

through better than I thought it would," says Sharples, who says he expected some fairways to burn.

Sharples had a good plan and therefore dealt with the water restriction well. Barrett says many golf courses dealt well with drought and water restrictions last year because of good planning and innovative thinking. But for those superin-

tendents who need a plan, Barrett advises them to start with the obvious —make sure the course's irrigation system is running efficiently and not leaking.

Barrett also says superintendents need to be more communicative to golfers about water restrictions and why courses are implementing certain plans to abide by them.

What You Can Do to Better Manage Your Course's Irrigation System

- Understand the capacities and capabilities of the irrigation system.
- Identify the soil texture and soil infiltration rate for the purpose of estimating the water-holding capacity of the soil.
- Prepare the system for effective water management. Install a dedicated irrigation water meter for measuring both the irrigation water flow rate and the volume applied.
- If necessary, perform an irrigation audit to obtain data in order to create the irrigation schedule.

Source: American Society of Irrigation Consultants

"It's critical that those who play the courses know why certain maintenance procedures are being implemented," Barrett says. "Players are much more understanding if they know water restrictions prevent watering the rough. If conditions worsen, they can be told in advance that only landing areas will be watered in the fairways. Information definitely promotes understanding."

If droughts continue in certain areas, superintendents can bet outdoor irrigation will continue to be under scrutiny by government officials in those areas. Last year's drought caused municipalities and water purveyors to be much more focused on how much water was being used in their respective areas, Vinchesi says. "It forced more states to adopt restrictive water-use policies and ordinances," he adds.

Vinchesi says states are getting more serious about tracking water use and using alternative sources. "The good news is that better irrigation systems with new technologies provide better efficiencies to use less water," he says.

The good news for Blue Hill GC and other courses in the Northeast is that the drought may be over. In late February, Sharples was staring at about 20 inches of snow on his course. He never realized how happy he'd be to see so much of the white stuff. ■



**Some things
are supposed
to be yellow.**

**Your course isn't one
of them.**

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There is a lot to be said about Augusta National's recent transmogrification. (Transmogrify: fancy word meaning "to change into a different shape or form, especially one that is fantastic or bizarre.")

Some claim that narrowed fairways, the "second-cut," lengthened holes, bunker re-arrangement and swarms of new pines reflect exactly what Bobby Jones would have cooked up if he were here today.

Thankfully, Mr. Jones wrote and spoke as eloquently as anyone in the history of the game. Below are samplings of his thoughts [with some comments and thoughts by me in brackets]:

"Too often the worth of a layout is measured by how successfully it has withstood the efforts of professionals to better its par or to lower its record." [Hootie Johnson says that massive changes were in the works long before Tiger's 18-under-par performance. Sure.]

"I don't see any need for a tree on a golf course." [Mr. Jones made this comment to Alistair Cooke while sitting on his porch overlooking the 10th tee. I wonder what he'd think of the pine cluster on 15 or those gangly trees used to plug gaps so that we don't have to see anymore of those heroic recovery shots.]

"However much we may enjoy whaling the life out of the little white ball, we soon grow tired of playing a golf course that does not give us problems in strategy as well as skill." [Strategy to Jones was not employing rough to force a player to tee off with a two-iron instead of a driver. Nor was strategy telling the player where you want him to drive it and forcing him to play from the tournament committee's angle of choice.]

"The perfect design should place a premium upon sound judgment as well as accurate striking by rewarding the correct placing of each shot." ["Correct placing" is quite different from the current "premium on accuracy" mantra. Jones was thinking of accuracy inspired by strategic thinking and execution. Hootie Johnson's premium is on straightness off the tee. That's tightrope golf. Boring!]

What Jones Said, What I Think

BY GEOFF SHACKELFORD



**HOOTIE JOHNSON
SAYS THAT MASSIVE
CHANGES WERE IN
THE WORKS LONG
BEFORE TIGER'S
18-UNDER-PAR
PERFORMANCE.
SURE**

"I believe it is true that with modern equipment and modern players, we cannot make a golf course more difficult or more testing for the expert simply by adding length. The players of today are about as accurate with medium or long irons as with their pitching clubs. The only way to stir them up is by the introduction of subtleties around the greens." [No comment.]

"We are quite willing to have low scores made during the tournament. It is not our intention to rig the golf course so as to make it tricky. It is our feeling that there is something wrong with a golf course which will not yield a score in the 60s to a player who has played well enough to deserve it." [Good luck breaking 70 on a firm, dry Sunday. They couldn't do it last year when the ground was soft.]

"The finishes of the Masters Tournament have almost always been dramatic and exciting. It is my conviction that this has been the case because of the make-or-break quality of the second nine. This nine, with its abundant water hazards, each creating a perilous situation, can provide excruciating torture for the front runner trying to hang on. Yet it can yield a very low score to the player making a closing rush." [Not anymore.]

"I should never care to argue for anything which would lessen the difficulty of the game, for its difficulty is its greatest charm. But when, in spite of vast improvement in the ball, in seeking to preserve the difficulty and to make scoring as hard as it was in the old days, we make the mistake of destroying the effect of skill and judgment in an important department, I cannot help protesting."

Let the protesting begin.

Geoff Shackelford's new book is titled *Grounds for Golf: The History and Fundamentals of Course Design*. He can be reached at geoffshackelford@aol.com.



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ON THE Horizon

Basic manufacturers plan to bring new fungicides to market soon and to continue their R&D efforts

BY PETER BLAIS

Despite escalating time frames and costs, basic manufacturers are bringing new fungicides to market and plan to continue their research and development efforts for future products — all of which should make life easier for superintendents.

BASF Professional Turf anticipates obtaining EPA registration on two new products, Insignia and Emerald, some time this year, according to Greg Thompson, the company's marketing manager for golf.

Insignia is a broad-spectrum strobilurin fungicide that controls 15 diseases. EPA labeled the same product under the name Cabrio in September 2002 for use on more than 100 different agricultural crops.

Emerald belongs to an entirely new class of turf fungicides called anilides. It is a targeted product that is effective on dollar spot and bentgrass dead spot at low application rates.

"We have documentation of more than 97-percent control with Emerald on dollar spot," Thompson said. "Our anticipated application rates are anywhere from 1.3 to 1.8 ounces per 1,000 square feet. Those rates are based on what BASF submitted to the EPA."

These are the first two golf course fungicides BASF has produced itself, Thompson said. TopPro, a BASF subsidiary, has several fungicides for the golf market that are being relabeled with the BASF brand, including Curalan and Iprodione Pro 2SE.

"BASF has become a major supplier for superintendents," Thompson said. "We anticipate bringing some other compounds into the golf market in 2005 and beyond."

Triton and Lynx are two sterile inhibitors (SIs) from Bayer Environmental Science that should receive EPA approval shortly, according to Eric Kalasz, fungicide brand manager. Bayer developed Lynx. Triton came through the Aventis merger.

Triton is a reduced-risk compound material that is effective on anthracnose.

"We can combine it with Signature [a Bayer product] and get some real control on early season and late-season anthracnose," Kalasz said. "You can spray in July and August, which you couldn't do before because of SI phytotoxicity concerns."

Lynx is a second-generation SI that shows excellent control of dollar spot, anthracnose and brown patch.

"It may even exceed the performance of Bayleton [another Bayer fungicide]," Kalasz added. "The cost would be comparable to other SIs in the market. We are looking at application rates of .5 to 1 ounce per 1,000 square feet [for Triton]. Lynx would be similar."

EPA is working on a host of pesticide registration applications and understands that superintendents may feel the approval process moves too slowly (*see sidebar*), even with reduced-risk products, according to Marcia Mulkey, director of the EPA's Office of Pesticide Programs.

"We think it's important to work on pend-



Anthracnose is one of the biggest problem diseases that superintendents encounter on their golf courses.

PHOTOS COURTESY OF BASF

ing applications as efficiently as we can and move them as quickly as we have the capacity," she said. "We are committed to the principle of expeditious handling of pending applications."

Syngenta has offered Medallion fungicide (fludioxonil) for golf course use since late 2001, according to David Ross, Syngenta's technical manager for turf and ornamentals. It recently received a new EPA label for control of pink snow mold and the more-difficult-to-manage gray snow mold for lawn and golf turf management, as well as for control of rhizoctonia, cylindrocladium, fusarium and sclerotium on landscape ornamentals.

Medallion can be applied at .5 ounces per 1,000 square feet before snow cover to protect against snow mold. It's often a tank-mix partner with Banner MAXX and is particularly effective for snow mold and summer patch. It also provides control of leaf spot, dead spot on bentgrass, brown patch, summer patch and yellow patch.



Basic manufacturers say they'll continue to bring new fungicides to market to battle problem diseases like dollar spot.

Many of the labels Syngenta has acquired, such as Zeneca's line, have been rewritten with Syngenta labels. The brand names have stayed the same. Syngenta's micro-emulsion concentrates (MAXX formulations) have become increasingly popular because they are stable, have no odor and are mixable. "We have been looking at ways to make that formulation available for other products," Ross said.

