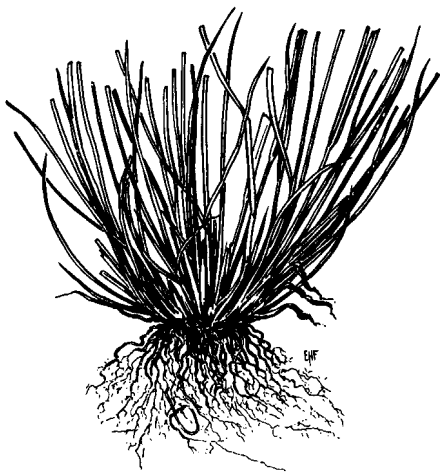
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION $1.50 AUGUST 24, 2000



INSIDE

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turfgrass Pathology

Bentgrass Dead Spot

This disease is apparent on sand-based greens and tees on several courses in the Mid-Atlantic Region. The causal agent, *Ophiosphaerella agrostis*, induces small reddish-brown spots 0.5 to 1 inch in diameter. Spots usually do not coalesce and only enlarge to 4 inches in diameter. Affected areas eventually fade to a light tan color. Initially, symptoms may be confused with **dollar spot, copper spot, black cutworm** and golf ball injury. However, upon close inspection, black flask-shaped fruiting bodies (*pseudothecia*) can be found embedded in necrotic leaf and stem tissue. Active patches often have a 5 inch bronzed outer margin. Roots are unaffected and foliar mycelium is not apparent in the field.

The disease has been identified on numerous bentgrass cultivars and was most serious on high sand content greens and tees. To date, all reports have come from recently established sites (one to six years old). Outbreaks have not been observed on fairways. Environmental conditions that appear to enhance disease development include hot, dry weather. The disease also appears to be more common in sunny locations than in shaded areas. Although little is known about chemical control, Daconil (chlorothalonil), Cleary 3336 (thiophanate-methyl), and Fore (mancozeb) have suppressed symptom development in University tests.

Gray Leaf Spot

Gray leaf spot has redeveloped recently on perennial ryegrass in the Mid-Atlantic States. Symptoms start as tiny brown leaf and stem lesions covering 1 to 2 inch spots. In severe cases, the leaves curl and lesions may extend the entire width of the blade. As the disease progresses, patches coalesce into large (one to two feet) areas of blighted turf. Extensive foliar blighting may occur during warm (75-85^{0}F), wet weather. Newly established seedlings are more susceptible to infection than mature plantings. When conditions are conducive to infection, the causal agent (*Pyricularia grisea*) produces abundant one to two-celled, pear-shaped spores (conidia). For best results, avoid high rates of nitrogen during July and August and extended periods of leaf wetness (i.e., water in the early morning hours). Fungicide studies conducted in New Jersey, Georgia, Maryland, and Kentucky have shown that Heritage (0.2 to 0.4 oz/1000 ft^2)

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Plant Diagnostic Laboratory Highlights

Richard Buckley, Plant Diagnostic Laboratory Coordinator

Turfgrass

Gray leaf spot continues to be on the mind of regional golf course superintendents. To date, the one and only sample confirmed by our laboratory came on August 1. Since that time, numerous samples of perennial ryegrass from fairways and rough areas of golf courses have been submitted to the laboratory. Most of the samples were diagnosed with **leaf spots** caused by the fungus *Bipolaris sorokiniana*. *Bipolaris sorokiniana* is a warm weather version of the well-known "Helminthosporium" leaf spot diseases. This fungus was positively identified in samples from Virginia, Connecticut, and New York, as well as from Morris, Monmouth, and Camden Counties in New Jersey. We have also seen ryegrass recently with **brown blight**, caused by *Drechslera siccans* from a Connecticut golf course. Finally, many of the samples with suspect **gray leaf spot** are simply from stressed turf areas that have been colonized with the senectopathic (weak) fungi *Leptosphaerulina* (**leaf blight**), *Curvularia* (**fading out**), and *Fusarium*.

Brown patch might be the most common disease diagnosed in the laboratory this week. The regular rain, high humidity, and warm night temperatures were especially conducive for *Rhizcotonia* activity. **Brown patch** was diagnosed on samples of golf turf and landscape turf from New York City and Long Island, and on several samples from Cumberland County. In other samples, **anthracnose** was identified on golf turf from Burlington and Mercer Counties, New York, Pennsylvania, and Connecticut; **slime mold** was active on golf greens from two Pennsylvania golf courses; and **pythium** was found in samples of golf turf from Ocean, Warren, and Monmouth Counties, and New York.

