

Cool-season diseases: the bad & the ugly

Sometimes the most annoying turf problem isn't your worst nightmare

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brown patch ▶

▲ **dollar spot**

On left, brown patch on tall fescue. On right, dollar spot on Kentucky bluegrass, comparing leaf lesions.

A turfgrass disease that kills turfgrass plants' crowns and roots is generally a bigger problem than a disease that merely affects the leaf blades. Keep in mind that the most frequent fungal disease is not necessarily the most severe, and the most damaging may not occur often. Here are some to watch for on the leading grasses:

Kentucky bluegrass diseases

Twenty years ago, leaf spot/melting out was the most common disease on Kentucky bluegrass. Still common, its importance has decreased with the use of improved Kentucky bluegrasses and increased use of other types of turfgrass. Also, applying higher rates of nitrogen in the fall rather than in the spring and avoiding lush spring growth in common bluegrass lessens the severity of this disease. So there is less leaf spot in the spring and fewer problems of melting out (the summer stage of this disease).

Patch diseases occur less frequently, but with more severity. Patch diseases kill grass, as opposed to leaf spot/melting out, which simply affects the cosmetic appearance of the turf. Patch disease fungi invade the roots and crowns. Recovery is poor and often slow.

Patch diseases occur in late spring or early summer under stressful weather conditions. Once the disease is present it will



gray leaf spot ◀

Tip dieback of perennial ryegrass from gray leaf spot.

continue to occur, although the severity will depend on the annual stresses on the turf.

Sodded lawns with excessive thatch, poor quality soils and poorly prepared sites are often the first to show patch diseases and the most severe damage. Older seeded bluegrass lawns with excessive thatch, poor soils and poor management are also at high risk.

Keep the lawn healthy, avoid environmental stress and encourage a deep, healthy root system. Maintain high mowing heights, managing thatch through extensive core aeration (several times a year) and monitoring soil moisture to avoid drought stress. Soluble fertilizers are not recommended since surge growth may accelerate disease development. Slow-release

fertilizers (greater than 50% slow release) are recommended; the slower the better!

Perennial ryegrass problems

Red thread can occur on all cool-season grasses but, with the increased use of perennial ryegrass in home lawns, athletic fields and commercial landscapes, the occurrence of red thread has increased. There is variable susceptibility to red thread, but many cultivars of perennial ryegrass can have severe outbreaks of this disease.

Cool to moderate temperatures, with long periods of wet leaves from heavy dew, light rain, fog and drizzle, are ideal for this fungus. Red thread is more severe under low soil fertility conditions, especially with low nitrogen, phosphorous, potassium and calcium. It is reported to occur every month of the year in many areas of the northern United States. The disease does not kill plants but may damage leaves back to the ground.

Evaluate the soil fertility levels and the fertilizer maintenance program. Promote turf growth through core aeration, proper mowing and irrigation. On new installations where the soil is of poor quality, modify the soil with organic matter and select resistant varieties. Consider preventive fungicide applications on lawns with a history of the disease and where there are expectations for high quality.

Gray leaf spot is a relatively new disease on perennial ryegrass (and other turfgrasses) and has been severe in some areas of the East Coast and mid-Atlantic states. Last year, the disease was found over much of the Midwest, to a lesser extent than the East Coast, but it is expected to increase. First reported on golf courses in the roughs and fairways, it can also be found on home lawns. This disease kills turf.

Gray leaf spot usually develops in the summer and fall. It thrives under hot, humid weather when the leaves are wet for long periods of time. The entire plant may be killed in 48 hours. The disease may be a problem in the fall on new seedlings.

Be on the lookout if:

▶ turf appears to be under drought stress, even with adequate soil moisture

▶ perennial ryegrass is brown while any patches of bluegrass, bentgrass or fescue are not affected

▶ leaf tips have dieback and a twisting or hooked appearance, like a fish hook

▶ individual leaves may have dark spots or lesions which develop into tip dieback.

Since this is a newly emerging disease, specific management strategies are not well understood, but maintain lawns to minimize summer stress with proper irrigation (allow turf to dry between waterings) and core aeration. For severely damaged or dead turf, consider a different type of turfgrass to limit the recurrence of the disease.

Tall fescue troubles

Brown patch on tall fescue can be a considerable disease problem during hot, wet and humid conditions, especially in the transition states. In northern areas, brown patch is usually only a problem on overirrigated lawns or during extremely wet summers.

The disease is not usually a turf killer north of the Mason-Dixon line, although in the South, it may result in turf thinning so that reseeded is necessary. Avoid high levels or excessive soluble nitrogen in the summer. Manage irrigation to promote the

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TURFGRASS DISEASES BY SEASON

KENTUCKY BLUEGRASS

Spring
snow mold
leaf spot
yellow patch
red thread
fairy ring

Summer
melting out
necrotic ring spot/summer patch
dollar spot
brown patch
powdery mildew
rust

Fall
leaf spot
red thread
rust
powdery mildew

PERENNIAL RYEGRASS

Spring
snow mold
red thread
leaf spot/blight
fairy ring

Summer
brown patch
dollar spot
pythium
rust
red thread
leaf spot/blight
gray leaf spot

Fall
rust
red thread
leaf spot/blight
gray leaf spot

TALL FESCUE

Spring
snow mold
leaf spot
fairy ring

Summer
brown patch

Fall
leaf spot

FINE FESCUE

Spring
red thread
leaf spots
fairy ring

Summer
red thread
dollar spot

Fall
red thread
leaf spots

*These are general time frames for disease occurrence. Depending on local weather and site conditions, disease outbreaks and the duration of activity may vary. Remember the genetic susceptibility of the grass and the environment are the predominant factors driving the occurrence of disease development.

