positioning will have a major effect on how and where the professionals approach each and every hole. In conjunction with the bunker project, four fairways were regraded, allowing golfers to view the greens from areas that were previously blind.

At Tom's suggestion, several other projects that were not part of the Rees Jones master plan were added to the renovation. The club approved the installation of a new irrigation system and pumphouse for Course #3, replacing the older, outdated system. Approximately 15,000 feet of new drainage tile and piping were installed and connected into an existing system. All cart paths were eventually removed and replaced. New vinyl seawall was installed in several areas where the older steel walls were deteriorating. Tom's staff also laid out 1.3 million square feet of new sod around all the tees, greens and bunkers throughout the course.

Although the yardage increased to 7,508 yards from the previous 7,406 yards, extra length was mainly (continued on page 13)



A view of par-3 no. 2 from behind the green.



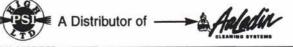
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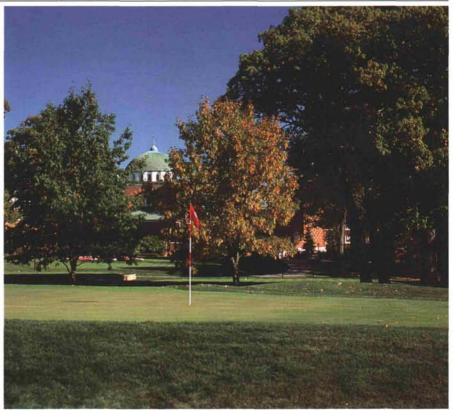
limited to a few holes. Two major hole changes were a new tee on the first hole, increasing the length from 388 to 435 yards, and a new tee on the par-3 13th hole, increasing the length to 244 yards. However, the most dramatic change was moving the green on hole no. 17 back down to the water. This will provide new challenges for the professionals and a great viewing environment for the fans.

Although Tom is happy with the way the project turned out, he notes, "It isn't without some issues." Despite last year's warm summer, last fall and this spring were very cool and some greens and reconstructed fairway areas took longer than others to grow in. In addition, Tom says, "Because of the amount of work that was done in such a short time period, there will be some areas that will need extra attention through next season." Although Course #3 opened May 30 as scheduled, another month or two with warmer temperatures would have helped.

The bulk of the work may be completed on Medinah #3, but renovations are just beginning on Courses #1 and #2. With the completion of the PGA Championship in 2006, the other two courses will begin to receive the major portion of their facelifts. Rees Jones is expected to be involved with the future renovations of these courses, as well.

In the meantime, this fall other improvements on Courses #1 and 2 are already underway and include the installation of a new pumphouse and irrigation system. New keystone and vinyl seawalls are to be installed in selected areas on each course as well. At the same time, the club is beginning the rebuilding and expansion of the pro shop and gun club.

No doubt about it, the next few years are going to be very busy ones at Medinah as the club continues to prepare to stage the 2006 PGA Championship while undertaking renovations to move forward into the future.



Looking across no. 18 green towards the clubhouse.





ASK THE "EXPERT" Randy Kane, Ph.D. and Lee Miller CDGA Hank Wilkinson, Ph.D. University of Illinois

# 2003 Illinois Pathology Report: Anthracnose Basal Rot Strikes Bentgrass and Other News

Anthracnose symptoms on a putting green.

In general, the 2003 growing season was good for turf in northern and central Illinois—an outcome that was much appreciated after the problems of last winter and early spring. Extremely cold temperatures with no snow cover last winter caused some turf loss due to desiccation. Then spring was also abnormally cool and dry, which delayed recovery of some winter-damaged turfs well into the golf season.

> Summer, however, continued the trend of average to below-average temperatures for the most part. After the dry spring, many areas recorded above-average rainfall. For example, at Golf House we had only 11 days over 90° for the entire season (as opposed to more than 30 last year), and received in excess of 12 inches of rain in July.

The '03 season wasn't without a few disease and insect problems, but the spectrum of diseases was a little different this year, owing to the cooler-thannormal conditions.

The '03 season wasn't without a few disease and insect problems, but the spectrum of diseases was a little different this year, owing to the cooler-thannormal conditions. The cool, dry conditions of early spring were very good for reducing the severity of take-all of bentgrass, summer patch and necrotic ring spot on *Poa* species. Dollar spot was slow to get started in June, but increased to moderate-to-severe levels by the end of August. Leaf spots and cool temperature Rhizoctonias were frequently observed, and cool and wet conditions that prevailed in some areas favored diseases like yellow tuft a lot more than Pythium blight or large brown patch. In central Illinois, summer temperatures and humidity were higher than in the north. This resulted in early leaf blights, brown patch, rust and dollar spot. However, the severity of these diseases was generally moderate.

#### Anthracnose Rears Its Ugly Head

Not surprisingly, anthracnose was one of our most troublesome diseases in 2003. The leaf blight and basal rot phases were common on *Poa annua* all season, and we observed an increase in anthracnose on creeping bentgrass—primarily on Penncross and Pennlinks, although there is no known resistance in *(continued on page 16)*  newer varieties. Anthracnose on bent can be as damaging as basal rot on *Poa* spp., since it most commonly occurs as a root, crown and stolon rot instead of a leaf blight (see Photo 1).



