CHARTER

Mid-Atlantic Newsletter

Published by:
Mid-Atlantic Association of Golf Course Superintendents to aid in the Advancement of the Golf Course Superintendent through Education and Merit

Volume XXXII **June 1979** **Number 4**

Symposium on Turfgrass Diseases 1979: Summary

by Jane F. Rissler, Plant Pathologist

On May 15-17, seventy-five university and government research and extension scientists, commercial lawn-care people, chemical company representatives, sod producers, and golf-course superintendents from many parts of the United States and Canada attended a symposium on turfgrass diseases at Columbus, Ohio. The meeting, jointly sponsored by Ohio State University and ChemLawn Corporation, provided an opportunity for turf pathologists to present and discuss their current research. Dr. Charles Darrah, Dr. David Wehner, Dr. Jame Rissler, and Mr. Kevin Mathias from the University of Maryland attended the symposium. In this article, major conclusions and observations from the meetings will be summarized.

Three themes recurred through the sessions of the symposium. First, there are often difficulties in diagnosing the cause of disease in turfgrasses because many pathogens can infect the plants but will be dormant until appropriate environmental conditions develop. Under these conditions, the pathogens can become active and cause disease. Therefore, attempts to isolate the causal organism from turf lead to the culturing of several different pathogens without a convincing indication of which organism is causing the problem. Second, stresses due to environmental conditions or cultural practices can actually cause symptoms which are similar to some of the major fungal disease of turfgrasses. Therefore, application of fungicides in these situations will not be likely to reduce the disease problem. Third, these same stresses can affect turfgrass in a different way in that they can cause the plant to be more susceptible to development of fungal diseases. Therefore, disease problems often can be prevented if stresses are not imposed on the plants.

Separate sessions in the symposium were devoted to the major turf diseases: *Rhizoctonia* diseases, *Phythium* diseases, *Sclerotinia* dollarspot, *Helminthosporium* diseases, and *Fusarium* blight.

Rhizoctonia diseases. The major emphases in this session were 1) symptomatology and diagnosis and 2) differentiating among species of *Rhizoctonia*. It is becoming increasingly apparent that organisms classified as *Rhizoctonia* can be turf pathogens under warm, cool, and cold conditions. Warm weather brown patch caused by *R. solani* can usually be diagnosed from a consideration of both symptomatology and prevailing environmental conditions. Other organisms closely resembling *R. solani* have been isolated from turfgrasses which appear diseased during cool, wet weather. These pathogens are not the same as the one causing brown patch. However, certain specialized techniques involving both the structure and functioning of the organisms are required to distinguish among them. Problems and procedures associated with the classification of *Rhizoctonia* species were discussed.

Phythium diseases. Phythium blight of turfgrasses, also known as cottony blight, grease spot, spot blight, damping off, can be caused by several species of *Phythium*. Three topics were discussed: 1) isolation and identification of *Phythium* species, 2) cool *vs.* warm-season *Phythium*, and 3) seedling diseases caused by *Phythium*. Several techniques were given for isolating these organisms from diseased plant tissue and from soil and for inducing the organisms to produce reproductive structures once they were obtained in culture. Differentiating among the species of *Phythium* requires microscopic observations of these reproductive structures. Phythium species which cause

(continued on page 2)

President's Comment:

Fast Greens

Should we maintain a putting surface for the noisy minority or for the silent majority? More and more, I read or hear about "fast" putting surfaces. I was even told recently that the esthetics of the green were not important as long as it was a good "fast" surface. I wonder how long we would be on the job if we had 18 brown greens that putted "fast"?

In my opinion, the putting surface should be suited to the majority of your membership. The limiting factor being the climatic conditions in your area. The conditions in some areas are very limiting in regards to height of cut.

What the membership wants is a *good* year around (where possible) putting surface. It is our job to try and meet this need.

