



In short, an ounce of prevention, or in this case **preconditioning**, can be worth a pound of cure.

health products and their impact on superintendents and the courses they manage.

Chris Tritabaugh, superintendent at Northland Country Club in Duluth, Minn., has some great stories of success using Bayer's Tartan for more than snow mold control. Chris had over 150 days of snow cover this year and he had trusted that Tartan and its proven disease control plus plant health properties would make him a hero.

"In our climate we must have excellent snow mold control and what I got with Tartan was not just excellent snow mold control but faster green-up and better overall turf health," Tritabaugh told me. "It was definitely more bang for the buck."

Environmentally minded superintendents are also talking about the many benefits of the synergy in plant health products. One of the industry's most noted environmental leaders is David Phipps, superintendent at Stone Creek Golf Club in Oregon City, Ore. Phipps told me he has been keeping a close eye on the rise of plant health products.

"When it comes to using products that have a plant health benefit I always take a second look. I have used Bayer Green Guard products in the past and I am doing some work with a pigment by Simplot call Par," he said. "I have been pretty pleased with the results. I can see the results or the plant health benefits. I think the manufac-

turers are heading in the right direction. I see the industry focusing more on the IPM (Integrated Pest Management) approach to overall property management and I feel that this chemistry lends itself well to that end."

The word from multi-course operators is also interesting. Tommy Hewitt is the superintendent at the Olde Atlanta Golf Club and the Windermere Golf Club working with the Cannongate Golf group in Georgia.

Hewitt says, "I have used both Honor and InsigniaSC in part for their plant health benefits. I always sleep better at night knowing that I have Insignia in my spray program. I feel that with Insignia SC on the turf the chances of a major disease outbreak are virtually zero. It was obvious that the plant responded quicker, looked better and was able to handle stresses more efficiently."

Hewitt and other Georgia superintendents faced record heat in 2010, seeing more than 80 days over 90 degrees while an average summer would have only 17 days of that extreme heat, making last season one of the most difficult for superintendents and their programs.

"BASF has given me tools to be successful," Hewitt continues. "I believe that my bentgrass will look better and be healthier overall as I continue to use the Intrinsic Brand fungicides in my program."

Research, service and education

There has been a major effort to improve products and programs that can enhance plant health and produce high quality turfgrass. The individuals and companies that have brought the very notion of "Plant Health" to labels and turf are leading the way through innovations in research, service and education.

The successful superintendent has found himself engaged in the entire process. He is noting the problems and pathogens, consulting leading researchers, experimenting with new products, interacting with sales representatives, utilizing the Internet and sharing his results with others.

It is more important than ever for an active network of experts in numerous fields to combine their talents to find solutions to the challenges facing the golf industry. Plant health products are great examples of the synergy of skills that exist in managing a successful golf/turf operation.

In 2011 the successful superintendent will face many challenges. Fortunately, he will have plant health products available to help reduce stress in the plant and the superintendent. ■

Anthony Williams, CGCS, CGM, is the environmental editor of Golfdom and the director of grounds at the Stone Mountain (Ga.) Golf Club.



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Don't Be a Target

Superintendents need to do more to make outsiders understand the **environmental benefits** of the golf course.

BY CHRIS SORRELL,
EAGLES RIDGE GOLF CLUB

We are an easy target. Golf courses are one of the most unnatural natural things around. What we do is against nature. Grass does not grow at .125" — it dies at .125". We have to do unnatural things to grass to make it survive the conditions that we demand from it.

Dan Dinelli, CGCS at North Shore Country Club in Glenview, Ill., wrote once that there is nothing sustainable about a golf course. If we as superintendents stop all maintenance for a week and leave, there will not be much of a golf course to return to.

Another thing making us an easy target: image. Although the history of golf began in the fields and shorelines of Scotland, when it migrated to the United States it lent itself to being a "blue-blood" game. Golf still suffers from this image, making it an easy target for those unscrupulous enough to engage in class warfare.

But then consider the agricultural industry. Agriculture uses vastly more chemicals than the turf market, and relies on the outdated fertilizer technology of water-soluble products compared to the more ecologically friendly slow-release products that are commonly used on golf courses.