Landscape

Various insect pests are also quite common on landscape plants at this time. **Lacebugs** were diagnosed on rhododoendron from Mercer County. **Elongate hemlock scale** was found in a large population on white spruce from Monmouth County. **Two-spotted spider mites** were identified on impatiens, viburnum, and elm from different Middlesex County landscapes.

Nursery

Pythium root and crown rot caused problems for a Monmouth County cut-flower grower. The disease was active in sunflower, celosia, and dahlia. **Phytophthora root and crown rot** was diagnosed in holly from a Union County grower. ❑

Diseases of Ornamentals

Ann B. Gould, Ph.D., Plant Pathology

Poinsettia Scab

Poinsettia scab, caused by the fungus *Sphaceloma poinsettiae*, has appeared in several greenhouses throughout the northeast region. This deadly disease appears as leaf spots and as lesions on stems and petioles. As the name suggests, stem lesions are corky and slightly raised, and stem tissue distal to lesions may die. On foliar tissue, the leaf spots turn brown and coalesce, eventually killing the leaf.

To manage poinsettia scab, carefully inspect and monitor all existing and incoming stock, especially toward the base of the plants, for symptoms of the disease. Since scab spreads through moving water, use cultural practices that minimize leaf wetness and splashing. Immediately destroy all symptomatic plants as well as the plants adjacent to them. Several fungicides may be used to protect the remainder of the crop. These products include chlorothalonil, copper, mancozeb, thiophanate-methyl, and the combination products ConSyst, Junction DF, Spectro, and Zyban. See label for timing and rates. Iprodione and vinclozolin, which are used for control of *Botrytis*, are not effective against scab.

Descriptions and photographs of this disease can be found on the following Web sites:

Rutgers Floriculture Home Page
http://aesop.rutgers.edu/~floriculture/grower/pscabmdgw.htm

Paul Ecke Ranch
http://www.ecke.com/scabupdate/

Weekly IPM Report from Maryland
http://www.agnr.umd.edu/users/IPMNET/aug0400.htm

Chase Research Gardens
http://www.hortworld.com/poinset.htm

Powdery mildew

Powdery mildew is very evident on many landscape trees and shrubs this year. This disease is very common and is caused by fungi that grow on the surface of leaves. The growth is evident as "powdery" spots or mats on tissue surfaces. Hosts commonly affected by powdery mildew include ash, azalea and rhododendron, flowering dogwood, elm, lilac, oak, and rose. In most landscape trees and shrubs, powdery mildews do little harm to the host. Refer to the June 15th and June 29th editions of this newsletter for more information. ❑

Verticillium Wilt of Landscape Trees and Shrubs

John Hartman, Ph.D. Plant Pathology, Fruit Crops, Trees, and Ornamentals, University of Kentucky, Lexington

Verticillium wilt, caused by the fungus *Verticillium dahliae*, causes dieback and death of many woody plants in the landscape. *Verticillium* invades susceptible trees and shrubs by way of the root system. The fungus resides in the soil and is preserved there in the form of sclerotia, which resist degradation for many years. Thus, if a plant has died in the landscape from this disease, the wilt fungus can remain there until another susceptible plant becomes available.

The best means of management for this disease is to plant resistant species and cultivars. If Verticillium wilt has been diagnosed in the landscape, avoid choosing from the susceptible list and select from the resistant list when making decisions for replanting.

See Wilt on page 4

The following woody plants are *susceptible* to Verticillium wilt:	**The following woody plants are *resistant* to Verticillium wilt:**
ash	apple
azalea	beech
barberry	birch
black locust	chestnut
boxwood	crabapple
brambles	cypress
buckeye	dogwood
catalpa	fir
cherry	firethorn
Kentucky coffee tree	ginkgo
cork tree	sweetgum
currant	hackberry
elder	hawthorn
elm	hickory
golden-rain tree	holly
honeysuckle	hornbean
horse chestnut	juniper
lilac	larch
magnolia	linden
maple	honey locust
nandina	mountain ash
osage orange	mulberry
Japanese pagoda tree	oak
persimmon	pawpaw
privet	pear
redbud	pecan
rose	poplar
Russian olive	pine
sassafras	flowering quince
serviceberry	rhododendron
smoke tree	spruce
sumac	sugarberry
tree-of-heaven	walnut
tulip tree	willow
tupelo	yew
viburnum	zelkova
weigela	
yellowwood	

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and Cleary 3336 50W (6 to 8 oz/1000 ft^2) were most effective when applied on a preventive basis every 14 to 28 days beginning in mid to late-July. Chlorothalonil (e.g., Daconil) and the DMI (sterol-inhibiting) fungicides, such as Banner (propiconazole), have also provided effective control when disease pressure was moderate.