Dow AgroSciences markets several golf

fungicides it has developed or acquired, including Dithane, Eagle and Fore, according to Chris Wooley, product manager for fungicides and insecticides.

What diseases and issues are of major concern now and likely to be in the future?

"The biggest disease problems superintendents tell us they are facing are dollar spot, brown patch, anthracnose and pythium," Thompson explained. "They want products that work now and are also looking for new chemistries. We need to supply products that last longer and require lower application rates. They are also interested in resistance management since many products become prone to resistance over time."

Despite the costs and lengthy time frames involved in developing and receiving government approvals for new products, manufacturers said they will continue to bring new products to market.

"We focus on two things," BASF's

Continued on page 76

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Fungicides

Continued from page 75

Thompson said. "First is supporting and stewarding existing products in our portfolio. Second is new product development."

Bayer's Kalasz agreed with the need for new development.

"Our niche is bringing products to market," he says. "It's our bread and butter. We have to continue to do that if we are going to continue to grow."

Even though Syngenta has no fungicide introductions this year, the company plans to unveil a new herbicide called Monument for warm-season turf that will be registered for golf in 2003 and an insecticide called Flagship that should also receive EPA approval by year's end. "While those aren't fungicides, that's evidence that we're looking to develop new products for the golf market," Ross said. ■

Blais is a free-lance writer from North Yarmouth, Maine.

EPA Explains the Registration Process

Marcia Mulkey, director of the EPA's Office of Pesticide Programs, acknowledges that manufacturers and others in the golf industry believe EPA moves too slowly in registering products. She offers them the following explanation of the process:

"It's important to work on pending applications as efficiently as we can and move them as quickly as we have the capacity. Two main factors enter into the time necessary.

"The first is that pesticides have an extensive scientific database required for registration. In that sense, they are not unlike drugs. There are differences, of course. But they do lead to human exposure and exposure to the natural environment. By nature, they do have some toxic properties. The amount of data to support a pesticide, just in stacks of paper, can be dozens of feet. The studies are long and complex. They can require two years of study or more. It simply takes a significant amount of time to evaluate this data and reach conclusions about what we need to know in order to make a decision about licensing. For a new active ingredient that has never been registered,

that process alone can take 12 to 18 months of active review time. It can be a little more than that if complicated scientific issues arise. Or it can be slightly less for a simple, straightforward case with all the data, minimum exposure situations or something like that.

"The second factor is that we have more applications pending before us than we have resources that would allow us to get to them immediately. We have a waiting-in-line time. We've had a backlog for many years. Some people call it queuing time. We have a priority-setting scheme that allows us to decide what to work on first. It's not strictly first-in-first-out. The reduced-risk [designation], for example, allows products to move to the front of the queue. The queuing time [for a typical product] can vary from a few months to a few years. But for reduced-risk chemicals, the queuing time is short. Right now, there is no queuing time for reduced risk.

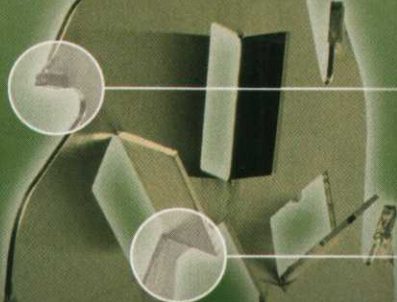
"The actual review time for reduced-risk chemicals usually is not dramatically less because you have the same volume of data to evaluate."

