



## Red Thread On Turfgrass *Laetisaria fuciformis*



**Figure 1.** Early symptoms of red thread on turfgrass. (Note the reddish color of infected areas. The arrow points to red hyphae) (Photograph by Thomas Kowalsick, Cornell Cooperative Extension – Suffolk County)



**Figure 2.** A close up photo of the blood red hyphae (“red threads”) of the red thread fungus. These are easily visible with a 10x hand lens (Photograph by Thomas Kowalsick, Cornell Cooperative Extension – Suffolk County)

**Introduction:** Red thread occurs in the spring and fall during humid periods when the air temperatures are between 16°C and 24°C (60°F and 75°F). The disease is especially severe on slow-growing nitrogen-deficient turf. Bluegrasses (*Poa* sp.), fescues (*Festuca* sp.), ryegrasses (*Lolium* sp.), and bentgrasses (*Agrostis* sp.) can be affected. Fine-leaved fescues and some ryegrasses are particularly susceptible.

**Symptoms:** The first noticeable symptoms are water-soaked patches of grass in the spring. Infected grass blades soon die and fade to a bleach-tan color when dry. When infected leaf blades, they are often interspersed with healthy unaffected leaf blades giving the grass a ragged appearance (Fig. 1). In severe cases, most leaf blades may be killed and diseased grass looks scorched or yellowed in irregularly-shaped or circular patches from 5 to 50 cm in diameter. The patches may be widely scattered or, if close together, may coalesce into larger spots.

In humid weather, the fungus *Laetisaria fuciformis* grows visibly on the infected grass blades and leaf sheaths. The fungus produces thread-like strands or web-like areas of coral-pink to blood-red hyphae on the tips of brown grass blades (Fig. 2). The strands can protrude up to 2 cm upward from the blade tips and are easily seen, hence the name "red thread disease".

**Disease Cycle:** *Laetisaria fuciformis* may produce spores for dispersal, however, the primary means of dispersal is the spread of infected tissue and bits of the "red thread" (sclerotia) to healthy areas of grass. This type of spread depends upon mowing, foot traffic, and other activities which occur on the

diseased turf. Invasion by the fungus is quick, and leaves may begin to die 2 days after becoming infected. Fungal hyphae and dried pieces of the fragmented "red thread" enable the fungus to survive when conditions are not favorable for disease development (winter, mid-summer, etc.). During dry conditions, the "threads" may be viable for up to 2 years.

**Management Strategies:** Maintain adequate soil fertility. The actual fertilization rates will depend upon the types of grass(es) grown, soil texture, and the specific rates recommended in your area. Where red thread has been a problem in the past, maintain a soil pH of 6.5 to 7.0.

Avoid overwatering. Do not water the lawn in the late afternoon or evening. Provide good soil drainage. Plant trees and shrubs far enough apart so that large areas of grass do not remain shaded for long periods during the day and so that dew and other moisture on the grass will readily evaporate. Selective pruning of established trees and shrubs may also help.

Do not allow thatch levels to accumulate. Use resistant varieties of Kentucky bluegrass (Ascot, Classic, Dawn, Eclipse, Princeton, Trenton), perennial ryegrass (Lowgrow, Lynx, Navajo, Passport, Precision, Riviera II, Shining Star, Target), and fine fescue (Biljart, Bighorn, Reliant, SR 3000, Waldina).

Where disease is severe, fungicide applications may be necessary. Although Red Thread is not often a problem on lawns, if it does become troublesome, homeowners in New York State may apply a registered fungicide to manage this disease. In spring or fall, apply Bonide Fung-onil MPF Conc. (chlorothalonil), Spectracide Immunox MPF (myclobutanil), Bayer Advanced Fungus Control for Lawns RTU Granules (triadimefon), or Heritage (azoxystrobin), or apply a registered fungicide containing the active ingredient propiconazole according to label directions.

Additional products may be available for use in commercial plant production. Commercial applicators should refer to the appropriate pest management guidelines for more information.

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The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Homeowners who have Internet access can locate currently registered products at <http://pims.psur.cornell.edu/>. Several different queries are available that will produce a summary for the product(s) that the system locates. If the system fails to locate the product in question, then that product is not currently registered in New York State. The database also provides a summary of important information related to every product currently registered. Two data fields "Status" and "Expiration Date" are provided in each summary. Products with a status of "Registered - Discontinued" are currently registered but will probably be discontinued for use, sale, and distribution in New York State after the date noted in the "Expiration Date" field.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly, some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**

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