



SELENOPHOMA LEAF SPOT OR SPECKLE OF FORAGE GRASSES

Selenophoma leaf spot, speckle, blotch, or eye spot is caused by the fungi *Selenophoma bromigena* and *S. donacis*. The disease is common and is destructive in Illinois on smooth brome grass and other *Bromus* species. Many grasses are susceptible, including timothy, fescues, orchardgrass, bluegrasses, reed canarygrass, wild ryegrasses, switch grass, common reed, tall oatgrass, needlegrasses, prairie Junegrass, squirreltailgrass, drop-seed grasses, sandreed, and California oatgrass. Selenophoma is not important on oats, rye, wheat, and barley.

The disease is most damaging when the weather is cool (60° to 70°F, or 16° to 21°C) and moist during the spring and autumn. Hot, dry weather checks the disease. Infected leaves turn yellow, die, and fall off. Severely infected plants may be stunted or killed prematurely. Seed set may be reduced greatly. In orchardgrass, significant reductions in crude protein and carbohydrate can occur when the severity of the disease is only moderate.

A number of distinct groups, strains, or races of the *Selenophoma* fungi are known. They differ in their ability to infect the various grasses and cereal grains.

SYMPTOMS

Small flecks or speckles that are brown to purple form on the leaves, leaf sheaths, and stems (culms) in the early spring. If the weather is cool and damp, the spots may enlarge later and merge to form lesions that are round to lens-shaped or irregular and are gray to straw-colored with narrow borders that are brown, red, or purple (Figure 1). Infection often spreads from the leaves to the culms and seed heads. Small fungus fruiting bodies (pycnidia) that are golden-brown to black develop in light-colored centers of the older lesions (Figure 2). The mature pycnidia commonly drop out, leaving small holes in the lesions.



Figure 1. *Selenophoma* leaf spots or "speckles" on smooth brome grass (courtesy University of Wisconsin).

DISEASE CYCLE

Air currents and splashing rains carry the pycnidia, with their enclosed spore masses, to other plants. The spores inside the fruiting bodies can remain alive for at least 18 months and probably overwinter there.

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The spores, germinating in free water on the leaves and culms, produce infection in cool, damp weather during the spring or early summer and again in the fall. The *Selenophoma* fungi are seedborne.

CONTROL

1. Sow only disease-free seed of improved, well-adapted grass varieties, as recommended by University of Illinois agronomists and the area Extension adviser. Resistant varieties of smooth brome grass and orchardgrass have been developed; however, the adaptability of these resistant cultivars to Illinois is not yet known. Plant certified seed whenever available.
2. Treat the seed, where feasible, with a thiram- or captan-containing seed disinfectant. For details, see [Report on Plant Diseases](#) No. 1001, "Seed Treatments for Field Crops." Seed treatment helps prevent the introduction of *Selenophoma* fungi, carried with the seed, to new fields.
3. If warranted, employ a careful, controlled burning of dead grass in the early spring if pastures are affected severely. This ancient practice destroys organic matter, but kills leaf-blighting fungi and bacteria in the overwintering leaves, stems, and other crop refuse. Check local EPA regulations about open burning.
4. Rotate with nongrass crops where practical. Rotation helps prevent buildups of the disease.
5. Keep down weed grasses by cultural or chemical means.
6. Avoid the following:
 - a. Excessive rates of fertilizers high in quickly available nitrogen.
 - b. Pure, dense stands of a single grass variety. Where practical, seed a mixture of forages.
 - c. Close grazing and clipping. Follow recommended mowing and grazing practices.
 - d. Leaving a heavy mat of hay on the grass during cool, damp weather.
7. Maintain adequate soil fertility, especially of potassium and phosphorus, based on a soil test.
8. Cut early and remove from the field any hay crop that becomes heavily infected.
9. Plow-under cleanly the cover crops and plant debris.



Figure 2. Extreme closeup of *Selenophoma* leaf spot on smooth brome grass. Note dark spore-bearing structures (*Selenophoma pycnidia*) within the lesions (courtesy University of Wisconsin).

In the future, resistant varieties of smooth brome grass and orchardgrass should become available.