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Inconsistent Weather Wreaks Havoc on Turf

This was an odd year for weather. Some areas were drier than usual, while others were wetter. This led to a number of problems for turf managers. Depending on the geography and rainfall, anthracnose, curvularia blight, gray leaf spot, microdochium patch, rhizoctonia blight and take-all root rot were rampant. However, there are cultural changes a manager can make to offset some of the curve balls thrown by Mother Nature.

The articles below take a look at typical situations in the Southwest and the Midwest this year, where Mother Nature threw even more curve balls than usual.

WEATHER **TEXAS**

Dry Winter, Wet Summer Caused Problems for Superintendents in Texas

By James McAfee

One of the old sayings in Texas is, "If you don't like the weather, just hang around a while because it will change."

The fall and early winter months for 2001-2002 in the state were dry, with temperatures above normal. This was followed by freezing temperatures that occurred in late February to early March. Next, for spring and early summer, the temperatures turned cool, and we received record rainfall in some areas of the state. In fact, by midsummer many areas of northeast Texas had already exceeded the average rainfall for the entire season, and temperatures remained well below normal. Rainfall continued in many areas of the state throughout the summer months, which is unusual for Texas.

While these weather conditions were welcomed by some individuals, because of lower water bills and reduced air-conditioning costs, these unusual weather patterns created numerous problems for superintendents.

Continued on page T2

WEATHER **MIDWEST**

Abnormal Reversal of Conditions Led to More Disease in Midwest

By Karl Danneberger

For most of the Midwest, this was the year of extremes. Cool temperatures and wet conditions characterized the spring weather while the summer was the exact opposite: hot and dry.

In April, rainfall was 1 to 4 inches above the normal average, while average temperatures were two to five degrees below normal for much of the area.

This trend continued in May, with rainfall amounts of 6 to 10 inches above normal monthly averages while temperatures were close to normal.

June was a transition month, with the first part of the month receiving relatively high amounts of rainfall and normal temperatures, while the last half of the month saw a lack of rainfall and higher temperatures.

July and August had precipitation amounts half the normal rainfall expected, while average temperatures were five to eight degrees higher than

Continued on page T10

IN THIS ISSUE

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TABLE 1

Precipitation ranks for the Midwest region, 2001-2002

Period	Rank
May	3rd driest
April-May	5th driest
March-May	5th driest
Feb-May	3rd driest
Jan-May	4th driest
Dec-May	6th driest
Nov-May	9th driest
Oct-May	6th driest
Sep-May	3rd driest
Aug-May	2nd driest
Jul-May	3rd driest
Jun-May	3rd driest

SOURCE: NATIONAL WEATHER SERVICE

Continued from page T1

normal. These extremes led to conditions that made for a difficult year in turfgrass maintenance.

The cool, wet spring resulted in considerable top growth, which required frequent mowing. At the same time, the wet conditions made mowing difficult. Scalping was common on many turfgrass sites. Although top growth recovered, repeated scalping had the long-term affect of reducing root growth.

Root growth was also restricted in areas where extended periods of excessive moisture resulted in saturated or waterlogged soils.

Under these conditions root growth was inhibited, in effect reducing the potential water-absorbing capacity of the plant going into summer.

In addition to the difficulty in keeping things mowed, the potential for significant compaction and wear from equipment on wet soils was a concern. For example, on golf courses in areas that receive repeated traffic or wear like collars and greens surrounds (not to mention greens themselves), the potential for soil compaction was high.

Generally, turf thinning from soil compaction did not show until the occurrence of summer stress. Thus, once the rain stopped, many superintendents were out coring, quadratining or using a Hydroject to relieve compaction. Turf areas that were high in clay content were especially susceptible to compaction.

Although noticeable, damage to leaf blades is a minor concern. What is far more important as an indicator of the overall health of the turf is the status of the crown.

A variety of diseases occurred during the spring. In early to midspring microdochium patch was active. This disease, also known as pink snow mold, is generally easy to diagnose. When this disease occurs late in the spring, however, many turfgrass managers misdiagnose it as cool-temperature pythium.

Microdochium patch can produce streaking symptoms similar to what would be expected with pythium, especially in drainage areas. In most cases, however, if one suspected cool-temperature pythium blight, it was almost always microdochium patch in 2002.

Toward the middle to late spring, the wet conditions — with increasing temperature — resulted in dollar spot being active sooner than normally would be expected. Although this disease got off to an early start, once it got hot and dry the severity of this disease decreased compared to previous years.

Summer stress

As previously mentioned, temperatures above normal and drought conditions characterized the summer in the Midwest.

Although there were a number of prob-

lems associated with this past summer, I would like to highlight three. The first was anthracnose. Basal rot anthracnose occurred on greens that had previously been stressed, primarily by mowing greens intensively to achieve increased ball roll.

Anthracnose symptoms progress from small yellow patches to large blighted areas with a more orange appearance.

As the severity of the disease increases, large sections of the greens can decline rapidly. *Poa annua* greens were the most susceptible especially where wear was intensive or if the turf was growing under shaded conditions.

Greens that were under low fertility programs also appeared to be more susceptible to this disease. Creeping bentgrass was more tolerant to the disease, but under stress conditions anthracnose symptoms were expressed.

Tree removal

As greens are becoming more intensively managed, anthracnose will be a persistent problem. This year, many golf courses are contemplating initiating a tree removal program to help relieve the stress associated with shade and provide a better growing environment to help reduce the severity of anthracnose.

In a few situations, golf courses are converting *Poa annua* greens to creeping bentgrass. In these situations, knowing why *Poa annua* was there in the first place will help slow or prevent its colonization.

The dry conditions raised concern on the long-term effect on dormant Kentucky bluegrass. Dormancy is a mechanism that Kentucky bluegrass uses to avoid conditions where inadequate moisture is available for growth. The most noticeable aspect of dormancy is the brownish-tan color of the leaf blades.

Although noticeable, damage to leaf blades are a minor concern. What is far more important as an indicator of overall turf health is the status of the crown. If the crown is damaged, the plant will not recover. Conversely, healthy crowns will generate new leaves and stems with the arrival of moisture.

Research is not conclusive on how long Kentucky bluegrass can remain dormant, but the dormancy phase could last indefinitely as long as the crown is healthy. This year, once rain did arrive, Kentucky bluegrass that had received light applications of water 6 to 8 weeks into the drought recovered quickest.

Overwatering causes fairways so wet that golf ball will plug and have minimal roll.

The last major concern was irrigation practices on golf courses that either resulted in too much water or not enough during the latter half of the summer.

Irrigation issues

Nonirrigated areas on many golf courses, including roughs and green surrounds, became dry and hard. These conditions made a poorly struck golf shot even more errant.

In contrast, some fairways were overwatered because superintendents were trying to throw water into nonirrigated areas to prevent turf loss. The result was fairways that were so wet that golf balls would plug and have minimal roll.

These two contrasting conditions often occurred together on the same courses, causing complaints from golfers.

Although the contrast between the spring and summer seasons was striking, the problems associated with this year were often related. The wet springtime conditions restricted root growth in areas where either saturated or waterlogged conditions persisted.

A turf that has a shallow root system going into a hot, dry summer will be greatly affected. A shallow root system places turfgrass at a greater risk to moisture deficits and high soil temperatures.

As this year comes to a close, we can hope that next year will bring more moderate weather conditions.

Karl Danneberger, Golfdom's chief science editor, is active in research, teaching and extension with the other turfgrass faculty in entomology, plant pathology, and natural resources at The Ohio State University in Columbus, Ohio.