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Gray Leaf Spot isn't pretty. It strikes quickly, affecting young ryegrass seedlings first with gray-to-brown lesions, often contorting tender blades into fishhook shapes. With prolonged hot, humid weather, large, mature turf areas can be lost to this dreaded disease.

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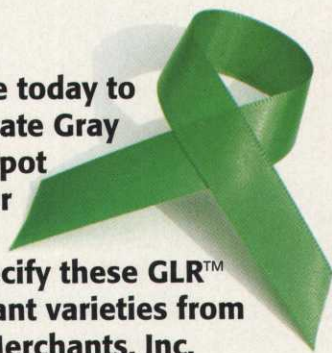
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“Worth Repeating

“I wish my gallery was this big when I was playing.”

— Ken Venturi, famed golfer and golf announcer, upon sizing up the crowd before his presentation at the Syngenta Professional Products Green Carpet Premiere during the Golf Industry Show.

“A lot of people might refer to us as gimps or cripples and ask what the hell we’re doing out there.”

— Bob Wilson, a below-knee amputee and executive director of the National Amputee Golf Association, on disabled people who play golf. Wilson sports a 13 handicap, by the way.

“You don’t need to trick up Winged Foot. It’s just a tough, tough golf course.”

— Eric Greytok, superintendent of Winged Foot Golf Club, who said this before his course hosted the 2006 U.S. Open, in which no golfer broke par.

“I haven’t checked yet, but it’s probably on eBay by now.”

— Chuck Calhoun, superintendent of John’s Island Club in Vero Beach, after witnessing a golf fan pick up John Daly’s discarded cigarette during a round at The Masters.

“Our products are vital to public health protection and property protection. And sometimes the American public tends to forget that.”

— Allen James, president of the Responsible Industry for a Sound Environment, on the importance of pesticides.

“I don’t want to discuss politics.”

— A clearly agitated Matthew Yount, superintendent of English Turn Golf & Country Club near New Orleans, when asked several months later how he thought President Bush handled the devastation brought by Hurricane Katrina.

“Technically, money isn’t an issue here.”

— Joe Voss, construction manager for Liberty National Golf Course, the \$129-million track built by Reebok founder Paul Fireman in New York.

“It’s the culmination of everything I’ve ever wanted to do professionally.”

— Thomas Lively, the director of grounds for the Medinah (Ill.) Country Club, who hosted his first Major, the PGA Championship, in August.

“When someone mentioned that I looked like I was back in my ‘comfort zone,’ I asked him whether he meant my ‘buffet zone.’ ”

— David Duval, on his golf game and his weight. Duval has improved his game and regained some weight, about 25 pounds. (Golf Digest).

“Without them, we wouldn’t have good golf courses to play on. It’s a skillful job they do. It’s not just about cutting grass. You need to have a lot of knowledge about that grass.”

— Retief Goosen, pro golfer, on superintendents.

“Tiger would have kicked the hell out of us, too. This guy is the most amazing athlete in any sport, ever.”

— Lee Trevino on Tiger Woods’ game (Cleveland Plain Dealer).

“We don’t think it’s the sexiest topic in the world, but we think it’s pretty darn important.”

— Chad Ritterbusch, executive director of the American Society of Golf Course Architects, on growing the game.



Congratulations to the staffs of ***Golfdom & Landscape Management*** for winning 17 TOCA (Turf and Ornamental Communicators Association) editorial and design awards at the 2005 TOCA Awards Banquet.



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The Year
in Review

6

On Second Thought

A commentary
by Geoff Shackelford
Contributing Editor

HEY, this sounds familiar.

Tiger Woods dominated again, winning two of four Majors and six straight PGA Tour events. The men's Majors were contested on well-conditioned layouts, with the hard work of crews and volunteers at Winged Foot Golf Club and Medinah Country Club singled out for heroic efforts despite tricky weather conditions.

On the women's side, players like Annika Sorrenstam, Karrie Webb, Lorena Ochoa and Michelle Wie helped the LPGA Tour continue its ascent despite a new commissioner who is alienating some of the tour's long-time tournament directors.

The architecture world once again greeted highly anticipated layouts like Sebonack, Ballyneal, Erin Hills and a slew of other high-priced projects.

