



Fusarium Leaf Spot and Crown and Root Rot

O & T Guide TD-10

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Hosts: Fusarium leaf spot (also known as Fusarium blight) and Fusarium crown and root rot are caused by several species of *Fusarium*. All turfgrass species are susceptible to this disease; however the disease is usually more severe on cool-season grasses.

Symptoms: Fusarium crown and root rot begins as small (2-6") roughly circular and crescent shaped patches of light green, wilted turf. As the disease progresses, the affected grass changes from light green to reddish-brown to tan and finally straw colored. Patches may develop a "frog's eye" or doughnut-shape (dead circles with live grass in the center). Diseased patches may become numerous and grow into one another resulting in large areas of blighted grass. Infected plants exhibit a black to brown "dry rot" of the roots, crowns, rhizomes, and stolons. White to pink mycelium may develop on infected grass during periods of high temperature and moisture. Fusarium leaf spot occurs more uniformly over relatively large areas. Irregularly shaped, water-soaked lesions with a purplish-brown margin occur mostly on the older leaves. Leaf spots may start near the tip of the leaves resulting in tip blight.

Conditions for Disease: These fungi survive as mycelium or thick-walled resting structures (chlamydospores) in

infected plants, plant debris (thatch) or soil. They are spread by movement of spores by equipment, people, animals, water and wind.

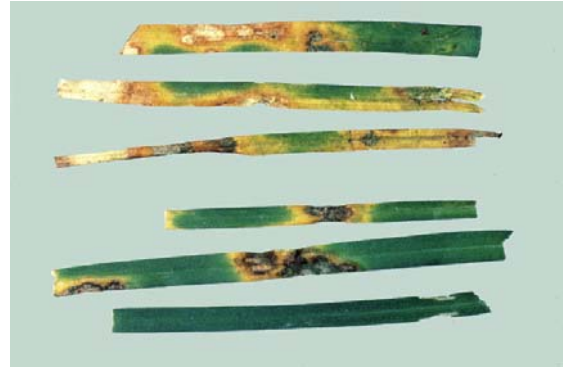
The disease occurs from late spring through summer and is favored by high temperatures (daytime temperature of 85°F - 95°F with night temperatures above 70°F) and drought stress. Humid conditions increase spore formation and may lead to the rapid development of large blighted areas. Over watering, especially following periods of drought, creates a more favorable environment for disease development. Susceptibility increases in grass with excessive nitrogen or unbalanced fertilizer applications, and thick thatch.



Circular spots caused by *Fusarium*.
Photo: A. H. McCain, University of California.



“Frog-eye” appearance caused by *Fusarium*. Photo: A. H. McCain, University of California.



Leaf lesions caused by *Fusarium*. Photo: R. W. Smiley, Oregon State University.



Fusarium crown and root rot. Photo: R. W. Smiley, Oregon State University.



Fusarium leaf spot on Kentucky bluegrass. Photo: R. W. Smiley, Oregon State University.

Management: Cultural practices which help to reduce the occurrence and severity of the disease include:

- Maintain appropriate fertility levels.
- Avoid heavy nitrogen applications.
- Follow proper irrigation practices.
- Avoid watering at night.
- Avoid light, frequent watering.
- Aerate soil to reduce thatch and improve water drainage.
- Maintain turf at the tallest height recommended for the grass species.
- For bluegrass, use tolerant cultivars or a blend of bluegrass with perennial ryegrass.
- Fungicides are most effective when used preventively or as soon as symptoms appear.