



## HELMINTHOSPORIUM LEAF SPOTS AND BLOTCHES OF FORAGE GRASSES

All forage grasses grown in Illinois are susceptible to one or more leaf spots and blotches, caused by species of the fungus *Helminthosporium* (*Pyrenophora*, *Cochliobolus*, *Leptosphaeria*). Conspicuous losses may occur in lush, dense stands during wet weather. Leaves killed by the disease become weathered, low in food value, and less palatable to livestock than normal leaves. The dead leaves reduce the quantity and quality of both hay and pasture. Weakened plants are also less likely to withstand drought and severe winters.

Infection may occur at almost any time during the growing season when moisture remains on the leaves and leaf sheaths for several hours. Infection usually starts on the older, lower leaves and progresses upward to the younger leaves until checked by hot, dry weather.

Several widely distributed *Helminthosporium* species (e.g., *H. sativum*, *H. vagans*, and *H. victoriae*) also cause seed decay and seedling blight, as well as root, crown, and stolon rots of grasses and cereal grains. (See [Report on Plant Diseases](#) No. 113, "Root and Crown Rots of Small Grains"; No. 115, "Spot Blotch, Net Blotch, and Stripe Disease of Barley"; and No. 405, "Helminthosporium Leaf, Crown, and Root Diseases of Lawn Grasses.")

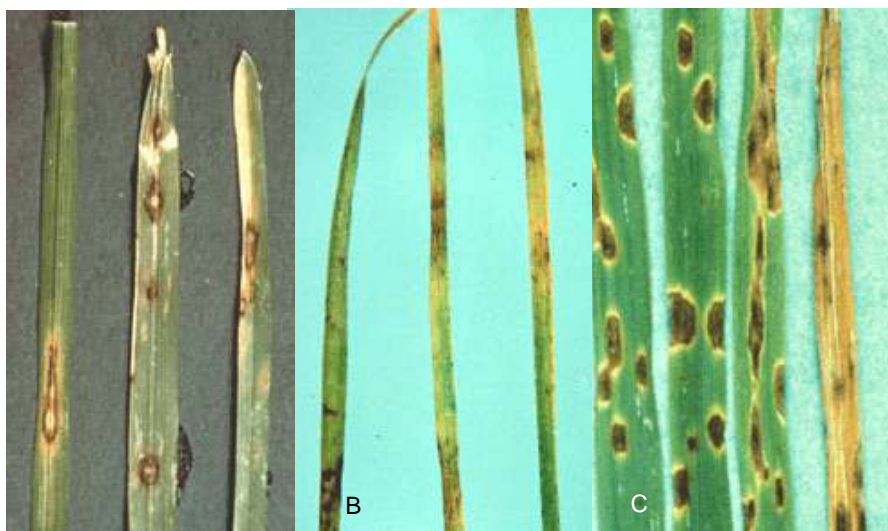


Figure 1. *Helminthosporium* leaf spots and blotches on (A) Kentucky Blue Grass, (B) tall fescue, (C) smooth brome grass.

### SYMPTOMS

Small-to-large spots (lesions), usually oval to oblong or elongated, form on the leaves and leaf sheaths (Figure 1A-C). The lesions may be yellowish-tan, reddish brown to purple-black (A), medium brown (B), or dark brown (C) and are often surrounded by a yellowish border or halo (C). The lesions may be up to half an inch long on most forage grasses and 6 inches or more on Sudangrass and forage sorghums. (See [Report on Plant Diseases](#) No. 202, "Northern Corn Leaf Blight" and No. 209, "Southern Corn Leaf

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Blight.”) Older lesions usually have a gray-to-straw colored center, surrounded by a dark red-to-brown or purplish-brown margin. On fescues and other grasses, a net blotch symptom may develop. The pathogen produces a net-like appearance of tiny, purple-to-brown lines scattered over the surface of the leaves and stem (culm). Some lesions may merge to form streaks; others may extend over the width of the leaf, causing it to turn yellow or brown, wither from the tip, and die. Affected plants may look scalded or as if injured by drought.

## DISEASE CYCLE

The *Helminthosporium* fungi overseason in or on seed, living or dead leaves, and culms, or crowns; also, in other crop debris. The fungi produce spores (conidia and ascospores) on dead or living grass in older lesions during the early spring or summer and again in the fall. The spores are carried by air currents and splashing rains to new growth on forage grasses. Infection of the leaves, leaf sheaths, crowns, and seedlings occurs during damp weather in the spring, summer, and fall.

## CONTROL

1. **Sow only certified, disease-free seed of improved, well-adapted grass varieties**, as recommended by University of Illinois agronomists and the nearest Extension adviser.
2. **Grow resistant varieties where they are available and are recommended.** For example, Piper Sudangrass is moderately resistant to *Helminthosporium turcicum*. Most, if not all, sorghum-Sudangrass hybrids are much more resistant than the great majority of Sudangrass varieties. Baylor and Blair are smooth bromegrasses resistant to brown leaf spot or blight.
3. **Treat the seed, where feasible, with a recommended fungicide.** See Report on Plant Diseases No. 1001, “Seed Treatments for Field Crops,” for details. Seed treatment helps prevent the introduction of *Helminthosporium* and other fungi or bacteria, carried on the seed, to new fields.
4. **Plant at the recommended rate in a fertile, well-adapted seedbed. Maintain adequate soil fertility, especially of potassium and phosphorus, based on a soil test.**
5. **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 damp weather.**
6. **Rotate with nongrass crops where practical.** Rotation helps prevent buildups of disease.
7. **Keep down weed grasses by cultural or chemical means**
8. **If warranted, use a careful, controlled burning of dead grass in the early spring when pastures are severely affected.** This old practice destroys organic matter, but kills leaf-blighting fungi and bacteria in the overwintering leaves and crop refuse. Consult local EPA regulations about open burning.