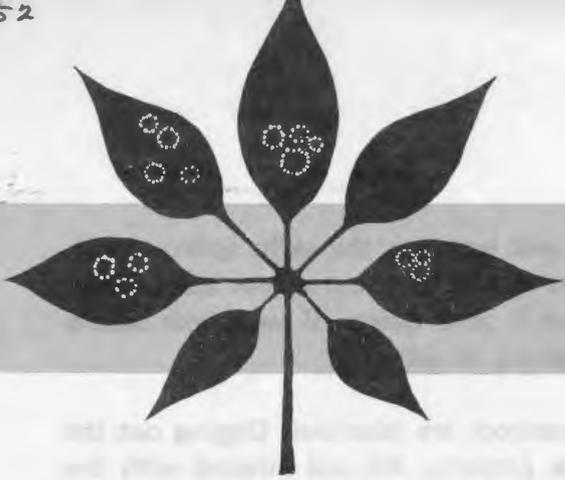


PLANT DISEASES



FAIRY RING AND OTHER MUSHROOMS IN LAWNS

Many kinds of mushrooms grow in lawns, especially in the mild, wet months of fall and spring. They may appear in clumps or singly, but when they grow in circular patterns they are called "fairy rings." In the Puget Sound region, the most common fairy ring is *Marasmius oreades*, a tan toadstool 2 to 3 inches high.

Mushrooms grow from fungus mycelia in the soil. This underground part of the fungus grows in the soil most of the year, forming a white thread-like network which can grow as deep as 8 inches or more. The toadstools develop during prolonged mild, wet weather. They generally disappear as the weather becomes drier or colder.

The fairy ring fungus starts its growth in a particular spot and then spreads outward, at rates ranging from several inches to a few feet a year. The grass along the edge of the ring is generally dark green and grows rapidly. Just inside the ring, the grass is dead. The fungus uses nutrients needed by the grass; hence the grass is weakened and may die. In addition, the dense mass of fungus threads keeps water from penetrating to the grass roots. As the fungus continues its growth, its older portions die, and weeds and other grass grow in the center.

Fairy ring and other mushrooms are difficult to control. They can usually be suppressed by proper watering and fertilizing. Excessive application of nitrogen or organic fertilizers should be avoided. Consult Extension Bulletin 482, *Home Lawns*, for fertilizer rates.

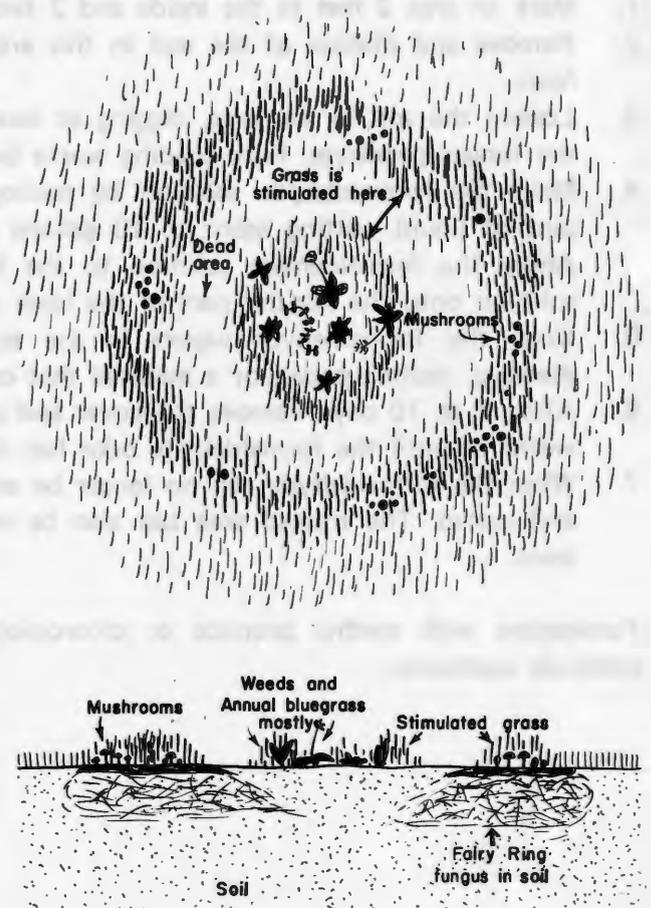


Fig. 1—Diagram of a fairy ring as seen from above and as seen in profile.

Another control measure is to drench the area with detergent and water in the early spring. Punch holes 4 to 6 inches deep throughout the affected area. The holes should be about a foot apart. After this is done, drench the area daily for one month, using about 1 to 2 quarts of water per square foot. Add 1 to 2 tablespoonfuls of liquid detergent to each 3 gallons of water.

It is also possible to eliminate the fungus completely, but the methods are laborious. Digging out the rings or other areas affected by mushrooms is effective if done properly. All soil infested with the white fungus threads must be removed. This may require digging 12 inches deep or more. Soil should also be removed to a point 2 feet beyond the outer edge of the diseased turf. Extreme care must be taken not to spill any of the infested soil on healthy grass. All infested soil should be removed and discarded in an area where turf is not going to be planted. Refill the dug-out area with clean topsoil and reseed.

Treating the soil in the rings with formaldehyde may be done as an alternative and is sometimes effective. The procedure is as follows:

1. Mark an area 2 feet to the inside and 2 feet to the outside of the green ring of grass.
2. Remove and dispose of the sod in this area. *Be careful not to spill any sod or soil on healthy lawn.*
3. Loosen the soil in the area, digging at least 8 inches deep, or as deep as the white threads of the fungus penetrate. Fork spading works best.
4. Make the formaldehyde solution by mixing 6 pints of commercial (40%) formaldehyde and ½ pint of liquid wetting agent to 10 gallons of water. This amount is enough for 90 square feet. Apply the formaldehyde solution to the loosened soil with a sprinkling can. Do not drip the solution onto the healthy part of the lawn since it will kill the grass.
5. Keep the formaldehyde vapors in the soil by covering the treated area with polyethylene sheeting, roofing paper, or a material that can be kept wet, such as canvas or burlap bags.
6. After 7 to 10 days, remove the cover and stir the soil. Leave the soil exposed to open air for 2 weeks or until the formaldehyde odor has disappeared.
7. When the formaldehyde can no longer be smelled in the treated soil, add clean topsoil as needed and reseed. The treated area can also be resodded, using healthy turf from another part of the lawn.

Fumigation with methyl bromide or chloropicrin is also effective but should be done only by a pesticide applicator.

Arlen D. Davison, Extension Plant Pathologist; Charles J. Gould, Plant Pathologist; Roy L. Goss, Extension Agronomist; and Roy M. Davidson, Extension Program Assistant, Western Washington Research and Extension Center, Puyallup, Washington.