

Tracing Trends in the Golf Industry

Having been involved in golf for many years, I—like many of you—have experienced a great number of cycles in the golf business. As everyone knows, the events of September 11, 2001, triggered a traumatic effect on most of the golf business, more so than the usual recession felt in the 1970s when golf took a couple of step backwards.

In the recent past, there have been a number of golf developments that have attempted to step into a soft golf market, which not only causes them to struggle but also causes the other golf courses within those market areas to suffer as well until additional players stabilize the market.

Most recently, we have witnessed a change in the dynamics of golf course development, construction, renovation/restoration and management. In the recent past, there have been a number of golf developments that have attempted to step into a soft golf market, which not only causes them to struggle but also causes the other golf courses within those market areas to suffer as well until additional players stabilize the market. Those additional players may derive from new homes being built or golfers having to travel a greater distance to play a less-busy golf course. Because some of these new golf developments have been less successful, lending institutions have become very wary of lending monies to a golf development with a solid, reputable and complete feasibility study.

This situation also translates to making potential golf course improvements, primarily as it relates to privately owned golf courses and municipal courses that are contemplating major improvements. Market competition has become fierce and will become even greater as the economy tightens with disposable income being diminished. However, without staying current with maintenance standards and improvements in golf course playability with new designs, "stale" golf courses become less played and begin to lose their standing within the marketplace. Major improvements have been undertaken by a number of these golf courses within the Chicagoland area and these facilities will prove to be superior after their completion, especially if they have enlisted the professional involvement of qualified golf course architects and contractors.

Because of a limited budget or a desire to directly oversee modifications to be made on a golf course, some facilities have foregone the traditional method of architect/contractor in consideration of the "design/construct" approach. This method has also been used to help reduce the overall cost by having a qualified superintendent and contractor who work well together formulate the correct plan and budget, then work together in a partnership to achieve the objectives outlined by the owner. Sometimes, the contractor can be the best asset that the owner hires since they can provide some "value engineering" because of their knowledge, experience and ability. Or, as in the case of Chicago Golf Club, facilities have performed the work "in house," purchasing the required material and equipment themselves while using qualified

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employees. As we all know, upper management usually wants the golf course superintendent and general manager to “do more with less.” In some circumstances, a change in the way “managers” approach the situation and handle the changes can spell success or failure.

New golf development has been very slow over the past couple of years and all of us are waiting for an upswing to occur in this part of the market. I have been watching the upper end of the golf market advance further than the mainstream, with many new, upper-end courses being built—such as Bolingbrook Golf Club, The Glen Club and others in the planning, including new three-hole executive-style golf courses as part of residential properties. We have seen this new type of golf course in the Peoria market with Augusta Estates. As part of this gated, 30-lot community of executive-style residences is a three-hole golf course on 15 acres with a par-3 and two par-4 golf holes. This property, as well as others already built or being planned, is a trend that is happening now and will continue into the near future due to decreased land usage and the demand from the upper-end market, as pointed out by Jay Morrish (current president of the American Society of Golf Course Architects).

Our involvement at this new three-hole facility at Augusta Estates started with the golf course architect, site engineer and the owner’s representative. We designed the irrigation system, completed the golf course construction and performed grow-in services. What is strange about this development is that, even in Peoria, Illinois, there is a market that is willing to pay upper six-to-seven-figure prices for homes AND pay the monthly maintenance fees that are almost equal to local private club monthly dues. At this time, the project is going extremely well and will be built out within two years’ time. The owners have at least two other developments in the planning stages in the central Illinois market alone, with a number of others planned in the Southeast and Southwest.

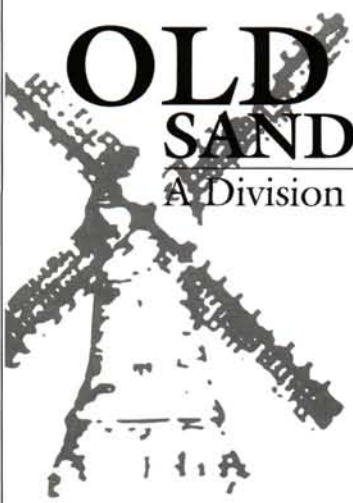
Another innovation within the golf market is the advent of practice facilities that will be made up 100% of artificial turf. These practice facilities will be in specific target markets around the country and each will also include a par-3 golf course as well. These future golf facilities will be associated with travel destinations and high-traffic locations for businessmen who want to practice their game or to entertain while traveling. Based on the improvements in artificial turf in terms of the differentiation of the turfgrasses and playability, this can be achieved on this large of a scale. As you can imagine—questions arise as to what impact this will have on our industry in the long term and whether these advancements will hurt our turfgrass industry? And will the artificial-turf industry endure the negative impacts that the turfgrass industry has with the impression of introducing chemicals into the environment? Advancements in every industry are beneficial but in some circumstances, at what cost?

Despite the economic downturn and any difficult times to come, I do look forward to the next series of challenges in our industry while learning from some of the best golf course superintendents in the country. In having been exposed to almost all areas of the golf business over the

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past 25 years, I can confidently say the most impressive experiences have been with the many talented, resourceful and innovative golf course superintendents in the MAGCS.





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Nematodes in Sand Root Zones— Coming to a Golf Course Near You?

Severe nematode damage on a golf course putting green.

Of all the pest problems in the world of agriculture, nematodes are possibly the least-understood pest. But based upon several recent reports from around the state of Illinois, we all might want to bone up on these little critters. Nematodes are sporadically diagnosed as problems on Illinois golf courses. However, in the past two years we have seen three cases of nematodes damaging turfgrass in sand root zones. Two of these reported cases were in the Chicago area. There may have been other cases that we are unaware of as well.

... the question is not “are nematodes present,” rather the question is “what level is necessary to cause significant turf damage and when will the turf really benefit from an application to control nematodes?”

Besides the two golf courses in the Chicago area, John Donahoe, athletic turf manager for the University of Illinois Department of Intercollegiate Athletics, had a positive test for nematodes during summer of 2002 on a Kentucky bluegrass soccer field with a 100% fine-sand root zone.

How does one determine if nematodes are a problem? This is a question that can spur tremendous debate amongst agricultural scientists and growers. The problem in determining nematode damage is twofold. First, nematodes are always present in large quantities. Many nematodes are not plant-parasitic, but there will always be some nematodes present that do feed on plants. So, the question is not “are nematodes present,” rather the question is “what level is necessary to cause significant turf damage and when will the turf really benefit from an application to control nematodes?” Second, nematodes are quite tiny and can’t be observed with the naked eye. So diagnosis generally involves a significant effort, expense and requires expertise. At the University of Illinois, nematodes are extracted from 100 cc of soil. The extract is then sent to a nematologist to quantify the numbers and species of nematodes present in the sample.

Recently retired University of Illinois extension nematologist Dale Edwards has established threshold guidelines for nematode infestations in

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turf grown in Illinois (Table 1). However, since nematodes are always present in turf, it can be difficult to decide what levels are necessary to cause damage. Nematode diagnoses are often the result of the elimination of all other possible sources of plant injury. Typically, superintendents try increasing water, fertility and then may try fungicides, all without any reduction in symptoms. In fact, symptoms often increase during these periods. It is only after all other possible causes are eliminated that nematodes are suspected.

What kinds of plant injury do nematodes cause? Nematode injury is often first observed on plants under the most stress. Nematode feeding is a stress that will exacerbate existing stresses. Thus, on a putting green, turf may begin to wilt where stress is most severe, the mower cleanup lap on the edge of the green or the area that is under shade. Damage is usually first observed as a yellowing of the leaf tissue. In the case of the Kentucky bluegrass, injury was observed as a light yellowing of the turf and the affected turf was growing more rapidly than the surrounding healthy turf, a type of growth termed etiolation. Damage on creeping bentgrass also starts out as a yellowing of affected leaf tissue. It is difficult to tell on putting-green turf whether affected turf is growing more rapidly than non-nematode-stressed turf due to the low cutting heights and frequent mowing. Because nematode feeding injury is mostly a plant stress, damage is generally observed in the hot summer months when turf is under heat and drought stress. On sand root zones, drought stress can be a problem because of the limited water-holding capacity of sand. Nematode predation on roots can increase the occurrence of drought stress even on well-watered turfs growing on sand root zones. This further increases the stress the turf must endure.

When is nematode injury most likely to be observed? Nematodes have a short life cycle, producing a

new generation in as little as four weeks under warm soil conditions. Nematode populations tend to rise as turf root growth increases. The most likely time to see nematode injury is in the early summer following the spring flush of root growth. Populations may also rise in the fall, but turf managers are less likely to observe damage then because the temperatures are cooler and there is less risk of drought stress. So, like many other turf problems, it is the hot summer months when the damage from nematodes will most likely be apparent.