Sam Kessel

Turfgrass *(continued from page 1)*

blight during the warm weather of summer are most active when the weather conditions are 68° night temperature, 85-95° day temperature, and 98% relative humidity. During the cool weather of spring and fall, other *Pythium* species cause disease problems when the night temperature is about 50°, day temperature is about 65°, and relative humidity is 98%. Seedling diseases caused by a variety of species of *Phythium* are a problem in the South where overseeding is common when converting from warm-season to cool-season grasses to maintain playing conditions for the winter months.

Sclerotinia dollarspot. The following points were made: 1) the taxonomic situation of *Sclerotinia* is confused; 2) wide temperature ranges occur among different strains of the pathogen; 3) environmental factors, such as drought, nitrogen level, and mowing height, can lead to stresses which affect disease development; and 4) because *Sclerotinia* can develop tolerance to fungicides, it is best not to use just one chemical continuously in controlling dollarspot.

Helminthosporium diseases. More than one species of *Helminthosporium* can cause disease in turfgrass. While it is not generally difficult to isolate these organisms from diseased tissue, there is a continuing controversy over the taxonomic position of these fungi. The genus name *Drechslera* has been proposed to replace the genus name *Helminthosporium*. The subject of another talk in this session was the relationship of cycles of wetting and drying leaf surfaces to the subsequent production of reproductive structures by *Helminthosporium*. Cultural practices associated with turfgrass maintenance may affect the numbers of reproductive structures produced. In a third presentation, results were given of laboratory research concerning the effect of postemergent herbicides on *Helminthosporium* leaf spot. While it is too early to relate this work to actual field practices, it appears that compounds which alter senescence also affect development of leaf spot.

Fusarium blight. The situation in regard to the cause of *Fusarium* blight remains unresolved and controversial. While one participant emphasized that this disease is caused by species of the fungus *Fusarium*, another speaker suggested that certain environmental and/or cultural stresses, such as temperature extremes, water stresses, thatch conditions, phytotoxins, fertilizer concentrations, mowing heights, soil structure, and pesticides, may lead to production of symptoms similar to those attributed to *Fusarium*. Problems have also arisen from the finding that *Fusarium* species which cause disease under greenhouse conditions often do not cause disease under field conditions.

Other disease problems. The major point about nematodes parasitizing turfgrasses was that while this problem is well known in the South, there is far less documentation of nematode diseases in turfgrasses in the North. The cause of spring deadspot of Bermuda grass still has not been determined despite intensive research efforts. An interesting correlation was reported: that the zone of incidence of spring dead spot appears to coincide with the zone in which 45° temperatures occur in November. Whether there is any cause and effect relationship between disease development and late-fall temperature is not know. *Scleropthora macrospora* has recently been shown to be the cause of yellow tuft disease of turfgrass. This disease, which could be of concern to sod producers, is primarily a problem under cool, moist conditions and is characterized by yellowing foliage in tufts with poor root development. The diseased tufts can be pulled from the soil easily. The fungus has an apparantly wide host range among the grasses.

Golf Course Statistics *Greg Bayor*

Below are some interesting "stats" from the National Golf Foundation for the year 1978:

Number of golf courses in the United States:

Regulation	10,974
Executive	692
Par-3	1,018
Total Courses:	12,684

Statistics below cover period from Jan. 1, 1978 to Dec. 31, 1978

Number of new courses reported open for play:

Regulation	58
Executive	15
Par-3	4
Total New Courses:	77

Number of additions to already existing golf courses reported open:

Regulation	56
Executive	10
Par-3	0
Total Additions:	66

Total new courses and additions opened for play 143

Number of new courses and additions currently under construction:

Regulation	294
Executive	13
Par-3	10
Total under construction	317

Now that you've read these numbers, consider this:

a. How many "Assistant Supers" are looking for their own course?

plus

b. How many Turf School graduates are seeking employment?

minus

c. How many "Supers" retire each year.

Now TOTAL this imaginary number to the above number of new courses and you can reach your own uncomfortable conclusion!