Yet, the agricultural industry is rarely, if ever, criticized.

That's because the agriculture market has a more positive image than the golf industry. Whereas golfers are stigmatized as rich folks sitting around sipping martinis while pondering their next business deal, farmers are perceived as working from sunup to sundown, growing their crops and raising their stock by the sweat of their brows to produce the food we all need.

Which one of these pictures is more appealing to you? Whose side would you take? Which one of them is easier to exploit?

Are you doing enough?

It's time we start making it harder to take advantage of our industry. We must start learning how to defend ourselves.

This article is not directed at the industry
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Taking Aim

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leaders, the leaders of the GCSAA or any other formal organization. It is squarely focused on you, the superintendent — the fella who is out there managing his 80- to 200-acre golf course every day.

The industry as a whole is taking steps to advance the cause. Take for instance, the “We Are Golf” initiative.

The question is, what are you doing? Perhaps you are making a serious effort to cut down on the inputs that you are using on your golf course: fewer pesticides, herbicides, fungicides; less water and fertilizer. Perhaps you have a formal IPM plan, or are trying to improve wildlife habitat on the course.

But are these things enough?

The answer is, “No, they are not.” For if no one knows about the things that we are doing, it should be considered as not doing them at all.

If our efforts are not promulgated,



The two animals at the center of the Sharp Park drama: the San Francisco garter snake and the California red-legged frog.

such as We Are Golf are excellent but are mostly focused on the national interests of the industry. They don't address local issues. That's where we come in.

The Sharp Park drama

Sharp Park Golf Club in San Francisco is a public course run by the city. It is an Alister Mackenzie-designed course that sits on the Pacific Ocean. It provides an affordable round of golf in an expensive

they are not effective. Our opponents are able to make extravagant, inflammatory, and often entirely false claims about our industry and never be called to the mat about it. There will be no help from our national media. National initiatives

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As the Turfgrass Plant Licensing Manager for the University of Georgia Research Foundation (UGARF), Shelley Fincher licenses qualified domestic and international producers to grow and market TeamUGA's patented turfgrass varieties. If you're interested in becoming a TeamUGA licensee for an existing turfgrass release, or future release, contact Ms. Fincher. She can steer you to the right group for a domestic or international TifGrand license. She can also give you updates on Paul Raymer's new premium Seashore Paspalum, which we expect will be available in the summer of 2011.

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Spreading the environmental message both inside and outside the game is vital to the industry we love.

We must be aware of the threats that confront us. Be prepared to stand up and speak in support of our profession and defend our position. Be willing to send letters to elected officials or newspaper editors.

city. It is also the home of two endangered species: the San Francisco garter snake and the California red-legged frog. Since the two little creatures have made their homes on the golf course, there has been much furor over how the course is impacting their wee little lives.

The course has a very bad drainage problem, so when there is a downpour, the ponds where these little critters live overflow into the fairways. The perceived risk here is that the regular maintenance of the course, or the golfers playing the course, will result in the demise of these animals when they are exposed during flood condi-

tions. The result is a massive battle about what to do about Sharp Park. Environmentalists want the course shut down and converted to a wetland habitat; golfers want the course renovated to provide for proper drainage that would prevent the conflict between nature and the game.

Stepping back and looking at the situation, two things are obvious. First, the slithery and slimy little inhabitants at Sharp Park have been living in contact with the golf course for some time without ill effects. In fact, they have been living there since a seawall was constructed that changed the water in the ponds from brackish water to fresh water, allowing the animals to thrive.

Second, the conflict is not about solving a problem; it is about advancing an agenda. The golf advocates' proposal solves the spatial conflict between the golf course maintenance crew and the affected animals. But unfortunately, the organizations fighting to shut the course down are not willing to compromise.

As superintendents, we are directly in contact with nature. Generally, we respect its beauty and the role it plays in our profession. We are not out to cause harm to any part of our natural surroundings. In fact, many of us love our jobs because it puts us in contact with the nature that we enjoy.

To accuse us of being an industry — and individuals — that practices poor stewardship is ridiculous. Yet that is exactly what is happening in the example of Sharp Park. The opponents of the golf course can get away with making political hay over this situation only because it is a golf course.

