverworts, mosses, and horsetail (*Equisetum* spp.).



Crabgrass

Grasses are monocots distinguished by parallel-veined leaves with sheaths (collars) surrounding the base of the stem. Grass stems are usually round with a swollen node and may be hollow. Root systems are fibrous and reproduction is by stolons, rhizomes and/or seeds. Examples include crabgrass, quackgrass and ryegrass. Sedges have a characteristic 3-sided triangular stem which is solid and does not have a sheath covering at the leaf base. Sedges reproduce by rhizomes and tubers underground. Examples include yellow and purple nutsedge.



Nutsedge

Broadleaf weeds are considered dicots, with leaves having branched veins throughout the leaf. Broadleaf weeds can be annual or perennial. Root systems are fibrous with reproduction by seeds, rhizomes, and/or stolons. Examples include bittercress, clover and oxalis. Woody weeds include: shrubs, vines, trees, brambles and sapling trees. Examples include morning glory, bittersweet, Japanese honeysuckle, multiflora rose, boxelder or maple saplings, and brambles such as raspberries and blackberries.

Consider the life cycle of the weed. Is it a winter annual, summer annual, biennial, or perennial weed? Knowing what time of year it first appears and how long it survives assist in selecting the correct herbicide and application times. Winter annuals germinate in late summer, remain green through the winter, bloom and set seed thru early spring. Examples of winter annuals are bittercress, chickweed, henbit and annual bluegrass. These weeds are best controlled using pre-emergence herbicides. Applications should be made in late summer before weed seeds germinate. Additional application may be beneficial in the late fall and again in early spring.



Hairy Gallinsoga

A summer annual completes its life cycle in one growing season from seed. Oxalis, spotted spurge, groundsel and sowthistle are examples of broadleaf summer annuals while wild oats, panicum and goosegrass are annual summer grasses. These weeds are best controlled with pre-emergence herbicides in early spring before growth begins.

Perennial weeds have root systems that are extremely hardy, often with stolons or rhizomes that come back year after year. Pokeweed, plantain, knotweed, red sorrel and horsetail are examples of persistent broadleaf perennial weeds. Phragmites, dallisgrass, nimblewill, and bermudagrass are examples of persistent perennial grassy weeds. Perennial weeds often require repeated applications to control established infestations. These weeds are best controlled with a combination of pre-emergence before weed germination and post-emergence herbicides before they flower and set seed. A biennial weed produces vegetative growth the first year, flowers the second year, sets seed and dies. Teasel, Carolina geranium, mallow, and evening primrose are considered biennial weeds.

Should I use a pre-emergent or post-emergent herbicide? There are NO pre-emergent herbicides labeled for use in covered greenhouses. A few allow for use in an uncovered greenhouse so long as it will remain uncovered for a specified number of weeks after treatment. Pre-emergent herbicides are available in granular or spray formulations. These products will not kill existing weed growth. Most herbicides are stronger either against grasses or broadleaf but seldom both. That is one reason for so many dual active ingredient herbicides. Search the label to make sure it is approved for your intended site: containers, field grown, landscape beds, etc. There is no one pre-emergent herbicide application that will control all weeds all season. Some target grassy weeds while others target broadleaf weeds. Several herbicides are labeled strictly for container use while others are for field or landscape use. Pre-emergent herbicides must be applied prior to seed germination and require activation by water to create a barrier that restricts seed sprouting. In field and landscape settings, if the soil is disturbed after application this barrier may be broken allowing for seeds to resume growth. Additional applications may be necessary.

There are several post-emergent herbicide choices labeled for use in a covered greenhouse with plants present. These include Envoy Plus, Finale, Reward and Scythe. A new OMRI listed contact herbicide named, AXXE was recently registered. Applications are used when growth is active and must be applied carefully to ensure the safety of desirable crops. Scythe, Reward and AXXE are non-selective herbicides that will kill all top growth present regardless if it a grass, sedge or broadleaf plant. It does not translocate into the roots, so repeat product application are necessary.

(Continued on page 11.)





