Horticulture Diagnostic Laboratory

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Stripe Smut on Turfgrass

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 masses exposed on leaf blade tissue of a turfgrass plant. (*Note end of red arrows*) (K. Mathias, University of Maryland)

Symptoms: 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, 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 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 noninfected 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 the 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-translocated 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.

Systemic fungicides available for use by homeowners include those containing the active ingredients: triadimefon or thiophanate-methyl.

Additional products may be available for use in commercial plant production. Commercial applicators should refer to the appropriate pest management guidelines for more information.

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The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Homeowners who have Internet access can locate currently registered products at http://pims.psur.cornell.edu/. Several different queries are available that will produce a summary for the product(s) that the system locates. If the system fails to locate the product in question, then that product is not currently registered in New York State. The database also provides a summary of important information related to every product currently registered. Two data fields "Status" and "Expiration Date" are provided in each summary. Products with a status of "Registered - Discontinued" are currently registered but will probably be discontinued for use, sale, and distribution in New York State after the date noted in the "Expiration Date" field.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly, some materials mentioned may no longer be available, and some uses may no longer be legal. 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. Read the label before applying any pesticide.

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