

GODER PROGRAM GUIDE OP.21



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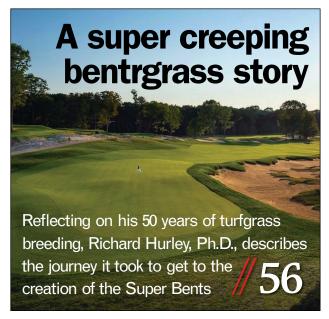
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"I was the oldest person at the show. I'm sure ATL fans were asking themselves, 'who brought their dad?' But I've been gray since 30, I don't even care anymore."

SETH JONES, Editor-in-Chief & Associate Publisher

Trying to play it cool

reetings from the Hall of Justice, "the HOJ" for short ... my detached garage. Sporting Kansas City is on TV, alternative rock is on the jukebox and cold Miller Lite is in my can. As I learned last summer, there's no telling where these columns go when I'm writing from the HOJ ... so here we go, in bullet format.

- A column/story from earlier this year came full circle. Hopefully you remember the story "My son the rock star" from the January issue when I wrote about Mark Merrick, CGCS, and his famous son Zack Merrick, bassist for the band All Time Low. Zack and the guys performed in front of several thousand screaming fans recently at Kansas City's Power & Light District, and Mark set PBI-Gordon's Brett Rieck and me up with tickets. COVID prevented the meetand-greet with the band, but it was a great time. ATL sounded fantastic, and the sold-out crowd was enthralled. And yes, I was the oldest person at the show. I'm sure ATL fans were asking themselves, 'who
- brought their dad?' But I've been gray since 30, I don't even care anymore.
- Big news in the Jones household: my daughter, now a freshman in high school, elected to forego volleyball to join the girl's golf team! Right now, I'm just trying to play it cool — no pressure from me. But I mean, golf is in her blood! I have photos of her in a jogging stroller on the golf course. She's met Greg Norman. She has more U.S. Open gear in her closet than any other student at her school. Is it too soon to run out and get her a new set of irons? Or to install a golf simulator here in the HOJ? That's just being a supportive father, right?
 - Alan FitzGerald penned

an eloquent column this issue (page 14) in tribute to the 20th anniversary of Sept. 11, 2001. I can't do any better than Fitz, so I'll just give this quick version of my "where were you when?" I had just gotten to GCSAA headquarters in Lawrence, where I worked at the time. A coworker grabbed me and told me to come to the boardroom because something was up. We watched in horror. I was adrift at work the rest of the day. That night, my friend John Wake and I went to a Blockbuster (yes, the movie rental place) and grabbed the dumbest comedy we could find to keep our minds off of the tragedy. Even the dumb comedy movie couldn't get us to laugh that night. Here's to

- remembering everyone whose lives were touched on that fateful day 20 years ago, and the many heroes who stood up for all of us.
- In this issue, we have our Early Order Program Guide. It's our pleasure to create this supplement for the industry. Inside the supplement, we have a story about a person I've known for a long time. It was probably 15 years ago when I lost my cell phone at Stone Mountain Golf Club while visiting Anthony Williams, CGCS. Anthony put the call out on the radio to the crew to keep an eye out. A few minutes later, then-assistant superintendent Tommy Hewitt pulled up in his Gator holding my phone up, much to my relief. Now a head superintendent, Tommy is just as eagle-eyed today as he recently helped create a tool for superintendents across the ClubCorp network. Keep up the good work, Tommy!
- Do we have room for one more bullet? (Looks around the HOJ, realizes it's past midnight and I'm alone.) OK! This issue I am proud to present my cover story on John Shaw, CGCS, at Valley Brook CC in McMurray, Pa. Shaw is our 2021 Herb Graffis Businessperson of the Year. This marks the tenth time we've presented the award. I look back at the people I've written about over the 10 years and it's a cool feeling to think of all the stories this award has allowed me to share. Thank you, Mr. Graffis. @

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CAPITOL HILL LAWN GETS A FACELIFT

BY SARAH WEBB // Managing Editor

Visitors to Capitol Hill in the past few years may have noticed that its main lawn, The Pond Lawn, hasn't been up to par.

"That lawn is the one everyone sees in pictures and where Inauguration is, and that area hosts four concerts a year plus regular tourist traffic," said Elliot Dowling, agronomist in the Northeast region for USGA. "They never had really good-looking grass between the four concerts a year that it hosts and foot traffic, so there was a desire to have a nice, attractive backyard that would look good in photos and on TV."

About three years ago, Capitol Hill called in the USGA to do an evaluation of the area. While many ideas were discussed, it was eventually decided that bermudagrass was the way to go

because it can stand up to the heat, humidity and foot traffic that defines D.C.

"It wasn't until I was walking the area and saw a bare patch with a patch of common bermudagrass that a light-bulb went off that we're in downtown Washington, D.C., in the upper Transition Zone," Dowling said. "There are golf courses all around with bermudagrass, so why would we not do that here, especially considering how busy they are in the summer?"

In spring of 2019, the crew there sprigged Tahoma 31.

In the coming months, the team will interseed bluegrass into the bermudagrass to create a permanent two-grass system called bluemuda so that they're green all year since the Tahoma 31 typ-

Continued on page 9

//REGULATIONS ON THE RADAR

EPA BANS CHLORPYRIFOS FOR FOOD CROPS

Following years of debate and lawsuits, the U.S. Environmental Protection Agency (EPA) is banning all chlorpyrifos pesticide use for food, although the chemical will still be allowed on golf courses and other nonedible applications — for now.

Environmentalists and public health advocates have been urging the EPA to ban chlorpyrifos since 2007, citing evidence of neurological damage, especially in children. The initial petition called for the EPA to revoke acceptable tolerance limits for the chemical in food, effectively banning its use. Agency reviews in 2014 and 2016 led the EPA to recommend revoking tolerances, but the Trump administration rejected those calls in 2017 and 2019.

Earlier this year, the Ninth Circuit
Court of Appeals ordered the EPA to ban
the substance for food use, citing the
regulatory group's own research. While
the EPA's ban on chlorpyrifos only applies
to food crops now, the agency said it will
review nonfood uses for the pesticide,
including taking public comments.
Some golf courses use the pesticide to
control annual bluegrass weevil (ABW),
nematodes and similar pests.

//MOVIN' ON UP

QUALI-PRO PROMOTES PAUL FOX

Quali-Pro has promoted Paul Fox, a longtime area manager, to its key accounts manager.

"Paul has been an integral part to the success of Quali-Pro and CSI," said Allan Fulcher, Quali-Pro vice president, turf. "Paul is the ultimate team player and helps everyone around him be successful."

Fox received his Bachelor of Turfgrass Science at the University of Florida. He has spent his entire career in the turfgrass industry as a distributor sales rep, operations manager and sales director. Fox is a member of the Florida Golf Course Superintendents Association and the Florida Turfgrass Association.

"I have enjoyed constantly learning new ways to do things from interactions with people in the industry," Fox said.

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Starter

//IN MEMORIAM

Stenten's Golf Cart Accessories President Marilyn Stenten dies

Marilyn Stenten, president of Stenten's Golf Cart Accessories. died at her home on July 31. Stenten was a pioneer in the golf cart industry and brought many products to the market. Stenten became friends with many dealers throughout her 35 years in the business and used a "keep it simple" approach with everything she did.

Stenten introduced the first golf cart lighting kit to the industry. Factory or aftermarket headlights and taillights were available, but cart fleet managers had to run the wiring. Her friend and employee, Jim Rasmussen, made the different wire harnesses for all the different golf cart makes. Dealers' initial responses were negative, but the gamble ended up paying off.

Another innovation she brought to the market was the first fold-down windshield. Prior to this, the industry was using a two-piece windshield. The two pieces of the windshield had Velcro attached to the edges and would adhere to the windshield frame. The two-piece top could be removed and attached to the lower piece. These would often fall off and get run over. Stenten came across a clear plastic hinge at a plant of one of the vacuum formers she was working with. After some research and development,



Marilyn Stenten made many contributions to Stenten Golf Cart Accessories.

she had a hinged fold-down windshield.

Stenten shared a story about the time she got a phone call from the Bay Hill Club. The person on the other end wanted to know where to get another one of those fold-down windshields because Mrs. Palmer was always taking Arnold Palmer's cart which had the hinged windshield.



Continued from page 8

ically goes dormant for about a month or two in the winter.

All in all, Dowling said he's proud of the work the USGA and the Capitol Hill team have accomplished on the lawn.

"People will comment on how good that lawn looks, and it's so photographed, whether it's tourists or people putting that image on social media or the concerts, Inauguration Day and any other government function televised for the whole world to see," Dowling said. "It means a lot to them to have a lawn that they're really proud of. For me, I was proud to be a very small part of that operation to make their experience that much better."



Starter

//HOWDY, PARTNER!

CORTEVA AGRISCIENCE, FMC TEAM UP

Corteva Agriscience and FMC Professional Solutions will be collaborating on an early order program beginning Oct. 1.

The joint effort will expand savings opportunities on the fungicides relied on by turf and ornamental professionals in the lawn care and landscape, golf and nursery markets.

As part of the 2021 Corteva Agriscience Ultimate Rewards early order program, turf and ornamental professionals will now have the ability to purchase select FMC fungicides that will count toward the program's rebates and locked-in savings.

Qualifying FMC products include all package sizes of Fame SC Fungicide and Rayora Fungicide. These brands also will be available through the FMC True Champions early order program. Qualifying FMC fungicides can be purchased during two ordering periods: Oct. 1 to Dec. 10 to lock in rebates for the full market year and Jan. 1 to Feb. 28, 2022, to lock in rebates through September 2022.

PRACTICE TEE

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Superintendent, Sherwood CC, Thousand Oaks, Calif.

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Starter

Have you mentored a staff member with additional needs like learning difficulties? How open are job candidates to mentioning this upfront? What additional support can be put in place for inclusion?

— Theresa W., South East, England

I've had several staff members with learning difficulties over the years. An honest and open two-way communication is the way to go. You need to concisely explain your expectations and allow their feedback. Most job candidates don't seem to be very open about any learning disabilities, but that is why I always do an in-person job interview. A resumé or a job application can only tell you so much. I enjoy asking off-the-wall questions like, "Do you get along with your parents?" or "Have you ever been in a fight? Why?" I generally get good, honest answers. As far as inclusion is concerned, during the summer, I am around my crew more than I am around my family. I always like to mix up who is working with whom. I'm not a huge fan of cliques within my



staff. We all work hard, but everyone, I hope, knows that I value them as friends, human beings and individuals.