Note: All the above turfgrasses are prone to fairy ring when there are favorable weather conditions.

TURF DISEASE GUIDE

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maximum time to dry the turf. If soils are poorly drained or areas of the lawn stay wet, improve the drainage. Monitor lawns that have automatic irrigation systems so that the system does not automatically come on every day and create an overwatered environment, ideal for the disease. More resistant new cultivars of tall fescue are being introduced.

Fine fescue failures

Red thread is a major disease problem on fine fescue. The general symptoms and weather conditions described under perennial ryegrass pertain to fine fescue. With low maintenance, these turfgrasses grow slowly. If they're damaged by red thread, recovery may be slow and patches may linger for weeks.

Leaf spot may occasionally occur on

fine fescue, most frequently in overirrigated or wet conditions. Improve drainage in low-lying areas to lessen incidence.

There are no disease-free turfgrasses. Make the best selection to match the factors at your site, maintenance programs and clients' needs.

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DISEASES OF COOL-SEASON TURFGRASSES

BROWN PATCH/RHIZOCTONIA BLIGHT (*Rhizoctonia solani*)

Susceptible Grass*

TALL FESCUE, Ryegrass, Kentucky bluegrass, Fine fescue

Temperature/Moisture (that encourages disease development) hot/wet

Management Strategies**

- 1) avoid excessive nitrogen
- 2) avoid excessive watering and poor drainage
- 3) increase air circulation; remove surrounding vegetation and increase sunlight

DOLLAR SPOT (*Sclerotinia homeocarpa*)

Susceptible Grass*

BLUEGRASS, Fine fescue, Ryegrass

Temperature/Moisture (that encourages disease development) moderate/wet leaves and dry soil

Management Strategies**

- 1) avoid nitrogen deficiency
- 2) choose resistant grass varieties
- 3) water to increase growth

GRAY LEAF SPOT (*Pyricularia grisea*)

Susceptible Grass*

PERENNIAL RYEGRASS, Tall fescue

Temperature/Moisture (that encourages disease development) warm/humid; wet foliage (often a late summer and fall disease)

Management Strategies**

- 1) avoid stress on turfgrass, a difficult disease to manage

- 2) provide adequate water, but avoid extending time foliage is wet
- 3) avoid high fertilizer in summer
- 4) reduce soil compaction
- 5) young plantings of ryegrass more sensitive than established stands

LEAF SPOT/MELTING OUT (*Drechsler & Bipolaris spp.*)

Susceptible Grass*

KENTUCKY BLUEGRASS, Fine fescue, Ryegrass, Tall fescue

Temperature/Moisture (that encourages disease development) leaf spot — cool/wet (spring/fall); melting out — hot, dry (summer)

Management Strategies**

- 1) raise cutting height
- 2) mow frequently to avoid stress
- 3) avoid excessive nitrogen
- 4) avoid light frequent watering and prolonged wet grass

NECROTIC RING SPOT (*Leptosphaeria korrae*) (previously called *Fusarium Blight*)

Susceptible Grass*

KENTUCKY BLUEGRASS, Fine fescue

Temperature/Moisture (that encourages disease development) warm/extremes in soil moisture (fluctuating from wet to dry soils)

Management Strategies**

- 1) avoid low mowing heights
- 2) reduce excessive thatch
- 3) use Kentucky bluegrass and perennial mixtures
- 4) avoid excessive watering or drought stress
- 5) use slow-release fertilizer

POWDERY MILDEW (*Erysiphe graminis*)

Susceptible Grass*

KENTUCKY BLUEGRASS, Fine fescue

Temperature/Moisture (that encourages disease development) moderate/high humidity; shade

Management Strategies**

- 1) reduce shade
- 2) increase air circulation by removing surrounding vegetation
- 3) use resistant Kentucky bluegrass varieties

PYTHIUM BLIGHT (*Pythium spp.*)

Susceptible Grass*

PERENNIAL RYEGRASS - new seedling plants of all types

Temperature/Moisture (that encourages disease development) very hot/wet

Management Strategies**

- 1) improve soil drainage
- 2) increase air circulation by removing surrounding vegetation
- 3) avoid excess watering
- 4) avoid high rates of nitrogen

RED THREAD (*Laetisaria fusiformis*)

Susceptible Grass*

PERENNIAL RYEGRASS, FINE FESCUE (reported on all cool-season grasses)

Temperature/Moisture (that encourages disease development) moderate/wet foliage

Management Strategies**

- 1) balanced fertilization program

- 2) promote growth by aeration, watering, etc.
- 3) use resistant varieties

RUST (*Puccini spp.*)

Susceptible Grass*

PERENNIAL RYEGRASS, Kentucky bluegrass

Temperature/Moisture (that encourages disease development) moderate/wet foliage; dry soil

Management Strategies**

- 1) avoid nitrogen deficiency
- 2) use resistant varieties
- 3) water if dry, promote growth

SUMMER PATCH (*Magnaporthe poae*) (previously called *Fusarium Blight*)

Susceptible Grass*

KENTUCKY BLUEGRASS, Fine fescue

Temperature/Moisture (that encourages disease development) warm/extremes in soil moisture, (fluctuating from wet to dry)

Management Strategies**

- 1) avoid low mowing thatch buildup
- 2) maintain soil pH between 6 and 7
- 3) frequent watering during dry periods to avoid heat stress
- 4) use slow-release nitrogen
- 5) use Kentucky bluegrass and perennial ryegrass mix

*Turfgrass(es) in all capital letters, highest potential for severe problems

**For fungicide recommendations check with county cooperative extension office and state Land Grant university in your area.