



Greenhouse TPM/IPM Bi-Weekly Report
University of Maryland Cooperative Extension
Central Maryland Research and Education Center

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Chesapeake Green 2009 – A Horticulture Symposium
Great Topics for Greenhouse Growers and Garden Centers

Be sure to mark your calendar for **February 4 and 5, 2009** for the Chesapeake Green conference at the Maritime Institute (near BWI Airport). MGGA, MNLA and the University of Maryland Cooperative Extension have designed 2 days of topics that will help benefit your business in 2009. Pesticide recertification credits are available for Maryland, D.C., Delaware and West Virginia.

Visit <http://www.chesapeakegreen.org/> to obtain a complete schedule

Happy New Year!

It is time to celebrate that we made it through 2008. The poinsettia sales were a bit of a disappointment for many growers this winter. It is time to move on and concentrate on this spring. Maintaining an optimistic but cautious view is the best approach for the 2009 season. Since Easter is usually the kick-off for the spring season and Easter occurs on April 12 this gives everyone about 5 weeks of strong sales this spring. If the rains will hold back and the consumers start feeling more confident then we could see a glimmer of hope return. Hopefully it will be a much more profitable season for the greenhouse industry in 2009.

Wise words to start off the year:

An optimist thinks this is the best time in the world to be alive. A pessimist is worried that this is true. Remind yourself and your customers that gardening is fun, relaxing and rewarding.

Easter Lily

Keep in mind that Easter in 2009 occurs on April 12 so if you are growing lilies you want them ready about 7 days before Easter. By **January 9, 2009** Easter lilies should have shoots sticking out of the substrate by 1 – 2". Your greenhouse temperatures should be around 62 – 65°F.

Examine the root system and make sure the roots are white and healthy. Root rots are probably the most serious disease of Easter lily with *Pythium*, *Rhizoctonia* and to a lesser degree *Fusarium* the common casual organisms. The problem is that you need to keep lily bulbs moist in the early stages of development, but excessive moisture promotes root rot problems. If we had plenty of

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sunshine in January then moisture control would be easier. Having a really well drained soil substrate helps. Because of the low light conditions and moisture levels often remaining wet during periods of extended cloud cover, many growers will apply a fungicide soil drench to protect against root rot diseases. Banrot is effective against all three common root rot fungi. Truban, Terrazole, Banol or Subdue Maxx are effective in controlling *Pythium*, while Cleary's 3336, Fungo 50, Terraclor, and Terraguard can help protect roots from *Rhizoctonia* and *Fusarium* infection.

Growers need to be aware that Easter lily plants require high light to produce the best quality. In lower light the plants stretch and there is yellowing of the lower foliage. If your greenhouse glazing is old or covered with dust, the light quality is reduced and may impact the quality of your crop. Everyone is looking to keep costs down this season and close spacing is one way to do it. Close pot spacing is alright in January when shoots are just emerging from the substrate but as we move into mid-February and the canopy thickens consider spacing the plants to avoid stretching of plants. If you start getting stretching of plants then the two growth regulators available are A-Rest and Sumagic. They will add to the expense of growing this crop and if you can get by without them by keeping plants in the high light situations you will be saving money.

Fertility of Easter Lilies in January

Easter lily plants need fertilizer early in the crop cycle to produce vigorous plant with large, dark leaf size and to have vigorous stem expansion. Calcium nitrate fertilizer should be applied at 300 – 400 ppm regularly. The problem is that in January when we have dark weather it is often impossible to make an adequate number of liquid fertilizer applications because the soil does not dry out quickly enough. The best method to prevent nitrogen deficiency is to top dress with a controlled release fertilizer such as Osmocote. Some growers will apply Nitroform at ½ teaspoon per 6" pot in mid-January, spreading it around the surface of the substrate in the pot and not piling it up in one spot. They will often reapply the Nitroform in mid-February. Check the soluble salt levels weekly. These levels should be maintained around 1.5 – 2.0 micromohs per square centimeters using a 1:2 soil/water dilution method. This level will be slightly higher if using the pour-thru method.



Easter lily crop (February 12, 2004)

Looking for Some Good News?

We had a greenhouse grower call in saying who was being charged tax for propane used to heat their greenhouse operation. Other growers said that they were not paying a Maryland tax since they are considered agriculture. I called the State Comptroller's office where we got a rather bureaucratic and difficult to understand answer to the question.

I spoke with Vanessa Finney about this issue and she said this question had come up before and she had an e-mail from Jack Hill at the Comptroller office from February 2007 addressing this question. Here is what the e-mail said:

A sale of heating oil used to heat a greenhouse used for propagating and growing is not subject to the Maryland sales and use tax if the plants are grown for sale. The exemption is a production exemption, not an agricultural exemption. If the greenhouse is used only for maintaining plants purchased for resale, such as holding bedding plants in original containers even though the plants may grow, the sale of the heating oil would be subject to the tax.