Longtime super at a nice club. Got in trouble for something I still don't think is valid. Even cost me money. I don't have that many working years left. I bit my lip and kept my head down. Did I do the right thing? I'm still mad about it.

— Anonymous.

As superintendents, we are the most passionate employees at the golf course. We probably know more about our property

and jobs than other employees. We are educators of owners, greens committees and board members. We are almost always right. BUT we are employees with a job who answer to owners, greens committees and board members. I am as opinionated a superintendent as you'll find, and I can become quite passionate about my job and I know I'm right. But, at the end of the day, I'm an employee. This was a lot harder to accept when I was younger but after 33 years, I let a lot slide right off my back. I've had my wars over the years, I've been the outspoken one during board meetings, and I've convinced different owners that I was right (after the proven results of course). I have yet to have a battle that I was willing to lose my job over. I'd rather bite my tongue now and then and have the career I love than be right and unemployed.

Got a question for Thad? Tweet to

@Terry Hills Maint and @Golfdom or
email Thad at thad thompson @terry hills.com



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Musings from the Ledge

DEFINING/EVENTS



"After about an hour or so, we headed back out to continue sodding, realizing on that day how unimportant dead turf was in the scheme of things."

ALAN FITZGERALD, superintendent, LedgeRock GC, Mohnton, Pa.

Remembering 9/11

he first real sign for me that we are getting back to normal after COVID-19 (at least until the next Greek letter variant hits us) was finally getting out to see Guns N' Roses at Hershey Stadium. The now only semifat Axl Rose warbled, "Did you wear a black armband when they shot Kennedy?" and I was reminded of my mother telling me that she remembered exactly where she was when she heard about his death, just like she knew exactly where she was when Neil Armstrong uttered his famous words.

There are defining events in our own lives that leave an imprint in our brains, but then there are those worldstopping events that take everyone to where they were at that specific moment in time. I remember watching the Space Shuttle Columbia returning from its first trip to space on a grainy 25-inch TV, and my grandfather saying how they look more and more like airplanes these days. Then there was the Challenger disaster, a moment that nearly everyone my age remembers watching live on TV. I clearly remember being about 3 feet from the TV, watching the launch of an actual teacher into space, and moments later my 10-yearold brain trying to process the magnitude of what I just saw.

I guess it is inevitable with the amount of time that I spend on a golf course that one of these moments came while working. On the morning of Sept. 11, 2001, I was sodding greens — never a good way to start a story when you're a turf manager — from damage caused by a tainted herbicide. It was a warm and sunny morning outside Philly, and I was stripping sod from the right of the second green on the par 3 course. We went in for our 9 a.m. break to find everyone crowded around the little 15-inch TV in the breakroom. The initial curiosity of how an accident like that could occur

was quickly quelled as the second plane hit. The shock and realization of what was happening set in.

Time seemed to stand still while we watched the events unfold. I can still picture the assistant mechanic running in saying, "They just hit the Pentagon!" right before it too popped up on our little screen. The newscaster said that there was still a missing plane and that all the others were told to land.

A couple of the assistant superintendents had family and friends in New York and were distraught as they tried to get ahold of family to make sure they were OK, only to find all the lines were busy on the then-infant cell

network. After about an hour or so, we headed back out to continue sodding, realizing on that day how unimportant dead turf was in the scheme of things. My memory of the day fades from there as the initial shock wore off, but I do recall the surreal effect of not hearing the constant flow of planes above us on their final approaches to Philadelphia International Airport and how shocking it was the next day when a C-5 roared over us out of the silent skies.

It is hard to believe that 20 years have passed, and I can still clearly picture that hour or so of my life.

Over the passing days and months, we heard of the heroes — those who risked their own lives to save others — and how some of these heroes were everyday people including those volunteering their time from the turf industry.

During the summer struggles with the weather, disease, staffing and whatever else can be thrown our way, the course becomes your whole life, so it is easy to lose perspective about the bigger outside world. It's good to remember at the end of the day that it's just grass, a playing surface. Yes, keeping it alive and playing well is our job, but don't forget to take the time to look around and enjoy the real world too, as you never know when that world can change in an instant. @

Alan FitzGerald (alan@ledgerockgolf. com) is superintendent at LedgeRock GC in Mohnton, Pa.

Good to be seen Longtime friend of the magazine Nick Strain, vice president of business development for Primera, with Golfdom Publisher Craig MacGregor. The two were attending the Primera Annual Meeting in Nashville.

All smiles Golfdom's Dan Hannan dropped in on the crew at Bayside Resort Golf Club, Selbyville, Del. Superintendent Eric Hindes (left) is about to begin a new job in the Dominican Republic but ready to take the helm at Bayside is Ken Crider (right).

All Time Low show Golfdom Editor-in-Chief Seth Jones (left) was happy to not only get out to enjoy a concert, but also to make some new friends in the industry by meeting PBI-Gordon's Brett Rieck (right) at the concert (with wife, Dana and Seth's friend Sean Lipford in back).

Good company Greg Nathan (left), chief business officer, National Golf Foundation, was one of the speakers at the recent Primera Annual Meeting, pictured here with MacGregor and Sam Wineinger, manager, turf and ornamental marketing and formulation business, Sipcam Agro USA.

Forever a member of the Tribe North Coast Media turned out the lights on the 10th floor and headed to Progressive Field, to pay tribute to longtime employee and lifelong Indians fan Jeff Heide, who recently passed away. The Tribe got trounced by the Oakland A's that game, but it didn't make much difference to Jeff's friends, who all cheered when the scoreboard flashed his name in tribute in the middle of the fourth inning.



Friend. Inventor. Superintendent.

BY SETH JONES

A golfer's
heart, a helping
attitude and
an engineer's
mind make John
Shaw, CGCS,
a friend to all
superintendents

lan Easter's mind goes back to a day he'd rather not relive — and certainly will never forget. It was the longtime superintendent's first day hosting a professional tournament. Pro-Am day ...

... and there's a massive irrigation break on the first hole.

"I isolated it. We've got blast-furnace winds. I thought, 'how am I going to fix this?" Easter recalls. "Then one of the four radios I have on me goes off and says, 'someone has shovels on the first hole."

Easter doesn't know who made the phone call, but John Shaw, CGCS at nearby Valley Brook CC in McMurray, Pa., arrived on the scene with his irrigation technician and dug up and fixed the break before the first group teed off. "John and I didn't even talk much back then, but how can you ever forget that?" Easter says. "I get emotional thinking about it."

Shaw is a cutting-edge superintendent who maintains Valley Brook CC to exceptional conditions. He's also a superintendent willing to go out of his way to help his fellow super, like he did that day with Easter. And, he's a superintendent with a mind for problem-solving who wants to help superintendents everywhere. For all these reasons, Shaw is *Golfdom's* 2021 Herb Graffis Businessperson of the Year.

★ ★ ★ Money back, and then some

A 1972 Volkswagon Bug and a passion for the game of golf led John Shaw to become a superintendent. He loved playing golf, and at age 16, he had wheels and a driver's license. Since he could drive himself to Castle Hills GC in his hometown of New Castle, Pa., he did something not many 16-year-olds would do: He bought a membership.

"I was about a month into that membership when the golf course superintendent came walking up to me on the first tee. He said, 'Hey, I see you playing here a lot. And I already know you bought a membership," Shaw recalls. "He said, 'I'm looking for somebody to work with me, and I'll give you your money back on your membership, and you get to play for free.' I kid you not, that's how it all started."

When college came around, Shaw studied engineering. Not because he liked it, but that's what his buddies were studying. After earning a degree in mechanical engineering, Shaw immediately switched over to the two-year Penn State turf program.

While enrolled at PSU, Shaw worked at Gospel Hills GC in Erie, Pa. After graduating, he immediately became a very young superintendent at Del Mar GC in Ellwood City, Pa. He left that job to become assistant superintendent at Valley Brook and work under the tutelage of Ron Fox, CGCS, who would become his mentor.

"I knew that if I wanted to make it big in the country club business, I had to be an assistant," Shaw says. "So, I made that name and worked for Ron for six years."

After Valley Brook, he again became a superintendent at Duquesne GC, then at Rolling Hills CC, both in Pittsburgh. After eight years away, he returned to Valley Brook, now as the superintendent, a position he's held since 2003. Valley Brook is 27 holes, a high-end club 20 minutes away from downtown Pittsburgh.

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PHOTO BY: SCOTT GALVIN PHOTOGRAPHY

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HERB GRAFFIS AWARD



"I saw prototype after prototype and I was hard on him," says Alan Easter (right) pictured with Shaw. "Never in my wildest dreams did I think I'd have something to do with this."

Continued from page 16

Those who have known Shaw over the years describe him as "cerebral" and talk about how he always strives to find a better way. Maybe it's that engineering background that has him constantly running tests and experimenting to observe results. When a nematode problem struck Pittsburgh in 2010, Shaw invested his own money into equipment to better analyze what was going on in his soil and shared that information with other area supers.

"Shaw has two microscopes in his office, connected to a 32-inch flatscreen on the wall. Superintendents will call me and say, 'I think I have summer patch.' I say, 'you know what I'd do? I'd call Shaw. He'll sit in his office with you for 10 minutes and tell you exactly what it is," says John Ferruchie, a former superintendent who now works as a consultant. "I've known Johnny a long, long time. I look at him as an engineer who is unbelievable at growing and managing both turfgrass and people."

$\star\star\star$

The hole problem

One common superintendent problem that had long vexed Shaw was the cores left behind by aerification, as well as the challenges weather can inflict on the process.

"My employees will be the first ones to tell you I was never satisfied with aerification," Shaw says. "We never aerified the same way from spring to fall, fall to spring. I was always changing and trying to improve, trying to do a better job, and I started thinking, 'there's got to be a better way."

Easter adds, "You get two days in the spring and two days in the fall to get your agronomic impacts implemented. If it rains, they slap you on the back and say too bad, God intervened. And in Pittsburgh, their expectations are for 14 (feet) on the Stimpmeter every day, or you're in trouble. John and I were talking, he said, 'I am going to make something that will collect cores in the rain and not touch the turf' ... I said, 'people have been trying to do

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A SUPPLEMENT TO

Golfdom

EARLY ORDER PROGRAM GUIDE

2022

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The BASF 2022 Early Order Program puts the "full" in powerful by helping superintendents stay ahead of the season. Take advantage of everything EOP has to offer when you design your own program, stock up on some of the most innovative chemistries in the industry and earn rebates up to 24%.

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EARLY ORDER PROGRAM GUIDE

Knowing the numbers

Superintendents create a massive spreadsheet to better compare budgets from course to course

BY SARAH WEBB



hen most people look at a spreadsheet, they see rows and rows of figures, column upon column of numbers, all in crisp black ink.