Know the facts

So, what is there to do?

First, every superintendent needs to keep studying. We all need to know the facts. Second, make those facts known whenever our practices are challenged. Third, keep reading about any and all

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Taking Aim

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new approaches that might lessen our use of synthetics. (This last point should not be taken as a condemnation of the synthetic pesticides and fertilizers that we use. The risks we take in using them are truly very low but why not reduce these risks if possible?)


The most necessary facts relate to the potential toxicity, chronic effects and negative environmental impact of the products we use. How toxic are the chemicals we're using? The answer to that question is best derived from the LD₅₀ rating of each active ingredient. The rating is determined through animal testing to determine how many milligrams (mg) of active ingredient per kilogram (kg) of body weight is required to kill 50 percent of a test population. The lower the number, the more toxic the substance.

The most toxic substances used in maintaining golf courses are insecticides and nematicides. Products like Nema-cur (no longer available for sale) have an LD₅₀ rating of 6. That means it only takes 6 mg/kg of the active ingredient to kill 50 percent of the test population. It's obviously very toxic stuff. In comparison, an insecticide that is commonly used on golf courses today

for the control of grubs is Merit. Its active ingredient has an LD₅₀ of 424 mg/kg. That's a substantial difference.

As for herbicides and fungicides, the more toxic ones are 2, 4-D at 375mg/kg and Subdue Maxx at 669mg/kg, respectively. Contrast that with these numbers: Caffeine's LD₅₀ is 250mg/kg. Aspirin's LD₅₀ is 780mg/kg. The active ingredient in the coffee you may drink everyday is more toxic than the vast majority of the chemicals that are commonly used on golf courses. The stuff that you take for headaches is only a little bit less toxic than some of the more toxic chemicals that are commonly used on golf courses and is a lot more toxic than some of them.

To refine this point even more, it would take 100 cups of coffee to reach a lethal dose. This is a substance that is ingested orally by many of us on a daily basis. One of these various pesticides applied at 1 pound of active ingredient (a ludicrously high rate in terms of modern products) per acre would be equal to spreading a teaspoon of sugar over 5,000 bowls of cereal.



We are not out to cause harm to any part of our natural surroundings. In fact, many of us love our jobs because it puts us in contact with the nature that we enjoy.



Many animals thrive at golf courses. In fact, many seek them out to raise their young.

Notice that the type of exposure discussed here is oral. What is taken in orally at a golf course? Not much. How often do you see golfers licking the greens, or chewing on some of our fairway turf?

Protecting ourselves

Every golf course is a good habitat for a wide variety of animals that generally live there throughout the year. Most important, animals often seek out golf courses for the very purpose of raising their young. If the chemicals that are used to maintain turf are so dangerous, then the effects would be readily seen in the young creatures that inhabit the courses. If animals' young tend to die off at a higher rate in a particular area, the population is reduced and often the adults move on to better grounds.

This is not the case at golf courses. Ask any superintendent about the problems they might have with Canada geese and you'll get an earful. And that's not the only animal thriving on golf courses. Many also have abundant herds of deer, and flocks of turkeys.

We must be aware of the threats that confront us. Be prepared to stand up and speak in support of our profession and defend our position. Be willing to send letters to elected officials or newspaper editors. Use the resources you have available to you. Rely on professors at turf schools, who are knowledgeable and willing to help.

Opponents of golf are passionate people. They will not listen to the call of rationality. The only answer lies in making sure that the truth of the situation is known by the masses. Painting these opponents into a corner of absurdity is the best protection that we can provide our industry, our courses and ourselves. ■

Chris Sorrell is the superintendent at Eagles Ridge Golf Club, Curwensville, Pa. The author would like to thank Dr. Joe Vargas, Michigan State University, for providing assistance in writing this article.

