

Clark Talks Turf

■ TIMELY TURF ADVICE



→ Repairing Winter Damage on Annual Bluegrass Greens

Kevin Frank, Ph.D., Associate Professor of Turfgrass Science at Michigan State University shares his insight on recovering from winter damage on annual bluegrass greens gained from observing recovery procedures on greens in Michigan and experiments on research plots.

Q How do you determine if some of the annual bluegrass on the greens has died? As soon as it is practical, take several plugs from the green or greens you are concerned about and bring them into the maintenance facility. Place the plugs in a warm, sunny location and see if the grass starts to grow. It is vital that you take several cores from each location on each green you are concerned about. Be sure to take a plug from an area where no damage occurred, take a plug from an area where you suspect damage and take a plug from an area where you are certain there is damage. A comparison of recovery among plugs is vital to making sound decisions.

As soon as the snow melts, start a regular routine of observing the turfgrass on the greens to follow the progress of the recovery.

Q What is the first step to promote the annual bluegrass to recover? Get out early and charge the irrigation system, if feasible, and water if needed. It was dry early in the spring last year and sufficient irrigation was critical to helping the annual bluegrass recover. Don't give up on the damaged turf-

grass until it has received sufficient rainfall or irrigation and had some time and warm weather to recover. Be prepared for a dry spring by having the irrigation system ready.

Keep observing the turfgrass and watch for new leaves.

Q The annual bluegrass on parts of some greens is dead. What next? The answer depends on the size and number of dead areas. For small areas, sodding with annual bluegrass from a nursery green on your golf course is the best option. The annual bluegrass from the nursery will be the best match appearance-wise to the annual bluegrass on the golf course. Hex-plugs can be used for small areas and sod strips can be used for larger areas.

For larger areas, some superintendents have had success enhancing recovery by aerifying the dead areas, removing the plugs and then aerifying a healthy area of annual bluegrass, collecting the plugs with healthy turfgrass and inserting the plugs with healthy turfgrass hole-by-hole into the damaged area. Yes, this is a time consuming process but it does speed up recovery.

For areas where neither of the above options is a good solution, slit seeding in two directions with creeping bentgrass is recommended. Be patient. Soil temperatures are cool in the spring and it will take several weeks for the creeping bentgrass seed to germinate and develop.

Q What about golfer traffic and mowing? Ideally, you should close the green. The reality is that few courses can close greens due to winter damage. Anything you can do to minimize stress on the green is recommended. Place cups on healthy parts of the green away from damaged areas, raise the mowing height, reduce the number of mowings per week and roll instead of mow.

Q What cultural practices will enhance recovery? Follow the regular fertility program that you normally use, and consider supplying additional phosphorus if it's not already part of your regular program. Phosphorus aids in turfgrass establishment. A slight increase in rate from your regular program, maybe 20- to 30-percent, will help promote recovery.

If you have the budget, cover the greens on cool days and cold nights and remove the covers on warm days.

Green sand can mask the damage on greens with spotty damage. While the green sand may not enhance recovery, it sure helps improve the appearance on the damaged green and might increase golfer satisfaction.

Regular syringing can make all the difference in recovery. Keep in mind the sod, healthy turfgrass aerification plugs and seedlings will all have a short root system and regular mowing isn't going to allow much of a root system to develop. Be prepared to syringe the damaged areas all spring and summer to compensate for a short root system.

Clark Throssell, Ph.D., loves to talk turf. He can be reached at clarkthrossell@bresnan.net.



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TURFGRASS TRENDS

■ N E M A T O D E C O N T R O L

The Changing Landscape of Nematode Management

If nematode problems are becoming more prevalent, why is the problem increasing and how do we deal with it?

By Nathaniel Mitkowski

As most superintendents with perennial nematodes issues recall, Nema-cur (fenamiphos) has been out of the national distribution chains for about a year. As the only registered turfgrass nematicide (aside from Curfew), the product filled an important niche in turfgrass management. While occasional failures of the product have been reported in past years throughout the South, it was almost universally effective in the northern regions of the United States. Those superintendents who have a supply of Nema-cur in their shed are using it sparingly, typically spot-treating infested areas and managing with a mind towards IPM like never before.

In fact, while I still use the same damage thresholds that I have used in previous years, the recommendation to apply Nema-cur has never been harder or required more careful deliberation. After all, once a superintendent exhausts the supply he or she has on hand, there is nothing yet available to replace it.

For those superintendents without a supply of Nema-cur, last year was especially difficult. In the ten years I have been counting nematodes at the University of Rhode Island, I have never regularly observed counts as high as those I have seen in the past two to three years.

Years ago, as an undergraduate doing counts at the University of Massachusetts, I vividly remember counting a sample with almost 9,000 spiral nematodes per 100 cc soil. In the two years I regularly worked in the nematode lab as a student, I never again saw a count that high. Last summer, such a count would not be unusually high at all. In fact, I regularly saw nematode counts in the 6,000 to 10,000 range from both stunt and spiral populations.

Despite the recent observations of higher nematode populations in the Northeast, it is unclear whether populations are truly increasing. The data to support this claim is scant and based primarily on diagnostic evidence, which has a tendency to be greatly skewed.

For example, in a diagnostic capacity I generally see materials from a small

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Another challenge for superintendents is handling nematodes with fewer materials in their arsenal. Here, a lance nematode pops out of a root.

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sample of golf courses. And golf courses that have fewer observed disease issues usually send fewer samples than those golf courses that have significant damage and decline. This means that a disease lab is often only seeing diseased turf and could easily assume that there was no healthy turf around! Another factor that may contribute to the perceived increase in nematode populations is the absence of NemaCur.

In the past, a course may have applied the chemical and requested a nematode count without informing the lab that NemaCur had been applied. If a nematode population appeared low when a count was made, I would have concluded that nematodes were not an issue. In addition, we do more nematode counts now than ever before because more superintendents request nematode diagnosis than in the past.

So while it is possible that nematode problems are increasing on golf courses, especially in the Northeast, this claim would probably not stand up to scientific scrutiny. It is entirely possible that populations are no higher than they have been in the past but our awareness of nematode populations is much greater.

If we assume that nematode problems are becoming more prevalent, there are two

questions that need to be answered: why is the problem increasing and how do we deal with it? Neither question has an easy answer but there are a few plausible reasons for why nematodes issues may be becoming more prevalent.

As mentioned previously, it may be that superintendents are simply more aware of the problem and are looking for causes of decline that have eluded them in the past. Others may also point to global warming as an explanation. While this theory does have some merit, it does not fully address the issue of management changes in the past 20 years. And without a doubt, things have changed dramatically on golf courses in the past few decades: height-of-cut has steadily declined, traffic has increased, topdressing is far more frequent and the type of chemicals we currently apply are very different from those used in the past.

While all of these can play a role in the level of nematode damage observed on turf and how aggressive nematodes may ultimately become, the change in the types of chemicals used by managers holds particular importance. Many of the pesticides now applied to turf are more environmentally friendly than those used in the past. However, it may be that some of the non-target effects of older pesticides actually kept nematode populations to lower levels. While mercury used to

be commonly applied on golf courses, this practice has long been discontinued. It was demonstrated in the 1950s that when mercury was applied to the soil, plant-parasitic nematode populations dropped dramatically.

Research from the 1960s demonstrated that mercury does not leach much when applied in pesticide form. Thus, it could be inferred that mercury was slowing nematode population growth in those locations in which it had previously been applied. However, the application of 20 years of topdressing has likely buried most residual mercury three to four inches below the surface of the soil where it will have little effect on nematodes today.

A few years ago the EPA added restrictions to the use of thiophanate-methyl. Many superintendents have moved away from the product in light of rate restrictions and are substituting strobilurin fungicides in its place under certain circumstances.

Thiophanate-methyl (and benomyl — which was marketed as Tersan 1991 before its registration was withdrawn) breaks down into carbamates and has been shown to be effective against some nematodes in experimental trials.

The registration for Dursban (chlorpyrifos) has also recently been withdrawn. This insecticide is an organophosphate and may have had some activity against nematodes when applied at higher rates. Even if these products did not directly kill nematodes, they very likely could have slowed reproduction and interfered with feeding behavior. Despite the fact that non-target effects against nematodes exist, none of those mentioned above were registered for nematode control nor should they have been (or currently be) used to manage nematode populations. But it is possible that the use of these products had side effects which are only now being recognized.

Cultural practices also have a major role in nematode related damage. It is relatively uncommon to observe nematode damage on fairways and roughs in the Northeast. Although populations can become high in these locations, the plants tend to root much more deeply and experience far less traffic. While deeper rooting can often increase nematode populations, plants gain a tremendous benefit in nematode tolerance that far

outweighs the increase in nematode populations (especially with stunt and spiral nematodes). The continual drive to lower heights on putting greens may well be increasing the impact of nematode populations that were tolerable at higher heights of cut.

So what options are available to control nematodes in the absence of Nematicur? Not many. Curfew does work well and is available but is not registered for most northern states, is expensive and requires special applicators to do the work.

In the past 10 years there has been a spate of products to hit the market and while some look promising in replicated trials, others don't seem to do much. We recently ran a small trial at the University of Rhode Island but won't really know how well the products worked until we replicate the study this summer.

Dr. Billy Crow at the University of Florida has demonstrated some positive results with the chemical methionine (an amino acid) but only on bermudagrass and only against sting and ring nematodes, neither of which are a problem in the Northeast. But new nematicides continue to be developed and researchers throughout the country continue to examine them for efficacy and phytotoxicity.

Despite the lack of chemical approaches to controlling nematodes, I have seen a number of golf courses that have been able to minimize plant damage by focusing on plant health. Specifically, these courses have made significant efforts to grow roots and minimize stress. In addition to fertilizer management and cultural practices, these courses have also worked hard to control root diseases like Pythium and summer patch.

These techniques will not reduce the number of nematodes present on a putting green but they will allow grass to more successfully tolerate nematode damage and recover from this damage more quickly. Unfortunately, the trade off for healthy grass may sometimes be slower speeds and this is a compromise many courses are unwilling to make.

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Nematode counts in the 6,000 to 10,000 range from both stunt and spiral populations are common.



Going Wild on the Golf Course

By Warner Shedd

The beauty of wildlife on the golf course, such as this Sandhill Crane, can add pleasure to even the worst golf round.

There are at least three good reasons why those responsible for managing golf courses should be aware of, and care about, wildlife. The first is that, collectively, wildlife represents a sort of miner's canary — an indication of the overall health of a course and its immediate surroundings.

The second is that many golfers really enjoy the added pleasure of seeing numerous wildlife species while golfing, which means that abundant wildlife can serve to attract more customers to a golf course.

The third is perhaps a bit more altruistic: golf courses that once were in fairly rural settings are now hemmed in by creeping urban/suburban sprawl, and they have become important greenbelts in the midst of development.

I can personally speak to the second of these reasons — the added pleasure of seeing a variety of wildlife while golfing. I'm an average golfer, and, like all hackers, I sometimes become frustrated with my inability to hit decent shots. However, I can honestly say that I've never been too frustrated to pause

and enjoy wildlife whenever I've seen it on a golf course.

The key to wildlife abundance is similar to the real estate mantra of "location, location, location," except that in this case it's "habitat, habitat, habitat." By their nature, most golf courses provide a wide variety of habitats. These include mowed areas; the edge cover of tall grass, shrubs, and a variety of other plants coveted by many species; and adjacent mature forest growth. This mix is a fine recipe for wildlife abundance and variety.

Because of this varied habitat and concomitant variety of wildlife species, many incidents involving wildlife on golf courses stand out in my mind. Crows seem to be ubiquitous on golf courses, and, though generally ignored, they're well worth watching. Once while my son and I were golfing at the St. Johnsbury (Vt.) Country Club, we encountered two crows facing each other, with a golf ball between them. One would pick up the ball and quickly drop it. Immediately its companion would do likewise. We watched these back-and-forth antics for at least five minutes before finally moving on.

We've seen majestic great blue herons at water hazards, but the oddest encounter with a wading bird occurred at the Barton (Vt.) Golf Club. While on a tee, we looked to our left and there, on a nearby green, stood a bittern. It was posing in its usual camouflage mode, neck and beak pointing straight up in the air.

That works well in the bird's reedy habitat, but it's totally ineffective on a golf green. The bittern, however, apparently couldn't comprehend this fact.

The well-drained soil that's common along golf courses is attractive to mammals that dig dens. I've often enjoyed watching woodchucks munching grass on golf courses, and laughed to see the portly marmots running back to their dens — and my only encounter with prairie dogs was beside a green on a western golf course.

Foxes with dens adjoining fairways are even more fun. I've known of at least four golf courses where foxes would run out of the woods, seize a golf ball, and run back to their den. In every case, the people I've spoken with have been so charmed by this that

they never objected to the loss of a ball.

Birds and mammals aren't the only denizens of golf courses, either, for water hazards attract reptiles and amphibians, such as turtles, salamanders and frogs. Once, at Carter Country Club in Lebanon, N.H., my son and I passed a water hazard where nothing was happening. When we passed this little pond again an hour later, we were astonished to find it alive with croaking, mating frogs.

These incidents are indicative of the added attraction that helps draw golfers to a course. With this in mind, there are a variety of ways that course managers can improve wildlife habitat.

One way, of course, is to minimize the use of chemicals that can harm wildlife, and many courses are now striving to do exactly that. This may be particularly important in regard to amphibians and other aquatic dwellers.

Regarding birds, there are two ways of attracting them: nesting boxes and plantings of shrubs and trees that provide food.

Nesting boxes immediately bring bluebirds to mind (see *Turfgrass Trends*, September 2010) but many other cavity nesters will also benefit from nesting boxes of the appropriate size for their species. Among those are kestrels; house wrens; barn, barred and screech owls; nuthatches; tufted titmice; chickadees; wood ducks; and tree swallows. Audubon societies, both the national and local, will provide information about where to purchase or how to construct nesting boxes. Good resources

include the Cornell Lab of Ornithology at <http://www.allaboutbirds.org/NetCommunity/Page.aspx?pid=1139>, or Google "Woodcrafting for Wildlife." Some state wildlife agencies also supply information and plans for nesting boxes.

