

PLANT DISEASE CONTROL NOTES

EXTENSION DIVISION • VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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Lawn Diseases

Control Series 57

FAIRY RINGS

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Fairy rings may be produced by the growth of any one of over 50 species of mushrooms, toadstools, and puffballs. All lawngrasses are subject to these fungus growth patterns.

SYMPTOMS. - Fairy rings appear as more or less continuous circles of grass that are darker green and faster growing than the adjacent plants. These bands may range from 4 to 12 inches wide, with the diameter of the circles varying from 3 to 200

feet. Frequently, several distinct rings will occur in the same area (see photograph). Where they converge on each other, fungus activity ceases at the points of contact, and, as the result, the circular shape of the original rings may be replaced by a scalloped effect. In some instances, the center of the ring may contain weakened or dead grass or the ring may be double with an outer and inner zone of stimulated grass surrounding a band of poorly growing grass (see diagram).

Fruiting bodies of the causal fungi (mushrooms or puffballs) often appear in the ring in late summer during periods of high soil moisture.

DISEASE CYCLE.- The fungi obtain their food from soil organic matter. Growth begins when the organism in the form of fungal threads or bits of fruiting bodies, or less often as spores, is introduced into soil of a lawn area. As the fungus grows through the soil, the first visible evidence of a new fairy ring is a cluster of the fungus fruiting bodies or a tuft of stimulated dark green grass. Then, the fungal threads progress outward from the point of origin and formation of the circular ring-like pattern becomes apparent.

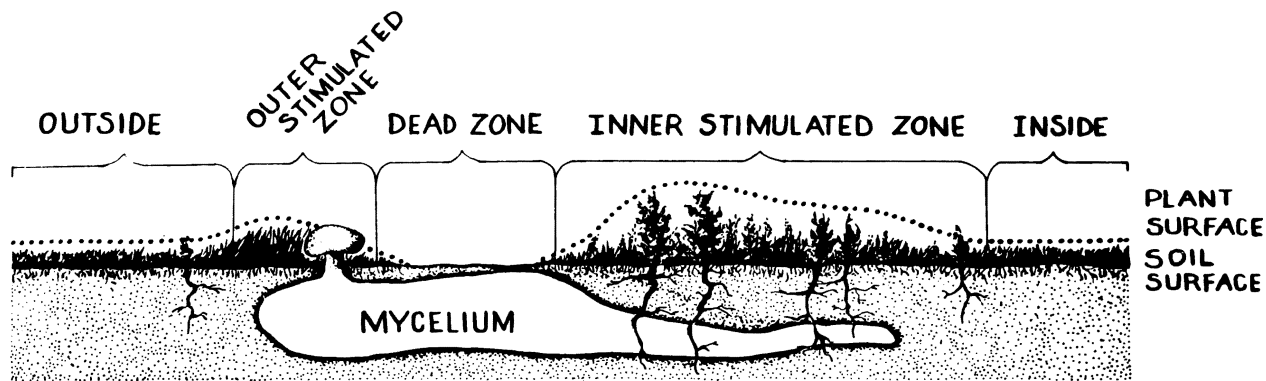
Rate of outward movement varies from 3 inches to 2 feet per year. Although some fairy rings are over 200 feet in diameter, most are from 3 to 12 feet across. In the British Isles, the largest rings have been estimated to be over 400 years old.



Fairy ring in a lawn

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Cross section of a fairy ring showing zones of grass stimulation and retardation and distribution fungus in the soil

CONTROL.- The control of fairy rings may be accomplished by one of three methods:

(i) Prolonged Water Soaking of Soil - This method consists of water soaking the soil for a distance of 18 inches on either side of the stimulated zone to a depth of 1 foot, and maintaining this condition for a period of 4-6 weeks. A hydrogun or a tree root feeder are ideal for establishing the water soaked condition. If these are not available, and surface irrigation is to be employed, then it is important that the area to be treated be thoroughly perforated with a hand aerifier or garden fork to a depth of 4-6 inches prior to the first application of water. When the soil has been adequately saturated with water, the heel prints of mens' shoes will be easily made in the sod when it is walked on. Throughout the entire treatment period, complete and continuing soaking of the soil is important; therefore, water should be applied to the affected area every second day.

(ii) Replacement of Infested Soil - A trench 1 foot deep and extending 18 inches on either side of the stimulated zone should be dug and the soil discarded. In removing the infested soil, it is very important not to spill it on the adjacent, healthy turfgrass. The trench should then be filled with fresh soil from a source free of fairy rings, and the area sodded or reseeded.

(iii) Fumigation with Methyl Bromide - This technique for fairy ring control requires a maximum of skill and precaution to perform properly. It cannot be overemphasized that, since methyl bromide in its final form is a poisonous gas, it should be applied only by a mature, skilled person, closely following the manufacturer's directions. When the material is being used, extreme caution should be exercised to keep all children and pets away from the area.

Kits for methyl bromide fumigation, including gas-proof plastic sheeting, are commercially available. For fairy ring control, these should be used as follows:

1. Treatment should not be made until the soil is 60⁰F or warmer.
2. Mark off an area 18 inches from the outer and inner edges of the stimulated zone.

3. Immediately before treating, mow the grass short in the marked-off area and aerify or punch holes in the sod 2 inches apart and 2 to 4 inches deep, with a spading fork.
4. Place evaporating pans at regular intervals in the area to be treated. These should be arranged in such a way that they may be reached easily after the covering plastic sheeting is in place.
5. Cover the marked-off area with the plastic sheeting. The sheeting should be supported above the soil by stakes, sacks filled with straw, polyethylene pillows.
6. The edges of the plastic sheeting should be placed in shallow trenches, covered with soil, and this, in turn, wetted to aid further in the sealing process.
7. Release the methyl bromide at 2 lb. per 100 sq. ft. through tubes into the evaporating pans under the plastic sheeting. The odorized type of methyl bromide, containing 2 percent chloropicrin, is to be preferred because of the safety factor.
8. Leave the plastic sheeting on for 36 to 48 hours. After this, remove the covering and allow the treated area to aerate 7-14 days before reseeding or resodding.

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KEYS TO PROPER USE OF PESTICIDES

1. Read the label on each pesticide container before each use. Follow instructions to the letter; heed all cautions and warnings, and note precautions about residues.
2. Keep pesticides in the containers in which you bought them. Put them where children or animals cannot get to them, preferably under lock and away from food, feed, seed, or other material that may become harmful if contaminated.
3. Dispose of empty containers in the manner specified on the label.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES.