PURDUE UNIVERSITY

PURDUE EXTENSION

BP-104-W

Turfgrass Disease Profiles

Red Thread

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Red thread is a foliar disease that usually occurs on taller mown turfgrasses during spring and fall. The disease is often associated with malnourished, low quality, slow growing turf, but the effects of the disease are largely cosmetic. Red thread symptoms create an undesirable appearance, but crowns and roots are not infected, so plants are not killed and turf eventually will recover.

Figure 1

Red thread takes its name from the antler-like structures (sclerotia) produced by a fungus (*Laetisaria fuciformis*) on the tips of infected leaf blades. The red or pink sclerotia (Figures 1 and 2) are visible without magnification and are useful for identifying the disease in the field.

Figure 2

From a distance, red thread symptoms appear as circular patches of tan or pink turf about 4-8 inches in diameter (Figure 3). The pink color is caused by the sclerotia and/or flocks of pink mycelium on leaf blades (Figure 4). Other diseases, including dollar spot, pink snow mold, and especially pink patch, have field patterns and symptoms that resemble red thread, and are active during similar environmental conditions. However, after close inspection, red thread is easily distinguished from other diseases by the presence of the sclerotia.

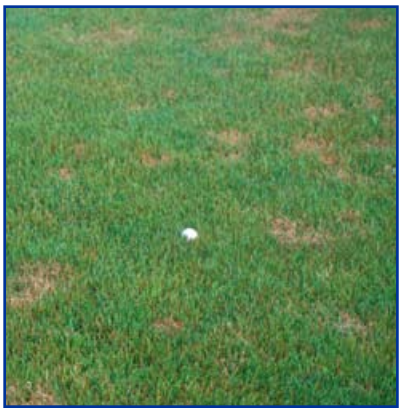

Figure 3

Red thread most commonly affects Kentucky bluegrass, perennial ryegrass, and tall fescue. Outbreaks usually occur in low maintenance turf stands such as residential lawns, golf course roughs, and some low budget athletic fields. Red thread development is most common where turfgrass nutrition is poor and there are other factors that promote slow growing turf.

Deficient nitrogen fertility levels can result in serious outbreaks. Disease development occurs over

a relatively wide range of cool conditions (40-70° F), typically in the spring and fall, especially during long evening dew periods.

The red thread pathogen survives winter as sclerotia in the thatch and soil layers. These sclerotia are a significant source of inoculum for outbreaks in subsequent years. Maintenance practices, such as mowing, play a relatively minor role in spreading the disease to unaffected areas.

Figure 4

Existing patches expand in a radial pattern by mycelial growth.

Disease Control Options

Nonchemical Approaches

Genetic resistance to red thread infection is limited. Turfgrass varieties with different levels of red thread susceptibility are listed on the National Turfgrass Evaluation Program (NTEP) Web site: http://www.ntep.org.

The most important nonchemical (cultural) control option involves implementing an adequate nitrogen fertility program. A good fertility program implemented over two to three years will drastically reduce further red thread problems. Other cultural practices that promote healthy turf and vigorous growth also help suppress red thread. Outbreaks may be reduced further by avoiding irrigation practices that extend dew periods (such as watering in the late afternoon and early evening).

Chemical Control

Fungicides may be used to control red thread if outbreaks occur on high maintenance turf or high value properties. QoI class fungicides (strobilurins) are very effective, especially when applied before sclerotia form. Flutolanil (Prostar®) also is very effective. Because dollar spot and pink snow mold (*Microdochium* patch) may be active at the same time as red thread, consider tank mixing other fungicides to avoid outbreaks of diseases that are not controlled by flutolanil or QoI products.

Repeated fungicide applications targeting red thread should be unnecessary if cultural control options are implemented. After a remedial treatment to suppress an unacceptable situation, the disease often can be managed with proper attention to nitrogen fertility.

Red Thread Control for Residential Lawns

Fungicides are not usually advised for red thread control on residential turf for various reasons. A red thread outbreak signals a more important problem concerning the lawn's health and vigor. In almost all cases, practices that result in a well-nourished, actively growing lawn also will suppress red thread. With even a modicum of care, turf will recover to some extent because red thread does not affect turfgrass crowns so will not kill the plants.

There are situations when fungicides for red thread control on residential turf are warranted. In those cases, effective fungicides should be applied by licensed applicators when the pathogen is active.

More Information

A good place to start a long-term plan for red thread control is Purdue Extension publication AY-22, Fertilizing Home Lawns, available at http://www.agry.purdue.edu/turf/pubs/ay-22.pdf.

Other turf-related publications are available on the Purdue Turfgrass Management Program Web site: http://www.agry.purdue.edu/turf/publicat.htm.

All photos by Philip Harmon and Richard Latin.

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