



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

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Root Aphids: Root aphids (*Aphis* sp.) were seen on a Moneywort (*Lysimachia nummularia* 'Aurea') sample in our office this week. Root aphids have cornicles (tailpipes) which are reduced to small bumps on the rear of their abdomen. They produce white, woolly wax masses which can be confused with either fungal mycelium or mealybugs. These soil-dwelling aphids tend to feed on the roots toward the edge of the rootball. Root aphids generally don't kill plants, but they can cause chlorosis and stunting.



Weekly Easter Lily Update

Source: 2006 Easter Lily Guidelines from William B. Miller, Cornell University Flower Bulb Research Program

March 20: Buds are 2 inches long. Plants should be 16.5 inches tall.

Fuchsia Rust

John Bowers at MDA has notified us that the Pennsylvania Department of Agriculture reported that Fuchsia rust, caused by *Pucciniastrum epilobii*, was discovered at a large greenhouse establishment. Plugs trays of possibly infected fuchsia plants were shipped to Maryland. As of now, this is not a regulatory issue, but is a quality of sale/consumer protection concern. Please inform your extension agents working in greenhouses to be watchful for this disease, and to please let us know if you find it so we can determine if it is widespread or of limited distribution. More information on fuchsia rust is available from the UMass website at

www.umass.edu/umext/floriculture/fact_sheets/pest_management/fuchsia_rust.html

Tobacco Mosaic Virus

Last week we received a call from a grower experiencing problems with Tobacco Mosaic Virus (TMV) on a crop of vegetative petunias. TMV has a wide host range and can spread easily in production areas. It spread mechanically in sap, in seed, and by workers handling plant material. Smoking should not be permitted in growing facilities to help prevent the spread of this disease. The most common symptom is a mosaic pattern of dark and light green areas on foliage. Disinfect benches and other surfaces to manage this disease. Remove and destroy all infected plants. There is no cure for TMV.

More information on TMV can be found in the February 22, 2007 New England Greenhouse Update at http://www.negreenhouseupdate.info/greenhouse_update/?p=2468

Scouting Reports

Downy mildew was reported on apple mint this week. John Speaker of Speaker's Gardens is seeing powdery mildew on scabiosa, aquilegia, and ranunculus. John is finding aphids on overwintering perennials, celosia, and dianthus. Parasitized aphids were also seen on the dianthus sample.



Aphid mummy with exit hole

Scales on Foliage plants in Greenhouses, Conservatories and Interiorscapes

We are working on a new book on greenhouse and interiorscape pests with Ray Cloyd and Karen Kackley to be published by Ball Publishing in 2008. Our search for samples of different pests to photograph for this book turned up several scale insects on orchids, bromeliads, cacti and foliage plants in the last two weeks. We thought we would share a photographic gallery of these scales. Special thanks to John Davidson for help in identification of some of these species.

Scale Control

Horticultural oil will always be a good option for reducing scale populations, but we found that often you also need to use an Insect Growth Regulator (IGR) to really bring the population down. We have conducted trials with Distance and Talus applied just about the time that armored scale crawlers start to emerge. Crawlers usually emerge over 2 - 3 week periods. A good way to determine when crawlers are active is to check the plants about once a week with a 10 -16 X magnifier. The crawlers will be oval shape and most species are light yellow, white or bright yellow. We have also had pretty good control with IGRs applied to settled 1 and 2nd instars. The IGRs work well on both armored and soft scale. We have also used systemic insecticides such as imidacloprid applied as soil application for soft scales with good success.

Armored Scales



Boisduval scale, *Diaspis boisduvalii*
(also called cocoa-nut snow scale)
Found on orchid



Cactus scale, *Diaspis echinocacti*
(also called prickly pear scale)
Found on *Opuntia ficus-indica*



Cyanophyllum scale, *Abgrallaspis cyanophyllum*
(also called palm scale)

Found on *Stapelia* sp. and *Pachypodium* sp.



Tea scale, *Fiorinia theae*
Found on *Osmanthus* sp.



Pineapple scale, *Diaspis bromeliae*
Found on a bromeliad



**False oleander scale
*Pseudaulcaspis cockerelli***
Found on *Strelitzia nicoli*

Soft Scales



Black scale, *Saissetia oleae*
Found on olive



Brown soft scale, *Coccus hesperidum*