Proper soil sampling is imperative when attempting to diagnose nematodes. Because nematodes are quite variable and always present, it is wisest to take two, paired samples. One sample from a healthy area helps to establish baseline populations. A second sample from the damaged area can be used to compare levels of plant-parasitic nematodes to those in the healthy turf. A note of caution: if the area you're sampling is very damaged, the nematodes may not be

found in large quantities at the center of the damaged area. They may have moved to more fertile areas after doing their damage. Nematodes can't move great distances—up to one foot per year is normal—but they will move after extensively feeding on a turf root system. Use a standard 1" diameter soil sampling tube to collect six to 10 subsamples from each area. Sampling depth should be equivalent to the turf root zone depth, at least 4" but not more than 6". Subsamples should be combined and placed in a plastic bag and shipped immediately to a testing facility. Remember, these are living organisms; improper handling or storage could kill them and invalidate the test.

Nematode Control

How does a turf manager manage nematodes? First, never apply a nematicide without first having a sample tested by a reputable soil-testing lab, plant clinic or nematologist. Because nematodes are always present, you must first establish the baseline levels prior to treatment. If the nematode analysis



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indicates that nematode levels are high enough to warrant an application (Table 1), consider leaving a small check area untreated. This will help in determining the effectiveness of any nematicide treatments. Currently, there is only one product labeled for nematode control in turf, fenamiphos (trade name Nemacur). Nemacur is a highly toxic product, LD₅₀ of 2 to 19 mg/kg in rats, which also has a propensity to leach to groundwater. This pesticide is a restricted-use product that must be applied with great caution. Nemacur will not eliminate nematodes but will reduce their numbers, and should result in a reduction of the symptoms. A second nematode count about two-three weeks after application will provide additional evidence of the efficacy of the application.

Unless damage is severe, a reduction in environmental stress will cause a reduction in the plant injury caused by nematodes. Sometimes just waiting can be a cure; however, other times a nematicide

application will be required to provide a reduction in symptoms.

Nematodes in turf have been well studied, and we don't know what cultural factors, outside of sand root zones, contribute to nematode problems. Since nematodes are always present, what causes their populations to get to the point where turf damage is observed? This would be a fruitful area for future research. Meanwhile, be on the lookout for signs of nematode injury this summer.

The University of Illinois Plant Clinic accepts samples for nematode determination. The address for the plant clinic is 1401 W. St. Marys Road, Urbana, IL 61802 (217-333-0519). Charges are \$40 per sample and payment should be included with the samples.

Table 1.
Damage thresholds for plant-parasitic nematodes in Illinois turfgrasses^a.

NEMATODE	NEMATODES PER 100 CC OF SOIL ^b
Lance	>75
Lesion	>50
Stunt	>100
Dagger	>50
Spirals	>300
Ring	>300
Pin	>500

^a From University of Illinois Extension report RPD 1108. D.I. Edwards, author.

^b Lance, lesion and stunt nematodes in combination can cause symptoms at lower population levels.



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What I Did On My (Boss') Summer Vacation

There is no better mentoring experience for an assistant and no better way for a superintendent to recharge his batteries than to take a vacation during the middle of the season. I found this out firsthand late last June.

A pump station goes AWOL during a heat wave, and an assistant superintendent spelling his boss for a week confronts some difficult decisions by mustering his resources, pondering his options, making the tough choices—and gains confidence in the process . . .

It all started with a drive to the airport to drop off the boss for a week-long trip. Wow! He was really going and leaving me in charge to take care of everything! To top it off, it was supposed to get hot towards the end of the week. No problem, I figured, I have been doing this stuff for quite a while and we have a great crew. What could go wrong? Boy, was I in for a surprise.

When I returned to work later that morning, I got in my cart to drive around and check on everything. During the course of my travels, I went to the chemical building because I had to finish cleaning up everything from spraying that morning. When I went into the chemical building, I noticed the lights were dim. I thought this was odd, so I decided to check into it. As the chemical building is on the same power source as our pump house, I went there to investigate the fuses or any other possible causes. Upon entering, I noticed the lights were dim there also and the pump station was flashing an error message. The VFD drive was not working . . . OH NO!!! Now I knew something was definitely wrong. I immediately got on the radio to call the foreman to help me figure out what was going on. Because his knowledge of electricity was better than mine, he deduced that one of the three legs of power coming from the power line must be out. I was not quite sure what he meant but knew it did not sound too good. He told me to meet him by the electric pole adjacent to the 12th hole. Sure enough, one of the fuses from the power line was hanging there disconnected.

