

SLIME MOLDS IN TURFGRASSES

Slime molds cause concern among many turfgrass managers when they suddenly appear after heavy rains or watering in warm weather. Numerous species may be involved, including the common *Physarum cinereum*, and occasionally *Mucilago spongiosa* and *Didymium crustaceum*. Other species of *Fuligo*, *Mucilago*, *Physarum*, and *Stemonitis* have also been reported on turfgrass.



Figure 1. Plasmodium of *Physarum cinereum* forming immature sporangia. (Noel Jackson).

Slime molds are primitive organisms that lack cell walls and flow or move like amoebae over low lying objects and vegetation, such as turfgrasses, strawberries, bedded flowers, ground covers, alfalfa and clovers, plantains, dandelions, mulches and growing media, bases of trees, and even sidewalks and driveways. These organisms are not parasitic but feed on decaying organic matter, fungi, and bacteria in the straw and soil. Generally, slime molds do little damage to living plants, but may cause some yellowing by shading the affected leaves. Moist, warm weather, and high soil moisture favor the fruiting of slime molds on turfgrasses.

Symptoms

The slimy amoebalike stage appears as watery white, gray, cream to light yellow, red, violet, blue, green, or greasy purple-brown masses in round to irregular patches from 1 inch to 2 feet in diameter. This stage is made up of a naked mass of protoplasm called a plasmodium, which simply "engulfs" its food. The plasmodium soon "heaps up," and the crusty (usually gray or yellow) fruiting bodies envelop individual leaves with numerous small, purplish, blue gray, gray, black, dirty yellow, or white powdery structures called sporangia. Slime molds commonly reappear in the same areas each year.

LIFE CYCLE

Slime molds survive unfavorable conditions as microscopic spores in the soil and turfgrass thatch. The spores are spread primarily by air currents, water, shoes, mowers, and other turf equipment. During or after warm, wet weather or deep watering from late spring to autumn, the spores absorb water and crack open, and a motile swarm spore emerges from each. The amoebalike swarm spores feed on fungi, bacteria, other microorganisms, and decaying organic matter in the straw mulch while they undergo various changes and numerous fissions. Finally, they unite in pairs to form zygotes and become a

For further information concerning turfgrass diseases, consult an Extension Specialist, Department of Crop Sciences, University of Illinois, Urbana.



Figure 2. Slime mold (*Physarum cinereum*) on *Alta fescue*.

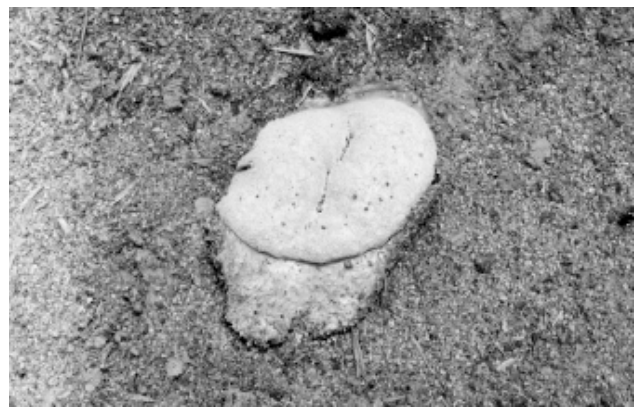


Figure 3. Slime mold growing on sundial near blueberries.

shapeless, slimy plasmodium that increases in size. The plasmodium works its way to the soil surface and creeps over vegetation in round to irregular patches. Here the crustlike fruiting or reproductive state is formed, which is the only stage that most of us ever see. The round, pinhead-sized fruiting structures (sporangia) are variously colored and range from white, gray to creamy white, purplish brown, bluish gray, tan to orange, brown, or black. They are filled with dark masses of powdery spores that are easily rubbed off the leaf or stem.

Slime molds are nonparasitic. They are much more unsightly than harmful and merely use grass leaves and stems as a means of support for their reproductive structures. Slight damage may occur when leaves are smothered or shaded for several days to a week. The weakened and somewhat yellow grass leaves are more susceptible to killing by secondary fungi and bacteria. An abundance of straw mulch favors slime molds by providing a ready source of organic matter and high populations of microorganisms.

Control

No control measures are usually considered necessary. If the molds are abundant, the unsightly spore masses may be broken by vigorously raking, brushing, poling, or hosing down with a stream of water. Washing is suggested only after the onset of dry weather. Mowing the grass usually removes the spore masses. Although many fungicides might be beneficial they are not recommended.