



**HYDRO-SEEDING  
HYDRO-MULCHING**

610 W. Liberty St.  
Wauconda, IL 60084

Bus (708) 526-4574  
Fax (708) 526-4580

## ACCURATE TANK TESTING

Warrenville, Illinois

- Underground Tank Testing Without Filling Your Tank
- All Tank Upgrades

Certified • Registered • Insured

Underground tank testing to assure you're not leaking  
for: Insurance, Real Estate, or Regulatory needs.

**Steve Berning**  
**(708) 393-1998**  
**(800) 773-TANK**



# BOJO

Turf Supply Co., Inc.

- Naiad + Aqua Gro
- Chemicals
- Fertilizers
- Terra Green
- Safety Equipment
- Flexogen Hose
- Panasea Plus
- Sand Aid
- Thatch X
- Pinhigh Sharpening Compound
- Tingley Boots & Raingear
- Terra Green - OilDri

**Excellent Service at Reasonable Prices**

24356 HARVEST HILLS RD., • FRANKFORT, IL 60423  
800-732-9401 815-469-6841  
Fax: 815-469-8248



800 West Irving Park Road  
Roselle, Illinois 60193

(708) 529-2502

**CLAUSS  
BROTHERS, Inc.**  
GOLF COURSE  
CONSTRUCTION AND RENOVATION  
LARGE TREE MOVING

## Fairy Rings and Their Control

by Malcom C. Shurtleff  
Emeritus Professor of Plant Pathology  
and Extension Plant Pathologist  
Department of Plant Pathology  
University of Illinois at Urbana-Champaign

Fairy rings can appear in any turf on a golf course. They are caused by any one of about 50 thatch- and soil-inhabiting fungi (mushrooms [toadstools] and puffballs). During the spring and early summer look for circles, arcs, or ribbons of darker green, faster-growing grass which may be 4 to 8 inches wide. A concentric ring of thin, dormant, or dead grass may sometimes develop both inside and outside this circle. Occasionally, a second zone of stimulated grass occurs inside the zone of dead grass. During dry weather, especially in late summer and autumn, the outer ring of lush grass may be missing with the dead ring outside the inner or between the inner and outer dark green areas. Fairy rings vary from a few inches to 50 feet or more in diameter, but most are 2 to 15 feet across. In mild weather, after rains or heavy irrigation, large numbers of mushrooms or puffballs (the fruiting bodies of the fairy ring fungi) may suddenly pop up in the outer circle of lush grass.

Commonly, several distinct rings or arcs develop in the same general turf area. Where the rings meet, fungus activity ceases, and the rings take on a scalloped effect.

**Fairy rings are usually first seen as a cluster of mushrooms or as a tuft of stimulated turf. Some rings disappear unexpectedly for a year or more and then reappear, usually a foot or more larger in diameter.**

Fairy rings are usually first seen as a cluster of mushrooms or as a tuft of stimulated turf. Some rings disappear unexpectedly for a year or more and then reappear, usually a foot or more larger in diameter.

Nutrients for these fungi come from a breakdown of organic matter. Infection often begins where large roots, wood or other organic matter is buried in the soil. Growth usually starts with a germinating fungal spore or with pieces of mycelium at a central point and continues radially in all directions. Each year the rings may enlarge from 5 inches to 2 feet or more. The fungus grows throughout the soil, sometimes to a depth of 8 inches or more. If you dig deeply into the outer dark green ring area with a trowel or spade, you will find a dense, white, threadlike network of mycelium (mushroom spawn) that has a strong musty odor.

The lush, dark green grass of a fairy ring is due to the increased amount of nitrogen made available to the grass roots by the fungus as it breaks down organic matter in the thatch and soil. The ring of brown, dormant or dead grass is caused by the dense, subsurface layer of mushroom spawn that impedes water movement into the soil, depletes nutrients essential for the growth of grass, and may produce toxic levels of ammonia or hydrogen cyanide. The grass in this area can become so weakened that it dies from environmental stresses. The roots are sometimes killed by the fungus or other disease-causing organisms. Invasion by weeds soon follows. As the fungus grows radially outward, the older spawn in the interior of the ring dies, releasing nitrogen and other nutrients used by the turf plants, initiating the possible formation of an inner green ring of stimulated grass.

