



These two words are starting to show up on fungicide labels in turf.



# Label

cides: Interface and Reserve.

So what exactly does “plant health” mean?

Karl Danneberger, Ph.D., professor of horticulture and crop science at The Ohio State University and *Golf-dom*'s science editor, said that the term seems to be growing in popularity every day.

“What I think of when I hear ‘plant health’ is that these products provide something to the plant not directly related to the disease control,” Danneberger said.

Thomas Hill, communications manager, specialty products for BASF, said he often hears the plant health question from superintendents.

“On the crop side, farmers understand it gives greater yield. On the turf side, you don’t want more turf, like a farmer would want a greater yield of corn,” Hill said. “(In golf) we’re looking at the effect on the plant. And what we’ve discovered is that our products are creating a stronger root system, which allows the plant to better recover from stress.”

Danneberger said he likes the idea in theory, with one caveat.

“The idea is good — having side benefits, helping the plant get through stress better,” Danneberger said. “But there has been some concern; Are superintendents going to use the product for the disease control, which is what it’s for, or the plant health, which is supposed to be the side benefit?”

## Origins in agriculture

Like many products in the turf and ornamental industry, the origins of the plant health label can be traced back to the agriculture industry.

Back in January of 2009, a fungicide in the agriculture industry called Headline stole the headlines. A BASF product, the company heralded it as the “most researched fungicide on the market” with more than 7,000 farm trials conducted on over a million acres in seven years. In trials Headline showed the ability to increase the yields of corn, soybeans, cotton and wheat.

“We saw the plant health effects in a variety of crops,” said Brian Lish, business manager for BASF Professional Turf & Ornamentals. “Our team started looking at the impact pyraclostrobin (the common ingredient in BASF’s Intrinsic fungicides) had on turf and ornamentals. It took them two or three years to see that the impact it has is longer, stronger roots.”

Lish said acquiring the plant health label was a significant undertaking for the company.

“It’s not just a simple task to go out and get an EPA-approved label with plant health on it,” he said. “We had to demonstrate with sound science the benefits pyraclostrobin has on turf. It cost a little bit of money, took a lot of time and a lot of sweat. We’re happy to know we have the sound science behind our label.”

According to an Environmental Protection Agency (EPA) spokesperson, to be approved by the agency, products must meet federal safety requirements stipulating that the product will not have unreasonably adverse effects on the environment or human health, and, of course, accomplish what the label says.

The EPA stated that it often takes one to two years for products to be approved, depending on how the product will be used.

Richard Rees, senior principal scientist in the turf, plant health and vegetation management areas for Bayer Environmental Science, said it took Bayer about three years to get approved for the plant health label.

“We have to do a tremendous amount of field work to prove these claims. We have to submit everything from turf color, quality, density — anything we want to put as a claim on the label, we have to submit to EPA,” Rees said. “It’s a tremendous amount of trial work. It’s quite detailed and expensive.”

## Superintendents on plant health

One believer in the plant health label is Carlos Arraya, superintendent at Hawk’s Nest Golf Club in Vero Beach,

*Continued on page 32*



*Continued from page 31*

Fla. He treats his greens with Honor Intrinsic fungicide. Arraya began using the product in response to problems he noticed on his greens a couple years ago. Within two months of applying the product, he noticed the grass had better resiliency, he said.

"It gives us better protection," he said. "The grass stays healthier for a longer period of time through periods where there's stress. All in all, it just has the ability to bounce back."

If a course's turf is under stress, said John Hoofnagle, superintendent at Bookcliff Country Club in Grand Junction, Colo., "it's certainly not going to be a positive for conditions on the golf course. You've got to have a healthy stand of grass to appease golfers."

Hoofnagle wasn't familiar with the plant health label, but said he'd learn more about it because it was such an important topic.

"It's a huge subject," he said. "It's everything, when I hear those words."

Arraya echoed those sentiments. "Plant health is the number one driver to what we do," he said. "Without that healthy plant, you're up the stream without a paddle, so to speak."

David Phipps, superintendent at Stone Creek Golf Club in Oregon City, Ore., said he felt the term "plant health" has been overused as of late, but understood the importance of the term.

"Plant health is vital to our industry," Phipps said. "A plant has to be healthy."

Especially on greens, said the superintendents *Golfdom* spoke with.

Why? "Golf is an extreme sport on turf," Phipps explained. "Greens are put under extreme stress."

### Learn through experience

One concern of Bruce B. Clarke, Ph.D., vice chair of the department of plant biology and pathology at Rutgers University, and echoed by Danneberger, was that superintendents should keep in mind that over applying any chemical to treat diseases could result in problems.

"I think superintendents have to realize that if they use fungicides more often than they normally would for dis-

ease control, with the idea that they're going to promote plant health... that comes with it some potential risks," he said. "Many superintendents I've talked to say this is a non-issue, because the fungicides are expensive, they wouldn't use them as plant growth promoting products alone, they'd use them as fungicides which happen to have growth-promoting properties."

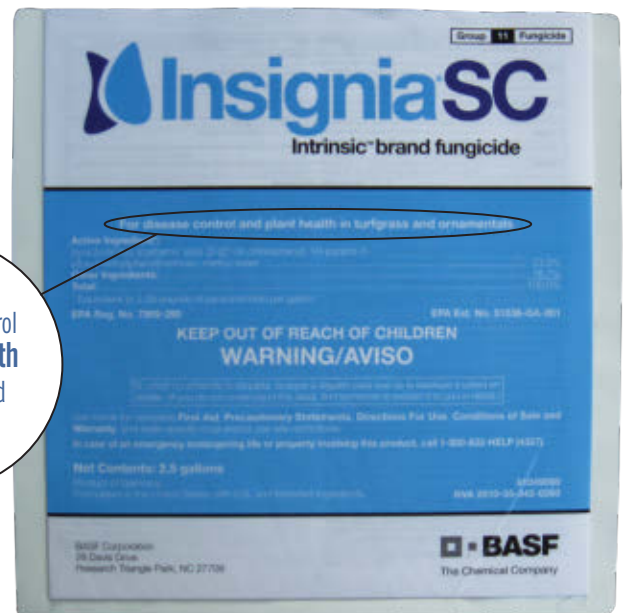
Hill said that his staff gets questions about the plant health effects, and they always give superintendents a clear idea of what to look for.

"We tell them that we already know it's a great disease control product, we know they're going to see that performance," Hill said. "We tell them to wait for a stress period — impending weather, tournament conditions, an aerification. Then apply it and call us. Do you see the aerification holes closing faster? Is the turf recovering faster than other areas where you didn't spray?"

Like many products, the plant health label got its start in the ag industry.

Peter Landschoot, Ph.D., professor of turfgrass science at Penn State University, said that the best way to learn about plant health is through experience.

"Plant health is just a balancing act right now. How many inputs do you put into your plant to make them functional yet not overdo it to make them contribute to this environmental problem



For disease control and plant health in turfgrass and ornamentals



we're having?" he asked. "You can't control the weather, (or) getting your budget cut, but what you can control is the inputs. It takes someone with managerial skills to get the proper balance of maintaining a functional, healthy stand of turf, but not overdoing it to the point where turf becomes unhealthy or you're contributing to environmental degradation.

"Getting education is not enough — you need to get experience."

### Infancy of plant health

So are we in the golden age of the plant health label? Will superintendents see this term used more and more around the industry?

*Golfdom's* Magic 8 Ball says "All signs point to yes."

"The term goes right down to the soil," Landschoot said. "They're different, but they definitely affect each other. (And) if you don't have good soil, you don't have good plants."

"The superintendent is already seeing the benefits of the plant health claim out in the field," Bayer's Rees said. "The reason these claims are important to have on the label is that we can now legally place this in our advertising to tell our customers."

BASF's Hill said, "We're proud to say we were the first fungicide in the market with plant health on the label. It's

The above turf was planted in tubes and set at 45-degree angles so the roots would be visible. The turf was treated with an Intrinsic brand fungicide or a competing strobilurin fungicide used at the high labeled rate. The control represents untreated turf.

The turf was planted on March 1, 2011, and treated on the same day and then again 14 days later. The photo was taken April 12, 2011. The tubes with turf treated with Intrinsic brand fungicides appear to have more and longer root systems.

a huge deal. The question is always, 'What's the next innovation?' I appreciate hearing (superintendents) say that they appreciate the branded products because they want to support the research and development. You daydream about people saying that."

Lish agrees that this is just the beginning of something bigger for the turf industry.

"I think we're just in the infancy of saying, 'here is what we can do with our Intrinsic products,'" Lish said. "Do I think we'll make it more robust? Yes I do. I think we'll continue to screen for and identify ingredients that improve turf."

But at the end of the day, Lish said, it all comes down to his customers wanting stronger roots.

"If we go into a stress period with healthier turf, we should also come out of that period healthier." ■



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# RECALLING A MOST *Masterful Win*

**IN 1986**, age 46 seemed older than it does today.

Don't think so? Consider this. When Jack Nicklaus won the Masters that year at age 46, didn't it seem like one of the greatest accomplishments of all-time? Didn't we consider it perhaps his greatest major victory, winning a green jacket at the lofty old age of 46?

