

THE 2011 PLANT HEALTH SERIES



GOLFDOM AND BASF Professional Turf & Ornamentals are proud to present the third and final part of the 2011 Plant Health Series, “A Super’s Touch,” by Anthony Williams, CGCS, CGM of Stone Mountain (Ga.) Golf Club.

Williams does with plant health what superintendents across the country do with anything they consider for their golf courses: He scrutinizes it. As he says, with so many products on the market these days, a superintendent must distinguish the innovations from the impostors.

In **part one** of the series, we took a journalist’s approach, utilizing *Golfdom* staff to re-

port on the advent of the plant health label in the turfgrass industry. Appearing in the April issue, we wrote about the label’s beginnings in the crop industry, and how it broke into the turf industry in early 2011.

In **part two**, Clark Throssell, Ph.D., took a

scientific look at plant health, interviewing turf researchers about what they’re seeing in labs, greenhouses and on golf courses around the country. That story appeared in our May issue and is still available online at www.golfdom.com.

And now, in **part three**, we round out our plant health coverage with the perspective of a superintendent.

The award-winning Plant Health Series would not be possible without the support of BASF Professional Turf & Ornamentals. Our hope is that this effort has produced useful information for our readers, information that will enable them to keep their turf healthier.

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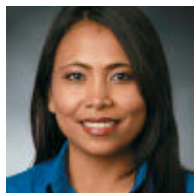
Practical Science For Stress

Few understand more clearly than golf course superintendents that living organisms, including turfgrass, are dynamic by nature. Superintendents spend much of their careers trying to understand and anticipate turfgrass needs to preempt negative reactions, while promoting positive reactions. Maintaining healthy turfgrass is a balancing act that demands constant attention to stresses and practical science-based tools.

Stress is inevitable, whether it's environmentally or mechanically induced. Disease, extreme temperatures or drought, low-mowing heights, reduced nitrogen rates and aerification create stress events in plants that require the use of more plant energy. When turfgrass uses energy during a stress event, it becomes further compromised and more susceptible to stress — creating the potential for a downward spiral.

If the turf is healthy, it's better able to endure the stress. Superintendents can't control Mother Nature but they can create better environments for turf growth using sound agronomic practices and practical tools to reduce stress, improve quality and manage pests, including disease.

Superintendents cannot afford to lose turfgrass in today's competitive environment. To help them improve turfgrass environments, BASF provides advanced



BY THAVY STAAL

tools, such as Insignia SC Intrinsic brand fungicide and Honor Intrinsic brand fungicide. Intrinsic brand fungicides are the industry's first fungicides labeled for disease control and plant health benefits, which help reduce the stress effects on turfgrass.

At BASF labs, researchers see turfgrass health improvements in test tube turf growth plots as well as in analyses that measure plant health at the biological level using microscope analysis and WinRHIZO tron root imaging and measurement studies.

On the course, superintendents can expect to see Intrinsic brand fungicide disease control and plant health benefits in the form of improved stress tolerance, plant vitality and healthier root cores, the literal foundation of healthy turfgrass. However, superintendents should keep in mind that just looking at root cores does not always show a visual difference between treated and untreated turf. An analysis utilizing WinRHIZO provides the most comprehensive results because measurements including

total root length and root length density can be derived.

BASF worked with numerous golf courses in 2010 to demonstrate these benefits and using WinRHIZO technology for analysis was included in the demonstration protocol.

Rotated within an integrated pest management plan, Intrinsic brand fungicides support the metabolic systems, defense responses, growth efficiency and overall health of turfgrass. It's practical science that gives superintendents plant protection value and peace of mind when stress arrives.

Learn more about Intrinsic brand fungicides at www.Intrinsic-PlantHealth.com and other BASF Professional Turf & Ornamentals innovations by visiting www.better-turf.basf.us. ■

Thavy Staal is marketing manager for BASF Professional Turf & Ornamentals.

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A Super's

As plant health gains traction in the industry, superintendents gain knowledge on the subject.

BY ANTHONY L. WILLIAMS CGCS, CGM



Believe a successful superintendent strives to create synergy in everything.

The current golf economy has placed incredible pressure on superintendents to maximize results with minimal resources. The fact is that every golf/turf maintenance operation is taxed with the axiom, “do more with less.” This has made synergy even more important. Synergy is a method of finding ways to make the sum of the individual parts equal more than the collective individual value.

Superintendents, researchers and vendors are finding this synergy in the area of plant health chemistry.