Not so for two Georgia superintendents, Tommy Hewitt, director of grounds at Windermere Golf Club, Cumming, Ga., and Gary Wilder, senior director of agronomy for ClubCorp, LaGrange, Ga. For them, a spreadsheet tells the story of where a golf club has been and where it's going.

"It gives you a better snapshot at that moment of where that club is at versus year's end. You see the peaks and valleys of memberships, expenses, revenues and things of that nature," Hewitt says.

By looking at the basics such as number of rounds played per year, acreage of a course and man-hours needed to maintain a course, Hewitt and Wilder, along with Jay Abbott, senior vice president of agronomy for ClubCorp, created a product that would help measure one golf course against another.

How it began

It all started back in 2019 when ClubCorp had a new COO who wanted to analyze the labor dollars for each course.

"He made the comment that he really wasn't concerned about how many employees you had. It was all about the number of man-hours," Wilder says. "A lightbulb went off that I had done a comparison like this about 12 years ago, and I looked through my files on my computer and eventually found something. Obviously, it was not near the scale of what we did this go around, but it was a similar comparison."

From there, Wilder got Abbott and Hewitt involved, and Hewitt went to work building his spreadsheets.

All in all, ClubCorp has about 175 country clubs around the country, and Hewitt says about 130 clubs were involved in the initial survey to more easily compare golf clubs within ClubCorp's system to one another.

"Going back to the beginning of time, we've always gone back and forth, being within a management company, 'This guy has got more money than me. Why? Why do I only have this?" Hewitt says. "You never were really comparing apples to apples. It was always comparing apples to avocados. You never had the ability to get everything in place to say, 'Alright, course A, you get X amount. Course B, you get X amount.' It was getting everything in line to see if there were any outliers of how we categorize clubs and if there were any things that we were really missing, good or bad."

After a couple hundred hours and countless stacks of spreadsheets, a complete product was finalized.

"It took months and months to go through it, but we were really just looking at ways to compare properties' dollars per acre and dollars per hole in both expenses and labor," Wilder says. "Tommy did an outstanding job on building this thing, and we all kicked it around and kept improving it and fine-tuning it. I'm sure we'll be doing more of that in the future."

A snowballing spreadsheet

While the spreadsheet saga originally started off by only comparing a few items such as acreage and types of greens, it soon snowballed into comparing dozens of items such as square footage or acreage for the greens and tees and fairways and roughs, natural areas, clubhouse and driving range.

"The more I started thinking about it, I thought, we Continued on page EOP4

EARLY ORDER PROGRAM GUIDE



Continued from page EOP3

already have a lot of this GPS data from all of our clubs," Hewitt says. "Once we had that, and it was then rolled into (the spreadsheet), I could break down how much money each club was spending toward maintaining those areas and then how many staff members each club had."

For example, if the average wage in one state was \$10 per hour and a club employed 15 people, but another club in a different state paid an average wage of \$19 per hour, it'd be easier to see why one club paid so much more money for essentially the same product.

"You can look at all the clubs as a whole and see the average dollars spent per hole, per 18 holes. We have multiple 36- and 54-hole properties, and we can compare those. We can compare clubs and geographical regions," Wilder says. "It was almost mind-boggling when you started thinking about

it, all the different comparisons you could make. You try to understand your business a little bit better."

Wilder says the project also helped reveal which clubs weren't spending the dollars that they should be.

"It was a tool to help us get more resources because a lot of times, people would look at a property and say, 'Gee, this isn't quite the condition of this piece of property or this other particular club," Wilder says. "In the long run, I think it's going to help us justify more resources, so we can bring all clubs up to standard."

All in all, Hewitt says it leveled the playing field for different courses and showcased standout clubs.

"It tempered expectations because it gave a realistic view of why X club is so good and why, at this other club, the superintendent might actually be doing a better job because he has fewer resources," Hewitt says.



Early order

For superintendents looking to take on a project of this scope, Abbott notes that it will take time to put everything together, and Hewitt says it's important to know all of a course's details.

"It's surprising sometimes when you talk to people, and many of them don't know how many acres of fairways, bunkers or linear feet of cart paths they have," Hewitt says. "You've got to have those facts before you can do this, and they need to be accurate. If you're putting in the wrong stats and just guessing at the areas, it's not going to produce accurate results in the end."

Both Hewitt and Wilder say using this type of program will help figure out what items to purchase when thinking about early order programs because the spreadsheets serve as a ready-made tool to determine what products will likely be needed the following year.

"At any point, you can know your numbers, and you can walk into a meeting with your greens committee or your corporate leadership and talk to them in a language they understand. It's going to greatly help your cost no matter what you're asking for because you can explain to them your why. You can show the value of your club," Hewitt says. "Typically, they might not understand grass and turf and the environment, but they do understand dollars and cents. It gives you the ability to mathematically have that conversation with them about economics."



PHOTO BY: TOMANY HEMITT

Early and in person

Savings, flexible payments make EOPs valuable

BY THE GOLFDOM STAFF



n late spring of this year, Golfdom asked readers to give some insights on how they perceived early order programs. We received responses from readers in 36 states telling us that they overwhelmingly will participate (86 percent) in this

fall's EOP and that three out of four readers prefer meeting in person with their distributor sales representative (DSR).

Most respondents listed "cost savings" as the main reason they participate in EOPs. "It helps me build my plan and receive product in a timely manner, and there is a cost benefit to getting it all at once," a reader at a private course in California wrote. Another respondent at a private course in Ohio told us, "It's a program approach ... I'm able to purchase all my agronomic needs in one or two conversations. It helps with budgeting. I know about what I need to spend for my program. And, the savings are also nice."

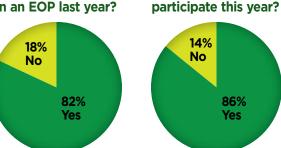
Still, some bemoaned that the benefits for smaller courses, or the timing, is not ideal. "There is no incentive for smaller clubs to order early," said a respondent in Massachusetts, while a reader at a premium daily-fee course in

Do you plan to

86%

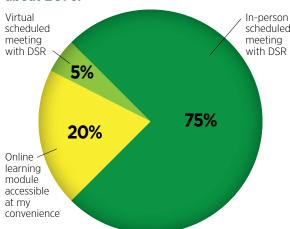
Yes

Did you participate in an EOP last year?

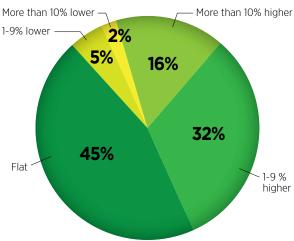


Michigan said, "it's the worst time of the year for me to try and take time and craft a useful budget for the following year, and there is no longer savings for paying upfront."

What is your preferred method for learning about EOPs?



What does your EOP spend look like this year, compared to last year?





Bayer offers solutions for a superior year

ayer understands that superintendents are always looking for ways to maintain their edge and raise the bar on what they can accomplish on the course. So this year, Bayer is raising the bar on its Fall Solutions program to offer its best deals yet so that you can make next year your best year.

With four ways to save, including 10 agronomic pairing incentives and special offers on brand-new innovations, Bayer took what superintendents liked from last year's program and made it even better.

From Oct. 1 to Dec. 6, 2021, superintendents will be able to take advantage of special:

// Off-invoice discounts // Tier-level rebates

// Individual, select product

// Agronomic pairing incentives

If you've been waiting to try Tetrino™, the new Bayer insecticide that offers gamechanging control of white grubs, annual bluegrass weevil and a wide range of other damaging insects, this is the time. Pair it with Densicor®, the exciting new

DMI fungicide from Bayer that offers next-level control of the top five most problematic turf diseases and the savings will quickly add up.





And when it comes to adding up, Bayer makes it easy for superintendents to calculate their program savings through its powerful, easy-to-use Flex Solutions tool, which can be accessed directly from the Bayer website.

To learn more about the Bayer Fall Solutions program, contact your distributor representative or visit es.bayer.us/fall-solutions beginning Oct. 1. To take advantage of discounts prior to Oct. 1, check out the NOW Solutions program that is currently running through Sept. 30, 2021, and features discounts on a subset of the products that will appear in the Fall Solutions program. Learn more at es.bayer.us/now-solutions.





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Simply Grow Together



uali-Pro has been a leader in the development of innovative and post-patent formulations, offering professionals a wide array of active ingredients. Quali-Pro provides solutions for

golf course superintendents, sports turf managers and lawn care professionals that are backed by university research and a dedicated staff of professionals.

2021 QUALI-PRO EARLY ORDER PROGRAM **INFORMATION**

Quali-Pro is offering special incentives now through Nov. 30. Take advantage of the SGT early order program by Oct. 31 for the biggest rebates.

To qualify, the participating end user must earn a minimum rebate of \$100. When 50 percent or more of the total rebate is derived from Platinum Products, a Double-Base Bonus will be added to your rebate total. Products must be purchased from an authorized Quali-Pro distributor between Aug. 15, 2021, and Nov. 30, 2021.





This is an end-user promotion: distributors and dealers are not eligible for this rebate. Purchases used to qualify for this promotion are not eligible for any other free goods, cash back or rebate programs. Internet sales and purchases do not qualify.

All submissions must be uploaded by Jan. 14, 2022.

Visit: SimplyGrowTogether.com



Quali-Pro 5903 Genoa Red Bluff, Pasadena, TX 77507











August 15th - November 30th

EARLY ORDER PROGRAM

Best Deals of the Year!

Quali-Pro is offering special incentives now through November 30th. Take advantage of our Simply Grow Together (SGT) date-tiered program by ordering before October 31st for the biggest rebates.

Submit your rebate online at simplygrowtogether.com.





The PBI-Gordon Annual **Early Order Program**



he PBI-Gordon Early Order Program gives endusers the best prices when they order qualifying products from a PBI-Gordon distributor between Oct. 1 and Dec. 17, 2021. And end-users

can maximize their rebate by placing an order before Oct.31, 2021.

Level 1 rebate (\$500-\$999) earns an additional 15 percent rebate

Level 2 rebate (\$1,000 or more) earns an additional 25 percent rebate

The PBI-Gordon EOP features 16 of our most popular products, including:

- Q4® Plus Turf Herbicide for Grassy & Broadleaf Weeds - Save money and labor with rapid. broad-spectrum control of tough grassy and broadleaf weeds from a single product.
- SpeedZone® EW Broadleaf Herbicide for Turf - The fast, broadspectrum control of the No. 1 speed herbicide in an advanced emulsionin-water formulation.



