



Stripe Smut on Turfgrass: *Ustilago striiformis*

Introduction

In the late spring or early fall some lawns exhibit yellow or brown stunted areas which are not necessarily confined to patches. Close examination may reveal that this unhealthy look is due to stripe smut, a common disease of bluegrasses, bentgrasses, fescues, perennial ryegrasses, and other grasses. Other smut fungi also attack various grass species. During very hot dry periods however, the striped smut infection may become severe enough that individual plants are killed. During wet summer weather, a striped smut infection may weaken plants enough that a simultaneous invasion by other disease organisms may also cause plants to die.



Figure 1: Black spore in streaks on the leaves.

Symptoms and Signs

Unless a large area of turf is dying, an overall view of the infected turf area may not be very revealing. However, infected grass blades, when viewed closely,



Figure 2: Leaves shred after spores rupture

will display yellow-green streaks in the early stages of disease, and these streaks later become gray. Shortly afterwards, the leaf tissue over the gray streaks ruptures and black spore masses are exposed (Fig. 1). After rupturing, the diseased leaves become shredded into ribbons (Fig. 2) and curl downward from the tip. The grass blades then become dark brown and die.

Disease Cycle

The disease becomes evident in the 10°C to 16°C (50°F to 60°F) weather of spring and fall. Infected plants growing at higher temperatures for extended periods will usually die, leaving only the non-infected shoots; consequently, visual symptoms are seldom present during midsummer. The dark spores produced in "stripes" along the leaf blades serve as a survival stage for the smut fungus during the summer and winter. Also, the fungus may survive as mycelium in infected crowns and rhizomes.

In spring and fall, when environmental conditions are satisfactory, the dormant spores will germinate and produce another form of spore which can infect the grass plants. Spores are spread by wind, water, maintenance practices, animals, and people.

Management Strategies

Some varieties of bluegrass survive effects of the disease better than others. Merion Kentucky bluegrass, for instance, is very susceptible to stripe smut, while Park and Newport are fairly resistant. Other more resistant varieties are A-20, A-34, Aquila, Baron, Birka, Bonnieblue, Fylking, Geary, Glade, Nugget, Pennstar, South Dakota Certified, Sydsport, Vantage, and Victa.

Optimum fertilization with a complete (not nitrogen only) fertilizer and conscientious watering helps maintain the vigor of the stand and to increase the survival of infected plants.

Systemically-trans-located fungicides are helpful for controlling the stripe smut disease. Applications are to be made just prior to dormancy in the fall (November in much of New York) or just before growth resumes in the spring (March). The fungicide should be drenched into the turf with at least 1/2 to 1 inch of water.

Some products that may be registered to manage this disease in home lawns in New York State may be found in our [turf fungicide table](#). Be certain any formulation of pesticide you purchase is registered for the intended use, and follow the label instructions.

The label also contains information on how to apply the fungicide as well as any precautions.

Additional pesticides may be available for commercial turf applications. Commercial applications should refer to the appropriate pest management guidelines, or contact their local Cooperative Extension Office for more information on currently registered products.

Reference:

Compendium of Turfgrass Diseases, Third Edition, 2005. R.W. Smiley, P.H. Dernoeden and B.B. Clarke. APS Press.

Updated SLJ 3/15

READ THE LABEL BEFORE APPLYING ANY PESTICIDE! Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

The Plant Disease Diagnostic Clinic

Phone: 607-255-7850

Fax: 607-255-4471

Email: ks13@cornell.edu or slj2@cornell.edu

Web: plantclinic.cornell.edu