Superintendents have always been interested in

products that can protect agronomic resources for a reasonable price; they know that their personal job security is linked directly to it. I was taught an interesting test to gauge the number of products that are put before a superintendent for review: First, keep all of the business cards that are presented to you by sales representatives for a set time — say, 60 days — visible on your desk. On the back of each card write the number of products that were pitched to you in each meeting.

Adds up, doesn't it? My record is 18 cards that combined for 64 different products. This is proof that in today's golf industry the superintendent is given more products and program options than ever. The key is to be able to analyze and quickly tell the difference between innovations and imposters.

Let's look at plant health products and scrutinize their value and benefits based on the way a superintendent would: by evaluating the product label, research and personal testimonials from successful superintendents who have used these products in their programs.

Show me the label

One of the current hot topics around golf maintenance facilities is the growing list of plant health products that offer a true synergy of benefits — more than just basic disease/

Touch

pest control. Their chemical structure creates additional value by helping improve overall plant health.

It's an easy claim to make, but successful superintendents demand a little more proof before putting a product — and their livelihood — out for review.

The first thing a superintendent or other professional pesticide applicator evaluates is a product's label. Remember, the label is the law and can often be the first commercial sign of a true innovation.

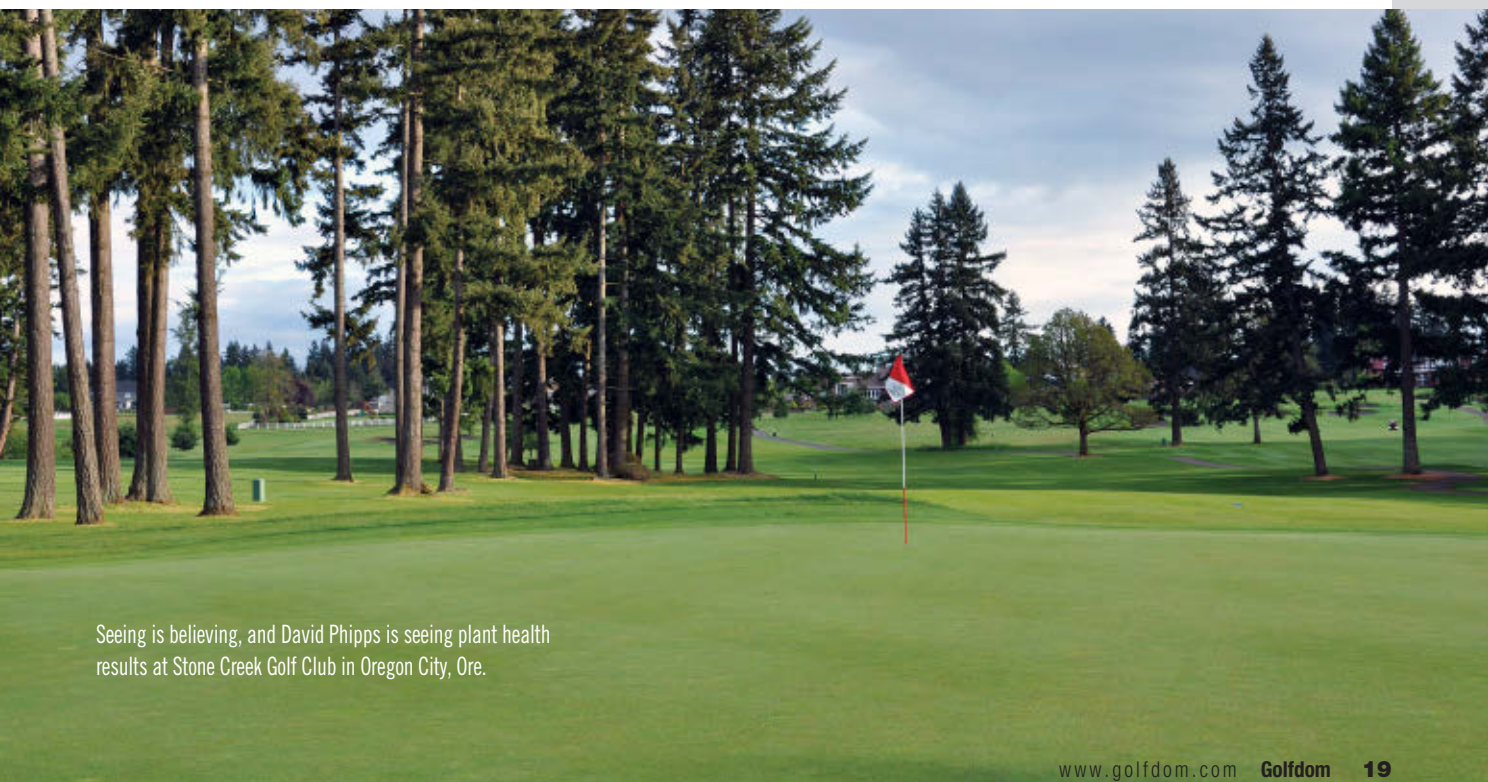
Last year BASF Turf and Ornamentals launched its Intrinsic brand of products specifically labeled for plant health in the turf and ornamental market. The brand included two products: Honor and InsigniaSC. This year, Bayer Environmental Science received EPA approval to add plant health to two of its fungicides — Interface and Reserve.