# Controlled Environment Agriculture - Growth Opportunity?

By Rick Yates, GGSPro Technical Services Manager

Controlled Environment Agriculture (CEA) is a phrase that is turning up more frequently. The CEA Center from the University of Arizona defines it this way: "An integrated science and engineering based approach to provide specific environments for plant productivity while optimizing resources including water, energy, space, capital and labor." Practically speaking, this approach is taking hold in traditional greenhouses, rooftop hydroponic greenhouses, high tunnels, plant factories and vertical farms on the drawing board and in practice. One of the commonalities is the desire to intensively produce food crops close to the people who will consume them in a resource efficient manner. This is an exciting endeavor, one that could potentially bring about the next big expansion for our industry. Consumers are increasingly willing to pay top dollar for delicious fresh produce that is locally grown with a minimum of pesticide inputs. Ornamental production may have plateaued a bit but locally grown produce may provide our industry the opportunity to use our collective talents and resources to contribute substantially to the food supply in a very healthy way.

The University of Arizona's Controlled Environment Agriculture Center in Tucson, AZ <http://ag.arizona.edu/ceac/> hosted an intensive short course for 5 days this past April. The CEAC is a collection of highly motivated researchers, technicians and their assistants that together represent the cutting edge for advances in this field. Growers from across the country and from across the world attended the short course. At one breakfast meeting I shared a table with growers from Turkey, Columbia and England. Together we learned from the experts and from each other. GGSPro has already integrated information gleaned at the short course into our support efforts and much more is on the way. Many applications for traditional greenhouse culture can be made from the information shared at the conference. Following are some brief highlights drawn out of the presentations and hands on tours of the CEAC research greenhouses.

- LED lighting- researchers are studying the plant responses resulting from exposing vegetable plants to customized light spectrums made possible by LED lights. Exposing plants to red light at the end of the day can reduce plant stretch. Change that to far-red light and the reverse is true. The possibilities for agriculture and ornamental horticulture from altering the light spectrum are enormous. Stay tuned.
- Aquaponics involves raising fish and using the resulting nutrient effluent to raise vegetable crops hydroponically. The research facility we visited was producing a harvest of Tilapia (fresh water fish) and a wide variety of greens at the same time.
- Agricultural and Biosystems Engineer and Associate Professor from the University of Arizona Dr. Murat Kacira hosted a hands-on workshop that demonstrated some of the vast array of meters and associated technologies becoming available to growers.

Prices are falling for this equipment putting it within reach of many growers. For example, relatively inexpensive Infrared transducers instantly calculate leaf temperatures from a distance. This type of reading allows you to quickly evaluate your internal air movement and ventilation set up. These devices can check the temperature of nearly any surface from a distance up to several feet away.



• Vegetable transplant grafting is becoming a huge business. Tomatoes and an array of vine crops are being grafted onto vigorous disease resistant root stocks resulting in enormous yields and in some cases reduced pesticide usage. It is estimated that over 40 million grafted plants are used annually in North American greenhouses. Who knew?! Dr. Chieri Kubota, a controlled environment plant physiologist from the University of Arizona is an expert in vegetable grafting and is also an integral part of the CEAC's LED lighting research team. Dr. Kubota also shared a presentation on indoor farming or "plant factories".

• Jennifer Nelkin, Director of Greenhouse Operations and one of the founding partners for Gotham Greens Farms LLC in Brooklyn, NY gave a fascinating presentation about her company's path to success. Jennifer stepped the audience through the numerous challenges and victories involved in planning and bringing to fruition a fully functional and profitable rooftop hydroponic vegetable greenhouse in one of the biggest metropolitan areas in the world. <http://gothamgreens.com/> They sell out 100% of their production each day and are actively planning their next locations.

Griffin's ownership is committed to the ongoing education of the GGSPro team. Our industry is constantly growing and changing requiring an ongoing educational emphasis to stay on the cutting edge of our industries technical requirements. This information is shared with our sales team in the form of ongoing training and certification programs with the goal of maintaining the best trained and most helpful sales force in the industry. Griffin is a sponsoring member of the Water Education Alliance for Horticulture <http://www.watereducationalliance.org/> and participates in the Young Plant Research Center. Griffin's GGSPro technical team continues to field thousands of phone and e-mail requests for assistance from Maine to Georgia. In April we set a record with just over 1900 technical contacts for the month. Please visit the GGSPro web site [www.ggspro.com](http://www.ggspro.com) to see the technical products developed to help growers be profitable and successful.