Speaking of houses, there are also bat houses. Bats, though they're normally only seen from dusk to dawn, are also an asset that should be encouraged around golf courses because of the vast number of mosquitoes and other biting insects that they devour.

With the dreaded white-nose syndrome decimating eastern bat populations in caves where they hibernate, bat houses may assume an increasing importance in maintaining bat populations. Plans for bat houses can be obtained from Bat Conservation International at 1-800-538-BATS, or at www.batcom.org.

Back to birds: with the sole exception of Canada geese, birds are desirable because of the interest that they provide for golfers. Geese, of course, love to graze on lush grass, and their soft, greasy droppings are a real detriment on a golf course, especially on greens. Geese aside, plantings of fruit-bearing shrubs at appropriate locations can attract and hold birds on and close to golf courses.

There are many sources of information about shrubs and small trees that attract birds and can be planted on golf courses. For one good source, Google "Shrubs That Attract Birds." Next click on "Trees and Shrubs that Attract Birds." Then use the Selection Guide and scroll down to a long list of shrubs and trees. One omission in this list is noteworthy: in our area of New England, red-berried elders, *Sambucus pubens*, attract handsome cedar waxwings in droves.

Many golf courses put up bluebird nesting boxes, but there is obviously so much more that can be done at your course. All it takes is some thought, careful planning, and the assistance of some expert advice to turn your course into a haven for wildlife and an added attraction for golfers.

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Even the most serious golfers are typically charmed by the sight of wildlife on the course.

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Help Us Out, USGA

One of my writing colleagues was chatting with a PGA Tour executive recently discussing some mindless matter when the suit announced, “It’s not just a branding issue, it’s how we language our branding.”

After you’ve digested that one and hopefully scribbled it down to wheel out when one of your golfers is throwing around too much business-speak, consider this sad reality: golf’s “green” movement has a branding problem. A how-we-language-our-branding problem.

There has been a slow move afoot to go to more organic practices or, more feasibly, leaner and less excessive maintenance with firm and fast as the goal. Yet the very word “green” has always created a conflict, one the USGA is discovering in its recent push toward promoting environmental stewardship and leaner, firmer, faster golf.

At the recent USGA annual meeting, a two-hour symposium run by the Green Section included excellent presentations from the organization’s Kim Erusha, Brian Whitlark, Jim Moore, Pat Gross and a guest appearance from Toro’s Dana Lonn. Each laid out where the industry stands with its efforts to use less water, battle myths about certain practices and move to more use of organics, all while helping the stagnant business of golf.

“Flat is the new up,” USGA President Jim Hyler noted during a press gathering. Since Hyler commenced his reign a year ago, the governing body of North American golf has been pushing firm, fast and lean as the way of the future. And they’ve already learned one

THERE SHOULD BE SOME REWARD FOR THOSE WHO ARE CUTTING BACK WATER USAGE AND WEAVING MORE SUSTAINABLE PRACTICES.

BY GEOFF SHACKELFORD



key lesson from the first year: you need green. Green grass that is. Enter the new push: lean and green! And now you see the way we “language our branding” becomes even more problematic. Or, at least a problem to those outside of the golf maintenance industry.

Golfers will always prefer green grass, but the trick is how to give them the same color they’d never dream of wearing without breaking the bank, poisoning the stream or leaving the outside world with the impression that golf has no interest in sustainable practices. Credit the normally stodgy USGA for adapting its message and tailoring its presentations on the fly in the best interests of all parties involved.

But this still doesn’t help with the branding issue facing golf’s green movement. The game wants and needs to go the direction of the organic movement, where more and more people each day are selecting food or cleaning products based on the “certified organic” stamp of approval. And while we know it’s not feasible for most golf courses to go mostly organic in maintenance practices, there should be some reward and appreciation for those who are cutting back water usage and weaving more sustainable practices into their daily maintenance regimen.

This recognition will be vital to an ever-expanding generation that makes its buying decisions based on a desire to be associated with better practices. Yet golf has no one credible “branding” and “certifying” such practices.

At the symposium I asked if this was something the USGA would consider doing in the near future. After all, they’re equipped with a staff of green section specialists who could evaluate practices and for better or worse, stamp a big red, white and blue USGA logo onto a piece of paper certifying a courses as having modified practices to achieve a certain level of respect for sustainability.

The answer was a pretty quick and disappointing, “no.” The USGA feels that an outside agency of some form needs to come along for any certification system to ever take hold and earn the respect of the environmental community.

I don’t agree. We first have to satisfy the golfing world and build a movement from within. And how we language the branding of green can only be verified, codified and solidified by the USGA Green Section.

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