In 2011, 46 just doesn't quite carry the same mystique that it did 25 years ago. Vijay Singh was 48 at this year's Masters, and the notion that he could have won another green jacket in 2011 wasn't too far-fetched, even though he missed the cut. And how about Freddie Couples? Freddie turned 51 last October and was among the leaders after two days, finishing at a tie for 15th. Steve Stricker is 44 and at the top of his game.

Why the change of perspective? Just look to Tom Watson's miraculous British Open run at Turnberry two years ago, when at the tender age of 59 he was one little nine-foot putt away from

*Continued on page 36*

What were you doing 25 years ago when Nicklaus had his most memorable win?

By Ron Furlong,  
Contributing Editor





## A Masterful Masters



*Continued from page 35*

hoisting the Claret Jug one last time. Watson raised the bar for all of those considered past their prime.

But let's turn the clock back 25 years. In 1986, it was a big deal. Nicklaus truly did defy all odds when he walked away wearing the green jacket that year.

The fact that it was Jack Nicklaus who did it added to the mystique. Had he been a lesser known golfer, his victory probably wouldn't have felt the same. But this was Nicklaus. The greatest golfer of all-time. It was truly magical.

In his new book, "One For The Ages," author Tom Clavin recounts the 50th Masters in vivid detail.

Clavin tells how *Golfweek* writer James Achenbach recalled that before the Masters that year, "Nobody was picking Nicklaus." Achenbach said, "I remember throwing \$10 into a Masters pool and watching with curiosity as Nicklaus remained unselected until one of the late rounds."

My own memory of that Masters was that I felt similar to Achenbach. I was a big Tom Watson fan and gave Nicklaus little chance. I was 21 in 1986, and I remember that although I watched the occasional major championship now and then, I was far from being hooked on the sport. That would change after that weekend.

**I SAID TO HIM,  
'JACK, YOU ARE  
PLAYING WELL  
ENOUGH TO WIN.'  
HE LOOKED AT  
ME AS ONLY JACK  
CAN AND STATED,  
'I WOULDN'T BE  
COMPETING  
IF I DIDN'T THINK  
I COULD WIN.'**

### **The superintendent**

Being the golf course superintendent at Augusta National carries with it a certain honor that only an elite few in this business will ever achieve. It might just be the top position a superintendent can reach. And being the superintendent at Augusta National in 1986 must have been even more special, thanks to that magical run by Nicklaus.

The man who holds that honor is none other than Billy Fuller, who was the superintendent at Augusta National from 1981 to 1986. In the early '80s, it was Fuller who was credited with the smooth transition of Augusta's greens from Bermudagrass to bentgrass. And he knew Nicklaus even before he made his memorable run at the '86 Masters.

"I got to know Jack really well prior to my going to Augusta National," Fuller told me, "when he and Bob Cupp designed Turtle Point at Kiawah Island, where I was then director of golf maintenance. Once I got to Augusta, that relationship continued.

"Jack always came in a week before the tournament to practice. Typically he would climb in the cart with me sometime during that week to look at various tree limbs that he recommended be pruned."

Fuller said that before the 1986 tournament even began, Nicklaus felt like he could win it. That was despite the fact that





No. 15 at Augusta National, a 530-yard par 5 over water. Nicklaus eagled the hole in 1986 with a 12-foot putt.

he hadn't won a major since the 1980 PGA Championship six years earlier, and he hadn't won a green jacket in 11 years.

"Before talking with him that year," Fuller said, "I had watched him play the course three days in a row and noticed how well he was playing. As we parted ways after looking at a couple limbs, I said to him, 'Jack, you are playing well enough to win.' He looked at me as only Jack can and stated, 'I wouldn't be competing if I didn't think I could win.' Of course, the rest is history."

### The first two rounds

The '86 Masters was the 50th Masters ever played. After the first round there was no reason for anyone to think history was about to be made. Nicklaus shot an uninspiring 74 and was already six shots off the pace.

On Friday, Nicklaus fared a little better, shooting a -1 round of 71. But he still had no sniff of the leaderboard.

Before the tournament began, Tom McCollister wrote in the *Atlanta Journal-Constitution* that Nicklaus was "done, washed up, through."

Nicklaus admitted the article ignited him a bit.

"I kept thinking all week, 'Through, washed up, huh?'" he said later. "I sizzled for a while. But then I said to myself, 'I'm not going to quit now, playing the way I'm playing. I've played too well for too long to let a shorter period of bad golf be my last.'"