And the game's powerbrokers continued to rake in big salaries while poo-pooing major issues like slow play, technology, water usage and the sport's accessibility.

But some things did change. Sort of.

Early in the year, the buzz centered around young bombers J.B. Holmes, Bubba Watson and Camillo Villegas. Remember them?

Their secret to their long-hitting prowess?

"I just like to sleep," Watson told ESPN.com. "I think Tiger and his caddie went out running yesterday. ... You won't see me doing that, and my caddie won't be running, either."

Holmes, who hit an eight-iron from 198 yards enroute to victory in Scottsdale, Ariz., was asked if he was a "weights and/or conditioning guy."

"No, not really," he said. "I ride the bike a little bit or whatever. I'm not really big on the weights and stuff."

Meanwhile, Tiger Woods told Golf Digest's Jaime Diaz that he didn't care for the demise of shot-making.

"I enjoy moving the ball and hitting different shots, and I think that's the way golf should be played," he said. "But the game has changed since I've been on tour. It's hard to make the ball move. You look at the old guys who are or were true shot-makers, like when I played with Lee Trevino at Bighorn and he blew my mind with some of the shots he hit. Then you look on Tour and you ask, 'Who's a true shot-maker? Who actually maneuvers the ball or does something different with it?' And there really aren't that many, if any, out here anymore."

Oddly, the early portion of 2006 included

Winged Foot Golf Club proved a formidable challenge for contestants of the 2006 U.S. Open.

Our intrepid architecture writer looks back on the highlights and lowlights of 2006

mea culpas from the governing bodies on the distance issue. They appeared to see its effects on both the pro and recreational games.

"The longest average drive has moved up about 20 yards in the last 10 years," conceded R&A secretary Peter Dawson to the press during the British Open. "The advent of the ProV1-type ball has most to do with it, along with the big-headed drivers. So do I think that the game at the top level — this elite few — would benefit from the ball being a little bit shorter? Yes, I do."

The United States Golf Association's (USGA) equipment testing guru Dick Rugge told The Asbury Park Press, "We are criticized, and probably rightfully so, for letting technology go too far over the past 10, 11 years or so."

Meanwhile, USGA Executive Committee member Jim Vernon told the group's annual gathering, "We know that the way the game is being played by accomplished players has changed dramatically in recent years. It is not just that driving distances have increased among elite players. What I am suggesting is that we need to reframe the discussion of how the game is being changed."

Then, mysteriously, the USGA unveiled a

Rugge-authored press release explaining "distance myths" and later suggested that U-shaped grooves were the real problem in golf because they encourage long hitters to swing away, knowing they will be able to spin their ball out of 4-inch rough.

In 2007, look for the USGA to prove that such a situation actually occurs.

The other major topic in early 2006 involved the PGA Tour's new television contract, which signaled the game isn't as popular as it used to be. The Golf Channel was locked in for a stunning 15 years of early-round coverage, while CBS and NBC remained involved with weekend coverage.

Rex Hoggard in Golfweek wrote: "Fifteen years? That's not a TV contract, that's alimony."

"If we're trying to reach out to non-golf fans, how you leave out ESPN is beyond me," David Duval told the Associated Press.

Of course, PGA Commissioner Tim Finchem put his usual tortured spin on matters.

"The Golf Channel brings a lot," he said in a press conference. "The reason for 15 years is that it sets the table for us to protect our position in the long term as the television marketplace continues to evolve."

Former USGA Executive Director Frank Hannigan offered a more refreshing take on Golfobserver.com: "The PGA Tour's new television deal confirms the obvious — general interest in golf peaked years ago and is now in decline. Recreational golf has been flat or worse in terms of rounds played for many years. The two are interdependent. For the Tour to find and command a new audience would require a freakish event — like a hermaphrodite dwarf becoming leading money winner. And it would help if the dwarf's cad-die could be Anna Nicole Smith."

The LPGA hired a new commissioner, and she made a splash in 2006, running off key staff members, upsetting the press with a ridiculous photo policy and angering several long-time tournament directors, leading to the demise of several events.

