Mid-Season is Here: What do you do now?

May and June were wonderful months for moving plants- a nice change from a very weak March and April sales period. So, what should you do at this time of year? It is clean-up time when you should get rid of the old plants that will harbor diseases and insects for the next crops – poinsettias, pansies, and mums. For weed control you have a new material to add to the arsenal for annual weeds. The product is Marengo from OHP which is pretty good on preventing grasses and broadleaf weeds from germinating. We have not had a labeled pre-emergent for greenhouses for a very long time. After you clean out the weeds from your greenhouse this July, consider using a pre-emergent to keep weeds from germinating under your benches.

This spring, many of you had the unenviable experience of dealing with tobacco mosaic virus (TMV) in greenhouses. Many growers told us it was the worst problem they have had in many years. If you had TMV in your greenhouse this year then it would be a good idea, after cleaning out all of the plants from the greenhouse, to use a power washer to wash down all benches and interior structure. Then, apply either 10% bleach (taking proper precautions to use safely, and making sure to rinse metal surfaces afterwards) or the disinfectant Virkon S on the floor and benches to sanitize them. Other greenhouse disinfectants are just not as effective in destroying TMV particles as either of these two options.

Be sure you register for the August 6th Greenhouse Biocontrol Conference that will be held at the Maritime Institute (near BWI airport).

Find out ...

- how growers in New Jersey and New York made biological control the center of their greenhouse operations
- what to do to get ready for adding biological control to your operation
- what options are available to control thrips, aphids, and some foliar diseases
- what chemical pesticides are compatible with biological control organisms

For more topics and registration information, get the conference brochure
Neonicotinoids and Growing Poinsettias
Some of the big box stores are now requiring growers to label any plants on which a neonicotinoid has been used to alert the consumer that a neonicotinoid was used on the plant. It does not consider that one of the neonicotinoids – acetamiprid sold under the name TriStar- does not have a restrictive pollinator label since it has no impact on pollinators. And, poinsettia plants that had neonicotinoids would not make any difference since no pollinators visit this plant. Still, since the big box stores have put on a new label requirement you might want to consider alternatives for whitefly on poinsettia and aphids on mum and pansy crops.

For whitefly control on poinsettias, start by checking your unrooted cuttings when they enter the greenhouse and get rid of any infested plants. Some growers have made solutions of the entomopathogenic fungus, Beauveria bassiana (BotaniGard), in large animal stock tanks and dunk cuttings into the solution before moving them into the greenhouse. You can also apply BotaniGard as a fine mist spray at 3 – 7 day intervals to get it established on the nymphal stage of the whitefly. Met-52 from Novozyme is another entomopathogenic fungi that is also labeled for whitefly control. The hot humid time of the year (July and August) are good months to use the entomopathogenic fungi. You can use soaps, horticultural oils and biological control if you start early in the season. Attend the August 6th biological control conference to find out more on biological control options.

How About a Good Systemic Insecticide Like Kontos?
Several poinsettia growers are trying to reduce the use of neonicotinoids in their greenhouses and are substituting the use of spirotetramat (Kontos). This material should be fine on poinsettia. Keep in mind spirotetramat should not be used on all of your plants next spring. The label on spirotetramat (Kontos) has a precaution not to use this product on geraniums (Pelargonium spp.), orchids, hoya, dracaena, cordyline, schefflera, neanthebella palm, and ferns. It also lists “Do not make more than one application per season to hydrangea, Impatiens spp., crotons (Codieum spp.), fuschia hybrids, petunia, peperomia, stock, or cyclamens (Cyclamen spp.).”

We just wanted to bring this out so growers are careful to read the label completely before they apply spirotetramat to mixed plantings in greenhouses next spring. Spirotetramat is good for controlling aphids on pansy so you have a good option with this systemic material. Kontos does a fair job of controlling thrips so it gives you an option for a systemic for thrips control on mums.

New Systemic Insecticide Coming
Syngenta has a systemic material that will be sold under the name Mainspring that is in line with the federal EPA to receive labelling for use in greenhouses and nurseries. This material appears to work well on aphids and thrips and several species of caterpillars. This new class of systemic insecticide has very good potential for use in greenhouse pest control and will help relieve the pressure if neonicotinoids are lost from future use.

Summer Programs

**Stormwater Management Program: August 20 and 21, 2014**
TWO Locations:
August 20 - Montgomery County Extension Office, Derwood, MD
August 21 - Robinson Nature Center, Columbia, MD
The stormwater management program brochure is available on-line.

**Summer Cut Flower Tour: September 9, 2014**
Locations: Flowers by Bauers and Belvedere Farm in Harford County
On-line registration using a credit card is available at [http://2014cutflowertour.eventbrite.com](http://2014cutflowertour.eventbrite.com)
The brochure has details on the program and a registration form for paying by check
Keep Up Your Substrate Monitoring
By: Andrew Ristvey

Now that the daytime temperatures have increased consistently to highs above 90 °F, it’s definitely time to start your container substrate monitoring if you have not done so yet. Testing for substrate electrical conductivity (EC) is an important management practice during these hot periods. For both soluble and slow release fertilizer users, plants are pulling our more water from the substrates than fertilizer. This means that fertilizer salts are becoming concentrated in the pot as the day progresses.