- TZone[™] SE Broadleaf Herbicide for Tough Weeds - Trusted broadspectrum control of tough broadleaf weeds plus yellow nutsedge suppression in a coolweather speed product.
- Segway[®] Fungicide SC — The industry standard for control of Pythium root dysfunction, blight, damping-off and root
- Union™ Fungicide SC - Lasting control of 17 diseases, including brown patch, plus the same proven Pythium control of Segway® Fungicide SC.

Hit the ground running in 2022. Please visit **EOP.PBIGordonTurf.com** to see the full list of qualifying products and enroll!



PBI-Gordon Corp. | 22701 W 68th Terrace, Shawnee, KS 66226 | 800-844-3179 | BIGordonTurf.com





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PBI-GORDON ANNUAL EARLY ORDER PROGRAM

Your First Smart Choice of 2022



The PBI-Gordon Early Order Program gives end-users the best prices when they order qualifying products from a PBI-Gordon distributor between October 1 and December 17, 2021.



The PBI-Gordon EOP features 16 of our most popular products, including:

- Q4° Plus Turf Herbicide for Grassy & Broadleaf Weeds
- SpeedZone® EW Broadleaf Herbicide for Turf
- TZone[™] SE Broadleaf Herbicide for Tough Weeds
- Segway® Fungicide SC
- Union™ Fungicide SC



Visit EOP.PBIGordonTurf.com

to see the full list of qualifying products and enroll!

End-users can maximize their rebate by placing an order before October 31, 2021.



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UNIVERSITY TRIALS INDEPENDENT TRIALS AMAZING RESULT

ETQ is making true believers out of superintendents everywhere.

Superintendents across the country are discovering what university researchers already know. ETQ^{TM} proprietary technology not only protects turf from harmful UV rays, it increases turf health from the inside out for stronger, denser, greener turf that can stand up to heavy use and stress.

To learn more about our entire line of ETQ fungicide solutions, visit sipcamagrousa.com or talk to your Sipcam Agro representative.

Real people. Real courses. Real results.









At Sipcam Agro, we're committed to bringing you real solutions that have been tested and proven not only by leading universities but by real people at real courses across the country. We call this initiative "Sipcam On-Site," and the current ETQ trials are just one example. We'll be bringing you more On-Site trial results soon, because we believe there's no better way to put our products and solutions to the test than in real-world conditions with real superintendents like you.

Take your savings to the next level



ith more ways to save than ever before, GreenTrust*365 offers the best rebates and bonuses

so you can take your savings to the next level. Maximize your turf quality and your budget during the **Early Order Period**:

Oct. 1 - Dec. 8, 2021, with the Plan It Your Way Rebate, volume pricing on Acelepryn* insecticide and more.

Check out the many benefits that make GreenTrust 365 the best value of the year:



Scan the QR code to watch a video on how your savings can add up.



Yearlong Rebates



Spend at least \$5,000 on qualifying products during the Early Order Period to lock in your **yearlong rebate of up to 10%.** Your yearlong

rebate is valid for all purchases of qualifying products made during the Program Year: Oct. 1, 2021 - Sept. 30, 2022.

Plan it Your Way Rebate



Earn up to an additional 12% rebate with qualifying purchases of Posterity*, Daconil* and/or Secure* brand fungicides. This rebate may also be used on purchases of Acelepryn*

half-gallons for proven control of grubs, annual bluegrass weevil, turf caterpillars and more.

See below how you can take your savings to the next level — up to 39%.

	GreenTrust 365 Yearlong Rebate	GT Bonus Booster	Plan It Your Way	Automatic Pallet/ Multipak Savings	Volume Discount	TOTAL
Acelepryn (liquid only)	Up to 10%	Up to 3%	Up to 12%	_	Up to 10%	Up to 35%
Multipaks	Up to 10%	Up to 3%	Up to 12%	Up to 15%*	-	Up to 39%
Pallets	Up to 10%	Up to 3%	_	Up to 22%	_	Up to 35%
Posterity Brands	Up to 10%	Up to 3%	Up to 12%	-	-	Up to 25%
Secure Brands	Up to 10%	Up to 3%	Up to 12%	-	_	Up to 25%
Daconil Brands	Up to 10%	Up to 3%	Up to 12%	_	-	Up to 25%

^{*}Not all multipaks qualify for the Plan it Your Way rebate. The greatest savings on a multipak that qualifies for the Plan it Your Way rebate is 14%.

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GT Bonus Booster



Qualifying participants automatically earn an additional 2 - 3% rebate on purchases made in October.

Pallet Solutions



Pallets offer the greatest savings of the year, plus:

- They are designed to match agronomic needs
- Nine of 11 pallets automatically qualify you for the program
- They can be combined with rebates for savings up to 35%
- They are only available during the Early Order Period

Multipaks



Save up to 15% on complementary products with our Multipaks. They are available all year long but can be combined with other rebates during the Early Order Period for savings up to 39%.

Product Assurance Programs



Protect your turf with confidence with leading agronomic recommendations and performance guarantees.

- NEW: Annual bluegrass weevil assurance
- Mole cricket assurance (enhanced for longer control)
- Large patch assurance (enhanced)
- Spring dead spot and take-all root rot assurance
- Fairy ring assurance
- Advion® fire ant bait assurance
- Barricade® brand herbicide assurance
- Poa annua assurance for overseeded fairways
- Poa annua assurance for non-overseeded fairways
- Snow mold assurance

SummerPav™



Keep your cash flow in check by deferring payment until June 24, 2022 to help manage expenses more easily throughout the season.

Rebate Calculators



Our online rebate calculators make ordering easier than ever. Simply input the products you would like to purchase to see your maximum savings. There are three versions available, such

as the AgronomicPro, so you can choose the best option for your needs.

AgronomicPro

- Choose a tailored agronomic program and input your
- Your order will be calculated to maximize your savings with:
 - Optimal product volumes
 - Configurations including Multipaks & Pallets
 - o GT Bonus Booster Rebate
 - o Plan it Your Way Rebate

Visit GreenTrust365.com/Calculators to see how your savings could stack up.

Contact your local Syngenta territory manager or visit GreenTrust365.com/Golf to learn more.

@SyngentaTurf #GreenTrust365

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Syngenta 410 S. Swing Rd, Greensboro, NC, 27409







BASF 2022 Early Order Program: PowerFull

he BASF 2022 Early Order Program is back and better than ever, putting the "full" in powerful by offering superintendents and other turf professionals access to everything they need to

pack their chemical shed full of innovation, incentives and savings. To stay ahead of the season, you need insightful program-planning tools and cutting-edge chemistry with proven results, which is why we're bringing back everything you loved from 2021 and adding new features to 2022 EOP. This year, you'll enjoy a seamless process with better program customization and the most benefits for your budget. Choose the products you want in the exact quantities you need for your course and earn rebates up to 26 percent — some of the best savings in the industry.



Plan early for peace of mind

Early planning doesn't just save you time, it also saves you money. When you purchase during EOP, you'll feel better prepared for the upcoming season and earn budgetboosting rebates ranging from 8 to 24 percent, depending on when you order and your total level of spend. Ordering at least \$5,000 of qualifying products from the Design-Your-Own Program in October will lock in your rebates, and partial cases will still count toward your rebate level. Start saving even faster with a \$2,000 minimum spend on qualifying turf, ornamental and specialty solutions from the Remaining Portfolio program. Payment terms for both programs have been extended until June 9, 2022. Plus, with the all-new Innovation Kicker Rebate, you can earn an additional 2 percent rebate when you buy 25 gallons of Encartis™ fungicide or three bottles of Alucion™ 35 WG insecticide. If you do not qualify for the Design-Your-Own Program, your rebate will be applied to your Remaining Portfolio program purchase.

Stav ahead of the season

You know your turf best, so restock your toolbox with

Design Your Own Program with these Qualifying Fungicides:

Select at least 3 qualifying fungicide brands. Partial cases still count toward your rebate level.

Order at least \$5,000 to start saving.

3	in highest rebates.

Extended payment terms to June 9, 2022.

Qualifying Fungicide	Earned Incentive %			
Purchase Level	Oct.1-31, 2021	Nov.1-Dec.3, 2021		
\$5,000-\$14,999	12%	8%		
\$15,000-\$24,999	16%	10%		
\$25,000-\$34,9991	20%	12%		
\$35,000 +	24%	14%		

Purchase at least 3 different Design-Your-Own Program Qualifying EOP Fungicides totaling at least \$25,000 and receive a 10% rebate for all other EOP Remaining Portfolio qualifying products during the EOP period of 10/1/21 to 12/3/21.

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your favorite course chemistries from last vear. like Maxtima® fungicide and Navicon® Intrinsic® brand fungicide, and expand your toolbox with



something even newer. This EOP, we've added three newly released solutions to our lineup, including Alucion 35 WG insecticide, Encartis fungicide and Finale® XL T&O herbicide, all of which provide confident control you can count on. Power through the season with rotation partners packed full of innovation to help you tackle the toughest pests, diseases and weeds in turf.

Flexible, intuitive program planning

Our convenient online EOP tools are flexible and full of innovation, allowing superintendents to connect with their distributor sales representatives digitally, ensuring



a more seamless ordering process. Visit BetterTurf.Basf.us/ **EOP** and click on the **EOP Rebate Calculator** to learn how you can optimize your savings and start designing your program, then share it directly with your DSR. Enter the precise measurements of your course to

estimate your product needs based on use area, acreage, number of applications and application rate, and begin planning a program that best fits the unique needs of your turf. Find out exactly how much you'll save this EOP when

you add qualifying products and review your rebates. If you'd rather take the classic route, our brochure includes an order form and an area where you can calculate your savings by hand. No matter how you place your order, BASF will help make the process as simple and straightforward as possible.

Take the pressure out of EOP

The BASF 2022 Early Order Program offers superintendents access to some of the most powerful innovations in the industry, smarter turf tools and rewarding product rebates. Save time and money this EOP when you begin planning your program using the EOP Rebate Calculator and allnew Innovation Kicker Rebate. Get ready to start and end the season

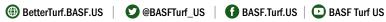


strong and stress-free. The best rebates hit in October, and the program deadline is Dec. 3.

Always read and follow label directions. For more information and complete program details, including program terms, conditions, limitations and restrictions, visit BetterTurf.Basf.Us/EOP. Alucion and Encartis are trademarks of BASF, and Finale, Intrinsic, Maxtima and Navicon are registered trademarks of BASF.



