



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

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Ornamental Cabbage and Kale

Ornamental cabbage and kale seedlings with collapsing stems were submitted to the Plant Diagnostic Lab. Karen Rane was able to recover both *Pythium* and *Fusarium* from the discolored roots of these samples. She noted that if the plug trays are kept excessively moist, that could help contribute to *Pythium* root rot problems. A soil drench with Banrot (thiophanate methyl + etridiazole) would help to protect uninfected plants from both *Pythium* and *Fusarium* root rots.



Cabbage looper larvae have been found causing significant damage at several local garden centers. The adults of the imported cabbage butterfly are also active this week. For control you can use *Bacillus thuringiensis* (*Bt*) on early instar larvae or Conserve.



Cabbage looper larva



Imported cabbage butterfly adult

Liriope Crown Rot

We've received several reports of crown rot in liriope, primarily in landscape plantings. Initial symptoms include yellowing, then browning of individual leaves, which progresses to collapse of the entire plant. Affected leaves pull out easily from the clump, and are often blackened at the base. Several fungi have been reported to cause crown and root rot in this plant – Phytophthora, Pythium, Rhizoctonia and Fusarium are reported in several references. We've thoroughly examined one sample in the UMD Plant Diagnostic Lab, and we recovered a Fusarium species, along with fungus gnat larvae feeding at the base of affected leaves.



Crown rot diseases are usually promoted by excessive moisture, deep planting, and other cultural factors that are stressful for plant growth. This year, abundant rainfall earlier in the season may have contributed to an increase in fungal crown rot problems. It is important to examine plants for symptoms of crown rot before installing them in the landscape – don't use plants that have a number of yellow or brown leaves, and check the roots to make sure they look healthy and white. It is very difficult if not impossible to manage fungal root and crown diseases with fungicide applications in the landscape – it is much more effective to avoid introducing potentially diseased plants, and to remove plants promptly, as soon as you notice crown rot problems. Managing irrigation to reduce the amount of time water may sit in the crown of the plant (irrigate early in the day, use drip irrigation instead of sprinkler irrigation, for example) will help reduce disease problems as well. **Photo by Steve Sullivan, The Brickman Group**

Thrips Resistance

Dow AgroSciences announced on August 12, 2008 that it is voluntarily suspending the sale and use of multiple spinosyn insecticides in Broward County and a portion of Palm Beach County in Florida. This is due to evidence that western flower thrips have developed resistance to a product with the active ingredient spinosad. Links to the DOW announcement, a supplemental Conserve label, and fact sheets on the western flower thrips are available on the UF/IFAS Pest Alert site at: <http://pestalert.ifas.ufl.edu/>



Variegated Fritillaries

Scouts are reporting activity of the adult variegated fritillary, *Euptoieta claudia*. This day flying butterfly is orange with white and black patterns on the wings. You will see the females swoop down onto your pansy crops in late July through September. Look for the orange larvae with black spines feeding on the pansy foliage. Don't confuse the variegated fritillary larvae with the common buckeye. We have been seeing these caterpillars on the snapdragons in our cut flower plots throughout the summer.

Control: Use microscreening to keep migrating adults from entering the greenhouse and laying eggs. Apply *Bacillus thuringiensis* (Dipel) on actively feeding early instar caterpillar larvae. Neem-based insect growth regulators like Azatin (Azadirachtin) can also be used to control caterpillars. Conserve is also effective on caterpillars. Pylon, in greenhouses, can also be used for caterpillar control.



Variegated fritillary larva



Common buckeye larva

Leafspot Problems on Rudbeckias

Steve Clancy, Town Creek Landscaping, and Steve Sullivan, The Brickman Group, have noticed an unusually large amount of leaf spotting on foliage of *Rudbeckia* this season. Steve Sullivan sent in this picture of a bed of *Rudbeckia fulgida* var. *sullivantii* 'Goldsturm' with severe damage on the foliage from leaf spot which is turning the foliage almost black, while a planting of another species or cultivar looks just fine. I spoke with Leanne Pundt of Connecticut Extension and she passed along that growers were seeing leafspot on *Rudbeckia fulgida* var. *sullivantii* 'Goldsturm' but saw very little leafspot on *Rudbeckia fulgida*.



She said many of them were just growing the straight species to avoid the leafspot problems. I spoke with a local wholesale producer of perennials in Central Maryland to see if he observed similar occurrence of leafspot on 'Goldsturm' compared to straight species *R. fulgida*. He confirmed he was seeing a similar situation where 'Goldsturm' was heavily infected with leafspot while *R. fulgida* were in good shape. He also mentioned that other perennial growers were observing the same thing. The puzzling thing is why a cultivar of the same species would be so easily susceptible to leafspot disease. The black-eyed susan, *Rudbeckia hirta*, which is an annual that usually reseeds itself, does have some problems with leafspot, but it apparently does not have the high incidence that *R. fulgida* 'Goldsturm' is having. We would be interested to find out if our landscape managers or growers are observing more incidence of leafspot on one species over another. **Photo by Steve Sullivan, Brickman Group**

Scouting Reports

Powdery Mildew

The cool nights during parts of July made conditions right for powdery mildew. It is showing up on the foliage of dahlias and zinnias this week.

Control: A good low risk pesticide to use for powdery mildew control is horticultural oil. The oil coating will prevent the mildew from growing on the surface of the foliage.

Twospotted Spider Mites

We are finding mites on asclepias this week. Examine the undersides of foliage. They can also be knocked onto a sheet of paper as part of your monitoring efforts.

Control: Horticultural oil, Floramite, Avid.

This week greenhouse IPM scouts are also seeing aphids on woolly thyme, mealybugs on calathea, and leafhopper damage on mums.



Powdery mildew on zinnia



Leafhoppers on chrysanthemum



Mite damage on asclepias