



Arkansas Plant Health Clinic Newsletter

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Turf Pythium

Pythium diseases of turf grass may occur in cool, wet weather, but the most obvious damage occurs in hot, humid weather. All species of turf are susceptible. In cool weather, blighted leaves have straw-colored lesions. Characteristic sporangia and oospores may be observed when viewed under a compound microscope. In warm, wet weather, Pythium begins as circular spots 2-6 inches in diameter. They can enlarge at an alarming rate, sometimes destroying a stand of grass in a day. The areas may be copper or straw colored, or have a gray, water-soaked appearance. The water-soaked leaves feel greasy when rubbed between the fingers, leading to the common name Grease spot. Leaves become shriveled and matted when dry. During wet periods or periods of high humidity, the affected leaves become covered with a fluffy, white, or gray mass of mycelia. Sometimes the blighted turf occurs in patches or circles with an area of green turf in the center. Pythium disease can only occur in areas that remain wet for extended periods. Provide for good surface and subsurface drainage. Avoid overwatering and night watering. Thatch removal is recommended if thatch exceeds half an inch in

depth. Reducing plant stress with proper mowing heights and fertilization helps control Pythium diseases. Avoid over-fertilization with nitrogen, and heavy applications of nitrogen in spring and summer. Slow-release nitrogen fertilizer gives better results. Disease is more severe on soils with high pH. Fungicides such as Terrazole, Subdue Maxx, Mancozeb, Alude, junction, Stellar, and Banol are labeled for the control of Pythium in turf. Homeowners may use Actinovate.

Zoysia Pythium-*Pythium* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Zoysia Pythium-*Pythium* spp.



Photo by Mary Ann Hansen, Virginia Polytechnic Institute and State University, Bugwood.org

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Turf Large Patch

Large Patch, caused by *Rhizoctonia solani*, is one of the most important diseases of turf. If you had a problem, last season with a patch disease in your lawn, now is the time to think about treatment this season. The pathogen attacks Zoysia, Bermuda, St. Augustine, and Centipede. The damage occurs in the spring and fall when the pathogen is active. Stolons and basal leaf sheaths develop water soaked black to reddish brown lesions. Irregular circular patches develop that may be from several feet to more than 25 feet in diameter. Sometimes a smoke-colored or orange halo may be observed early in the morning at the margins of the patch. Diseased shoots are easily detached from their points of attachment. Roots are discolored but not rotted. In the most badly affected turf, entire lawns may be blighted. Symptoms on Bermuda usually occur earlier in the spring than on Zoysia. Symptoms in Zoysia occur two to eight weeks after green up, or in the autumn. Sometimes symptoms slowly disappear during the growing season as surviving tillers start filling in the killed spots. Night irrigation, shade, and excessive amounts of nitrogen increase both severity and incidence of patch diseases. Complete fertilizers with time-release nitrogen should be used instead of quick release nitrogen. Apply 0.5 pound of nitrogen per thousand square feet approximately three weeks after the grass turns green in late May. No more than two pounds of nitrogen total should be applied per growing season to Zoysia. A soil test is useful to see where fertility levels are. Good drainage is essential for a healthy lawn. The turf should be de-thatched if thatch

accumulates to more than 0.5" thick. De-thatching should be done while grass is actively growing. Fungicides may be applied once in the spring between March 15 and April 15, and again in the fall between September 20 and October 10. Heritage, Prostar, Eagle, Trinity, and Bayleton are labeled for Large Patch. Soil test for pH and nutrients. Avoid night watering. Homeowners may use Spectracide Immunox Plus Insect Control for Lawns, Scotts Lawn Fungus Control, or Bonide Infuse Systemic Disease Control for Lawn and Landscape. Follow label for timing and rate.

