



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

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Wet Weather = Slug and Snail Activity

In wet seasons slugs and snails, invertebrates with soft bodies in the phylum mollusca, can cause major losses of plants or a reduction in the quality of plant material in nurseries. The high-humidity environment of production beds is well-suited for supporting populations of slugs and snails. Several native and imported slugs and snails have been reported damaging foliage of annuals and herbaceous perennial plants.

Damage to Monitor

Plant damage occurs by the rasping action of the mouthparts. Damage to leaves appears as irregularly-shaped holes with smooth edges. They can chew off succulent plant parts and growing tips that are close to the ground. Seedling plants can be completely consumed. A slime trail is nearly always associated with fresh feeding injury.



Slug Damage on Annual Salvia

Control

Metaldehyde baits have been shown to attract slugs up to 3 feet away. The toxic effects of metaldehyde seem to be primarily due to dehydration as it elicits excessive mucus production (mucus is 98% water and 2% mucoproteins.)

Thus in dry weather, metaldehyde is more effective. In wet weather, slugs sometimes can absorb enough moisture to compensate for the water lost in mucus production and therefore recover from the effects of metaldehyde. However, if slugs consume too much metaldehyde, they do not recover. Slugs seem to become more susceptible to carbamate pesticides as they mature. Copper sulfate is toxic to slugs and slugs will not crawl across a barrier of copper metal or wooden surfaces treated with copper sulfate. Mesurool is labeled for slug and snail control in greenhouses, and it also kills thrips. The problem is that Mesurool has a 24 hour REI.

Aphids Problems in Interiorscapes

We visited a newly-installed interiorscape last week. They had some unusual plantings including espaliered apple trees and a koi pond filled with papyrus plants. Aphids are already becoming a problem at this site. They were seen on burgmansia, aglaonema, papyrus, and apple.

The control options there are limited because people are in the building at all hours of the day. The horticulture department manger is planning to use primarily biological controls such as predatory mites, lacewings for aphids, *Cryptolaemus* for mealybugs and scale, and entomopathogenic nematodes for fungus gnats.



Green Peach Aphid on Angel's Trumpet



Aphids on Aglaonema



Rosy Apple Aphid on Apple



Aphids on Papyrus

Scouting Reports

This week scouts are seeing aphids on rosemary, ‘Osmin’ basil, parsley, and verbena; mites on lemon verbena, ‘Kentucky Colonel’ mint, and pink hyssop; thrips on dahlias and geraniums; *Botrytis* on Magellan zinnias.

John Speaker is still seeing white mold, *Sclerotinia sclerotiorum*, show up this week at several operations on the following crops: petunias, lobelia, zinnia, vinca, marigold, gazania, impatiens, and torenia.

Thrips

John Speaker is also reporting that thrips are starting to show up in greenhouses. This is the time of year when they are carried north on the trade winds. Thrips move into greenhouses from the outside through vents. Now that the warm weather has arrived, thrips pressure will continue to increase. Be sure to monitor key crops such as: **verbena, marigolds, impatiens, and dracaena spikes.**

Control: Besides Conserve, try using *Beauveria bassiana* (BotaniGard). Pedestal also works well on 1st and 2nd instar larvae. Pylon can be applied at between 5 – 20 oz/100 gallon (depending on the amount of thrips pressure).



Thrips Damage on Verbena

Two-spotted spider mites

We visited some greenhouses this week and found spider mites active on several species of plants including: **thunbergia, ipomoea, and verbena.** Examine the undersides of elephant ear plants. If you have ivy in hanging pots, monitor them closely because mites love this crop.

Control: Rotate between Avid, Pylon, Akari, horticultural oil, and Floramite



Mite Damage on Thunbergia

Cut Flowers

If you have a trickle irrigation system, make sure that it is up and running. The bright, sunny weather dries out soil very quickly. Many growers are now planting lisianthus plugs out into the field. Do not allow lisianthus to dry down early on in the crop cycle, or it will flower prematurely and stunt the plants. Check your crocosmia for spider mites. As the weather is heating up, spider mites will start to increase rapidly. For mite control try one of the following: Floramite, Akari, Hexygon, Judo, or Avid.

Daylily Rust

This is the time of year that daylily rust (*Puccinia hemerocallidis*) starts its activity. Examine the foliage for yellow to brown streaks, yellow spots on the upper surface of the leaves, and pustules on the undersides of the leaves. As the disease progresses, the leaves will turn yellow and dry up. Monitor 'Pardon Me' and 'Stella de Oro' closely for this disease. Don't mistake daylily rust with daylily leaf streak (*Aureobasidium macrostictum*). Daylily leaf streak also causes brown to yellow streaks, but there will be no pustules present.



Orange Spore-filled Pustules

Ant Activity

Tom Henseller and his wife sent us a photo of interesting ant activity on the sidewalks in their nursery. Nancy Breisch, University of Maryland Entomologist, looked at the photo and noted that all ants share food and this could be a group feed. She also mentioned that when two colonies of the same species meet (depending on the species) they evaluate each other prior to aggression or they may combine colonies.



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 rosnkrnz@umd.edu