For more information, contact R. Jack King, Business Tax Audits, Comptroller of Maryland, Compliance Division, 410-767-1500 or 1-800-492-1752 or e-mail: jking@comp.state.md.us

So, it appears if you are using the fuel to heat a greenhouse for production then you are not taxed. If you are heating a greenhouse for retail selling of plants it looks like you do pay the Maryland 6% tax. Hope this clears this up and if you have been paying the tax and you are a production greenhouse then you have a new found gift for 2009.

Beating the Odd Conference in Davidsonville: We had an excellent conference on December 16th on dealing with the economic downturn. Here is some of the advice from the conference:

Delay non-strategic investments

If you get a chance to purchase something at a bargain price then do it.

Refinance what you can.

Exercise the full length of credit terms

Sell unused assets (if possible)

Do a good job of collecting your money.

Apply for credit long before you need it.

Reduce your estimated tax payments

Review your insurance premiums.

Know your costs and control them.

Know your variable and fixed overhead costs.

Learn your break even point – go lean.

Cost establish the price floor. Discount what you are phasing out. Specials are different from discounts.

Analyze employee productivity.

Reward employees doing the best.

Margins drive profits. Sales do not drive profits. You can sell a lot but if you are not making money then what is the purpose.

Lock in energy costs at lower rates.

Do not cut marketing expenses. Increase marketing expenditures.

Cull your bottom feeders by raising your price.

Cultivate your top ten customers. Talk with key purchasers and show them how they can make money. Visit your customers regularly.

Analyze your product/service offerings and eliminate low-margin categories.

Keep less inventory in stock, but bring in small batches of new merchandise more frequently.

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The plants with the best margins:

Annuals provide 61.5% margin, and can have 13 turns in spring at a garden center, and this is 26% of sales. Perennials are 66.5% margin. Perennials have fewer turns but strong margin. Shrubs have a 52% margin with 6.3 turns. Trees have a 60.1% margin and 3.1 turns in a season.

Scouting Report:

Twospotted spider mites:

IPM scouts are finding twospotted spider mites on fern leaf lavender and *Ipomoea* 'Blackie'. Look for yellow stippling on leaves and webbing on plants. A 10X hand lens can be used to detect the mites on the plants.



Photo shows a twospotted spider mite infestation on sweet potato vine stock plants.

Mite control on herbs

Options for controlling mites on herbs are rather limited. Neem oil, Azadirachtin (Azatin-XL, Aza-Direct, Neemix), UltraFine oil, JMS-Stylet oil, and insecticidal soap are the options. If you want to use predatory mites to control two-spotted spider mite, two good choices you can use are *Phytoseiulus persimilis* and *Amblyseius californicus*. Swirski-mite can provide additional control when used with other predatory mites. These predacious mites can be supplied by beneficial insectaries. For a list of suppliers go to:

http://www.cdpr.ca.gov/docs/pestmgt/ipminov/ben_supp/contents.htm#top

Control of mites on *Ipomoea*: It can be difficult when treating a plant with a trailing growth habit such as sweet potato vine. Judo is a foliar systemic miticide that can be used. A good rotation of contact miticides that would have to be directed to the undersides of the foliage includes Floramite, Akari, Avid, horticultural oil, and Pylon.

Mealybug on *Ipomoea* 'Margaurite':

Look closely at plants for mealybugs which can be found in cryptic areas such as at the base of leaves and petioles. Also check the bottoms and outside surfaces of pots. Mealybugs can live up to three weeks without a host. Other common hosts include coleus, rosemary, sage, and gardenia. **(Photo shows a mealybug found on sedum)**



Chemical controls include: BotaniGard (*Beauveria bassiana*), 2% oil, Azadirachtin (Azatin), soap (M-pede), neem oil (Triact), pyrethroids such as bifenthrin (Talstar) or permethrin (Astro), flonicamid (Aria), buprofezin (Talus) and the neonicotinoids acetamiprid (Tristar), imidacloprid (Marathon), and dinotefuron (Safari).

Biological control of mealybug:

Mealybug destroyer (*Cryptolaemus montrouzieri*) can be used to control citrus and longtailed mealybugs. *C. montrouzieri* is a small, dark brown beetle with a tan head. Their wax-covered larvae resemble mealybugs, except they are twice as large as their prey. *C. montrouzieri* larvae feed on mealybug eggs, crawlers, and honeydew. Adults and young larvae prefer to feed on mealybug eggs, however older larvae will attack any stage.

Thrips on French Tarragon:

Thrips larvae feed on plant foliage. Adults can be found feeding on the foliage and in flowers. You can do a tap test onto paper to see if thrips are present in flowers. Thrips feeding can deform flowers, leaves and shoots. Another sign of thrips is black fecal spots on foliage.

Control options include: Azatrol, Nemix, Aza-Direct, and Botanigard ES.



There was a high population of thrips found in this gloxinia flower.



Male and female (larger) western flower thrips were found in the gloxinia flower.