RED THREAD AND PINK PATCH

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Red thread caused by *Laetisaria fuciformis* and pink patch caused by *Limonomyces roseipellis* often occur together. Pink patch was once considered to be a form of red thread due to similarities in symptoms, disease cycle, epidemiology, host range, and appearance. Both are diseases of slow-growing turf whether the result of low fertility, lack of sunlight, drought, other diseases or plant growth regulators. The diseases occur on bentgrass, Kentucky and annual bluegrass, perennial ryegrass, and fine-leaf fescue. Symptoms of pink patch and red thread appear as roughly circular, pinkish red to tan patches, 2-4 in. in diameter. Dead leaves are mixed with healthy leaves which give the turf an overall diffuse, scorched, and ragged appearance similar to drought stress. Both pathogens are limited to the plant foliage and individual blades die from the tips down. The red thread pathogen produces pink to pale red or orange, thread-like sclerotia which branch out from infected leaves. In dry conditions, the sclerotia become brittle, are easily detached, and may be spread by equipment or fall into the thatch where they remain viable for up to two years. Under wet conditions, pink, cottony flocks of mycelium and arthroconidia may be produced. Pink patch spreads much more slowly than red thread, is less severe, and does not produce sclerotia or cottony flocks of mycelium. Individual leaves become covered with a pink, gelatinous mycelium which can survive for long periods in plant debris. Both pathogens are favored by cool, wet weather, heavy dews, fog, low fertility, and tend to occur in the spring and fall.

L. fuciformis survives unfavorable periods as sclerotia, in infected debris, or in the thatch. Arthroconidia and sclerotia are spread by water, wind, equipment, and people and require a film of moisture on leaves for germination. The pathogen is capable of growth over a wide range of temperatures. *L. roseipellis* survives as mycelium in plant debris and is also capable of growth at a wide range of temperatures. It has a slow rate of growth and generally causes greater damage to unmowed turf.

Management:

- Maintain adequate and complete (potassium, phosphorous, calcium as well as nitrogen) fertility as determined by soil tests.
- Apply water-soluble sources of nitrogen to reduce disease severity.
- Maintain soil pH between 6.0 and 6.5.
- Water deeply and infrequently.
- Avoid late afternoon, evening, and light, frequent irrigations which extend periods of leaf wetness.

- Prune trees and shrubs to improve air circulation and increase light penetration.
- Keep mower blades to sharp to minimize leaf wounding which can enhance infection.
- Collect grass clippings when the disease is active or growing slowly to reduce the number of sclerotia that are incorporated into the thatch.

Chemical recommendations:

azoxystrobin (Heritage):0.2 to 0.4 oz/1000 sq ft (REI 4 h). Apply when conditions are favorable for disease development. Do not apply more than 2 sequential applications of Heritage. Then alternate to an effective non-strobilurin fungicide.

chlorothalonil (Echo 720 F): 3.6 to 5.5 fl oz/1000 sq ft (REI 12 h). Begin applications when conditions favor disease development and repeat as long as these conditions persist. Use higher rate and shorter interval under severe disease pressure.

fenarimol (Rubigan AS): 8.0 fl oz/1000 sq ft (REI 12 h). Begin applications 1 to 2 weeks prior to the anticipated appearance of disease symptoms. Applications should be made at 30 day intervals with a maximum of 2 applications per season.

flutolanil (ProStar 70WP): 1.5 oz/1000 sq ft (REI 12 h). Systemic fungicide for the control of diseases caused by Basidiomycetes.

iprodione (26 GT 2SC): 4 fl oz/1000 sq ft (REI 12 h). Use as a preventive every 14 days as long as required.

myclobutanil (Eagle 20 EW): 1.2 fl oz/1000 sq ft (REI 24 h). Apply when conditions are favorable for disease development.

polyoxin D zinc (Endorse): 11 lb/acre in a minimum of 44 gal water/acre (REI 0 h). For best results, apply after mowing. Avoid consecutive applications.

propiconazole (Banner MAXX): 2 fl oz/1000 sq ft (REI 24 h). Apply when conditions are favorable for disease development.

pyraclostrobin (Insignia): 0.5 to 0.9 oz/1000 sq ft (REI 4 h). Apply when conditions are favorable for disease development. Do not apply more than 2 sequential applications of Insignia. Then alternate to an effective non-strobilurin fungicide.

trifloxystrobin (Compass): 0.1 to 0.25 oz/1000 sq ft (REI 12 h). Apply when conditions are favorable for disease development. Do not apply more than 2 sequential applications of Compass. Then alternate to an effective non-strobilurin fungicide.

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