BASF 26 Davis Drive, Research Triangle Park, NC 27709











2021 FMC Early Order Program: Simple and Thoughtful

he theme of the 2021 FMC EOP is "Simple and Thoughtful": simple by bringing back the same familiar features from last year's EOP and thoughtful by allowing you to purchase the exact

products you actually need. Together, we'll set a plan to help you save even more in 2021.

Some highlights include:

- September Spotlight, offering the best rebates of the year on fungicides and purchases of Fame®, Rayora® and our latest innovation, *Kalida™, will count toward your total EOP purchases. This will run Sept. 1-Sept. 30.
- **RebateLock**, only from FMC, is back and better than ever, offering more opportunities to lock in rebates on select FMC products all season long!
- Maximize RebateLock by purchasing Fungicides in September and insecticides and herbicides in October. Enroll at FMCTrueChampions.com and learn more about **FOP** and RebateLock
- Get the best rebates by purchasing in volume

- Lock in your volume rebates and get these rebate levels all next season with RebateLock
- The FMC EOP will run from Oct. 1-Dec. 10, 2021, with July 2022 terms on qualified purchases

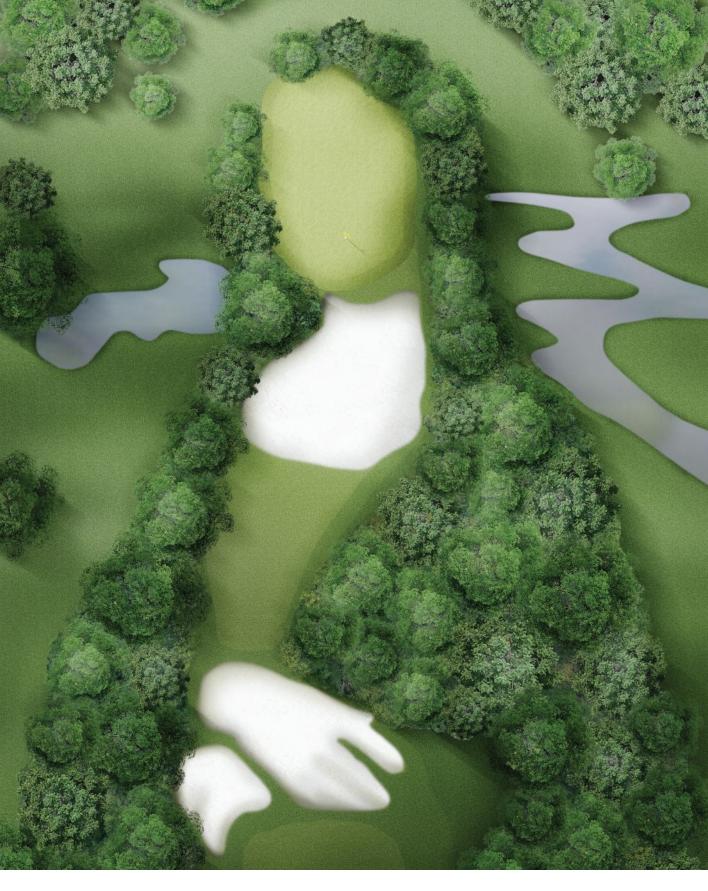


*In support of FMC's Give Back to Local Chapters initiative. each Kalida unit purchased during EOP will generate \$25 to your local GCSAA chapter.





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Create Your Own Masterpiece

Discover the artful power of FMC's Kalida™ Fungicide.





AMGUARD[™] DEFENDERS 2021 Early Order Program



ou hold your course to the highest standards — from tee to green and front nine to back.

No exceptions. No compromise. After all, this is *your turf* we're talking about.

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PRODUCT	ITEM NO.	A.I.	UNIT SIZE	REBATE
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AVENSIS® INSECTICIDE/MITICIDE	13659	Abamectin	1 gallon	\$11 per unit
PREMION® FUNGICIDE	13739	PCNB + Tebuconazole	2.5 gallon	\$15 per unit
PREVIA® FUNGICIDE	13657	Chlorothalonil	2.5 gallon	\$5 per unit
SUREPYC® IQ	14209	Sulfentrazone + Imazaquin 1 quart		\$9 per unit
Turfcide® 400	12511	PCNB	2.5 gallon	\$15 per unit

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Nufarm Edge Rewards Program Boosts Savings Potential in 2022



he 2022 Nufarm Edge Rewards Program offers golf course superintendents the best opportunity to save on more than 35 popular Nufarm brands during the upcoming season. Nufarm is a leading

provider of high-performing plant growth regulators, herbicides, fungicides and insecticides. Superintendents earn top savings on these proven solutions by participating in Nufarm Edge Rewards during two order periods.

- Save the maximum during Period 1: Sept. 13-Oct. 31, 2021.
- Extend your time to save during Period 2: Nov. 1-Dec.10, 2021.

NEW Increased Volume Bonus Rebates for 2022

Nufarm's Volume Bonus Offers are designed to deliver an added edge with savings of 150 percent to 400 percent over regular period one rebates on five top-performing golf solutions. During Period 1, stack Edge Rewards and Volume Bonus Rebates to maximize savings on Pinpoint®. Traction™. Anuew™. Aloft® GC SC. and Millennium Ultra® 2.

Volume Bonus Rebates are only available during Period 1.

- Pinpoint® Fungicide: Save \$30 per jug. 50 percent increase over 2021
- Traction[™] Fungicide: Save \$55 per jug. 10 percent increase over 2021
- Anuew[™] PGR: Save \$21 per package.
- Aloft® GC SC: Save \$50 per jug.
- Millennium Ultra® 2: Save \$50 per jug.

NEW Premium Savings on Three Premium Herbicides

New for 2022, superintendents can find significantly increased period one rebates on premium herbicides Escalade® 2, Cool Power®, and Horsepower®. Ideal for



2022 HIGHLIGHTS

NUFARM EDGE REWARDS PROGRAM



Grow rewards up to 400% with **BETTER Volume Bonus Offers**



Boost savings with increased herbicide REWARDS



Add instantly and SAVF with our online calculator



EARN rebates faster with our low \$2,500 minimum

NUFARMREWARDS.COM

weed control in fairways, rough, aprons, and tees, the 2022 Edge Rewards Program offers best savings on these three proven solutions.

Best premium herbicide rewards are available during

- Escalade® 2 Herbicide: Save \$15 per jug. 50 percent increase over 2021
- Cool Power® Herbicide: Save \$15 per jug. 50 percent increase over 2021
- Horsepower®: Save \$15 per jug. 50 percent increase over 2021

Registration is Quick and Easy

Registration is easy and required to participate in Nufarm Edge Rewards. Visit **NufarmRewards.com** and submit the registration form. Previous registrants are automatically registered and do not need to register again. At the Rewards website, browse eligible products and build a qualifying order with ease using the online Nufarm Edge Rewards Calculator Tool. It can tabulate your savings and be emailed directly to your distributor.

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2021 Mini EOP



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Order PurKote™ Pro Turf Mini between Oct. 1 and Dec. 31. 2021, with delivery between Jan. 1 and Feb. 15, 2022, to receive significant discounts on items in the Pro Turf Mini line of products. Offer includes SGN 90-150 materials (urea, ammonium sulfate and potassium sulfate) with longevities of 45 days or longer.

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SGN 90

SGN 160

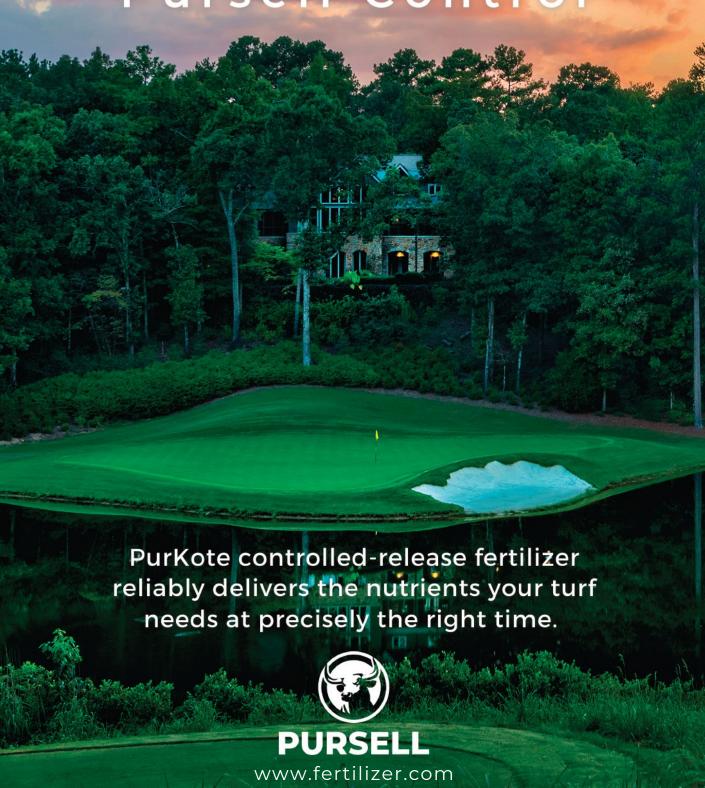
To take advantage of our popular Early Order Discount Program for PurKote™ Pro Turf Mini products, contact Jason Woulfin, sales and marketing director at jason@ fertilizer.com.

This discount is available on orders received between Oct. 1 and Dec. 31, 2021, and delivery between Jan. 1 and Feb. 15 of 2022, so don't wait to take advantage of this offer.



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GOLF COURSE









CHOOSE YOUR DEFENSE and see our full list of product savings opportunities | **amvac.com/eop-2021**Offer valid Oct. 1 – Dec. 17, 2021











Continued from page 18

that for 30 years ... that's a pipe dream."

Shaw's goal: a machine that could attach to an aerifier to collect cores — before touching the greens — and be used long enough that large greens could be aerated with a complete pass without having to stop to empty the core collector. Though the sight of a crew with shovels scooping cores hurts even a member's back, it wasn't a matter of saving labor to Shaw, though it ended up being a huge labor saver. It was a matter of pulling a perfect core and leaving a perfect aerification hole.

"When you see a lot of layers (in a green's soil profile), supers call that raccooning or layering. That impedes water movement, and naturally, that impedes air movement," Ferruchie says. "The light layer is sand, the dark layer is organic matter. You go to pick up the cores with a core harvester or people pushing shovels ... you

leave a very fine level of organic matter. John wanted to eliminate that layer."

Shaw brushed off his mechanical engineering degree and went to the drawing board seven years ago. He used the nursery green as a testing ground. As the machine evolved, he used it at other area courses, gathering information along the way.

