

HOME GROUNDS FACT SHEET



Cornell University
Cooperative Extension
Nassau County



Horticulture Center
Demonstration & Community Gardens
at East Meadow Farm
832 Merrick Avenue
East Meadow, NY 11554
Phone: 516-565-5265

Pythium Blight and Root Rot of Turfgrasses

All commonly cultivated cool-season turfgrasses (Kentucky bluegrass, annual bluegrass, perennial ryegrass, tall fescue and fine fescue) are susceptible to attack by *Pythium* spp. such as *Pythium ultimum*, *Pythium graminicola*, and *Pythium aphanidermatum*. They cause a turf disease often called Cottony Blight, Grease Spot or Pythium Blight and Root Rot. The disease is most common in the hot, humid or wet weather of summer. Under high temperatures (80°F-90°F+), high soil moisture, and little air movement over the turf, the disease can spread rapidly by swimming spores, killing large areas of seedling or established turf in as little as a day. The disease can also occur at lower temperatures (60½°F+) under high humidity conditions caused, for instance, by overwatering or using excessive seeding rates. As you can see, over irrigation can lead to disaster. Pythium Root Rot can occur during cool, wet springs, but it is also prevalent in the summer and fall.

Symptoms

The disease appears as small, usually irregularly-shaped spots one half to four inches in diameter. The grass blades have a water-soaked appearance and the diseased areas look like greasy or slimy dark soaked patches. Upon drying, these killed areas of the turf take on a light brown or straw-colored hue and may have a reddish tinge. Groups of affected patches may join together into larger irregularly-shaped areas or elongate streaks up to a foot wide or more that often extend in the direction of surface drainage flow in the area. Dead and dying grass blades may mat together if conditions remain moist, especially in areas where trodden.

If a sudden drop in temperature or humidity causes disease progress to stop before whole blades are killed, straw-colored spots of varying sizes may develop on the leaf blades. These spots may resemble those of the "dollar spot" pathogen, *Sclerotinia*, on the grass blades, except that the reddish lesion margin so often associated with the latter disease is not found with *Pythium*. The blades may twist and collapse at the lesion area.

In the early morning or when high humidity continues throughout the day, white cobwebby mycelium (mold-

like fungus growth) may show on the diseased areas, hence the "Cottony Blight" name sometimes given to the disease.

Disease Cycle

This pathogen survives over winter and during periods adverse to disease development as resistant oospores in the soil. It can be moved from one area to another by soil movement, transporting diseased plants or parts of plants, and by equipment, shoes or surface water.

The "damping off," "seed decay" or "seedling blight" often observed in wet or low-lying young turf establishment areas is often caused by the same organism that causes Pythium Blight. It may also attack as a root and crown pathogen, causing reduced growth, off color and thinning. Sometimes, this kind of attack precedes the outbreak on aerial plant parts described above.

Diseased plants serve as infection centers from which the fungus spreads. Spread from these areas can be rapid in wet or humid, hot weather. Spread is fastest between 85°-95°F. High nitrogen fertility favors the disease on many grass varieties (such as Highland Bentgrass). Overwatering, excessive maintenance and poor drainage also favor the disease along with alkaline and calcium-deficient soils.

Integrated Pest Management (IPM)

Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

* A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. **insecticide**, **fungicide**, **herbicide**, etc.

C-2-27 MTC:re reviewed TTY 1/03

-continued-

Building Strong and Vibrant New York Communities

Cornell Cooperative Extension in Nassau County provides equal program and employment opportunities.

Cultural Control

This disease is difficult to control, partly because of its rate of spread and partly because of the fungus' tolerance of most fungicides. For this reason, prevention is often better for effective disease control. Monitor weather especially in areas which were previously affected. Decrease nitrogen and increase organic material to boost yields of good soil microbes.

Pythium Blight

Avoid excess nitrogen fertilization and watering, especially on perennial ryegrass, fescues and bentgrass. Do not mow when the grass is wet. Renovate area, selectively pruning dense trees to increase air flow. Consider renovating the turf area if poor drainage is a problem. Maintain soil pH in the neutral to slightly acid range of 6.5.

Pythium Rootrot

Avoid prolonged wet conditions and excess watering. Raise mowing height when possible. Avoid frequent applications of broad-spectrum systemic fungicides. The use of some composts and organic fertilizers has been shown to reduce disease severity.

Chemical Control

If Pythium Blight occurs, a fungicide will probably be necessary to prevent spread during hot, humid weather conditions, although a change in weather to cool, dry days and nights may stop the spread. It is best to **not** seed grasses in warm wet weather in an area known to have had the disease. If seeding can be postponed until the weather is less favorable for disease development, it should be.

Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

WHENEVER YOU USE A PESTICIDE,
ALWAYS READ THE LABEL AND FOLLOW
THE MANUFACTURER'S INSTRUCTIONS
AND RECOMMENDATIONS.