



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

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White Mold

Karen Rane, Director, Plant Diagnostic Lab

A sample of lobelia with Sclerotinia blight was submitted to the Plant Diagnostic Lab last week. IPM scouts are reporting this disease at several greenhouse operations in the state, including Southern Maryland and the Eastern Shore. It is also being seen on petunia crops. Sclerotinia blight, also called white mold, can occur on a wide variety of herbaceous ornamentals, vegetables, and weeds.

The plant we received showed wilt symptoms and an abundance of white cottony fungal growth on the lower stem. The characteristic black sclerotia were embedded in the white mycelium and on the soil surface. These sclerotia structures are similar in size and shape to mouse droppings, but are white inside rather than black/brown (I've cut open my share of mouse droppings to prove it!).



Wilt symptoms on lobelia



Interior of sclerotia structure

Sclerotia are very resistant to environmental extremes, allowing the fungus to survive in soil for several years. Sclerotia can germinate to produce mycelial strands that can infect plants directly. Sclerotia can also germinate to produce small, cup-like structures that release spores into the air and spread the disease, but this stage is more common in field situations rather than greenhouses.

Management of Sclerotinia involves excellent sanitation – discard any symptomatic plants, but do not compost them (many composts do not reach the uniformly high temperatures needed to kill thick-walled sclerotia). If field soil is used in a potting medium, it should be steam-sterilized. Avoid introducing untreated field soil to the greenhouse on tools or equipment, and keep weeds under control. Soil drench application of Terraclor or thiophanate-methyl can help protect uninfected plants from Sclerotinia blight.

Two-Spotted Spider Mites

The weather conditions have been ideal this season for two-spotted spider mites. We visited four different greenhouse operations last week that all had two-spotted spider mite populations. I examined some herb plants over the weekend for a grower who had *Jasminum officinale* that were loaded with spider mites. They were also having problems with aphids and iron chlorosis on their Jasmine plants.

Monitoring: Examine the undersides of foliage for eggs, nymphs and adults. Tap testing over white paper also works for detecting mites on foliage.

Watch the following plants closely:

Bouganvillea
Bacopa
Cyclamen
Cosmos
Chrysanthemum
Gardenia
Forget-me-not
Hibiscus
Ivy geranium
Sage
Angelica
Hyssop
Lemon grass
Lemon balm
Purple coneflower
Chamomile
Thyme



Mite damage and iron chlorosis

Mite control on herbs

Several people growing herbs have asked what they can use for controlling mites. The options 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*. 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

Light and Your Greenhouse

Andrew Ristvey, Regional Specialist, Maryland Cooperative Extension

Given the poor weather that has afflicted Maryland the past few weeks, I understand that sales are slow and inventory is high. This has caused a variety of problems. I was made aware of several overstocked greenhouse operations that were not moving plants, potentially creating issues with space and light availability because of hanging flower baskets. While there is little that any grower can do to prevent this situation, this is an opportunity to discuss light and what is needed for adequate plant growth in a greenhouse.

Most of us do not have access to a light meter. In this case, be aware of your light conditions. Considering the cloudy days we have had the past few weeks and the forecast for more cloudy weather early in the week, try to increase light on your benches and floors by minimizing what you hang over them...if possible. Hopefully, by the end of next week, warmer weather will increase retail activity. If measuring with a linear light sensor, in most cases, greenhouse plants need at least 750 foot-candles (about 8 kilolux) to get the best growth. If you have a light meter, check to see what your average light is in the greenhouse.

There are however, many ways to measure light and not all the light you measure is being used by plants. Plants and their chlorophyll use mainly blue and red light. They don't use much green light. Green light is reflected and that is why the plant leaf is green. Different light meters measure different parts of the light spectrum.

For more information about this look at the informative link from Priva about light:

<http://www.priva.ca/newsletter/news-what%20is%20sunlight.html#Anchor-Ligh-41870>

Does reduced vigor impact pest pressure?

People who have moved into organic greenhouse plant production are finding that the organic fertilizers tend to be lower in nitrogen, which translates to reduced vigor of the plant. The question is does this influence pest populations? Good question. Growing plants is a constant balancing act, and keeping up the nutrition of a plant is just part of good IPM practices. On the other hand we don't want you to go to the other extreme and over-fertilize, since this may also increase some insect activity.

Back to the lower nutrition theory: a theory is being discussed whether reduced nitrogen results in a more compact plant with food concentrated in the tissue making it more attractive to certain insects or mites. Reduced nutrition may create stressful conditions for some plants, thus making them more susceptible to herbivorous insects due to their decreased nutritional quality and/or reduced concentrations of defensive compounds. We do see increased aphid and mite activity on plant material under nutrient stress conditions. The bottom line is: keep nutrition at a nice even level to maintain plant vigor trying not to under or over-fertilize the plant.

On a related note...

Will Healy, Ball International, commented on our March 28 report of downy mildew on coleus. He has seen that when the fertility is kept up to adequate levels there is much less incidence of downy mildew and that the symptoms of the disease aren't as prominent. Will has made similar observations in the past regarding the higher occurrence of *Cercospora*, *Alternaria*, and *Colletotrichum* leaf spots seen in under-fertilized pansies. He also commented on last week's report of *Phytophthora* on rosemary. Will said that the plants will become more susceptible to disease when the pH is low and the calcium level drops.

Scouting Reports

We are seeing heavy populations of shore flies on pansy this week. Thrips are showing up on gerberas and hibiscus. John Speaker is finding downy mildew on various perennials at several different greenhouses. Aphids are being seen on snapdragon and monarda.



Thrips damage on gerbera daisy

***Pilotus exaltatus* 'Joey'**

Brett Karp, Syngenta Horticultural Services, sent us these pictures and some cultural information about a new plant that he saw out at the California Pack Trials. *Pilotus exaltatus* 'Joey' is a sun and heat loving plant native to Australia. It has a unique flower and can be used in gallon pots or mixed combos. From seed it is a 16 week crop, and from plugs a 10 week crop. This is a day neutral plant, and no plant growth regulators are necessary.



If you would like to know more, contact Brett at:

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Upcoming Programs

Procrastinators' Pesticide Recertification Conference

June 6, 2008

Montgomery College, Germantown

For more information contact: Chuck Schuster at 301-590-2807 or cfs@umd.edu

IPM for Nurseries and Landscapes

June 11, 2008

Allegheny College of Maryland, Cumberland

For more information contact: Derrick Bender at 301-724-3320 or dbender@umd.edu

Procrastinators' Pesticide Recertification Conference- Eastern Shore

June 13, 2008

Wye Research and Education Center, Queenstown

For more information contact: Ginny Rosenkranz at 410-749-6141 or rosnkranz@umd.edu

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