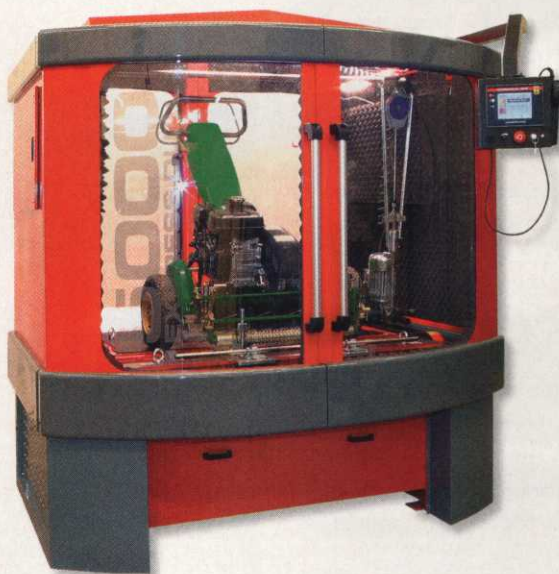
LPGA head Carolyn Bivens likes to talk down to everyone as if she's a CEO running a Fortune 500 company. And she showed real savvy in defending some of her initiatives to

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Tiger Woods dominated the Tour again. He also had plenty to say about the demise of shot-making.

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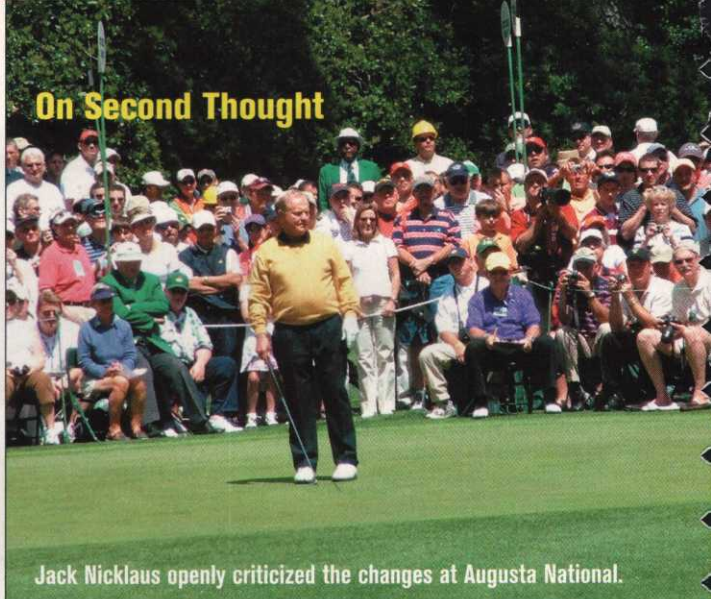
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SHARPER SOLUTIONS

On Second Thought



Jack Nicklaus openly criticized the changes at Augusta National.

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the Orlando Sentinel's Steve Elling: "We're trying to open endorsement opportunities to women. We're trying to raise purses. Isn't that appalling? My, my, go back in the kitchen."

The Masters arrived with a crashing sound, as former champions Jack Nicklaus and Arnold Palmer were critical of the many design changes made under Augusta National Chairman Hootie Johnson, who retired and handed the reins to Billy Payne.

"They've totally eliminated what Bobby Jones tried to do in the game of golf," Nicklaus said in *Golf Digest*. "Bobby Jones believed golf was primarily a second-shot game. He believed that you should have enough room to drive the ball onto the fairway, but if you put it on the correct side of the fairway, you had an advantage to put the ball toward the hole."

The floodgates were opened, and several current players chimed in as well. Said Mike Weir in *The Toronto Sun*, "I'm sure if Bobby Jones was still around, it would be like, 'What are you guys doing?'"

Word also leaked that the club is buying homes in a nearby neighborhood to possibly shift a road so the fifth hole can be lengthened.

Around the same time, word got out that the Ohio Golf Association would be playing its Champions Tournament with a limited-flight ball in order to study a possible rollback and other ramifications of impacting the distance chase that has so adversely affected courses like Augusta National.

The August event was far from a perfect example of how a rollback might work, but the player comments revealed that such a rollback might bring the desired effect of restoring at least one lost element to golf.