"I had many failures before I had successes, and I'm talking years of failures," Shaw says. "About five years ago, I started getting confident, and I started the patent process four years ago. I was not willing to go to market until we had something rock-solid."

* * *

Going into business

That machine today is known as the Core-Max 48. Two backpack blowers blow cores from the outside to the middle of the aerifier. Two more blowers attach to the man-

ifold system and blow air straight back. After the core is ejected from the ground, it lands on a mat and is then pushed to the back of the box holding the cores.

The first course to ever buy the machine was, ironically, Alan Easter's. Shaw, wanting to remain a superintendent, formed an agreement with SynaTek Solutions to market and sell the machine. After many conversations Easter, 57, and ready for something not as strenuous as growing grass, joined SynaTek and is now the marketing manager for the machine, giving demos around the country.

"It's been a privilege to see this grow," Easter says. "We're very close to kicking the doors down. If I spent full time on this machine, I think our production would have difficulty keeping up."

Ferruchie marvels at the machine and, like only a superintendent could do, goes Continued on page 55

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LESS WATER!

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QUALI-PRO

NEW MODE OF ACTION

SUPRADO PROVIDES SOLUTION FOR ABW RESISTANCE, APPLICATION TIMING AND LIFE STAGES

esistance issues, overlapping life stages, chemistries going away and costly damage force superintendents in the Northeast to work tirelessly to treat annual bluegrass weevils (ABWs).

Now, they have a new chemistry and mode of action to use in their rotations or as a standalone product with Quali-Pro's Suprado insecticide. Powered by insect growth regulator Novaluron, Suprado controls ABWs in as little as one application, reducing the need for ongoing applications of multiple chemistries.

Suprado treats ABWs in overlapping life cycles, with demonstrated control in all larvae stages, both when found in and out of the plant. When applied to adults, Suprado hinders their ability to lay eggs.

Superintendents and distributors who have seen this low-toxicity product in action have been impressed with the results, sharing their top takeaways.

TREAT MULTIPLE STAGES

Controlling ABW is a priority and cornerstone to maintaining the

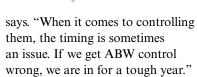


Logan Freeman

highest quality turf possible during the year for Logan Freeman, superintendent at Mountain Branch Golf Club in Joppa,

Md. He manages perennial ryegrass fairways and tees that have high percentages of *Poa annua*, performing up to five applications a year for ABWs.

"The hardest part about the pest is how quickly they can become destructive and the amount of turf damage they can cause," Freeman



QUALI-PRO

SUPRADO

Annual Bluegrass

Weevil (ABW)

When he learned about Suprado, he jumped at the chance to perform a side-by-side comparison with the new approch and another industry product. He says they did everything possible to stress the *Poa annua* during the trial to see ABW damage, but they never saw any.

"The results were outstanding. I feel confident Suprado has a place in my ABW control program," Freeman says. "As a golf course superintendent, I am all about adding tools to my



PHOTOS: QUALI-PRO (BUG); LOGAN FREEMAN (COURSE)



IPM toolbox, and based on my experience, Suprado may just be the sledgehammer I've been looking for in my battle against ABW. One of the exciting things about Suprado is that it's something the ABWs have never seen before."

Suprado's standalone results prove especially beneficial for those who can only do one application for ABWs due to budget restrictions.

"I think it gives the opportunity to reduce applications with the way it's showing and the results it provided during the test," Freeman says. "That's going to be part of the benefit. It will free us up and maybe reduce the number of applications we have to manage."

In addition to the product itself, Freeman says he also appreciates the support he's received from his Quali-Pro rep.

"The company is on board and understands the importance of what we're trying to do here," he says.

PROVEN IN TRIALS

Tom Leahy, superintendent at Sleepy Hollow Country Club in Scarborough, N.Y., also put the product to the test on his course.

He used Suprado on a one-acre



Tom Leahy

demonstration area, along with a fairway where they traditionally had a good amount of ABW pressure. Leahy says they experienced good results with the product.

"We haven't had any ABW issues in that area where I did the trial or any breakthroughs," Leahy says. "With chlorpyrifos going off the market, my need for a product like this has increased. I'm confident that this product is going to fill a void that we have with the loss of chlorpyrifos in control of ABW."

"(Suprado) will help a lot with resistance that's out there. It's the perfect time for new chemistry for ABW control.

On average, they apply chemicals for ABW four to five times a year along with one treatment and spot treatments on fairways. Leahy is a firm believer in focusing on the first generation of ABW in spring time with his control program, which is when he plans to use Suprado.

"I think it's a product worth trying, and it might help cut back on applications," Leahy says. "It will help a lot with resistance that is out there. It's the perfect time for new chemistry for ABW control."

FLEXIBLE TIMING

Distributors like John Garcia, co-owner of Atlantic Golf & Turf in Oxford, Conn., are equally excited about the release of Suprado. Garcia says he's impressed with the research and trial results he's seen with Suprado, especially because of the respected industry experts who performed them.



John Garcia

"Not only do we have excitement based on the research data we've reviewed, but as an independent distributor, Quali-Pro is one of our most trusted manufacturer partners in the industry," Garcia says.

Through this partnership,
Garcia says he's able to provide
his customers with a brand-new
chemistry and mode of action for
controlling ABWs. That sets his
business apart from his competitors
and also offers his customers a
much-needed product.

With resistance issues to pyrethroid and other chemistries like chlorpyrifos being taken off the market, professionals' chemical options have continued to shrink. Considering ABWs are the most difficult pest to control in New England, that makes the superintendent's job even harder.

"That has been a real challenge to lose older tools that have been available to keep this pest at bay," Garcia says. "So, when something new comes along, it's definitely something we will try to position with customers growing *Poa annua*. It's great to be able to have a new

"The flexibility of application timing is one of the most attractive things for the end user with this product (Suprado)."

rotational tool."

Typically, superintendents have to pick a product to target adults or one that targets earlier stages of larvae. That requires them to track the growing degree days, perform soapy flushes to see where there's larvae action and take other measures to keep track of the stages.

Soil temperatures are a major factor in ABW damage, and those temps can vary across a course. For example, a south-facing slope in sunshine all day could be up to eight degrees warmer than other spots on the property, Garcia says. So, if they waited to treat the warmer areas until the rest of the property needed an application, it might be too late.

That's why timing has historically been one of the most critical components with ABW applications. Since Suprado can treat a variety of life stages for this pest, users have a much wider window for when they can apply the product, helping to simplify the process.

"The flexibility of application timing is one of the most attractive things for the end user with this product," he says.

Though new, customers know they are receiving a quality product with Suprado because of the company it comes from and the reputation it has created in the industry.

"I know their products are top-notch," he says, adding that the timing couldn't be better for Quali-Pro to bring a new patented ABW product to market. "It's an interesting and exciting time for distributors and end users to make their lives better and save them some money."

REDUCE APPLICATIONS

Because the product can work on multiple life stages of this insect, the window of application is a little broader than with other products,



Allan Fulcher

says Allan Fulcher, vice president of turf, Quali-Pro.

"I think it's going to be a gamechanger for superintendents," Fulcher says. "They can still

use other applications and products to ensure they control the pest, but I think after Suprado has been on the market for a couple of years, they will realize they don't have to."

Quali-Pro is excited to provide a solution to a pest problem that has been difficult to control for years.

"We can offer a product no one else has and be a leader on this," Fulcher says. "It's really exciting to have unbiased research showing Suprado is in a class of its own — working on both pyrethroid-resistant and non-pyrethroid-resistant populations — with almost 100-percent control in nearly every trial."

SOLUTION TO RESISTANCE

While Suprado treats a pest primarily found in the Northeast, it's only one example of how Quali-Pro has positioned itself as a leader in product development, says Paul Fox, national account manager, Ouali-Pro.

"We're really excited for this product and to continue to bring new and differentiated products to the market that are both economical and efficacious



Paul Fox

for our customers," Fox says.

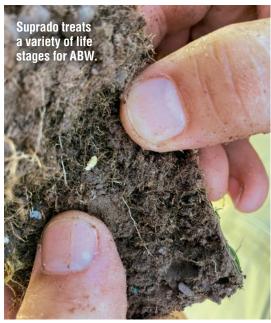
The chemistry affects all life cycles, allowing it to be used in different stages. Being a new mode of action, it's something ABWs haven't seen before, which isn't the case with other products currently being used.

"A lot of the chemicals superintendents are using today are in similar classes of chemistry," Fox says.

That can lead to ABWs developing resistance to these chemistries, making them difficult to control. But with a new active ingredient, that isn't the case with Suprado.

"It's another tool in the tool chest with good efficacy and timing flexibility with applications that allows superintendents to create a program that best fits their course and needs," Fox says.

Suprado will be available this fall for Quali-Pro's early order program. For more information, visit Suprado.com.





No other solution offers this level of control.

- New Chemistry: Suprado's active ingredient, Novaluron, is a new mode of action to the market.
- Application Flexibility: Suprado prevents damage when applied at any of the three standard preventive timings.
- Unmatched Efficacy: Suprado provides superior control of damaging ABW larvae, even on insecticide-resistant populations.



WRECK THE WEEVIL!

QUALI-PRO suprado.com



Field tests by Dr. Ben McGraw of Penn State University

Continued from page 50

on about the beauty of a perfectly punched hole in the ground.

"The hole it leaves is absolutely perfect. The mat that the cores lay on and get blown into the box serves as the absolute perfect turf hold-down," Ferruchie says. "I said to John, 'once you get this piece of equipment into certain markets, it will explode.' We're in Pittsburgh, man. We've got a few clubs that got some money, but we're not Long Island, OK? We're not Northern Jersey, you got me? Once one or two of those guys in those corridors get this piece of equipment in their hands and their buddies start seeing it, and their members see their greens were aerified and they're absolutely perfect? Game over. They'll sell on their own. And that's where we are."



Shaw thinks back to the time he spent in engineering school with his buddies. He never worked in that industry, he says, but he's built a couple neat machines over the years. He's more excited about how he's been able to succeed at Valley Brook for the last 18 years, and the course is something he and his mentor Ron Fox



"If something didn't work out he'd tear it apart and reconfigure it," says John Ferruchie. "He kept playing with it until he got it right. And when he got it right, it was unbelievable."

can be proud of.

"Fortunately, it's all worked out for me. I have a U.S. patent now on the CoreMax 48. That's when I partnered up with SynaTek. I'm letting Alan and SynaTek run with it; that way, I can continue to be a superintendent, which is what I want to do," he says. "I'm just in love with the industry. I always have been, and I still want to be a golf course superintendent. Honestly, I'm not really interested in selling the CoreMax 48. What I want to do is help people in the industry."