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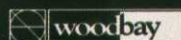
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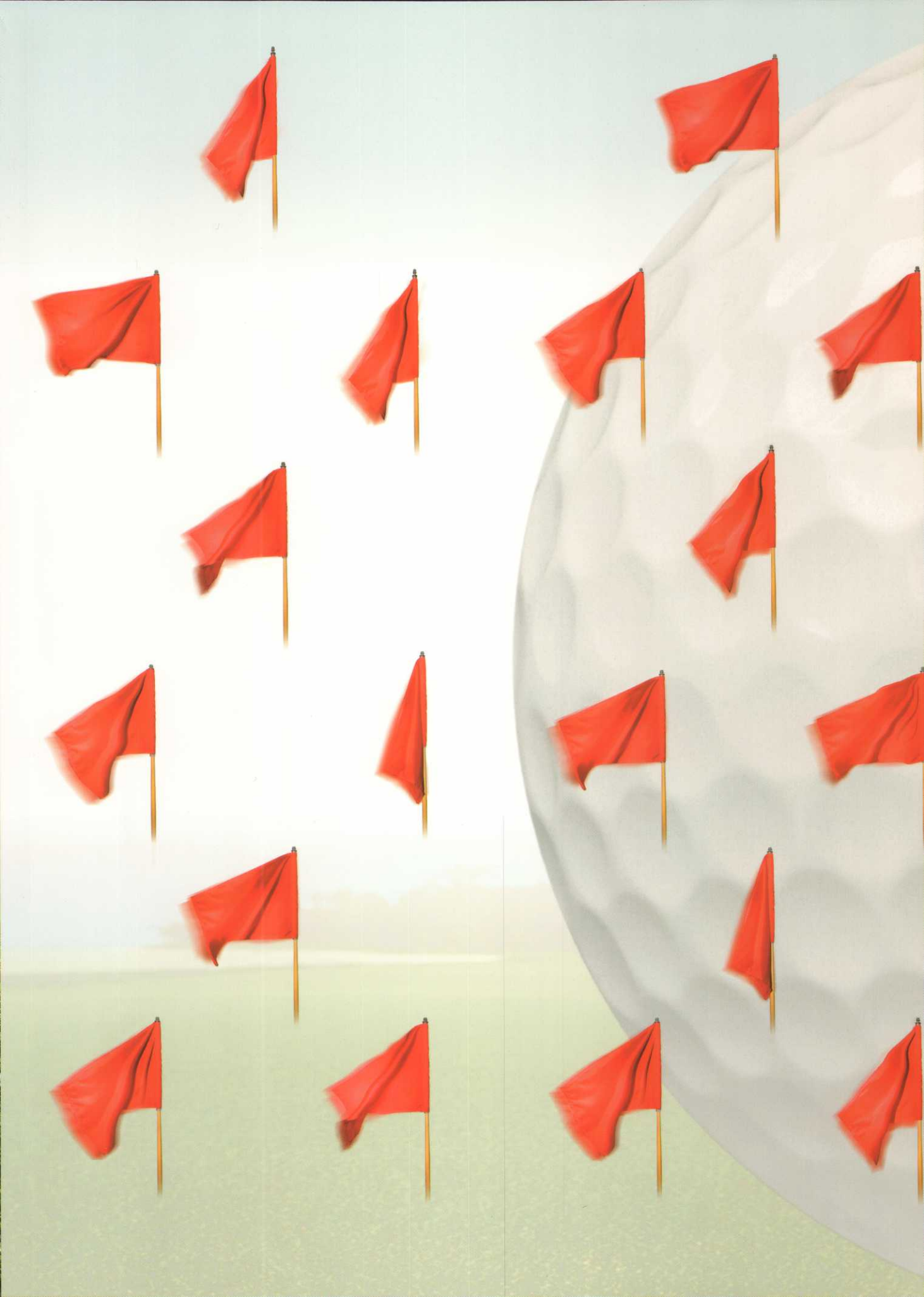
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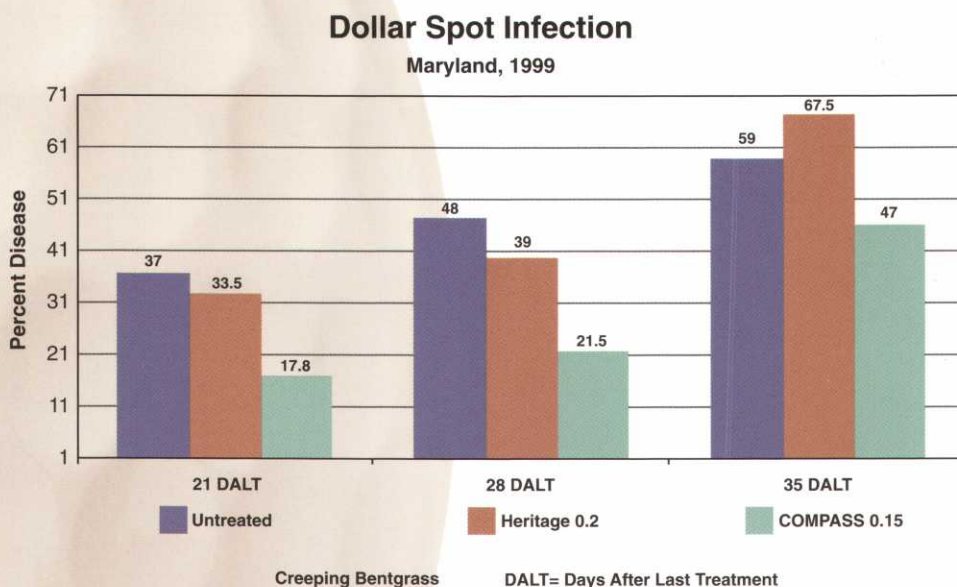
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