"The hardest part was adjusting to the release," [Tournament winner Blake] Sattler said of the Volvik ball in an interview with *Sports Illustrated*. "It brought more strategy into the game."

In another reaction to major changes in the game, Nicklaus' Memorial Tournament at Muirfield Village Golf Club introduced special furrowing rakes for bunkers. Nicklaus' reason behind the controversial concept? Bunkers are too easy, he said.

"Bunkers are really supposed to be a penalty," he said in a press conference before the event. "[Tour officials] have been telling the guys all year that the honeymoon is over and the bunkers are going to be a penalty. I said, 'We can start it right here if you want to.' And they said, 'Fine.'"

Naturally, the players complained.

Australian Geoff Ogilvy won the U.S. Open at Winged Foot despite not caring for the USGA's ultra-narrow course setup or its "tiered rough" concept, which was greeted with mostly positive reviews. He's already proved to be an eloquent spokesman for a return to sensible golfing values.

"Two important aspects of golf have gone in completely the wrong direction," he told Golfobserver.com. "Most things are fine. Greens are generally better, for example. But the whole point of golf has been lost. Ben Hogan said it best. His thing was that you don't measure a good drive by how far it goes; you analyze its quality by its position relative to the next target. That doesn't exist in golf anymore."

Highlighted by Phil Mickelson's final-hole double bogey that started with an errant tee shot that hit a corporate tent, TV ratings for Saturday were the lowest since measuring began in 1982 and were down 12 percent on Sunday, making it the second-worst watched U.S. Open ever.

Then burned-out Hoylake hosted the British Open. Tiger Woods won despite only hitting one driver over four rounds on the fast and fiery turf.

And even though Hoylake was entirely brown but for a few areas on the putting surfaces, players loved it.

"I'd like to see more of these in the States, I really would. It's so much fun to play," Chris DiMarco told the press after the tournament.

After Tiger captured the PGA Championship at soft but well-conditioned Medinah, the U.S. team took another beating in the Ryder Cup contested at Ireland's K Club, falling by the same nine-point margin as last time and causing many to wonder why American players are so inferior on a match-play stage.

The game lost legends Byron Nelson, Patty Berg and Herbert Warren Wind, while the PGA Tour killed the oldest professional tournament, the Western Open.

And in the fall, Bandon Dunes creator Mike Keiser announced that the fourth course at the Oregon resort would be named Old MacDonald, and it will

feature a team-driven design process led by Pacific Dunes architect Tom Doak and his design partner Jim Urbina.

"I think I'm not employing Doak and Urbina as architects," Keiser said. "I'm employing them to design as C.B. MacDonald and Seth Raynor, his apprentice and successor, would build it if they were alive today." ■

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"When you aim for perfection, you discover it's a moving target."

— George Fisher, former CEO of Motorola

Golf course superintendents always have focused on delivering almost perfect turf conditions. However, striving for perfection might not always deliver the results they expect. For example, what defines a perfect bunker?

Conventional wisdom describes an ideal bunker as firm. No matter where the ball hits in the bunker, it ultimately comes to rest at the base of the bunker. Once in the bunker, a ball's lie is similar to that found on a cement roadway. The antithesis of the perfect bunker is one that produces a buried or fried-egg lie.

However, in producing a firm and ideal bunker, it's been revealed that the bunkers are no longer much of a penalty for professional golfers.

But in the last few years, opinions about what constitutes an ideal or perfect bunker has changed. According to PGA Tour statistics, 149 professionals averaged at least 50 percent sand saves in 2000. In 2005, just 85 players executed sand saves at least half the time. What caused the drop in sand-save efficiency? One reason is the construction or renovation of bunkers that has made them deeper. Depth increases bunker difficulty. The downside to deeper bunkers includes cost of construction and increased difficulty for recreational/amateur golfers to play out of them.

In concert with bunker renovation, the desirable characteristics of the sand have changed subtly. Bunker sands are characterized through a series of laboratory tests (Brown & Thomas, 1986). One of those tests is called the "Fried Egg Lie Development." In this test, a ball is pressed into the sand using a penetrometer. The force needed to create a fried egg is measured. The less force needed, the higher the tendency to bury the ball. Under the concept of firm bunkers, desirable sands were classified as having a "very low tendency to bury the ball." [Editor's note: a high penetrometer measurement is greater than 2.4 kilograms per square centimeter (kg/cm²).]