(continued on page 6)

(Fairy Rings continued)

Fairy rings are usually most severe in light-textured, low-fertility soils that are deficient in moisture. The rings are more common and damaging on lightly watered and fertilized fairways than on well-irrigated and fertilized greens and tees. Turf with a thick thatch and growing in a sandy soil is very vulnerable to damage.

Controlling fairy rings is not easy because the soil becomes almost impervious to water. Before seeding, sodding or sprigging a new turf area, remove the bases of tree stumps and large roots, and other large pieces of organic matter from which these fungi obtain nutrients. Keep the new turf area well fertilized and watered. It is best to moisten the soil to a depth of 6 inches or more. Shallow watering is believed to encourage the germination of fairy ring fungi. In established turf areas, fairy rings can be effectively controlled but the methods are laborious and time-consuming. The best ways are through suppression and antagonism.

**A. Suppression.** To suppress ring formation, water the turf thoroughly and fertilize well to enhance the growth of grass within and around rings, to a level close to that of the lush ring of grass.

1. The symptoms are easily 'disguised' by pumping large quantities of water 10 to 24 inches deep into the soil, at about 1-foot intervals, for a distance of 18 to 24 inches on either side of the outer stimulated zone of dark green grass. Maintain the soil in a near water-soaked condition for 4 to 6 weeks by watering every 2 to 3 days using a tree-feeding lance or root-feeder attachment on a hose. Repeat the treatment several months to a year or more later when the rings begin to wilt.
2. Since there are fewer rings and they are much less conspicuous on well watered and fertilized turf, apply nitrogen fertilizer several times during the growing season based on a soil test and the cultivar or blend of grass being grown. Avoid excessive applications of nitrogen and organic matter as they tend to stimulate the development of fairy rings and encourage other turf diseases. Core cultivation and the use of a wetting agent (surfactant) helps to move water more deeply into infested soil.

**B. Antagonism.** This control method is most effective when a turf area is heavily infested with a number of fairy rings. The biology of these fungi ensures that two or more strains will eliminate each other when occupying the same site.

1. Strip the sod or kill the infested area with glyphosate (Roundup, Kleenup) and then strip the sod. Thoroughly rototill the entire area soil covered by the fairy rings. Using a rake, collect the white mycelial spawn from all the rings and blend it thoroughly. Spread the blended spawn as evenly as possible over the exposed soil, then thoroughly mix the mycelium-infested soil, by multiple cultivations using a rotary cultivator, to a depth of 6 to 8 inches. Rake or roll the soil level and fertilize.
2. Wet the soil to a depth of 8 inches or more with or without adding a wetting agent to increase water infiltration into the denser spawn layers. Sod or reseed the area and keep it well watered and fertilized.

# MILLCREEK TOP DRESSERS

**An Easy Way to Dispose  
of Grass Clippings...  
And Save Money**



In one easy step, eliminate costly dumping fees and improve the rough by spreading grass clippings still enriched with precious fertilizer. Millcreek's Top Dressers are equipped with an adjustable undershot poly brush designed to evenly distribute top dressing from three to ten feet wide.

The spreading uses of these Top Dressers are endless:

- Fertilizer
- Sand
- Top Dressing
- Grass Clippings
- Seed
- Compost

Models are available with PTO or Engine Drive.

For More Information, please contact:  
**Avery Harris**  
**LEWIS EQUIPMENT**  
**(708) 537-6110**

55 East Palatine Road  
Prospect Heights, IL 60070  
FAX (708) 537-5736

Distributor of:  
**MILLCREEK**  
TURF PRODUCTS