Zoysia Large Patch-*Rhizoctonia solani*



**Photo by Melvin Daniels, University of Arkansas
Cooperative Extension**



Zoysia Large Patch-*Rhizoctonia solani*



Photo by Jim Robbins, University of Arkansas Cooperative Extension

Turf Dead Spring Spot

Spring Dead Spot, caused by *Ophiosphaerella* spp., typically occurs on Bermuda plantings three or more years old, and is the most important disease of Bermuda grass in North America. Infections begin in the fall with damaged areas becoming visible in the spring. Symptoms begin as circular depressed areas prior to spring green-up. When the turf greens up, circular patches of dead, bleached grass are apparent. The dead spots may be from 6 inches to as large as 3 feet in diameter. After several years, the centers of active patches may contain weeds or live bermudagrass, with the patches taking the form of rings or serpentine arcs. The roots and stolons are severely rotted in these areas. Re-growth is extremely slow. Bermuda that re-colonizes the necrotic areas remains stunted due to toxins produced by the

fungi. Adequate control of Spring Dead Spot is mainly through cultural practices. Recommendations are core aeration done in August or September, and practices that reduce soil compaction and improve drainage. Applications of ammonium sulfate and potassium have been found to be helpful when applied in summer. Apply at least 1.0 lbs. of Potassium (K₂O) per 1000 sq. ft. to turfgrass during June, July, or August. Some experts recommend two fall applications three to four weeks apart. Maintain pH in the range of 5.5-6.5. Fungicide treatments are not effective unless coupled with good cultural practices. Heritage, ProPensity, Disarm, Eagle, and Torque may be used by commercial lawn care professionals. Homeowners may use Scotts Disease EX Lawn Fungicide, or Bonide Infuse Systemic Disease Control Lawn and Landscapes, or Spectracide Immunox Fungus plus Insect Control for Lawns, or Ferti-lome F-Stop Liquid Fungicide. Make applications about 30 days before dormancy in the fall when soil temperatures are between 60°F and 80°F. Follow label for specific instructions, Cultivars with good winter hardiness are less affected by Spring Dead Spot.

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Bermuda Spring Dead Spot- *Ophiosphaerella* spp.



Photo by Brannon Thiesse, University of Arkansas Cooperative Extension

Bermuda Spring Dead Spot- *Ophiosphaerella* spp.



Photo by Brad McGinley, University of Arkansas Cooperative Extension

Bermuda Spring Dead Spot- *Ophiosphaerella* spp.



Photo by Shawn Payne, University of Arkansas Cooperative Extension

Turf Take All Patch

St. Augustine grass is a warm season grass found from the Carolinas to Florida and along the gulf coast to Texas, and in Southern and Central California. It tolerates a wide range of soil types but does not withstand waterlogged sites or drought. St. Augustine is not as cold and drought tolerant as Bermuda but has more shade and salt tolerance. Our first sample arrived at the clinic this spring with Take-all-patch caused by the fungus *Gaeumannomyces graminis*. This disease is active in fall and winter when there is abundant moisture and moderate temperatures. Symptoms, however, are often not expressed until late spring or early summer when temperatures become higher, and grass is stressed by drought. Symptoms begin with leaf yellowing and death of the foliage. Roots become rotted so damaged



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stolons are easily pulled from the ground. The turf becomes thin as additional roots, stolons and nodes become infected and large areas of grass begin to die. Brown hyphal strands can be seen on the stolons using a hand lens. Large irregular patches of dead and dying turf can form when conditions are right. Cultural controls are important. Core to improve drainage and the root zone. Turf should be de-thatched if thatch build-up is thicker than 0.5 inches. Soil test for pH and nutrients. The optimum pH for controlling Take-all-patch is 6.0-6.5. Avoid high doses of nitrogen and use a balanced fertilizer. Two applications of fungicides 28 days apart in spring and again in fall are effective. Heritage, Eagle, Disarm, Insignia, And Torque are labeled. Homeowners may use Spectracide Immunox Fungus Control for Lawns, or Bio Advanced Fungus Control of Lawns, or Fertilome Liquid Systemic Fungicide, or Bonide Infuse Systemic Disease Control Lawn and Landscape, or Scotts Lawn Disease Control.

