Plan TURF DISEASE MANAGEMENT NOW

Turfgrass disease management for commercial and residential lawns

RUST

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Now is the time to begin to think about management practices that minimize disease to ensure high quality lawns throughout the summer. Start by considering the need for balance among landscape plants, trees and turfgrass. Recognize that they all compete for water, nutrients and sunlight. Also, be aware that too much shade, or plantings that impede the movement of wind, can increase the leaf wetness duration within the turf canopy. This can increase disease severity.

Knowing soil type and pH are also vital to developing a successful disease management program. Soil pH between 5.5 and 7.0 is sufficient for optimal turfgrass growth and development. Soils that are too acid (<5.5) or too alkaline (>7.0) require adjustment prior to establishment or renovation, and soils high in silt and clay typically take additional time for water to percolate through the profile.

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Typically, lawns on sandy soils have less disease incidence. However, be aware that drought stress symptoms can be confused with disease symptoms. Make an effort to educate your clients about lawn watering practices and, if they follow your recommendations, this will minimize disease incidence and severity. Irrigate in the early morning as it will not increase the overall length of turf canopy leaf wetness duration.

In the zone

You can also reduce disease pressures by selecting the turf species best adapted to the particular climactic zone you are working in. Transition climactic zones are the most difficult in which to choose the appropriate turfgrass. The northern-most edge may be too cool and day lengths too short for optimum growth of warm-season turf species. The southern-most edge may be too warm for optimum growth of cool-season turf species. In either scenario, the turf plant is not growing optimally. That makes it more likely to succumb to turfgrass fungal pathogens.

An excellent source of information as to how different turfgrass species and varieties within a particular species have performed within a given climactic/geographic zone is the National Turfgrass Evaluation Program (NTEP). Access this information through the Internet at **http://www.ntep.org**. Also, consult with a knowledgeable local seed distributor. Ask the distributor for local performance data on the particular varieties, blends or mixtures that are available.

The use of fungicides is an integrated component of an overall disease management program. But, understanding the soil physical and chemical properties, making modifications to improve sunlight and air penetration into the landscape, selecting the best adapted species and implementing sound cultural practices, should be addressed prior to using fungicides.

Here are some common turf diseases and some basic management suggestions:

RUST

Pathogens: *Puccinia* and *Uromyces* spp.
Primary hosts: Kentucky bluegrass and perennial ryegrass, but can occur on any turfgrass species
Environmental conditions conducive the disease development: cool, wet, low light

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intensity, weather of primarily the fall and spring

Rust disease in turfgrasses is probably one of the easiest to diagnose. With a hand lens, note small collections of spores, often referred to as pustules, that have an orange to reddish-brown color to them, on the leaf surface. When observing the turfgrass, from a distance, symptoms take the appearance of a general chlorosis or drought stress.

Rust is generally managed through good cultural practices. Mowing on the high side of the recommended mowing height for the particular species as well as regular mowing frequency is important. Maintain balanced nutrition during the growing season. Consider applying light applications of a water-soluble nitrogen source (0.25 to 0.5 lb. N per 1000 sq. ft.) to stimulate growth for the plant to outgrow the symptoms during stressful times in the spring and fall. Anything that can be done to increase air circulation and light penetration will also reduce the severity of rust disease.

NECROTIC RING SPOT ▲

Pathogen: *Ophiosphaerella korrae*

Primary hosts: Kentucky bluegrass, annual bluegrass and fine leaf fescues

Environmental conditions conducive to disease development: A root-infecting fungus that is in continuous association with the turf. Necrotic ring spot is a perennial disease that tends to occur in the same location from year to year. Plants within a circular pattern (i.e., several inches to feet in diameter) initially have a drought stress appearance, and eventually collapse and die.

Core aerify in spring and fall to reduce thatch accumulation. This also improves soil drainage through the alleviation of compaction. Implement deep and infrequent irrigation and maintain a mowing height of 2.5 to 3 inches. Treat the turfgrass with a complete balanced fertility program with more than 75% of the fertility applied in the fall months. This should minimize the severity of necrotic ring spot.

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SUMMER PATCH

Pathogen: *Magnaporthe poae*

Primary hosts: Kentucky bluegrass, annual bluegrass and fine leaf fescues

Environmental conditions conducive to disease development: A root-infecting fungus that is in continuous association with the turf. Symptoms can be misdiagnosed as drought stress. The symptoms of summer patch typically start out as small 1- to 2-in. patches where the plants die from the leaf tip down. The affected areas can expand from 3- to 12-in. in diameter and coalesce over time. Summer patch symptoms are typically more severe on sunny exposed slopes or areas surrounding walls, sidewalks or driveways.

To minimize the severity of summer patch aerify the turfgrass in the spring and fall to reduce thatch accumulation and improve soil drainage through the alleviation of compaction. Again deep and infrequent irrigation will help, along with maintaining a mowing height of 2.5 to 3 inches, and implementing a complete balanced fertility program with more than 75% of the fertility applied in the fall months. Acidifying nitrogen sources such as ammonium sulfate and sulfur-coated urea have shown to reduce summer patch disease severity when used in an overall management program.

BROWN PATCH

Pathogen: *Rhizoctonia solani*

Primary hosts: Perennial ryegrass, tall fescue

Environmental conditions conducive to disease development: hot days (80 to 90 F), warm nights (65 to 75 F), high relative humidity, soil moisture and increased leaf surface wetness duration, primarily early summer through early fall.

Patches generally occur in the size of a

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BROWN PATCH

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softball up to 2 ft. in diameter. Observing the turf in the early morning under high humidity, you may observe abundant foliar mycelium in a circular patch. Around the border of the circular patch, the mycelium may take on a grayish cast — called 'smoke ring.' Close inspection of the leaves may show tan, water-soaked lesions that are irregular in shape and tend to have a chocolate brown border of the lesion. Overtime, patches will coalesce into large areas of blighted turf.

Once evening temperatures consistently reach into the mid to upper 60's F and day time highs are in the mid to upper 80's F, coupled with rain and showers, start looking for brown patch disease. Irrigate turf in the early morning to prevent increasing the leaf wetness duration of the turf canopy. Put down enough water to wet the root zone, but you don't want to keep the thatch/foliage wet over extended periods of time. The majority of your fertility program should be applied in the fall and limited in the spring after green up. Consider making light applications of 0.25 to 0.5 lb. N per 1,000 sq. ft. every two to four weeks during the summer months. This could be helpful.

GRAY LEAF SPOT ▶

Pathogen: *Pyricularia grisea*

Primary hosts: perennial ryegrass, tall fescue and St. Augustinegrass

Environmental conditions conducive to disease development: This disease is one of the last to be seen in lawns (mid-July through early-October) following summer months of high heat and humidity. It is usually more severe following prolonged periods of drought stress.

Fungicides may be necessary during the first year for the establishment of St. Augustine lawns from sprigs or sods since nitrogen and water requirements will be higher and will lead to conditions conducive for the disease. In perennial ryegrass and tall fescue, brown patch can be present at the same time as gray leaf spot. A preventive fungicide program would be the best choice for managing gray leaf spot as well as brown patch. LM

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