



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

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September 7, 2007

**Composting Materials for the
Landscape and Nursery Industry**
October 9, 2007
Chesterfield Farms and the Big Fish Grille, Crofton
For more information: 301-596-9413

Ornamental Grasses

We received a call this week from a grower who was seeing an unusual red discoloration on their *Miscanthus sinensis* 'Strictus' and 'Morning Light'. They had just applied a new fungicide and feared that it could be phytotoxicity. The label stated that phytotoxicity could occur at pH levels below 6.5. We tested the water which turned out to have a basic pH of 7.4. I mentioned the situation to Ethel Dutky who said that she had experienced this same problem on *Miscanthus sinensis* in the past. She was able to immediately diagnose this symptom as anthracnose. The disease was expressing itself in the weaker variegated tissues which were less able to defend themselves against attack. The red color is a plant response to the infection and comes from anthocyanin pigments in the leaf.

Control: Treat with protectant fungicides such as mancozeb (Protect TO, Fore) chlorothalonil (Daconil Ultrex, Spectro 90), and coppers (Phyton 27, Kocide) to prevent new infections. Systemic fungicides like Heritage, Compass, Terraguard, Medallion, and Strike could also be used.



Red Anthocyanin Pigments

Deer

We've been seeing plenty of deer activity throughout the summer. An area cut flower grower noted that when it comes to hydrangeas, deer seem to prefer 'Limelight' and 'Endless Summer' and are less likely to feed on 'PeeGee' hydrangeas. Deer also fed at the same site this summer on *H. arborescens*, *Eryngium* 'Blue Glitter', and *Ilex verticillata* 'Winter Red'.

With pansy crops, growers commonly report that deer feed on the yellow and white pansies before moving on to other colors. Deer also love ornamental cabbage and kale and lilies. If you use fencing for deer, it has to be at least 8' high.



Cut Flowers

The amount of time that cut flowers spend in marketing channels and the temperatures at which they are stored have a direct impact on their vase life. A reduction in vase life can have a negative impact on repeat sales. In this experiment, the effects of higher storage temperatures were not noticeable when the flowers were first delivered to a florist. In the summer 2007 issue of the California Ornamental Research Federation's newsletter there was an article on work being done with Radio Frequency Identification (RFID) devices used to monitor time and temperature during shipping of cut flowers. The data collected in transit can then be used to predict the vase life using a respiration-temperature model.



Salt Marsh Caterpillar (*Estigmene acrea*)

Adult female moths are active and laying eggs now. The eggs will hatch in mid to late-September. Watch for larvae skeletonizing your chrysanthemum and aster. Salt marsh caterpillars tend to feed on the lower interior leaves first and then move outwards, especially on tightly-spaced plants.

Control: *Bacillus thuringiensis* (Bt) on early-instar larvae. Conserve can be used on later-instar larvae.



Time to ID Your Whitefly

Most people have pinched their plants and are considering what long term materials to apply to their poinsettia crop for whitefly control. Before you make your decision you should identify which species and strain you have of whitefly on your crop. You can send a sample of the sessile stages to our office and we can tell you whether you have greenhouse whitefly or *Bemisia tabaci*. If you have *Bemisia tabaci* you will want to find out which strain you have.

**LABORATORIES AUTHORIZED TO TEST
TO DETERMINE Q-BIOTYPE FROM B-BIOTYPE**

There are a number of specifics concerning how one collects a sample and preserves it for evaluation. For these specifics, scheduling and pricing information you MUST contact the individual laboratories.

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**Does heat stress induce a leaf wrinkling response in Echinacea (Coneflower) ‘Sundown’?
Rich Anacker, Plant Disease Specialist, Maryland Department of Agriculture**

Growers across the country have reported problems with leaf wrinkling of coneflower. The most commonly affected cultivar we have seen in Maryland is Echinacea ‘Sundown’; however there is some indication that this condition may also affect other cultivars of coneflower. Multiple tests for various viruses and virus groups have been performed, but none have returned a positive test. Growers are concerned with this leaf wrinkling conditions because they believe that it may jeopardize the quality of the plants. In this study we tested a small group of plants to see if heat stress plays a role in the leaf wrinkling symptom. A total of eight plants were tested. Plant samples consisted of ‘healthy’ plants and 4 ‘symptomatic’ plants obtained from two different Maryland nurseries. Plants were placed in separate rooms of a climate controlled greenhouse at the Maryland Department of Agriculture in Annapolis, MD. Plants were divided so that two ‘healthy’ plants and two symptomatic plants were in either a hot or cold room of the greenhouse. Healthy and symptomatic plants were kept separate by enclosing them in a wire mesh cage to keep out insect pests. Plants were kept in separate rooms for a one month period beginning August 7, 2007 and ending September 7, 2007. The average daily temperature of the cold room was 67.6 °F (min. 60°F, max. 96 °F) and the average daily temperature of the hot room was 85.1 °F (min. 70 °F, max. 120 °F).



Figure 1 'Healthy' plants. Front row was in the cold room, back row was in the hot room.



Figure 2 Symptomatic plants. Front row was in the cold room, back row was in the hot room.

Results of this experiment gave no indication that heat stress causes the leaf wrinkling condition observed on coneflower. If heat stress was a major factor causing this symptom the healthy plants in the hot room should display increased leaf wrinkling when compared with those from the cold room. Although one symptomatic plant maintained in the cold room started to produce healthy leaves, the other did not. Additionally, one of the symptomatic plants stored in the hot room started to produce healthy leaves when it was not expected to.

Although the results of this small scale experiment gave no indication that heat stress is an initiating factor of this condition, a larger scale experiment may yield different results.