Take All Patch-*Gaeumannomyces graminis*



Photo by James Bennett, University of Arkansas Cooperative Extension

Turf Gray Leaf Spot

Gray leaf spot, caused by *Pyricularia grisea* (syn. *P. oryzae*), can be a destructive disease on grasses such as St. Augustine, perennial ryegrass, Italian ryegrass, and tall fescue. Symptoms begin as small brown lesions on the leaves and stems. These lesions grow rapidly and turn into elongated oval to oblong spots that are tan to gray with purple to brown borders. Lesions may coalesce to kill the leaves. In hot humid weather, the spots develop a grayish, felty mass of conidia (spores). Infected leaves have a twisted or fishhook appearance. Gray leaf spot is most severe in warm, humid weather between 82 to 90°F and on newly established plantings. High nitrogen rates increase the severity of the disease. Management practices for gray leaf spot include limiting drought stress, extended periods of leaf wetness, excess nitrogen, soil compaction, herbicide stress, and plant growth regulators. Avoid overseeding turf until cooler weather. If possible, grow a variety of grass that has a high level of resistance to the disease. Preventative fungicides that can be used by commercial growers include Compass, Banner MAXX, Fungo, Cleary's 3336F Daconil Ultrex or Bayleton. Home growers can use Ferti-lome F-Stop Liquid, or Scotts Lawn Fungus Control, or Bonide Infuse Systemic Disease Control Lawn and Landscape. Applications should be made at first sign of disease, then at 14-day intervals.



Gray Leaf Spot-*Pyricularia grisea*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Turf Anthracnose

During periods of high temperature stress, turf will often develop Anthracnose, caused by *Colletotrichum graminicola* or *C. cereale*. This fungus can cause both foliar blight and basal rot. Symptoms are a reddish-brown leaf discoloration. Sometimes oblong reddish lesions appear on the leaves. Crowns appear water-soaked or black. Small areas of turf or individual plants turn yellow and die. Areas of affected turf may coalesce and form large areas

of dead and dying turf. Fruiting bodies of the fungus, (acervuli), with their distinctive hair-like structures are readily seen with a hand lens. Anthracnose is most often a problem on turf that is stressed by factors such as low mowing height, mechanical injury, high temperatures, compacted soils, poorly drained soils, and soils with inadequate nutrition. Fungicides registered for anthracnose control are Daconil Ultrex, Daconil WeatherStik, Banner Maxx, Endorse, Heritage, Compass, Insignia, Cleary 3336, and Chipco Signature. Homeowner fungicides that are effective are Scotts Disease EX Lawn Fungicide, or Fert-lome F-Stop Liquid Fungicide, or Ferti-lome Liquid Systemic Fungicide, or Bio Advanced Fungus Control for Lawns, or Scotts Lawn Fungus Control.

Turf Anthracnose-*Colletotrichum graminicola*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



Turf Downy Mildew (Yellow Tuft)

Early stages of the disease known as Yellow Tuft, (Downy mildew), are slightly stunted growth and thickened or broadened leaf blades. As the disease becomes more severe, small yellow spots or patches appear in the turf. Each yellow spot represents a single grass plant that is composed of a dense cluster of excessively tillered yellowed shoots with shortened roots. During cool, wet periods, a white, downy mycelia growth appears on the leaf surfaces. Proper water management is essential for control of Yellow Tuft, as this disease is caused by *Sclerophthora macrospora*, one of the water molds. Subdue Maxx is the fungicide of choice for chemical control. Avoid high rates of nitrogen. Homeowners may use Actinovate.

This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

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Turf Yellow Tuft-*Sclerophthora macrospora*



Photo by Sherrie Smith, University of Arkansas
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