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Problem: Stripe Smut - *Ustilago striiformis* and Flag Smut - *Urocystis agropyri*

Host Plants: Certain cultivars of Kentucky bluegrass and creeping bentgrass.

Description: In Kansas, stripe smut is the most common of the two diseases. Initial damage caused by smut may be subtle. Diseased lawns decline gradually and patches or large areas of the lawn may appear off-color (pale green to yellow) in the spring and fall. During the summer, the turfgrass within the diseased areas begins to die, causing a general thinning of the lawn. The lawn also develops an uneven texture, which is most apparent after mowing. Eventually, thinning of the lawn will be very noticeable as weeds encroach into the dead areas. Symptoms of smut on individual plants are most noticeable in spring and fall because disease development is favored by cool (50° to 60°F) temperatures. Infected plants, which are pale green to slightly yellow, may occur in patches, or may be scattered throughout the entire lawn. Individual leaf blades affected with the disease are slightly curled and have tattered or shredded tips, similar in appearance to damage caused by a dull mower blade. Leaves also develop black sooty or powdery stripes which run parallel with the leaf veins. The sooty substance is composed of millions of fungal spores. The presence of the black, sooty stripes on the leaves is diagnostic of smut. Infected plants often die during hot, dry weather, resulting in a thinning of the turf. In some cases, the symptoms disappear during the hot summer months, only to show up again in the cool fall weather.

Stripe and flag smut survive adverse weather conditions inside infected plants or as resting spores in the soil. Spores (called teliospores) germinate in the soil and thatch during cool weather. Most disease development occurs in the early spring and fall. Infection of new plants can only occur at new growing points, such as developing tillers, and not on fully expanded leaves. Once inside the plant, the fungus grow's throughout the entire plant. Thus, all new buds and rhizomes developing from an

infected plant also will be diseased. Diseased plants are very sensitive to high temperatures or dry conditions and often die during the hot summer months.

Recommendations: Stripe and flag smuts are very difficult to control once they are established in the lawn. The best means of avoiding smut is to plant resistant or tolerant cultivars. Avoid planting the Kentucky bluegrass cultivars Windsor, Merion, Fylking, Pennstar, Galaxy, Sydsport, Baron, or Rugby in areas where smut has been a problem. Most of the other Kentucky bluegrass cultivars have some tolerance to the disease. Because these smut fungi are quite variable, it is advisable to plant a blend of two or more resistant cultivars.

Controlling smut in lawns already infected is very difficult because the pathogen is systemic. Smut-infected lawns are intolerant of drought and high temperatures. While frequent irrigation and excessive fertilization may help the diseased turfgrass survive the hot summer months, it will also increase the incidence of the disease the following year. This is because diseased plants that survive continue to sporulate, adding additional inoculum to the soil that can infect healthy plants the following spring.

Consequently, it is best to follow a moderate fertilizer and irrigation program to encourage death of infected plants during the summer. If the disease is restricted to a small area of the lawn, it may be advisable to kill this portion of the turfgrass with a contact herbicide and reseed with tolerant cultivars.

References:

1. Lawn Diseases, North Dakota State University, PP-950
2. Stripe Smut, Texas A&M, Turf Answers 4 You

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