Marasimus

There have been numerous reports recently about the appearance of small mushrooms protruding from brown leaf blades. These structures, belonging to the fungus *Marasimus*, are approximately ½ to ¾ inch in length, and consist of a dark brown stem and a small tan to orange colored cap. **Marasimus** often appears in areas that have been thinned by brown patch. Although this fungus may appear to be pathogenic, it is actually invading dead and dying tissue and thus is not a threat to the surrounding turf.

Stem and Crown Rust

Both of these diseases are evident on susceptible Kentucky bluegrass and perennial ryegrass cultivars, respectively, at this time. As rust intensifies, the turf prematurely yellows and orange pustules called uredia (reproductive structures) appear on affected blades. To control both **stem and crown rust**, maintain adequate fertility and apply Banner, Bayleton, Chlorostar, Daconil, Eagle, mancozeb, Manicure, Pentathlon, Sentinel, or Thalonil per manufacturer's recommendations. ❑

WILT FROM PAGE 3

Although maples are generally considered to be susceptible hosts, the following Norway maple cultivars are tolerant or resistant to Verticillium wilt: Columnare Compacta, Jade Glen, and Parkway. Norway maples with intermediate tolerance to the disease include Emerald Queen, Schwedleri, Silver Variegated, Summershade, and Superform. Norway maples susceptible to Verticillium wilt include Cleveland, Crimson King, Globosum, Greenlace, and Royal Red.

Submitted by Ann B. Gould, Ph.D., Plant Pathology. ❑

Note: This is the last biweekly issue of the Landscape, Nursery & Turf edition of the Plant & Pest Advisory. The remaining monthly issue dates for the 2000 season are:

Sept. 7
Oct. 12
Nov. 9

New RCE Factsheets on Biosolids and Others of Interest

A new series of factsheets on Land Application of Sewage Sludge (Biosolids) is now available from Rutgers Cooperative Extension (see information below). For further information on the subject of Biosolids, contact your county agricultural agent.

The following is a list of the new factsheets:

FS951 - Land Application of Sewage Sludge (Biosolids) #1: Questions to Ask Before Considering Application on Farmland
FS952 - Land Application of Sewage Sludge (Biosolids) #2: Regulations and Guidelines
FS953 - Land Application of Sewage Sludge (Biosolids) #3: Different Types of Sewage Sludge
FS954 - Land Application of Sewage Sludge (Biosolids) #4: Guidelines for Land Application in Agriculture
FS955 - Land Application of Sewage Sludge (Biosolids) #5: Heavy Metals
FS956 - Land Application of Sewage Sludge (Biosolids) #6: Soil Amendments and Heavy Metals
FS957 - Land Application of Sewage Sludge (Biosolids) #7: Organic Contaminants
FS958 - Land Application of Sewage Sludge (Biosolids) #8: Pathogens

In addition, Rutgers Cooperative Extension (RCE) Publications Distribution has many other factsheets available (see sample titles on page 3). Many of the publications (including the Biosolids series) appear in their entirety on our web site: www.rce.rutgers.edu with downloading capabilities. For a hard copy contact your County Extension office listed on the back of this newsletter (or in your local phone directory) or call the Publications Distribution office at (732) 932-9762; fax order to: (732) 932-5023; or mail your order to: RCE Publications Distribution, 57 Dudley Road, Cook College, New Brunswick, NJ 08901-8520.

Here are some additional titles of interest:

FS079 – Sample IPM Landscape Maintenance Agreement
FS155 – Laboratories for Soil Testing and Plant Analysis
FS718 – On-Farm Use of Leaves: Regulations
FS767 – Soil pH Measurement with a Portable Meter
FS828 – Biological Control of Insect Pests of the Greenhouse
FS873 – Boron – Needs of Soils and Crops in New Jersey

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