Photo 1: A macro view of fungus infection on bentgrass shoots.

The typical anthracnose symptom pattern on bentgrass is different than on *Poa*, however, usually occurring as a diffuse, thinning, reddishbrown patch of turf 6-10 inches in diameter (see Photo 2). Basal rot on *Poa* usually appears as small, scat-

appears in late spring or again in late summer to early fall, but this year we observed activity all season because of the moderate temperatures. Low nitrogen fertility or other deficiencies or imbalances that reduce plant growth rates also may increase the severity of anthracnose, as might environmental and management stresses. The latter factors include heat, drought, wear (e.g., mowing, foot traffic), vertical grooming and other abrasions (e.g., from sand topdressing)-all of which cause wounding of plant tissues and provide infection sites for C. graminicola.

As with basal rot on *Poa annua*, anthracnose on bentgrass is difficult to control with fungicides, especially once the infection has become chronic. Systemic fungicides are the best bet for curative or long-term preventive control, and candidates in the DMI (sterol inhibitor), QoI (strobilurins) and benzimidazole (thiophanates) classes all have activity on anthracnose. Tank mixes with



Photo 2: Bacterial wilt on a green.

tered, bright yellow to reddish-brown 'flecks' or 'freckled' spots grouped in a larger patchy area. Bentgrass anthracnose can easily be confused with some leaf spots, localized dry spot or other environmental stresses that cause diffuse patches.

The soil-borne fungus that causes anthracnose, *Colletotrichum* graminicola, is favored by extended periods of leaf wetness, moist thatch layers and cool-to-moderate temperatures. Bentgrass anthracnose usually chlorothalonil, polyoxin D (Endorse) or fosetyl aluminum (Aliette) have shown preventive activity in a few season-long trials. A growing concern is development of reduced sensitivity of *Colletotrichum* to QoI fungicides; several instances of field resistance to Heritage have occurred around the U.S. after repeated use for anthracnose and other summer diseases. Also, occurrence of resistance to the benzimidazole class appears to be fairly common in Illinois. If your course has a history of previous use of benomyl or thiophanates, these products may have limited utility for controlling anthracnose.

#### **Other Developments**

Nematode infestation of turfgrass is always a concern, although most healthy turf swards can support a significant nematode population if the host plants are not placed under extremely stressful conditions. Putting greens, of course, often feature turf under stressful conditions and are most likely to exhibit nematode feeding injury. In Illinois, we can add a new type of nematode to our list of plant pathogens. We have identified cyst nematode (Heterodera spp.) injury on greens for the first time. This nematode causes swelling of roots similar to root-knot nematodes, which limits root uptake and results in plants that are generally weakened and easily drought-stressed. In severe infestations, affected areas go off-color and eventually thin out. Stay tuned for more information on this, as we are working with University of Illinois nematologist, Professor Terry Niblack, to identify the problem worm and parameters for infestation.

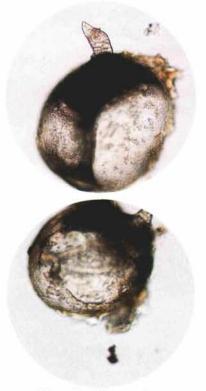
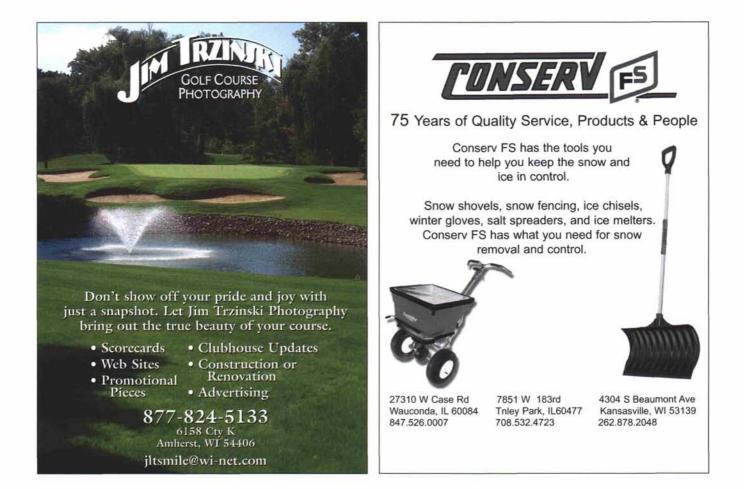


Photo 3: A Heterodera female nematode.

Over the last couple of years, a lot of news has been emerging from the Northeast and Mid-Atlantic States about bacterial wilt on Poa annua putting greens, and we have now confirmed one case in northern Illinois. Symptoms include a light green to yellow color of infected shoots, which may wilt under stress. Also, infected plants may turn reddish brown and die in scattered, dime-size spots (similar to early symptoms of C-15 decline on bentgrass). The presence of xylem colonizing bacteria was confirmed in our lab ("bacterial streaming") and isolates were sent off to Dr. Nathanial Mitkowski at the University of Rhode Island for identification (probably a Xanthomonas *campestris* type, but different than the C-15 bacterium).

