



Drought, Miserable Temperatures and Turf Diseases in 1988!

By Dr. Gayle Worf
Department of Plant Pathology
University of Wisconsin-Madison

As this is written, I have recently returned from a trip through South Dakota, Wyoming and Montana. I wasn't on any golf courses during that time, but I looked at a lot of landscape turf en route — mostly bluegrass. I was fascinated — and impressed — by the very high quality turf that seemed to exist everywhere it had been adequately irrigated. To be sure, most of the grasses were as dry as tinder, but where watered, and — except for occasional high pH areas where there was some yellowing from apparent iron tie-up problems — the turf was luxurious, green and very, very dense. We'd be proud to grow turf of that quality here in Wisconsin!

If the turf can tolerate such conditions, then our turf in Wisconsin should be faring as well in this year of 1988. And in fact, in most of our fungicide trials up to this point, we've had very little to record or report on. And prior to our departure in mid-July, we had received virtually no reports of pathogenic disorders on turf throughout the state. This included *Poa annua*, as well as bent and bluegrass. We've certainly had plenty of high temperatures this year, and our intuition might lead us to believe that turf should be suffering far more than it appears to have done so up to this point!

How have we gotten by without seeing more damage? Your guess is as good as mine, but I'll share my thoughts. Basically, there are two primary reasons. One is the credit you should be giving yourself. Particularly with compaction and moisture extremes, plus moderation in fertility programs, must be terribly important. In the trials at Stevens Point Country Club with Jeff Bottensek, we were seeing only traces of anthracnose disease coming in to date. And it was more intense in the areas of the irrigation pattern that were a bit drier, or where mower compaction was greater. Even though the disease was not intense, one could begin to see the advantages of fungicide treatment.

In the Nakoma plots in Madison with Randy Smith and Chuck Frazier, where rains have been much less generous, the dry pattern within the irrigation system is a bit more evident, and anthracnose is much more intense. The plot area has not been fertilized recently, so as to increase anthracnose potential. And one really sees the benefit of fungicide applications there!

But through it all, the question of temperature and its effects upon turf remains. My bias as a turf pathologist makes me believe that it may in fact be moisture, or humidity, more than high temperature per se that places so-called "stress" on the plant. And much of that stress may be through the motivation of fungi to do bad things to the turf.

One thing is certain. We're witnessing something of a departure from historical patterns of disease development during the recent high temperature years. For instance, at one time we nearly always could depend on dollar spot to show up in our plots somewhere. I've only received one report of significant dollar spot up to this time, and many superintendents have reported none at all. Warm dry soils, especially with low nitrogen usually favors dollar spot. Theoretically, it should be occurring in the Nakoma trials. But it's not, probably because the grass doesn't stay wet long enough from irrigation alone. Yet it's enough to promote anthracnose. It could be that the temperature is usually *too* warm for the dollar spot fungus — its preferred greenhouse temperature is from about 59°-86°F. The anthracnose fungus does better from 71°-90°F, and greenhouse inoculations are successful at temperatures above that.

But Pythium is once again showing up in a lot of places. In recent years it appears to be much more threatening than dollar spot to summer turf quality. The disease has been producing its more classical "grease spot" symptoms in a lot of turf this year, and has been observed doing damage more or

less throughout the state. (I've not heard of any problems in the north-west.) Research studies frequently report damage during temperatures in the upper 90's, especially with high night temperatures like we've had this year. One thing about Pythium is its rather wide range of species that are involved. In some ways, it's a wonder we haven't had more problems with Pythium for that reason — and also with its control. Fortunately, the pathogen apparently is continuing to succumb successfully to any good Pythium-controlling chemical. It probably remains an **excellent** idea to continue with rotation of basic fungicide groups to avoid future problems!

Incidentally, Pythium in the classic form is easy enough for most experienced managers to recognize. But we've had several cases in June where turf was going out of condition, allegedly because of Pythium. Pythium was not involved. The problems appeared to be due more to compaction and hard-to-wet environments. Considerable expense and waste of chemical resulted because of misdiagnosis. The new diagnostic kits appear to have a really good role to play for situations where symptoms don't necessarily fit the book, or where, for other reasons we don't feel secure about our diagnosis.

