



# DISEASES

## Fairy Ring in Turfgrass

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### 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 other turfgrass species. It is caused by many mushroom fungi that live in the soil and thatch layer. Damage often is unsightly and sometimes a serious problem even on well-maintained lawns. Fairy rings develop over a wide range of fertility levels and soil and climatic conditions. The disease tends to be worse on lawns maintained at low soil moisture and fertility levels.



Figure 1: Fairy ring.

### Symptoms

Early symptoms of infection appear as circular or partial ring-bands of lush green grass that vary from less than 1 foot to many feet in diameter. Most rings range from 3 to 12 feet. Eventually the deep green 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 fungus may appear in the rings following periods of wet weather.

### Disease Cycle

How fairy rings begin is unknown. Fungi that cause fairy rings commonly live in forest areas. It is thought that they begin to grow on a source of organic matter such as an old stump, dead roots, 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 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.

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## Control

To prevent the disease, don't bury 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.

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 penetrate. Hand water these areas to prevent overwatering of adjacent healthy turfgrass.

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

When the disease is severe, it may be necessary to renovate the affected turf. Remove and destroy sod (do not compost) or kill it with a nonselective herbicide such as glyphosate (Roundup). Thoroughly mix the soil from the ring with nonring 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.

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