Help people in the industry. That statement harkens back to that moment on Easter's No. 1 fairway on Pro-Am day who could have guessed that years later, they'd have this connection?

"The CoreMax 48 is awesome, and that's my way of giving back to the industry," Shaw says. "It's just not something I want to do (full time). I still want to paint this golf course and paint my picture." @



September 2021 Golfdom // 55 Golfdom.com



BY RICHARD HURLEY, PH.D.

Reflecting on his 50 years of turfgrass breeding, Richard Hurley, Ph.D., describes the journey it took to get to the creation of the Super Bents Richard Hurley, Ph.D., has spent 50 years looking for the perfect golf turfgrass at old courses in the U.S. and abroad. The results: Super Bents, a term trademarked to refer to creeping bentgrass varieties selected and bred to modernize golf course turf quality.

The following is the story about research and what it could mean for the industry in Hurley's words, as told to the *Golfdom* Staff.

Starting out

This story begins in 1982 when my mentor, the late C. R. Funk, Ph.D., at Rutgers University agreed to work with me to initiate a creeping bentgrass program. Dr. Funk is widely acclaimed to have been the world's most respected and productive cool-season turfgrass breeder.

For the next decade, we brought germplasm to Rutgers' Horticultural Research Farm II for space plant evaluations. Collecting primarily from older golf courses, we gathered more than 1,000 creeping bentgrass clones — mostly 1-by-2-inch cutouts from putting greens — from New Jersey, New York, Connecticut, Pennsylvania, Arizona and California.

We hunted for one-of-a-kind selections from greens. These segregated patches had been thriving and were subjected to close mowing, summer and winter stresses and significant disease pressure for more than 50 years.

Continued on page 58



Advanced Genetics for Superior Performance





"Greens are doing great!
777 didn't miss a beat through the hot spell and the project turned out amazing."

- Brent Doolittle CGCS

Shady Oaks Country Club - Fort Worth, TX



The new bents are fantastic! 007, 777, and Flagstick are beautiful grasses. I could not be happier."

- Phil Cuffare, CGCS Director of Agronomy

Oakland Hills Country Club - Bloomfield Township, MI



"777 was very quick out of the box and covered very fast!"

- Joe Verduin, CGCS

American Dunes Golf Club - Grand Haven, MI

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// ORIGIN STORY

Continued from page 56

Rutgers' creeping bentgrass germplasm diversity gave us the opportunity to identify a few rare and unique plants. Out of the thousands of plants selected, only a few consistently produced enhanced turf qualities for a long-term creeping bentgrass breeding program.

What we wanted

For creeping bentgrass, we sought a pleasing medium green leaf color (no cool-weather purple color), medium-fine leaves and turf density, the ability to recover quickly from traffic (foot and mechanical), the ability to tolerate 0.105-inch cuts and enhanced genetic resistance to the most common turf diseases including dollar spot, brown patch, anthracnose and snow mold (pink and gray).

It took many generations of critical selection of parental plants — each cycle requiring one year — throughout many years to identify progenies for the next cycle and, through the assorted mating process, include enhanced genetics into the next generation.

Remarkable scientific accomplishments through genetically enhanced breeding allowed a total transformation of wild

CHOOSING THE RIGHT PARTNER

Choosing a company to produce and distribute Super Bents was critical because having a genetically enhanced bentgrass is only half of the equation. Without quality seed production, a very good variety may be compromised.

What good is a high-performing variety of bentgrass that may have weed and crop issues? Who wants seeds of *Poa annua* or *Poa trivialis* contaminating each pound of seed?

Knowing that low-quality seed offers no long-term savings, I chose Seed Research of Oregon (now a DLF Pickseed brand). I wanted bentgrass varieties to have each pound of seed meticulously tested with precise standards that exceed all minimum industry guidelines.

- Oregon State Certification Requirements for bentgrass
 - 0.25 gram examined, 2.5-gram noxious weed exam
 - Seed Certification lab lot size up to 40,000 pounds
- Seed Research/DLF Pickseed testing protocol adds
 - o 5-gram crop and weed exam at an independent lab
 - Lot size 10,000-pound max.

strains into highly refined varieties. Rutgers' methodical, long-term breeding program generated multiple advanced generation creeping bentgrass varieties adapted to 0.105-inch greens with varieties also used on fairways and tees.

Continued on page 60



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Applying fertilizer before, during and after mechanical aerification all provide unique options for ensuring your turf recovers quickly. The Genesis Rx line of products is designed to help you determine the right fertility approach for your aerification program. These blends represent the most comprehensive fertilizers we have ever produced, offering single-product solutions designed to simplify aerification fertility and accelerate turfgrass recovery.

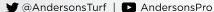
Genesis R Zeolite+ 3-4-3

- A 50/50 physical blend of Genesis Rx 5-7-5 and zeolite
- Delivers balanced NPK, secondary and minor elements plus humic acid and zeolite
- SmartPhos® DG provides plant-available P over an extended period of time, resulting in superior availability and lower use rates than traditional sources
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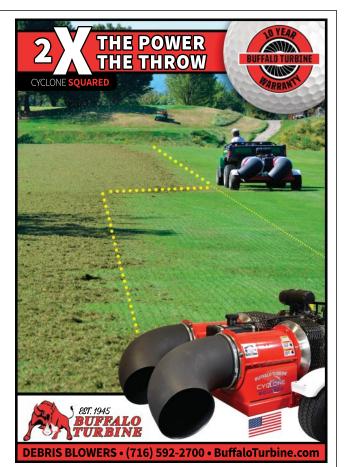




TurfNutritionTool.com

Use the TNT to compare aerfication application strategies.

Shady Oaks GC in Fort Worth, Texas. The total course renovation by Ogilvy, Cocking and Mead includes new greens seeded to 777 bentgrass.



Continued from page 58

Generations of improvements

Remember when the varieties A1 and A4 were the rock stars for greens in the 1990s? These varieties have been significantly surpassed.

Rutgers' breeding program developed varieties with greater genetic resistance to fungal diseases with each breeding cycle generating finer leaved, denser turf and greater disease resistance to minimize fungicide use — all while producing a more resilient and attractive turf.

So much has changed with the maintenance of golf greens, tees and fairways since the 1990s. In the 2020s, courses mow putting greens razor thin. Superintendents face pressure to produce the highest-quality playing surfaces while using fewer inputs and less water. With cool-season and transition climates, only state-of-the-art varieties can accomplish this.

Superintendents recognize that they can plan and execute a total greens/fairway/tee renovation to allow new age golf course maintenance. One course was spending up to \$80,000 each year on fungicides for ryegrass/*Poa annua*/bentgrass fairways. Converting fairways to bentgrass cut fungicide use up to 50 percent.

New name

I identified Super Bents varieties and trademarked the name to create an easy-to-understand catchphrase to denote the highest-turf quality standards for a creeping bentgrass.

Continued on page 62

PHOTO COURTESY: RICHARD HURLE

Conquer Heat with INFINITE

Fortified with Diuturon and Protected with Templar



Infinite™ is the first soil surfactant that includes multiple ingredients, designed to manage both soil moisture, plant stress and recovery. A mulitple polymer product, fortified with two novel technologies; DiuTuron and Templar. Patent pending DiuTuron polymer technology, improves the longevity and residual of the product in the soil. DiuTuron allows lower use rates. Infinite



also includes Templar, which reduces stress associated from heat and drought through enhancing the plants' natural defense mechanisms. The combination of reduced hydration stress and improved turf defense makes Infinite's performance endless.



















Super Bents advanced-generation, highly refined bentgrass varieties are bred for genetically enhanced disease resistance and scientifically designed for use on closely maintained golf greens.

Super Bents varieties — including 007 and 777 — are unique



and distinct and perform at the highest level on greens, tees and fairways.

Additional bentgrass varieties include MacKenzie, MacDonald and Flagstick. I fully expect the fifth generation of 007XL to be the next must-have Super Bents variety. Rutgers University data reports this variety to be No. 1 in putting green turf quality and the fairways and tees test for the past four years in a row.

Team effort

Nothing in life is accomplished on an island. My creeping bent-grass journey has been a team effort, as none of the above would have been possible without C. R. Funk, Ph.D., my mentor; Stacy Bonos, Ph.D.; Bill Meyer, Ph.D.; James Murphy, Ph.D.; Bruce Clarke, Ph.D.; and all of my associates and collaborators over the years at Rutgers University.

Throughout the past 25 years, Bonos, Meyer, Rutgers staff $\,$



A shot of the 007XL bentgrass nursery at Colonial Country Club in Fort Worth, Texas.

members and graduate students added significantly to the creeping bentgrass germplasm pool on collection trips that included visits to Europe.

Also, great appreciation goes to Leah Brilman, Ph.D.; Bill Dunn; Steve Reid; and Barbara Hinds-Cook of Seed Research of Oregon/DLF Pickseed. **©**





See Research at GreenJacket.com

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SNOW MOLD CONTROL THAT WINS OUT AND PAYS OUT

TURFCIDE® 400, POWERED BY PCNB, outperformed chlorothalonil and others in numerous research trials against all three major snow mold pathogens. Now, you can save big on Turfcide 400 and all other PCNB-powered fungicides by AMGUARD™ Environmental Technologies.

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- Better multi-site contact fungicide than chlorothalonil against pink, gray, and speckled snow molds
- Unsurpassed tank-mix partner for snow mold control





\$20 REBATE



2.5 GAL

\$20 REBATE

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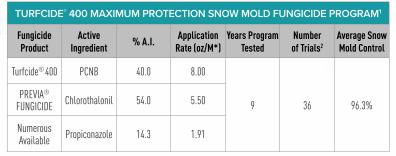


Turfcide 400 | 2021 SNOW MOLD ASSURANCE PROGRAM

Powered by PCNB, the most effective snow mold fungicide available.

Making a snow mold fungicide application to your turf is like buying an insurance policy. You hope you never need it. But if you do, you want the best coverage you can get for the lowest possible cost. That is exactly what you will get when you use **Turfcide*** **400**, powered by PCNB, as the backbone of your snow mold fungicide program. Including Turfcide 400 in your snow mold program gives you maximum protection from pink and gray snow molds when disease pressure is high, and dozens of university snow mold field trials during the last nine years prove it.

AMGUARD® Environmental Technologies is so confident in Turfcide 400 that we are offering the strongest performance guarantee in the turf industry. You can count on at least 95% control of pink and gray snow molds for at least 160 days from our Turfcide 400 Maximum Protection Snow Mold Fungicide Program.