Finally, a new disease of growing importance is "rapid blight," which has now been identified in 11 states, mostly in the Southwest and Southeast. This disease is very interesting to turf pathologists for several reasons, mostly because we are dealing with an entirely new type of pathogen. Formerly thought to be caused by a chytridiomycete, rapid blight is actually caused by a type of marine slime mold in the genus Labyrinthula. Infection by this new pathogen was previously found only in saltwater (marine) systems, causing a condition called "wasting" on eelgrass, but now has found its way onto land. Rapid blight mainly affects Poa annua, Poa trivialis and perennial ryegrass on established or overseeded putting greens that are irrigated with salt-contaminated water (e.g., treated or reclaimed wastewater). The symptoms resemble Pythium blight or Pythium root rot, and can be quite severe when seedlings are attacked on overseeded Bermudagrass. In controlled studies, the organism has also been able to infect salt-stressed bentgrasses, so it could become significant locally for those folks who are irrigating with low-quality or reclaimed water. BOLO (be on the lookout) for rapid blight!

Bentgrass anthracnose usually appears in late spring or again in late summer to early fall, but this year we observed activity all season because of the moderate temperatures.



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### From the Berarducci Files

Years ago at Olympia Fields, superintendent Oscar Miles employed two interns named Burchfield and Berarducci. They were Penn State hooligans. That summer, fire destroyed the employee dormitory. The interns were housed in the clubhouse with men's locker room privileges.

One night, the hairy Bear sat in the steam bath, relaxing. In the haze, a member wandered in and sat beside him. "Are you going with the fellows on the golf junket to Spain?"

Said Bear, "I'd love to, how can I manage on \$1.85 an hour?"

#### **Big Ed's Gotcha**

A definition of "gotcha:" retaliation, getting even. An example: sneezing during your opponent's backswing. Our friend, north side superintendent Ima Wizard, likes to be in the limelight. His birthday is announced in Irv Kupcinet's column; his golf weather forecast appears in the Tribune's "Locker Room;" at celebrity pro-ams, he embraces Michael Jordan for photo ops.

On with the story . . . Big Ed is driving to work in the predawn hours tuned in to WGN. It's the Wally Phillips show, and lo, Ima is on the air, too.

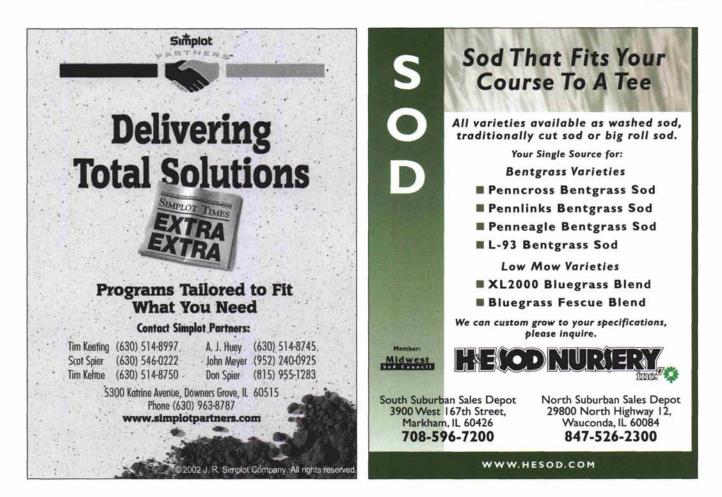
Wally: "Hello, Ima, what's new on the links?"

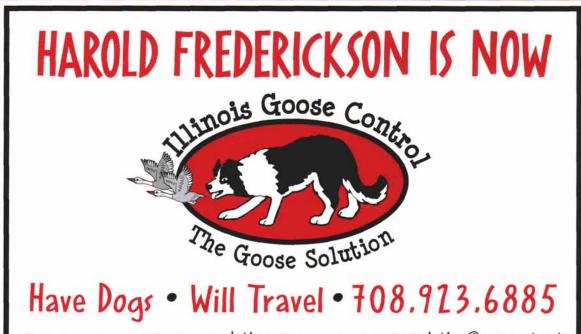
Ima: "I have a problem, Wally. Maybe your radio audience can help. Each Tuesday morning my ladies complain about the mess the fox leaves in the bunker on number seven. How can I get rid of this Monday night dilemma?" Immediately, an idea strikes Big Ed. In his best Scandinavian accent, he phones Ima at work. "Yah, this is Lars Nordstrom, I was hearing about your fox problem. I raise pedigree AKC fox hounds. If you put my dogs' doo-doo in your trap, for sure the varmints will never return. We can't ship you the doo-doo 'cause the scent will be gone. You must come to my kennel on Monday and pick up fragrant fresh droppings."

When last heard from the next Monday night, Ima was close to Harvard, Illinois, gas tank near empty, still searching for the Tally Ho Kennel.

Tuesday morning on his way to work, Big Ed rolled down the window, spat out the juice from his Copenhagen and yelled to Ima, "Gotcha, Ima, yah that's for sure!"







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