



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

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August 17, 2007

ASCFG Mid-Atlantic Regional Meeting

August 27, 2007

Location: Wollam Gardens, Jeffersonton, VA

Schedule and Registration Form Available at:

<http://ascfg.org/images/stories/mareg07.pdf>

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Chrysanthemums

Brian Clark, Extension Educator in Prince George's County, brought in a Chrysanthemum this week that was stunted and extremely chlorotic. At first these symptoms looked like they could be the result of a nutrient problem. However, when we went to perform a soil test we saw that the roots were infected with *Pythium*. The discolored, water-soaked roots were not taking up nutrients. The outer cortex of the root was sloughing off, exposing the vascular cylinder or stele. Wet soil conditions and high salt levels promote this disease.

Control: Subdue Maxx (mefenoxam), Banrot (etridiozole and thiophanate-methyl), Truban (etridiozole)



Stunting and Chlorosis



Root Discoloration



Cortex Sloughing

Rust

John Speaker is reported rust on ‘Celeste’ asters this week. Rusts are easy to diagnose because they all make bright orange or brown spores in a pustule or a cup. However, nearly a dozen species in three different rust genera are reported on Aster. Microscopic examination is required to identify the rust to genus. At our last Advanced IPM Scout Training Conference, Bob Mulrooney from the University of Delaware mentioned that he has posted a rating for susceptibility of asters to *Coleosporium asterum* (rust found on goldenrod and aster). The alternate host is three needle pines. You can find the rating report, *1998 Aster Demonstration Results – Reaction of Aster Cultivars to Powdery Mildew and Rust*, by Bob Mulrooney, Susan Barton and Theresa Holton, Department of Plant and Soil Sciences, University of Delaware at (<http://ag.udel.edu/extension/horticulture/pdf/pp/pp-44.pdf>).

Management of Rusts: Fungicide sprays can be applied to prevent infection. Spores are carried from Aster weeds to infect plants in landscape and production. Many fungicides are good protectants including mancozeb (Cleary’s Protect TO, Fore) and chlorothalonil (Daconil Ultrex, Spectro 90). Once symptoms (yellow spots with pustules) are present a systemic should be used. These include Rubigan, Systhane, Strike, BannerMaxx, Heritage, Compass and Contrast.



Rust on Aster

Dodder

A garden center in Prince George’s county is finding dodder on their Chrysanthemum crop. It blew in from the weeds adjacent to their mum field and is now in bloom. Dodder can be a problem in landscape areas if left unchecked and allowed to flower. Dodder is an annual vine with thread-like stems that are yellow, orange, or red. It is a parasitic plant with roots that are modified to penetrate the host plant. The flowers are small, white or sometimes pink and numerous in compact clusters. Plants die at the first frost, but seeds will germinate the next year in spring and early summer. The seed is long-lived in the soil.



Control: Pre-emergent herbicide in early spring to prevent flowering and seed production.

Variegated Fritillary (*Euptoieta Claudia*)

Now is the time to be monitoring your pansy crops for the adult variegated fritillary. This day flying butterfly has orange wings with white and black patterns. You will see the females swoop down onto your pansies in late July through September. The past two years we have reported seeing the larvae feeding on the foliage of pansies in the first week of September. The larvae are orange with black spines.

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.



Ornamental Cabbage and Kale

If you are growing ornamental cabbage and kale this fall, here is a reminder of some common pests to be monitoring for...

Imported Cabbage Butterfly (*Pieris rapae*)

The imported cabbage butterfly is a day flying butterfly with white wings and black spots on its wings. The butterfly will visit ornamental cabbage and kale during the day and deposit eggs on the foliage. The ridged eggs are embedded into the leaf tissue. We reported seeing the adults last year in the third week of September.

The velvety green caterpillars of this moth feed first on the undersides of foliage, but as they get larger they will be found throughout the canopy.

Control: *Bacillus thuringiensis* (Bt) on early instar larvae, Conserve on later instars



Cabbage Loopers (*Trichoplusia ni*)

The adult moth has dark brown mottled wings with silvery figure eight markings on the forewings. The first instar caterpillar is light green with faint white stripes running down each side and along the back. Cabbage loopers are in the family Geometridae (inch worms). If the caterpillar is disturbed while on the plant, it will rapidly move in a looping pattern until it drops off the leaf. In previous years we have reported seeing cabbage looper damage in October. This caterpillar can also feed on snapdragon, and nasturtium.



Control: Applications of *Bacillus thuringiensis* (Bt) give effective control of early instar caterpillars. Pyrethroids will control later instar larvae. We have been testing a mixture of BotaniGard and Bt and obtained excellent control at the Central Maryland Research and Education Center.

Harlequin Bug (*Murgantia histrionica*)

Harlequin bugs lay black and white striped, barrel-shaped eggs on foliage. This true bug also feeds on snapdragons and cleome. Look for small, ovate bugs with black, white, and orange markings.

Control: Systemic pyrethroids such as Talstar, Astro and acephate.



Cross-striped Caterpillar (*Evergestis rimosalis*)

You can monitor adult moth flight activity with blacklights. The adult moth is yellowish-brown with a dark zigzag marking on the forewings and five or six small brown spots near the inner border of the hindwing. The eggs of the cross-striped caterpillar are yellow and flattened. Early instar larvae will be found on the undersides of the foliage. The larvae are blue-green with black stripes across the top of their bodies. Underneath they have a black stripe with a yellow one on either side.

Control: *Bacillus thuringiensis* (Bt) on early instar larvae, several parasitic wasps attack cross-striped caterpillars.

Cabbage Aphid (*Brevicoryne brassicae*)

The cabbage aphid only attacks cole crops such as cabbage, kale, cauliflower, and broccoli. Populations tend to build up on the stems of plants in the cooler months of October and November. The body is a dull green color and is covered with grayish-white wax.

Control: Insecticidal soaps, Neem products, horticultural oils

Grasshoppers: One grower reported seeing a lot of grasshopper activity on their flowering cabbage/kale crop (4-1/2"). The grasshoppers are eating the centers out of the plants.

Mealybug: Mealybugs are being found on *Strobilanthes* and *Coleus*.

Southern Nursery Conference

I spent a couple of days last week in beautiful Atlanta, Georgia at the Southern Nursery Conference. One interesting presentation was on rates for fertilization and impact on thrips populations on gerbera daisy. They found that increasing fertilization increased thrips populations on plants. We have seen this with aphids and scale insect that when you increase the nitrogen applications you increase populations. The problem with the gerbera daisy project is that the lower fertility rates results in poor quality plants that are pretty much unmarketable.

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