Staying Ahead of a Moving Target

BY KARL DANNEBERGER



PLAYING
CONDITIONS
ARE SUBJECTIVE,
SO WHO SETS
THE STANDARDS
ANYWAY?

Currently, the bunker sands being used at some of the tournament golf courses have been changed to give a "slight tendency to bury the ball." These measurements fall in the 2.2 to 2.4 kg/cm² range. Golf course architects and builders often refer to these sands as "2.3 sands" in reference to the penetrometer measurement. Not only do these sands provide a degree of partial burial, the raking of these sands tend to be less consistent, which creates soft ridges that result in the ball settling in the grooves.

At the 2006 Memorial Tournament at Muirfield Village Golf Club, Jack Nicklaus and superintendent Paul B. Latshaw took raking one step further. Using deep-toothed rakes, the bunkers were furrowed perpendicular to the line of play. The furrowing of the bunkers was reminiscent of the original furrowed bunkers of Oakmont Country Club in the 1910s and 1920s. Although furrowing was criticized by the professionals back then and in 2006, it does have some advantages.

Furrowing provides a consistent penalty. The ball always tends to settle in the furrow. Thus, golfers all receive the same lie. Another advantage is that furrowing is accomplished easily for tournament play, and then bunkers can be raked out for everyday member play. Furrowing also helps mitigate the need for digging bunkers deeper and the associated cost.

The changing view of what constitutes a perfect bunker is a reflection of how perfection can change — ever so slowly and often in the eye of the beholder. Perfection is attained by slow degrees; it requires the hand of time. And sometimes it needs a little nudge from an innovative superintendent.

Karl Danneberger, Ph.D., Golfdom's science editor and a turfgrass professor from The Ohio State University, can be reached at danneberger.1@osu.edu.

TURFGRASS TRENDS

PEST CONTROL

Predicting Nematode Populations Can Pre-empt Disease

By Nathaniel Mitkowski and Katerina Jordan

Nematodes are one of the few turf pathogens that can be managed using an integrated pest management strategy. Because plant-parasitic nematodes are ubiquitous in turfgrass soils, it would be impractical and impossible to eliminate them. Thus, turf managers in the Northeast must live with a certain number of plant-parasitic nematodes in any turfgrass stand. When the population of nematodes reaches a high level, it may cross a disease threshold, and symptoms might be observed. When this occurs, treatment is warranted to knock the nematode numbers below the disease threshold.

Dr. Robert Wick at the University of Massachusetts has been actively working on the population dynamics of plant parasitic nematodes on putting greens for at least 20 years. His research has helped clarify the damage thresholds for numerous plant-pathogenic nematodes in the Northeast and has established the seasonal population growth curves for these nematodes (Wick, 1989). Using this information, diagnosticians can tell which nematodes are likely to cause damage, the number of nematodes associated with damage and the likely time of year that the damage will be most noticeable. One of the major pieces of missing information, however, is being able to predict which courses will have nematode problems and in what particular years. Not every golf course has a nematode problem, and nematode populations do not reach dramatically high levels every year, even on those courses that frequently have high nematode populations.

During the past three years, we have been conducting a project to examine the factors that can contribute to high nematode populations on golf course putting greens. During 2003 and 2004, soil samples were taken from 38 golf courses in southern New England (three greens each) during May, July and September. Nematode numbers were counted, and a wide array of cultural and environmental factors were recorded. Once all the data was obtained, it was statistically analyzed to determine what factors, if any, might lead to increased nematode populations.