The Pour-Thru procedure is easy. You simply wait between half to a full hour after irrigation when containers are at water holding capacity. Simply find five or so containers, randomly from a block or irrigation zone and tilt them at an angle sufficient enough to have water come out the bottom of the container. Sample each container individually. Collect the released water from the container in a small cup. You need only enough water to cover the EC and pH probes for an accurate reading. If you cannot retrieve a sample, simply pour a small amount of water evenly over the top of the container. You are only trying to displace the water at the bottom of the pot, so you need just enough to get a couple ounces. Don’t forget to re-wet the containers after taking your sample.

Should you use distilled water instead of your irrigation water? No, not really, but you need to know your well-water EC to gauge the amount of fertilizer in the pot. Look for levels between 0.5 dS/m and 2.5 dS/m. Anything below 0.50 dS/m after subtracting your well-water EC value, and you may want to consider additional fertilizer. Anything above 3 dS/m would indicate that leaching may be needed, especially if a hot day is expected. Electrical conductivity of 4 dS/m will kill roots.

Another monitoring method is the Saturated Media Extract (SME), which is simply making a slurry with some substrate out of a container. The slurry should sit for at least 15 minutes or more so that salts in the substrate can dissolve into the water you have applied.

Either method works. Electrical conductivity levels could be lower in SME’s since you are diluting the sample, however, practically speaking, the same EC limits as in the Pour-Thru could be considered. As a reminder, the following EC units all mean the same thing: mmhos/cm (milli-mhos per centimeter) = mS/cm (milli-siemens per centimeter) = dS/m (deci-siemens per meter) = 1000 μS/cm (micro-siemens per centimeter).

Don’t forget to keep an eye on your pH. The pH range for soilless potting media is between 5.4 and 6.3 for optimum nutrient availability. Some say that since you apply fertilizers in soluble form, pH is not very important for nutrient availability in organic potting media, but monitoring for large swings in pH is wise. Electrical Conductivity and pH meters can be purchased through nursery supply businesses, catalogs and via internet orders where you can shop for the best prices. You can even purchase combination meters that read both EC and pH. You want an EC meter with a range of 0 to greater than 4 dS/M or 4000 μS/cm. It is extremely important to purchase pH and EC standard solutions to calibrate your meter and an electrode holding solution to protect the pH electrode.

Monitoring your container root zone EC and pH goes a long way for preventing nutrient related problems including deficiencies and toxicities. Certainly, pathogen infections may be kept in check simply by keeping your roots healthy. If time is a premium, know where your trouble spots are and focus your efforts.

You can call me for additional information or with any questions you have at 410-827-8056 x113. Good luck with the rest of this growing season!
Aphids on Pansy

Fortunately we have several good alternatives to neonicotinoids for aphid control. Materials such as Endeavor, Aria, Enstar, Azatin, Aza-Direct, Neemix and nemazod can all be used to keep aphids in check. Kontos also gives fairly good aphid control.

If your populations of thrips on mums is still low you have several options.

Azadirachtin (Aza-Direct, Azatin XL, Eczin Plus, Ornazin, Neemix) works fairly well when thrips populations are still low and will help keep them suppressed.

The insect growth regulator Pedestal (Novaluron) works well on immature stages of thrips and works best when populations are relatively low.

Pylon (Chlorfenapyr) at 10 -20 oz/100 gallons of water has performed well for thrips control. At this rate it can be a little pricey, but this material is translaminar and fairly effective on thrips.

Aria (Flonicamid) is labeled for control of thrips used at 2.1 – 2.9 oz. in 100 gallons of water. Work in 2006 published by Michael Parrella trial from a 2006 IR4 summary – use Aria at a 2x rate at 14-day interval. Some suppression occurred but not very effective and differences from control not significant.

Grandevos (Chromobacterium subsugae strain PRAA4-1T and spent fermentation media) is a new product that came onto the market recently. The rate for greenhouse use is the label suggest, using 1-3 pounds of GRANDEVO® in 100 gallons of water sprayed until just before point of runoff. We have worked with Grandevos on leafhoppers this summer and it is working very well. Dan Gilrein at Cornell University Extension has conducted two trials using Grandevos for western flower thrips and he found it was not effective for western flower thrips control.

Many growers have consistently used Conserve (Spinosad) to control thrips, but I would suggest trying another material such as the Azadirachtin or Pedestal and hold the Conserve and Pylon in reserve for when thrips populations have really built up later in the season to avoid developing resistance to this material.

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by University of Maryland Extension is implied. Read labels carefully before applying any pesticides.

Photographs are by Suzanne Klick and Stanton Gill unless stated otherwise.