I raced back to the shop and called Com Ed. They would have someone out to fix it, they told me, but they didn't give me any estimated time of arrival. Oh great, I thought—this could take forever. Much to my surprise, an hour later a crew was there to replace the fuse. I asked the guy what could have caused the problem and he pointed to a dead squirrel on the ground beneath the pole. In no time they had the fuse back on and everything was back to normal, or so I thought.

I got back to the pump house to reset the pump station and the VFD drive would not reset. What now?! After checking everything that I could think of, I called the expert, Chris Plumb. While waiting for Chris, I made sure everyone

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was busy and did a quick drive-around to check the course. No problems so far, except for the VFD drive in the pump house. An hour later, Chris was there and started troubleshooting the situation. I did not like the expression on his face when he opened up the VFD drive box. Everything was black inside and definitely fried. I asked him what my options were? Chris explained to me that the manufacturer of the drive does not allow him to do service work on that drive. I would need to have their people fly in to fix it, which could take a week or longer and may get costly. Not a valid option, I thought. The other option was to replace this drive with one that he could service and get parts "next day." In my mind, that sounded a little better, especially with the predicted forecast of hot weather coming in the next couple of days. I wondered how much this was going to cost, knowing it was not in our budget.

What a great experience for me to prove my abilities, interact with members and learn what it is a superintendent must do everyday. It was experience and training I could not learn in school or on the job with the superintendent there.

Having acquired all this information, I headed back to the shop to call the greens chairman to let him know of the situation and obtain his approval to fix it. After explaining the problem and our options to him, he asked me what I thought we should do. Wow, he is asking for my opinion, I thought to myself. I told him that I believed our only valid and sensible option would be to get the new drive, which our local service guy could fix in the future if necessary. He agreed and then gave me the okay to spend the unbudgeted \$9,000 that it would take to replace the VFD drive. All this because it was what I recommended!

I immediately told Chris our plan was to get a new VFD drive and he called in the order. Because it was already late in the afternoon, he said the parts would be there the day after next and he could have everything up and running shortly after that. I knew the course could make it through another day without water because the trustworthy weather people were predicting rain the next day and the course looked fine at the moment. I told Chris I would call him when we had everything. After a couple tours around the course, I convinced myself the course would be fine without water that night, knowing we could hand-water, if needed, the next day.

At that point, I needed to make one more decision: do I call the boss and let him know I have just spent an unbudgeted \$9,000, or do I just leave the bill on his desk as part of his summary of events while he was gone? Well, I thought to myself, there is not a whole lot he can do now and why stress him out while he is on vacation—that's not the reason he went. Trusting that I had made the right decisions so far, I opted to not disrupt his vacation and just leave the bill on his desk for him to see when he returned.

The next day was a long one. The daytime temperatures were approaching the 90s and nighttime temperatures were close to the 60s. Although the weather guys were still predicting rain for that evening, they were also predicting higher tempera-

tures to follow the next couple of days. That afternoon, I had some of the crew out doing some very limited hand-watering of areas on greens that were beginning to stress, while I stayed in the pump house to manually turn on and off the pumps as needed. My objective was, at minimum, to keep the greens alive and in good condition; the other areas we could deal with later when everything was back to normal. This seemed to be working fine and I just hoped nothing else would go wrong. Much to my surprise, I felt we made it through that day in good condition.

After a night of watching the Weather Channel, I happily arrived the next morning to see 0.6" in the rain gauge. Also, later that morning, a small package arrived. It was only the fan that kept the VFD drive cool, not the VFD drive itself. A couple hours passed and I began to worry about the rest of the shipment that had not arrived yet. I called UPS to find out the location of the VFD package, but all they could tell me was that it had arrived at O'Hare and should be at the club soon. Keeping the crew busy and watching the Weather Channel helped to pass time. The rain had given the course some much-needed relief, but I was not comfortable still having a disabled pump house with the temperatures getting hotter. A couple hours later, I finally found out where the package was . . . it had been sent to the wrong location! Oh great, who knew how long it would take for UPS to get it here? After a lot of complaining on my part, they assured me it would be at the club that day. My head was starting to spin from all of this turmoil, so I called Chris to let him know that the package would not be at the club until sometime late in the afternoon. Chris gave me reassurance by telling me he understood the urgency of getting the pump station fixed and that I could call him whenever the package arrived.

The crew's day was soon over and that left me there waiting for the VFD drive, checking the course conditions, and calling UPS every so often to check the status of my package. To prepare myself for the worst,