

SOME IMPORTANT TURF DISEASES

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Fusarium Blight

Recent investigations by workers at Pennsylvania and elsewhere have shown that the fungus **Fusarium roseum** is capable of infecting Kentucky bluegrass, bentgrass and red fescue. Under favorable conditions of temperature, moisture and soil fertility, susceptible grasses may be rapidly killed. The killing out of entire stands of turfgrass within one week has been reported. In Illinois the disease has been observed only on Kentucky bluegrass.

Fusarium blights is reportedly most severe when the turf is grown under high nitrogen fertility or deficient calcium levels. Observations in Illinois tend to confirm that the disease appears to be most prevalent on well fertilized lawns. It usually occurs during hot, humid weather in July and August.

In Kentucky bluegrass lawns, the disease commonly occurs in circular patches, rings or partial rings varying from a few inches to over two feet in diameter. Characteristically the grass leaves in these areas are light yellow-green at first but rapidly become light tan as they are killed. An examination of the crowns, roots and rhizomes during this period reveals an extensive rot of these structures.

Although a number of different fungi have been isolated from these diseased plants, **Fusarium roseum** was the one most frequently obtained. Inoculation studies have shown that **F. roseum** is capable of causing a severe blighting of the leaves of Kentucky bluegrass, bentgrass and red fescue. However, rotting of the crowns, roots, stolons and rhizomes has not been reproduced by artificial inoculation with this fungus. The Research reports certainly show that **Fusarium roseum** is important in this disease and future research may show that it is the only pathogen involved.

Some control of the disease has been obtained with the fungicide Dithane M-45.

Helminthosporium Leaf Spot Diseases of Bentgrass

Two species of fungi in the genus **Helminthosporium** commonly cause leaf spot diseases of bentgrasses in Illinois.

Helminthosporium erythrospilum Drechsler is the cause of "red leaf spot." The leaf spots caused by this fungus are straw colored in the center and are surrounded by a margin of reddish-brown. Occasionally the straw-colored centers are absent and only the reddish-brown discoloration is apparent. Individual spots are nearly circular but irregular shaped areas are formed when several spots run together. Infected leaves usually turn light green and then yellow before they wither and die. Infected areas can be readily seen by the yellowish cast these diseased leaves impart to the turf. Red leaf spot occurs most commonly in late April and May but may also be active in October and November. In the studies in Illinois this fungus has not been isolated from bentgrass during June, July, August or September. This disease has been adequately controlled with 2-3 applications of zineb at a rate of 2-4 ounces per 1000 sq. ft.

The second disease called "**Helminthosporium** leaf spot" is caused by the fungus **Helminthosporium sorokinianum** Sacc. ex Sorokin (synonym **H. sativum** P.K. & B.). The leaf spots caused by this fungus first appear as minute water soaked areas that develop


into a small, circular, brown spot surrounded by a yellowed zone of leaf tissue. This yellowed zone later turns dark brown and the central brown area becomes tan. Leaf spots may be so numerous that the leaves wilt and die causing a thinning of the turf. Under extremely hot wet conditions infections may result in a blighting of the leaves without the formation of typical leaf spots. This blighting involves the entire leaf and is first evident by a wilting of the leaves, even though abundant moisture is present in the soil. The wilted leaves die quickly and become straw colored. Infections of leaves of adjacent plants may produce areas of blighted turf varying from less than one inch to several inches in diameter. When these blighted areas coalesce large irregularly shaped areas are formed.

Helminthosporium sorokinianum has been isolated from bentgrass during every month from April through November. However, the disease usually does not become damaging until late May or early June when periods of hot, humid weather normally occur. Severe outbreaks are most prevalent in hot, humid weather, especially if rainfall has been abundant.

This disease has been adequately controlled on the turf plots at the University of Illinois with several fungicides applied once a week on a preventive schedule. The better materials, Dyrene, Difolitan 80W and Dithane M-45, should give adequate control on golf course putting greens. For further information on control see Mr. J. D. Butler's article on Fungicide Testing in 1964 in these proceedings.

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