Let's take a closer look at the Insignia SC label. The

contents of the label itself are familiar and include details on approved uses, rates (0.4 to 0.7 fluid ounces per 1,000 square feet for turf uses), personal protection equipment required, emergency numbers, compatibility and precautionary statements. Notably, front and center on the label you find the words, "For disease control and plant health in turfgrass and ornamentals." This simple statement has spawned some debate from superintendents, researchers and others about whether the target is disease control or plant health.

Andy Hutchinson, superintendent at The Falls Resort and Golf Club in Kentucky, has a practical approach to the subject. "The question is not whether you are targeting disease control or plant health," he says. "The question is, since you can impact both with a single affordable application, why would you debate which aspect is greater?"

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Seeing is believing, and David Phipps is seeing plant health results at Stone Creek Golf Club in Oregon City, Ore.



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Show me the research

There are several interesting research projects that have supported the plant health label and benefits claims and the impact these products have on the maintenance of high quality turfgrass. Initially, L.T. Lucas, Ph.D., a turfgrass pathologist at North Carolina State University, observed that in his field experiments where Aliette (fosetyl-Al) and Fore (Mancozeb) were applied regularly to creeping bentgrass greens throughout the summer there was marked performance of the turf beyond mere disease control.

He also noted that to achieve maximum results, applications must begin prior to the onset of stress conditions. Scientists at Bayer took this information further by evaluating the components of Aliette and Fore. They found that a color pigment in Fore combined with Aliette produced similar plant health results. Chipco Signature (aluminum tris) has been documented to help manage summer bentgrass decline (summer stress complex) by improving plant health. It also increases a plant's stress tolerance. Bayer now offers several products containing StressGard, which was developed from this earlier work on Chipco Signature. StressGard protects plants from UVB radiation and thus helps improve plant health — especially during stressful periods.

Some of the most interesting work on plant health from a pathology standpoint was done by Dr. Bruce Martin at Clemson University. I have been fortunate to attend several seminars taught by Dr. Martin. Martin believes that a compound that has a positive impact on plant health should promote better rooting and activate natural plant defenses. This would be used to precondition plants/turf prior to the stress period to better cope with prolonged stresses.

In short, an ounce of prevention, or in this case preconditioning, can be worth a pound of cure. In 2009 Martin began a series of tests commonly known as programs 13, 14 and 15. All three programs consisted of eight separate fungicide applications, applied at label rates on 14-day intervals beginning in late May.

The programs are the same, except each features a different strobilurin fungicide; program 13, Insignia; program 14, Heritage TL; and program 15, Disarm. The tests were conducted in Florence, S.C. The summer of 2010 in Florence was one of the most stressful on record but gave rise to the success of program 13. Program 13 did see decline in late summer but maintained acceptable turfgrass quality.

At Northland CC in Duluth, Minn. (right), superintendent Chris Trita-baugh has seen better snow mold control and faster green-up than ever.

Anthony Williams says shared knowledge continues to help Stone Mountain (Ga.) GC enjoy better plant health.



The reasons for the success of program 13 are still being evaluated. Martin theorizes that Insignia offered superior control of *Pythium volutum* or pythium root rot/ root dysfunction and suppression of other minor pathogens. *Volutum* is very aggressive in periods of prolonged heat and stress. I have had some experience with it and agree with Martin; Insignia should be a critical part of any program aimed at controlling *Pythium volutum*.

Martin's research has consistently shown that fungicide programs that include two applications of Insignia provide more uniform, denser turf while providing equal disease control compared to programs that include other strobilurin fungicides. The synergy in Insignia in relation to plant health is hard to analyze but equally hard to ignore.

Share your results

Superintendents have a long history of apprenticeship and mentorship. There is a unique brotherhood that exists between superintendents, so much so that in my experience I have never reached out to another superintendent for help or advice and not been overwhelmed with genuine responses. This is a rare thing in the green industry, where many people see other professionals as competition and hold their insights as a competitive edge.

It is the advantage of shared knowledge that will give us a deeper, more practical and personal look into plant



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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.