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Dreschlera and Pyrenophora: leaf-spotting diseases

by Dr. Eric B. Nelson

The names of the agents of leaf-spotting diseases have changed over the years but the diseases themselves remain among the more serious: leaf-, crown-, and root-rotting diseases affecting cool-season turfgrasses world-wide. Among the most important diseases caused by members of this group are: "leaf spotting" and "melting out" of Kentucky bluegrass caused by *Dreschlera poae*. There are also: "leaf spot," "leaf blight" and "foot rot" of perennial ryegrass caused by *Dreschlera siccans*. Finally, "net blotch" and "leaf blight" of perennial ryegrass and tall fescue are caused by

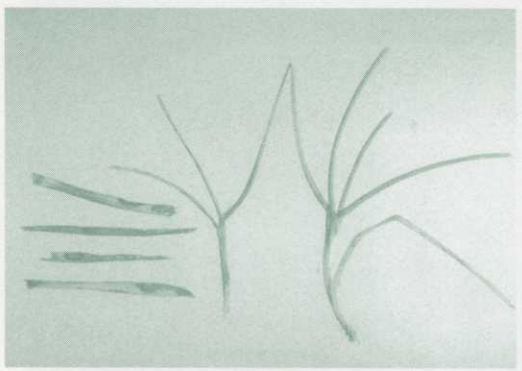

Photo provided by Dr. Eric B. Nelson, Cornell University
Leaf spot on Kentucky bluegrass

Pyrenophora dictyoides, and "red leaf spot" of creeping bentgrass is caused by *Pyrenophora erythrospila*. (See Table 1 on page 2.)

These diseases, caused by the important fungal genera *Dreschlera* and *Pyrenophora*, were previously known as the 'Helminthosporium' diseases of turfgrasses. The *Dreschlera* and *Pyrenophora* species share nearly all of the same identifying characters used by taxonomists to distinguish between fungal species. So many characteristics, in fact, that some species of *Pyrenophora* were formerly misclassified as *Dreschlera* species. The main difference between the two genera is that species of *Pyrenophora* possess reproductive properties not found in *Dreschlera.*

All these pathogens share the common properties of requiring prolonged leaf wetness and cool temperatures for infection. Only *D. erythrospila* and *D. gigantea* require warm temperatures for optimum disease development. Additionally, all of these pathogens can infect leaf, crown, and root tissues, depending on how advanced the disease becomes and on environmental conditions.

Despite expressing themselves as multiple diseases across the spectrum of cool-season turfgrass species, many of the *Dreschlera* and *Pyrenophora* species will only infect specific turfgrass species. Although symptoms are quite similar, regardless of the grass species infected, subtle differences do exist in disease expression

Photo provided by Dr. Eric B. Nelson, Cornell University
Leaf spot on Kentucky bluegrass

that often allow for accurate field diagnoses. However, the only definitive diagnosis of diseases caused by these pathogens is by microscopic observation and comparison of the sizes and shapes of the spores produced on and in leaf, crown, rhizome, and root lesions. Various aspects of each of the most important diseases are detailed below.

IN THIS ISSUE

IN-DEPTH ARTICLES

Dreschlera & Pyrenophora
by Dr. Eric B. Nelson 1

Cultural controls
by Dr. Eric B. Nelson 7

Why do the names of fungi change?
by Dr. Eric B. Nelson 10

Annual bluegrass: its biology and control 13
by Dr. Joseph C. Neal

INTERACTIONS

Politics, turfgrass management, and the future 12
by Christopher Sann

NEWS BRIEF

Dithiopyr granules superior to liquid 15

COMING ATTRACTIONS 15

RESOURCES 15