You should also know that the assay is being improved upon rapidly to speed up the process and improve upon its accuracy. But more about that later.

One disease I've not personally observed this year, in contrast to what I might have expected is *Rhizoctonia* brown patch. I have a special interest in that disease. We so often receive reports of the disease, and difficulty in controlling it with labeled fungicides. We've talked about this before. One question we've wondered about is whether we have different strains, or different species in the state. Brown patch is caused by the fungus *Rhizoctonia solani*. But another disease re-

ported in states to the south of us is "Rhizoctonia leaf and sheath spot", caused by the fungus *R. zeae*. The latter fungus requires higher temperatures than *R. solani*. Yet another fungus — *R. cryzae* — operates at a still higher temperature. Neither of the last two have been reported in Wisconsin. In fact, we've done very little work with Rhizoctonia. If you've encountered brown patch, we'd invite you to submit a sample so that we might build up a collection of the organism(s) for possible future work.

It probably would be useful to try to document in some fashion the disease development pattern on our golf courses over a period of several years. I wonder how many superintendents would be interested in participating in such an exercise.

— FOR SALE —

1976 3-wheel Cushman truckster. PTO, dump box, 100 gal. sprayer, 15' boom, 100' hose, reel and spray gun. 960 hours, excellent condition. \$4,250. Contact Greg at Stano Landscaping in Milwaukee at (414) 358-1800.

Invest in YOUR Future

Support the
NOER CENTER

Make Your Pledge
TODAY!

**AMETEK
TURF BOXES**

Manufactured In
Sheboygan, Wisconsin

Ametek irrigation boxes

are

warehoused regionally

throughout

the U.S. and Canada

AMETEK

THE GENTLE GIANTS

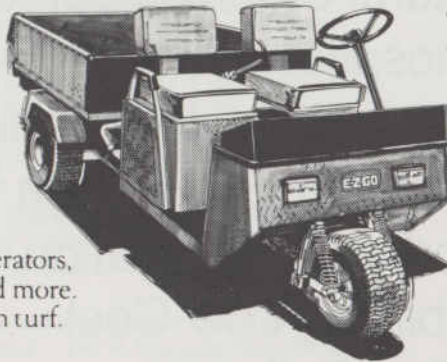
Here are E-Z-GO's hard workers in three- or four-wheel, gas or electric models. With durable, diamond-plated steel Polane-coated panels and load beds, including options such as sprayers, aerators, spreaders, top dressers, and more. Each one tough but easy on turf.

The GXT-1500

Here's the heavy-duty workhorse in the line. Powered by an 18 H.P. engine for payloads of up to 1500 pounds. For golf course or public grounds, its large load bed has sides and tailgate. Options include a hydraulic dump, PTO, and range changer. The GXT-1500 adapts to many accessories: sprayers, spreaders, top dressers, and aerators to handle any job.

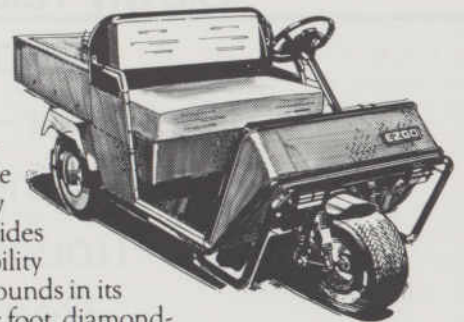
The GXT-800

Reliable, economical, this mid-size hauler more than pulls its own weight. It has a two-cycle, 244cc engine with rack and pinion steering, heavy-duty springs, and hydraulic shocks, plus a whopping 1000-pound load capacity. Options and accessories such as cabs, bed covers and loading ramps make it an ideal all-around utility vehicle.



The XT-300

This is a reliable three-wheel electric answer for a wide variety of jobs where maneuverability is critical. It provides a payload capability of up to 1000 pounds in its roomy 5.7-cubic foot, diamond-plated load bed.



E-Z-GO
TURF VEHICLES

For Further Information
Call 1-800-654-3794

E-Z-GO Chicagoland
24404 N. Hwy. 12
Lake Zurich, IL 60047