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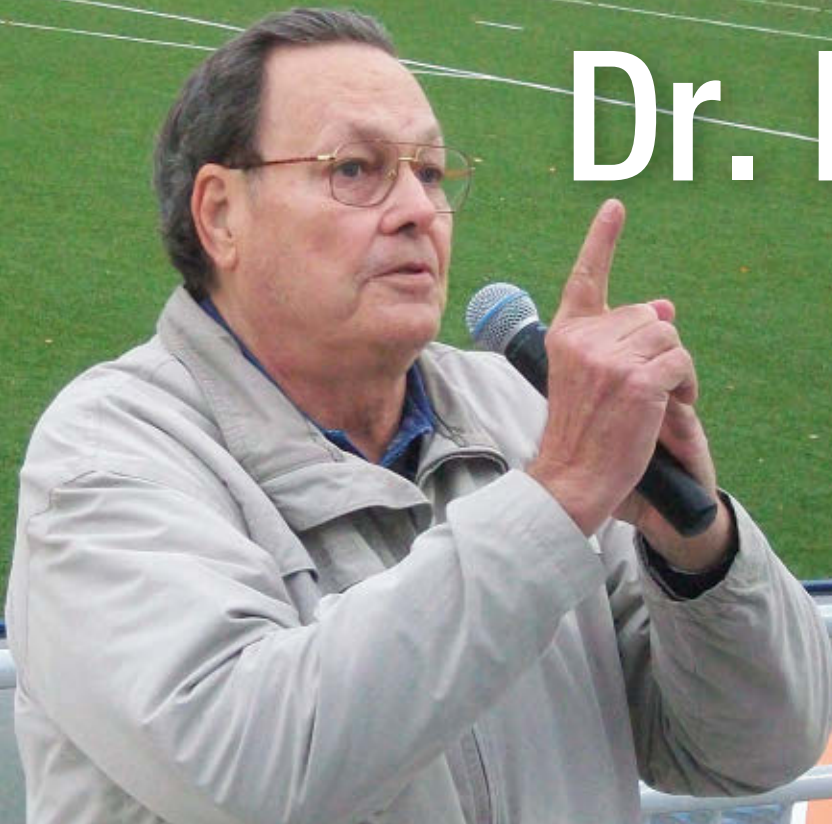
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BY RON HALL



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Crystal Ball

"The closer you get to perfection, the more obvious the imperfections and the more difficult and costly the improvements," says Dr. James B. Beard, director and chief scientist of the International Sports Turf Institute.

In other words, superintendents, try as you might, you'll never be able to give golfers perfect playing conditions. That doesn't mean you shouldn't keep trying, says Beard, still vigorously authoritative in his fifth decade of researching, writing and lecturing about turfgrass and its management. (Of the three stages of life — youth, middle age and "hey,

you're looking good" — Beard jokes that he's now in the third.)

Recently, Beard, addressing more than 1,000 sports turf managers, briefly outlined the history of the turfgrass industry — from the era when grazing animals and their manure were counted on to mow and fertilize greenswards to today's mechanized, scientific management — as a preamble to sharing his vision of the industry's future.

In a sense, his address at the Sports Turf Managers Association Conference in Austin, Texas, validated a similar presentation he gave to the same group 16 years previously. In fact, Beard, reaching into a sport coat pocket, branched the very notes he used that day. That

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Dr. James B. Beard, director and chief scientist of the International Sports Turf Institute, addresses the audience at the Sports Turf Managers Association Conference in Austin, Texas.

PHOTO BY: RON HALL



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Future forecast

Dr. Beard's crystal ball says,
"more biologicals, less chemicals."



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many of his 1995 predictions came true did not surprise the audience; many of the attendees also perhaps secretly hoped that they and the turfgrass industry — with all its challenges — will be around to hear another similar presentation from Beard a decade or more hence.

But, before we get to the meat of Beard's talk, trends that will shape the future of turfgrass, let's note some of the highlights of the history of turfgrass management that he shared:

- The history of turfgrass for sport purposes goes back to at least the 1200s with historical mentions of lawn bowling and to the 1300s with cricket. Using stone and later iron implements to roll and smooth these areas probably constituted the first cultural practice, while mowing came much later.
- Using a manually cranked wooden cleaner, Orlando M. Scott developed weed-free seed in the 1880s, a huge breakthrough, said Beard. Scott also pioneered seed testing.
- Manure was used to fertilize turfgrass

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