#### Photo Captions:

Top left Photo - Gotham Greens rooftop farm, Brooklyn, NY. Photo: Ari Burling  
Top right Photo - Gotham Greens rooftop farm in full production. Photo: Ari Burling

# Perennial Plants

## Provide Profitable Promotions

syngenta

By Michael Oleykowski, Syngenta- Ornamental Specialist

Fall is right around the corner and as we say to our consumers, "Fall is for Planting". This is especially true with perennials which can add late season profitability along with other seasonal crops of asters, mums and pansies. Perennials add much interest and diversity to our plant palette, and the market for perennials is strong and growing stronger. It's not a question of whether growers should grow perennials, but rather how many and which types should they produce.

The message for consumers is simple!

- Planting perennials in the fall gives them time to establish healthy root systems.
- Perennials transplanted in early fall overwinter successfully and flower more abundantly the following year.
- Bonus: Perennials and bulbs can be planted together, effectively achieving two flowering plants with one digging effort! Bulbs will not damage established perennial root systems.

Perennials offer valuable early spring options for growers to add to the "shoulders" of the season. Several perennial varieties dovetail with a fall pansy production schedule to increase March and April deliveries by 10 to 15 percent. Plugs propagated from seed have minimal material cost, even if purchased as plugs through Griffin Greenhouse and Nursery Supplies. The decision window is now for spring 2013, as the perennials should be started in summer and transplanted between late September and early January. Some options include Alyssum Summit™, Aquilegia Origami™, Aubrieta Audrey™, Erysimum Canaries™, Iberis Tahoe™, Lupinus Camelot™, Papaver Spring Fever®, Penstemon Pinacolada™ and Saxifraga Highlander™. All are perfect for small pots or large packs, similar to pansy.

### Points to Ponder for Propagating Perennials

**Crop Culture** - Having a good understanding of a crop's cultural requirements is the first step in assuring a good start to a healthy fall offering. Attention to details like mist cycles, planting media or the need for bottom heat and/or additional lighting can mean the difference between success and much less success. Fortunately many herbaceous perennials have similar needs. Please check with Griffin's plant department or your supplier for those cultural recommendations.

**High quality rooting substrate** - The selection of a good propagation growing media is also key. Whether it is straight sand, or a premix from Fafard®, disease- and pest-free growing media with adequate air space (10 to 15 percent) and exceptional container capacity (70 to 75 percent) is most important. Super Fine Germination Mix (SFGM) is a Fafard® growing media that performs well for perennial seeds. SFGM contains 65 percent peat, perlite vermiculite, starter nutrients, wetting agent and dolomitic lime and is offered as a loose-filled mix from Canada or the United States. Baled growing media is also available; Young Plant Mix is a popular baled option. The F15 Mix is 85 percent

Canadian Sphagnum peat moss, perlite starter nutrients, wetting agent and dolomitic limestone. F15 Mix is offered in compressed bales or loose-filled bags. Other Fafard mixes ideal for perennial propagation include: 1P, 1NW and F30.

**Rooting Assistance** - Be wise and offer your cuttings a little help with rooting. Products containing indole-3-butyric acid (IBA) or Naphthaleneacetic acid (NAA) such as Dip 'n Grow (a mixture of IBA and 1NAA) or Hormodin, can help promote roots in slow rooting crops. Hormodin comes in three strengths; however Hormodin 2 would likely serve most perennial needs. Foliar sprays of IBA are also effective and commonly used in production.

**Added Protection** - So the perennials are off to a good start, but it is important to have a preventive strategy in place to protect them from some of the common diseases that can affect them prior to sale. The following is a list of target diseases with examples of rotational programs to provide broad spectrum protection against the fungal diseases listed below.

**Propagation:** Target diseases include Pythium, Phytophthora and Rhizoctonia spp. which cause root and stem rots, and foliar diseases such as botrytis and fungal leaf spots.

