



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

**From:** Stanton Gill and Ethel Dutky, University of Maryland Cooperative Extension  
Ginny Rosenkranz, Extension Educator, Chuck Schuster, Extension Educator, Suzanne Klick  
and Shannon Wadkins, Technicians, University of Maryland Cooperative Extension  
Amanda Laudwein, Joanne Lutz, John Speaker, and Marie Rojas (Independent IPM Scouts)

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**Scouting Reports**

Last week scouts reported aphids on annual Asclepias 'Silky' series. Tall thistle weeds growing outside of the greenhouse made a nice ladder up to an unscreened vent, and the aphids marched right in and down onto the Asclepias plants. This week they are finding more aphids and some thrips on the Verbena 'Aztec' series. They are also seeing *Botrytis* on Zinnia 'Magellan' and the Rudbeckia 'Toto' series. Two-spotted spider mites were observed on stock pots of Mexican Mint Marigold.

Last week John Speaker of Speaker's Gardens reported that thrips populations were exploding all over the state. He also reported seeing continued activity of spider mites, especially on sweet potato vines. John is still seeing downy mildew on coleus plants this week.

**Asiatic Lilies**

Last week Ben Beale in St. Mary's County submitted a field-grown Asiatic lily with unusual oval-shaped, reddish-brown spots on the leaves. The spots had concentric rings and appeared to be slightly sunken. David Clement at the Home and Garden Information confirmed that this was *Botrytis elliptica*. Unlike common *B. cinerea*, this *Botrytis* infects healthy tissues and is specific to lilies. The lesions are often found near the tips of the leaves.



### **Fourlined plant bug**

Around this time of year, be sure to check your phlox, mint, rudbeckia, and monarda plants for fourlined plant bug activity. This pest injects a toxin along with its saliva when it feeds. The initial yellow stippling injury eventually turns into a very characteristic necrotic spotting. Symptoms are usually concentrated on the upper part of the plant. Fourlined plant bug damage is often noticed long after the actual feeding has occurred.



### **Geraniums**

John Speaker has received confirmation of *Xanthomonas campestris* pv. *pelargonii* on Zonal geranium samples submitted for diagnosis. Bacterial blight causes marginal chlorosis, which develops into angular leaf necrosis. Leaves will eventually wilt and die.

**Prevention:** Purchase disease-free cuttings and plants from a reputable source. Follow basic sanitation procedures to prevent contamination including; removing infected plants and debris, avoiding excess water on the foliage, hanging hose nozzles up off the floor, maintaining proper spacing, and providing good ventilation.



### **Broad Mites**

John Speaker reported finding a large population of broad mites causing curling and stunting of immature growth on *Salvia* 'Victoria Blue' this week. Broad mites are cool season mites that show up from March until May. However, March and April are usually the months when IPM scouts find broad mites in Maryland greenhouses. When looking for cyclamen mites or broad mites dissect the tip growth to find the mites. They are very small and move about when exposed to the light. The easiest way to distinguish cyclamen mite from broad mite is by examining the eggs. Cyclamen mite has a smooth surfaced egg and broad mite has an egg with small bumps on its surface.

**Control:** Avid, Pylon, and Sanmite all provide good control of broad mite and cyclamen mites. We had good success with a grower in Maryland in 2001 and 2002 using *Neoseiulus californicus* predatory mites to control broad mites. On ornamental bedding plants we have obtained good control in our trials using Pylon and Avid.

## Water Testing

Just a reminder that it may be time to test your water. If your plants appear to be suffering from nutritional problems, you may want to send a sample in for testing or perform your own on-site with a pH meter and an alkalinity test kit.



### **The following excerpt by Karen Kackley is from our February 3, 2006 report...**

Alkalinity is a measurement of all the bicarbonates, carbonates, hydroxides and other alkaline substances present in the water. The most common forms of alkalinity that exist in irrigation waters are calcium bicarbonate, magnesium bicarbonate and occasionally sodium bicarbonate. As bicarbonates accumulate in the growing medium, they cause the pH in the plant root zone to rise. It is neither the calcium nor the magnesium ions that are responsible for this effect, it is the bicarbonates.

The best way to remediate high alkalinity water is to use mineral acids to neutralize the bicarbonates and carbonates. This process prevents a pH rise in the growing medium while still keeping the calcium and magnesium available for plant use.

There is an excellent alkalinity calculator available on the internet at the North Carolina State University website to help growers determine the amount of acid to use.

To reach this site, go to: [www.ces.ncsu.edu/depts/hort/floriculture/software/alk.html](http://www.ces.ncsu.edu/depts/hort/floriculture/software/alk.html)

In order to use this calculator, a grower must know the alkalinity and pH of the irrigation water. A water test from the J.R. Peters Laboratory provides this information as well as the levels of many other important water parameters. To obtain a freetest kit or to inquire about testing, contact the laboratory toll free at 1-866 JACKSLAB (866-522-5752) or e-mail the lab at [info@jrpeterlab.com](mailto:info@jrpeterlab.com).

## Rose Rosette

We received rose samples with rose rosette disease from Chapel Valley last week. This disease is vectored by the feeding of a very small eriophyid mite called *Phyllocoptes fructiphylus*. The adult eriophyid mite is way too small to detect using a hand lens, but if you examined it under a 30x dissecting scope you would see spindle shaped mites that are white and have four forward facing legs.

**Control:** Presently there is no effective control. Destroy infested plants.



## Vinca

Last week we saw *Rhizoctonia* on vinca grown in St. Mary's County. *Rhizoctonia* causes small plants to "melt down" and upon close inspection you will find blighted leaves stuck to the soil surface by pale tan "cob-webs" of *Rhizoctonia* mycelium. Also watch for *Pythium* and *Thielaviopsis* root rots on your vinca crops.

**Controls:** Banrot, Medallion, Chipco 26019, and Terraclor



## Black Vine Weevil

We recently purchased two of the new cone-style black vine weevil traps from AgBio. Joanne Lutz will be placing one near an established population of weevils on Astilbe. The other trap will be placed in a propagation house of Taxus yew cuttings. Last year we had the first report of black vine weevil adults the week of June 16. The adult females will notch the edge of leaf foliage in June through September. Susceptible plants include: taxus yews, rhododendrons, astilbe, heuchera, hosta, sedums, toad lily, and bergenia.



**Control:** Soil applications of imidacloprid to control larvae for the landscape. We have conducted trials using Hb strains of entomopathogenic nematodes applied as a soil drench to Astilbe and Heuchera growing in soilless substrate. We had good control levels. Work in Connecticut has shown that Talstar applied to soilless substrate also gave excellent control of black vine weevil larvae.

Not visible in this photo is a sticky base that traps the black vine weevils after they enter the trap.