Initially, we examined data to determine how populations of different nematode species changed over the course of a year and between two different years (Jordan and Mitkowski, 2006). Surprisingly, there was a major statistical and biological difference between total nematode numbers between 2003 and 2004, with 2004 having much higher total average nematode numbers, regardless of the species of turf parasitic nematode. By examining the graphs in Figure 1 (p. 40) it is apparent that most nematode populations increased into September, with the exception of the *Tylenchorynchus* (stunt) nematodes. These findings agree with what is generally observed on golf course

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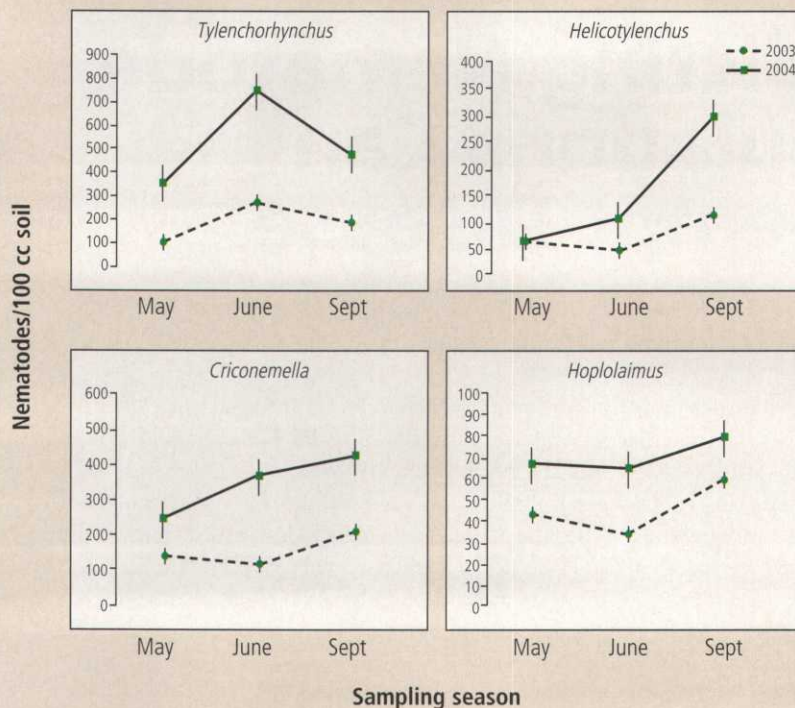
QUICK TIP

Nematodes are a growing pest problem for golf course superintendents, and control options are becoming more limited by EPA regulations on pesticides that can be used for their control.

Keeping turfgrass plants as healthy as possible can help overcome nematode problems or problems created from nematode feeding. And having a balanced fertility program focused on proper nitrogen for growth, proper phosphorus for energy and rooting, and proper potassium for water relations and improved stress tolerance can go a long way in warding off pest damage. Many times we overlook the importance of potassium as a nutrient. Because potassium is consumed by turfgrass plants via luxury consumption, we must be sure to consistently maintain potassium concentrations in the soil solution. Tissue testing is the best means of determining how well a potassium fertility program is working.

FIGURE 1

Changes in nematode population in 2003 and 2004 expressed as nematodes per 100 cubic centimeters (cc) of soil.



Continued from page 39

putting greens: a steady increase in nematode numbers that often peaks at some point in August or September.

Unfortunately, it is difficult to determine exactly why nematode populations were so much greater in 2004 than in 2003, an entirely unexpected result. Two plausible explanations are rainfall amount and temperature. Spring 2003 was extremely wet. Soil-borne nematodes require oxygen and excessive precipitation is likely to keep soil oxygen low, thereby reducing nematode viability and fecundity.

However, temperature may have played an even more significant role in nematode survival. While nematodes in temperate climates can survive the freezing temperatures of Northern soils, the fluctuation in temperatures plays an important role in their survival. Although the average temperatures for winter 2003 and winter 2004 were similar, temperatures in 2003 varied widely

throughout the winter. The fluctuation in temperature was dramatic, and little ground froze. In 2004, however, temperatures changed gradually, and some areas of southern New England had frozen ground to a depth of 3 feet. We expected to see fewer nematodes in 2004, as it seemed to be a harder winter. The opposite was true. Because nematodes acclimate to their environment over weeks or months, it is possible that a hard (or consistently cold) winter allows them to maintain a regular level of dormancy.

A significant amount of information about the 114 greens was collected in order to determine which, if any, factors influenced nematode numbers. Collected data included: seven different management practices (Table 1, p. 42), 16 different soil chemical properties, grass species present and soil physical analysis. Only a few parameters were found to influence nematode numbers between golf courses. The most

Continued on page 42