**Fungicide Rotation:** drench with a combination of Subdue MAXX® + Medallion® after rooting is initiated. Rotate with Truban® fungicide + thiophanate methyl after 4 weeks for crops with longer rooting times or if additional protection is needed. To prevent foliar diseases, spray with a rotation of Daconil® + Iprodione, Heritage® and Palladium® fungicides on a 7 to 14 day interval or as needed.

**After Transplant or Growing on Phase:** The target list of diseases is expanded due to the diversity of plant species and their susceptibility to various disease-causing agents.

**Root and Stem Rots:** Pythium, Rhizoctonia, Thielaviopsis and Fusarium spp.

**Fungicide Rotation:** drench with a combination of Subdue MAXX + Heritage after transplant. Rotate with Truban + thiophanate methyl and Subdue MAXX + Medallion® on a 4 week interval or as needed.

**Foliar Diseases:** Botrytis, Rust, Downy mildew, Powdery mildew and a variety of fungal leaf spots such as Alternaria, Cercospora and Colletotrichum.

**Backbone Fungicide Rotation:** Spray with a rotation of Daconil + Iprodione (prior to bloom), Heritage, Palladium on a 7 to 14 day interval for prevention. Adjust rotational program as needed based on disease pressure and label restrictions.

**For crops prone to rust:** Replace Palladium and Iprodione, (or incorporate into rotation) with myclobutanil (Eagle® fungicide)

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and mancozeb. Banner MAXX® fungicide may also be used for outdoor production.

For crops prone to downy mildew: Incorporate Micora™, mancozeb, phosphites and Adorn® into the fungicide rotation and periodically drench with Subdue MAXX.

We have seen the spring of 2012 get off to a rapid start, with demand that surprised many of us in the market. Let's keep the enthusiasm strong by offering a healthy and diverse plant palette with some additional highlights for the upcoming fall season.

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How to Control Weeds article continued from page 8.

These applications are best for weeds on the floor, walkways or along base boards where no desired plants are in the spray target area. A selective herbicide can target either broadleaf or grassy weeds. Envoy Plus can be used over the top of many ornamentals to selectively control grassy weeds in broadleaved woody and herbaceous crops in a greenhouse. There are no selective herbicides to control broadleaf weeds in broadleaved woody and herbaceous crops.

Post-emergent herbicides labeled for empty greenhouses and outside include Finale and Glyphosate Pro. These herbicides are non-selective so pay attention to wind as herbicide drift can cause phototoxicity to nearby desirable plants. The addition of a spray dye can be used to assist in identifying sprayed areas. Tank mixes of pre and post-emergent herbicides can help provide a longer season of weed control.

Actively growing sedges require post-emergent sprays with selective herbicides such as ProSedge. These products are not labeled for inside the greenhouse or in nurseries, only turf and established woody ornamental landscape plantings. Pennant Magnum, Freehand and Tower offer pre-emergence control of nutsedge. Freehand and Tower have an added benefit against liverworts and algae in containers. SureGuard, Broadstar and Ronstar also have demonstrated good control against liverworts. TerraCyte from Biosafe allows greenhouse growers a product to control liverworts as a top-dress to established containers. Trial for plant safety on a small scale before widespread use.

Our Griffin GGSPro technical guide offers numerous choices of pre-emergent and post-emergent herbicides for broadleaf and grassy weeds in easy to read formatted charts. The charts provide reference material help to guide you to the proper selection of herbicides. Included are: rates, MOA, EPA #'s, REI and contain mixing conversion tables. Read and follow the entire pesticide label. Contact GGSPro technical department for further assistance.

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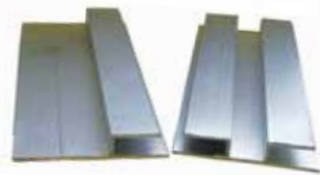


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09-6030	Alum Foil Duct Tape 2" X 50 yds
09-5020	#10 x 1 1/8" Neo / Bonded Washer (100/bag)
09-5025	#14 x 1 1/8" Neo / Bonded Washer (100/bag)
09-6020	#10 x 3/8" Neo / Bonded Washer (100/bag)
09-6022	#14 x 3/8" Neo / Bonded Washer (100/bag)
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