Several mushroom- or puffball-producing soil fungi are known to cause fairy ring on both cool and warm season turfgrasses. Although fairy ring damage is rarely serious, the disease is often unsightly, especially on a well-managed lawn, green, or fairway. The typical ring patterns will develop over a wide range of soil types, fertility levels, and climatic conditions. Poorly maintained, drought-stressed turf on light, sandy soils often suffers most. Heavily thatched lawns are particularly susceptible to injury by fairy ring.

**Symptoms**

Dark green circles, arcs, or rings of thick, fast-growing grass develop anytime from green-up in the spring until the first hard frost in the fall. The bands of lush grass are usually several inches in diameter.

A zone of dead grass may appear inside the outer ring of lush grass. The zone of dead or declining turf is often wider on turf suffering from drought, low fertility, or both. At times, a second lush band of grass may develop inside the ring of dead grass. The ring pattern of lush and dead grass may be seen almost year-round, especially on cool season turfgrasses.

The size of the rings often increases slowly during the summer. Rings on lawns, greens, and fairways usually range from 3 to 5 feet in diameter although rings up to 20 feet in diameter are sometimes seen. After heavy rains, mushrooms or puffballs often develop within the zone of lush grass, primarily in late summer to early fall. Sometimes, the mushrooms or puffballs form in areas where there is little evidence of any ring pattern.

Contact with a curb, sidewalk, planting bed, or other soil barrier will disrupt the ring pattern. When two or more rings meet, they may continue to increase in size or disappear. Elaborate serpentine patterns often appear on greens when several fairy rings grow together. Rings may suddenly disappear and reappear years later, often larger in size.

Fairy rings may be categorized according to symptoms. The most damaging, which has zones of both stimulated and dead grass with mushrooms or puffballs, is the Type 1 fairy ring (Figure 1). A Type 2 fairy ring has mushrooms or puffballs, but only the single zone of stimulated turf (Figure 2). Circles of mushrooms or puffballs with no associated areas of fast-growing or dead grass are characteristic of a Type 3 fairy ring (Figure 3).

**Cause**

Approximately 50 species of fungi are known to form fairy rings in turf, with Marasmius oreades, Agricus campestris, Lycoperdon spp., and Scleroderms spp. being the most common. These fungi decompose organic debris in the soil and thatch. Nitrogen that is released during this decomposition is responsible for rapid turf growth within the stimulated zone.
The white, waxy mycelia of some fairy ring fungi may penetrate the soil to a depth of 6 inches or more and impede the movement of water through the soil profile. Plant death may result from a lack of water even though adequate moisture may be available for growth of the remaining turf. Excessive levels of nitrogen (ammonia form), other toxic chemicals, or direct invasion of the turfgrass roots by fairy ring fungi (that is, *M. oreades*) may also kill turf.

Control

Fairy ring development can often be traced to buried organic debris. Undecomposed tree roots, stumps, wood scraps from construction projects, and other organic debris are commonly colonized by fairy ring fungi and should be removed before establishing a new lawn or green. Use clean, ring-free sod for a new or renovated lawn.

Proper watering and management practices that minimize thatch buildup may prove helpful in preventing ring development. See Extension publication ANR-239, “Lawn Maintenance in Alabama,” for a detailed discussion on lawn management.

ProStar 70WP, applied at 2.2 to 4.5 ounces per 1,000 square feet, will suppress the formation of fairy ring in turf. Apply high rate to suppress active rings. Use of these fungicides is recommended on golf course greens, tees, and other highly visible and valued turf. On home lawns, treat only the ring and surrounding turf. When a ring pattern first appears, apply ProStar 70WP in 10 to 50 gallons of water per 1,000 square feet or Heritage 50W in 4 gallons of water per 1,000 square feet. Since disease suppression may be temporary, a second application may be made no earlier than 21 to 30 days after the first. For consistent results, core aerify symptomatic turf prior to applying ProStar 70WP and irrigate before and after each application. Always include a non-ionic surfactant in all fungicide tank-mixes.

Heritage 50W applied at a rate of 0.4 ounces per 1,000 square feet will suppress fairy ring. Apply in 4 gallons of water per 1,000 square feet of turf. Reapply at 28-day intervals, as needed.

In most situations, especially on home lawns, symptom suppression is the most practical method of fairy ring control. Zones of lush turf on low-maintenance lawns associated with Type 1 and 2 rings can be masked by fertilizing according to soil test recommendations. See ANR-239, “Lawn Maintenance in Alabama,” for further information on fertility requirements of commonly grown turfgrasses.

The appearance of zones of wilted or dead turf may be prevented by increasing soil moisture levels in the ring area. Using a tree spike or lance, water turf thoroughly to a depth of 12 to 24 inches at weekly intervals over a period of four to six weeks. Insert spikes at 1-foot intervals around the entire ring edge.

Destroying the existing turf is generally required only to control Type 1 fairy rings. Discard or kill a strip of sod 1 to 2 feet wide on either side of the zone of lush turf with a non-selective herbicide. Cultivate the area repeatedly to thoroughly mix the ring and non-ring soil. Eliminate dry spots by soaking the cultivated area with water. You can fumigate the cultivated soil to kill the fungus. See Extension publication ANR-30, “Nematode Control in the Home Garden,” for further information on soil fumigation.

Correct any soil fertility deficiencies according to soil test recommendations before turf re-establishment. Finally, reseed or install clean, ring-free sod. Follow recommended management and irrigation practices to prevent fairy ring reoccurrence.

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Use pesticides only according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended only if they are registered with the Environmental Protection Agency and the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply any pesticide, check with your county Extension agent for the latest information.

Trade names are used only to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

For more information, call your county Extension office. Look in your telephone directory under your county’s name to find the number.

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