*Continued on page 38*

PHOTO BY: SETH JONES

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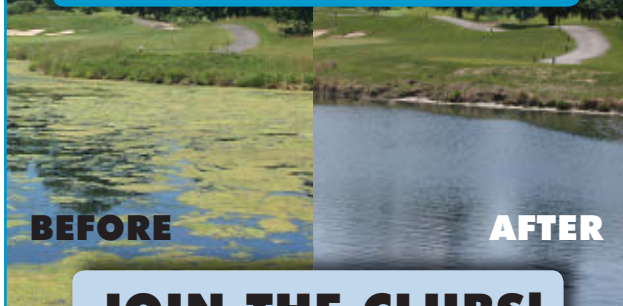
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*Phillip J. White, Crofton Country Club, Crofton, MD*

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Billy Fuller, former superintendent of Augusta National, now works as a golf course designer.

*Continued from page 37*

### The weekend

Nicklaus began to turn it around on Saturday, Moving Day at Augusta. He posted a 69 to get within five shots of the lead. But Nicklaus received very little attention as he teed up for the final round on Sunday.

Nicklaus' old rival Tom Watson was among the players ahead of Jack on the leaderboard. Watson, 24 years later, recalled in “One For The Ages” that he didn't doubt Nicklaus could pull it off.

“That night, I saw no reason why Jack couldn't do it, even at 46 years old,” he said. “Especially at Augusta National. No reason at all.”

Sunday dawned slightly overcast and warm, with no wind. Fuller followed Nicklaus around the front nine.

“As he made his way to Amen Corner I headed back to the shop to be prepared for a playoff if necessary,” Fuller said.

Too bad for him, because Amen Corner is where the magic started for Nicklaus. After staying even par for the day through the first 8 holes, Nicklaus promptly birdied 9, 10 and 11 to thrust himself onto the leaderboard.

The roars began.

“I sat in front of the TV (at the maintenance shop) as he marched through one of the greatest back nine holes of any championship,” Fuller said. “I just remember the roars being so deafening as they rose through the valley.”

*Golfweek's Achenbach* wrote: “The ground felt like it was moving. It was a surreal experience. I half expected the trees to bow down in homage to Nicklaus.”

Nicklaus birdied the 13th then sank a 12-foot putt on 15 for an eagle that put him within two of the lead. The place went crazy.

On 16, Nicklaus had another birdie. As the famous story



goes, Nicklaus hit his tee shot and his son Jackie, who was his caddie that week, told the ball as it was in flight to “be right, be right.” Nicklaus, without looking at the shot, picked up his tee, handed his club to his son with a wink and said, “It is.”

It is the image on the next hole, the 17th, that sticks the most in the minds of those who witnessed it. Nicklaus, putter raised to the sky as he watched his 18-foot birdie putt fall in. A par on the 18th gave him a 30 for the back nine, a record at the time. He played the final 10 holes 7-under.

Nicklaus held off the likes of Greg Norman, Tom Kite, Seve Ballesteros, Tom Watson and Nick Price. Not bad.

**A place in history**

It was Nicklaus’ final major championship. In fact, it was his final victory on the regular tour.

Sports columnist Tom Boswell summed it up best by saying, “Some things cannot possibly happen, because they

**A PAR ON THE 18<sup>TH</sup>  
GAVE JACK A 30  
FOR THE BACK  
NINE, A RECORD  
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HE PLAYED THE  
FINAL 10 HOLES  
7-UNDER.**

are both too improbable and too imperfect.... Jack Nicklaus cannot shoot 65 to win the Masters at age 46.”

I firmly believe Nicklaus’ magical win at Augusta was the primary reason I not only became a huge fan of the game but also was drawn to a career in the golf course field. Two years after the 1986 Masters I was working on my first golf course, and 23 years after that I’m still on the golf course. Thanks, Jack.

For Billy Fuller, the ’86 tournament was to be his swan song at the famed course. Following the ’86 Masters he joined Bob Cupp in the design business.

Fuller shared one final thought on his last days as Augusta’s superintendent.

“It was very special for me that my parting memory was Jack slipping on his sixth green jacket in what will always be remembered as one of the greatest wins in golf.” ■

*Furlong, a contributing editor to Golfdom, is superintendent of Avalon Golf Club in Burlington, Wash.*

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# The Company Line

NEW PRODUCTS AT THE GIS

There were new golf course maintenance products around every corner at the 2011 Golf Industry Show in Orlando. Here *Golfdom* presents an assortment of those products, but this is by no means a complete list of products. Keep an eye out for additional products in future issues as well as in *Golfdom's* e-newsletter, the *Golfdom Insider*.

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