



DISEASES

Fairy ring in turfgrass

no. 2.908*By Laura Pickett Pottorff¹*

Quick Facts...

Fairy ring is caused by a number of mushroom fungi that live in the soil and thatch layer.

Early symptoms of infection appear as circular or partial ring-bands of stimulated grass that vary from less than 1 foot to many feet in diameter.

To control an established fairy ring, aerate the entire diseased area every 4 inches plus an additional 2 feet.

Areas of dark green grass often can be masked with light applications of nitrogen fertilizers that stimulate adjacent turf growth.

Fairy ring is a common disease of Kentucky bluegrass and most all other turfgrass species. The disease is caused by a large number of mushroom fungi that live in the soil and thatch layer. Damage from fairy rings often is unsightly and sometimes a serious problem even on well-maintained lawns. Fairy rings will develop over a wide range of fertility levels, soil and climatic conditions. The disease tends to be worse on lawns maintained at low soil moisture and fertility levels.



Symptoms

Early symptoms of infection appear as circular or partial ring-bands of stimulated (lush green) grass that vary from less than one foot to many feet in diameter. Most rings range from 3 to 12 feet in diameter. Eventually the deep green colored grass in the ring-band dies. This pattern of stimulated and dead grass (Figure 1) may be visible throughout the year and may slowly increase in size during following seasons. Mushrooms or puffballs of the causal fungus may appear in the rings following periods of wet weather.

Disease Cycle

How fairy rings begin is still unknown. Fungi that cause fairy rings are common inhabitants of forest areas. It is thought they begin to grow on a source of organic matter such as an old stump, dead root, or wood left over from building construction that was buried during the landscaping process. The fungi grow radially outward in the soil or thatch layer of the turfgrass. Fungi that cause fairy ring live by decomposing organic litter that is abundant in the turfgrass thatch. The lushness of the stimulated zone occurs because the fungi release nitrogen as they decompose the organic matter in the thatch and soil.

The zone of inhibition or dead zone contains grass plants that may be killed or dormant, mostly as a result of insufficient soil moisture. This ring of drought-stressed plants occurs because of an extensive network of mycelium or dense mold produced by the fungus. This mycelial layer prevents water from infiltrating into the soil and reaching turf roots.

Control

1. The disease can be prevented by not burying organic debris, such as stumps and waste lumber, before establishing a lawn. Maintain optimum growing conditions for turfgrass with proper watering, fertilization and thatch control.

2. To control an established fairy ring, aerate the entire diseased area every 4 inches, plus an additional 2 feet beyond its visible limits. Disinfect core cultivators after use to prevent accidental spread of the fungus into healthy grass. Following aeration, soak the infected area with water. Add a wetting agent to help water penetration. Hand water these areas to prevent overwatering of adjacent healthy turfgrass.

3. Areas of dark green grass often can be masked with light applications of nitrogen fertilizers that stimulate adjacent turf growth.

4. When the disease is severe, it may be necessary to renovate the affected turf. Remove and destroy sod (do not compost) or kill with a non-selective herbicide such as glyphosate (Round-Up). Thoroughly mix the soil from the ring with non-ring soil. You may use a fumigant, such as metam-sodium (Vapam) (restricted use) to eliminate fungal mycelium in the soil. Fungicides drenched into the soil are not recommended, their success has been very limited.