

# Extreme Heat and Drought Take Toll on Area Turf: Looking Back at Summer 2005

*In the August issue of On Course, we talked about the heat and drought we have faced during this summer of 2005, and compared it to the dismal summer of 1988. Also, several superintendents discussed the problems they have faced at their courses and how they were coping. Irrigation water availability and quality were the main issues; it was much too dry then for typical summer disease problems.*

*The weather pattern seemed to be changing, at long last, by late September—but the drought and heat that engulfed northern and parts of central Illinois during summer 2005 were simply brutal.*

Unfortunately, that weather scenario has continued right into mid-September, as higher-than-average temperatures and little rain remained in the forecast. We did have a nice break in temperatures and some significant rain during the middle two weeks of August, but as of this writing we are back to the hot and dry trend (20-plus days without rain).

To summarize, the drought and heat that still engulf northern and parts of central Illinois have been brutal. Affected areas are seven to nine inches below normal precipitation, after a July and August that saw many areas in northern Illinois get only 50 to 60% of their normal rainfall. Average temperatures have been 2° to 4° F above normal throughout the summer, and we expect the Chicago area to record around 40 days with daily high temperatures at or above 90° F. Very low relative humidity (dewpoint) readings have accompanied many of those 90°-plus days, which puts an extra ET stress on already ailing turf with shallow root systems!

At least as we head into autumn, we can look forward to shorter (even if still hot) days and cooler nights, which will help moderate soil temperatures and take some of the stress off the grass. Those poor little suffering plants will finally get a chance to grow some new roots, rhizomes, stolons, etc., and replace lost carbs, proteins and other nutrients. What superintendents need to do for now is:

- Keep syringing and hand-watering weak, shallow-rooted turf—don't let those recovering plants go into another drought stress!
- PICK UP the fertility! Green speed shouldn't be an issue now, let's grow some grass!
- Core-aerify anything that's rooted down, or at least deep-tine with big, solid tines if you don't want to pull cores. Those aeration channels will be important to provide space for roots to grow, plus allow flushing rains or irrigation to cleanse the soil of accumulated salts.

Although the drought curtailed symptoms of some perennial diseases like dollar spot and Pythium, the heat brought on other diseases that we have not been used to seeing. Off-white or lighter green, irregular patch symptoms on putting greens (especially newer bent greens) have been prevalent this year. These patches have primarily been aesthetic in nature, with perhaps some mild thinning of turf. We believe these symptoms are linked to late spring/early summer root infection by the take-all pathogen (*Gaeumannomyces graminis*) or the summer patch pathogen (*Magnaporthe poae*). Normally, bentgrass could support a fair level of infection by these fungi, but the heat and stress of this season accentuated root or vascular impairment, causing the mild symptoms.

Another odd "disease" symptom we have observed this year appears to be related to a mycorrhizal bloom. Symptoms initially started as yellow patches that would eventually collapse and become necrotic. Again, they appeared on newer greens that had been gassed and regrassed in the last two to three years. Upon examining the underlying thatch layer, we noticed a thick gelatinous mat of

mycelium and spores, and the roots had spores literally bursting out of them. We asked around and tentatively identified the fungus as a *Glomus* sp., which normally acts as beneficial mycorrhizal symbiont. Under this year's heat, we believe the fungus' metabolism became highly active, and it bloomed much like an alga. As one of our colleagues phrased it, the *Glomus* sp. became a "mycorrhizae gone wild," and started doing more harm than good.

On the insect front, grubs could be an especially bad problem this fall. Some Chicagoland courses have reported early grub outbreaks (last week of August), and early scouting has revealed that these problems are due to the smaller second instars, which means there still is another stage of development left. Since Japanese beetles and masked chafer adults lay their eggs in moist areas, golf courses and other irrigated landscapes were probably more of a target in this drought year. In addition, the heat may have caused the adults to lay their eggs later in the season, which means grub problems may last later into the fall.

As this article "hits news-stands," the brutal summer of '05 should be soundly in the rearview mirror, and turf growth and recovery should be the name of the game. However, let's not forget how stressful this summer was on our turf health and water resources . . . because if history holds true, we'll be in for another doozy in a maximum of five to ten years, and the lessons learned now will make us more apt to handle the stress then.



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