Recommended for use in areas where extended periods of continuous snow cover and extreme snow mold pressure commonly occur. Will provide at least 95% control of *Microdochium nivale* (pink snow mold), *Typhula incarnata* (gray snow mold) or *Typhula isikariensis* (speckled snow mold) for a least 160 days on greens, teeps, and fairways.

All trials had a minimum of 50% snow mold in the untreated plots (Average = 82.3%; Range = 52.5 to 99.0%.) All three major snow mold pathogens are included in this summary. Research conducted in CA, ID, MI, MN, MT, NH, NJ, NY, UT, WA, and WI.

TURFCIDE® 400 + DMI SNOW MOLD FUNGICIDE PROGRAMS®							
	Fungicide Product	Active Ingredient	% A.I.	Application Rate (oz/M*)			
PROGRAM 1	Turfcide® 400	PCNB	40.0	8.0			
	Numerous Available	Propiconazole	14.3	2.0			
PROGRAM 2	Turfcide® 400	PCNB	40.0	8.0			
	Numerous Available	Tebuconazole	38.7	1.1			
PROGRAM 3	Turfcide® 400	PCNB	40.0	8.0			
	Mirage® Stressgard®	Tebuconazole	21.4	2.0			

Recommended rates for best performance with Turfcide 400 and propiconazole or tebuconazole. Will provide at least 85% control of Microdochium nivale (pink snow mold), Typhula incarnata (gray snow mold) or Typhula isikariensis (speckled snow mold) for at least 120 days on greens, tees and fainways. A minimum of 6 ozM Turfcide 400 applied with another fungicide at the snow mold label rate will also qualify for the 85% control for 120-day performance guarantee.

1,000 square feet



Scan code above to see full 2021 Turfcide 400 Snow Mold Assurance Program details. Terms & conditions apply.



2.5 gallonProduct No. 12511
EPA Reg. No. 5481-8992







ré Science

// BACK AT IT

ON THE PLOTS AGAIN!

By Mike Kenna, Ph.D.

he Rutgers University Turfgrass Field Days, held July 27 and 28, were well attended. More than 360 people were at the first day's Golf and Fine Turf Event. It was great to be back on research plots after the long break from seeing field research due to COVID-19.

There were 12 stops on topics including cultivar trials, product performance and more.

Bruce Clarke, Ph.D., discussed fungicide performance trials on the control of summer patch on Kentucky bluegrass, dollar spot on creeping bentgrass and anthracnose on annual bluegrass. A general scheme was individual products alone, combination products and a program of different chemistries.



Phillip Vines, Ph.D., discusses developing gray leaf spot resistance in perennial ryegrasses at the 2021 Rutgers Turfgrass Field Day.

Stacy Bonos, Ph.D., gave an overview of the bentgrass breeding program at Rutgers. Fairway, and putting green bentgrass trials were available for viewing. The National Turfgrass Evaluation Program (NTEP) putting green test had several cultivars with improvements in dollar spot resistance. The NTEP Kentucky bluegrass and tall fescue trials were additional stops. Phillip Vines, Ph.D., reviewed the perennial ryegrass breeding program for gray leaf spot resistant cultivars.

Matt Elmore, Ph.D., discussed the control of deer tongue in fine fescue rough. Elmore and Katy Diehl presented the impact of perennial ryegrass height of cut (HOC) on goosegrass control with preemergent herbicides. There was a great deal more goosegrass infestation in the 0.5-inch HOC plots than the 2-, 3- and 4-inch HOC plots.

Albrecht Koppenhofer, Ph.D., and Ana Luiza Sousa, Ph.D., demonstrated the different sampling methods used for annual bluegrass weevils. They have compared the percentage of adults detected in mower clippings, vacuuming with a leaf blower and by soap flushing. Their results appeared in the October 2020 issue of Golfdom.

Bingru Huang, Ph.D., and William Errickson discussed the field application of plantgrowth promoting rhizobacteria. The research evaluates two interesting strains of bacteria isolated from the Pine Barrens in Southern New Jersey. Under a rainout shelter, the strains appear to help improve the drought resistance of bentgrasses.

Getting out on research plots and being able to visit with turfgrass scientists was great. I hope we can get back to normal and continue seeing our land-grant universities' exciting research on turfgrass. @



NEWS UPDATES

GREEN VELVET HIRES AMY DEARINGER

Amy Dearinger has joined Green Velvet as a technical sales representative.

She brings nearly two decades of professional turf experience back to the Columbus, Ohio, market.

"The Central Ohio turf market has always been so welcoming, and I'm excited to continue to grow those relationships as well as develop new ones," Dearinger said. "I cannot wait to hit the



Amy Dearinger

ground running and become a resource once again for all my turf brothers and sisters. It's great to be back. This Bluegrass gal is proud to be an official Buckeye!"

Dearinger is a knowledgeable turfgrass expert who has a long history of using her technical expertise to solve agronomic challenges on the country's best golf courses. She has a background in evaluating NTEP seed trials, researching Roundup-Ready bentgrass and conducting research on the efficacy of foliar products most recently at Baylor University.

Green Velvet is a full distributor of turf & ornamental products and a grower of premium turfgrass sod. Green Velvet's team of more than 40 turf experts has been serving the green industry of Ohio for 62 years and is headquartered in Bellbrook, Ohio.

PLACES IN THE NORTH THAT GET HAMMERED WITH SNOW MOLD HAD BARELY ANY AT ALL, WHILE THEIR OPPOSITES FARTHER SOUTH WERE HAMMERED ..."

Paul Koch. Ph.D. (see story on page 64) //AN ODD YEAR

The bizarro snow mold year

By Paul Koch, Ph.D.

s us Seinfeld (or comic book) fans know, the Bizarro World is the exact opposite of the regular world. As Jerry so eloquently states, Bizarro Superman is "Superman's exact opposite...up is down. Down is up. He says 'hello' when he leaves, 'goodbye' when he arrives." While maybe not quite as dramatic, the winter of 2020-2021 was a bizarro snow mold year.

Places in the north that typically get hammered with snow mold had barely any at all, while their opposites farther south that haven't seen significant snow mold in 10 years were hammered (Figure 1).

What led to this difference in disease? How could Chicago have more snow mold than northern Wisconsin? What can we learn from this moving forward? Let's look at the conditions that led to this contrast through the lens of two case studies: a generic course in Chicago and a generic course in Wausau, Wis.

SNOW MOLD GALORE IN CHICAGO

The lack of snow mold over the past decade in much of the southern Great Lakes had become so normal that many courses no longer applied snow mold fungicides on their tees or fairways. Last winter looked like it would be much the same, with Chicago's December temperature 5.2 degrees F higher than average and snowfall more than 5 inches below normal (Figure 2). In fact, during a "Happy Hour with the Turf Docs" webinar in early January, I stated that snow mold probably wouldn't be much of an issue this year. Nostradamus, I am not.

Then, the switch flipped. The temperatures remained above average, but not warm enough to prevent a wave of storms



Snow mold pressure in southern Great Lakes locations like Madison, Wis., was severe in 2021.

from dumping snowfall after snowfall on the region. Chicago's January 2021 snowfall was 11.1 inches higher than average, and February 2021 snowfall was 12.5 inches higher than average.

A brutal cold snap hit much of the country in mid-February, but the deep snowpack in the region meant that temperatures at the turf surface would have stayed at or slightly above freezing for this entire period. When the snow finally melted off in March, snow mold was evident on just about every nontreated turf surface in the region.

To summarize what happened in Chicago and much of the southern Great Lakes, warm fall and early winter temperatures led to limited hardening of the turf. Then came a deep and insulating snowpack in January that prevented the February cold snap from affecting fungal growth at the turf surface. Even though it was a relatively short winter, the conditions were perfect

for snow mold to develop across the area.

NOT A TRACE OF SNOW MOLD IN WAUSAU

Four hours to the north, in Wausau, the winter started out much the same as Chicago. Temperatures in December and January were 5.1 degrees F and 5.2 degrees F above average, respectively. December snowfall was 8.4 inches below normal, and January was 7.8 inches below normal.

Just like in Chicago, there was unhardened turf susceptible to fungal infection if a deep snow cover were to arrive, but the snow never came in Wausau and other parts of the northern Great Lakes. This lack of snow cover was critical once the February cold snap arrived in mid-February. These frigid conditions froze out the turf and the snow mold fungi along with it.

One of our snow mold research sites is at Wausau Country Club, and in the

winter of 2019-2020, the nontreated control plots averaged over 70 percent disease. In 2020-2021, there wasn't a lick of snow mold on the plots (Figure 3).

In short, the winter in Wausau and much of the northern Great Lakes started out much the same as the southern Great Lakes, but the snow machine never kicked on in January and February, and, as a result, the February cold snap killed off most of the snow mold fungi and prevented snow mold from developing.

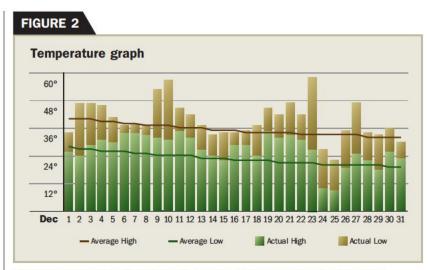
WHAT DID WE LEARN AND HOW DOES THIS AFFECT NEXT YEAR?

Two years ago, I thought warmer winters from climate change would lead to less snow mold, but the reality is more complex. Fall and winter temperatures have increased, which has generally decreased fall and early winter snowfall totals but has also decreased the level of plant hardening prior to snow cover. This means that when snow does arrive, the plants are more susceptible to snow mold.

If temperatures continue to warm to the point where snowfall is rare even during the middle of winter, then snow mold severity may decrease across the region. Right now, all these warmer winters are leading to more uncertainty about when and where snow mold will develop.

The timing of the cold snap(s) are important. Snow mold fungi like cold temperatures, but not freezing temperatures, and you can think of a big cold snap that freezes the soil as a fungicide application that kills back snow mold fungi. If that February cold snap had hit Chicago in early January, before the deep snow cover was present, then there would have been very little snow mold development.

Should those places that got nailed with snow mold last winter treat for it this winter? Well, that depends. On the one hand, we know that a snow mold outbreak one winter tends to increase the potential for snow mold the next year because of increased fungal inoculum.



Chicago's December 2020 temperatures were well above average, preventing turf hardening and making it more susceptible to snow mold. Graph taken from Accuweather.com

FIGURE 3

What a difference a year makes in Wausau, Wis. Nearly 100 percent disease on the nontreated control in 2020 (left) and nothing in 2021 (right).

On the other hand, this was the first time in 10 years that many in the region had seen snow mold, so what are the chances of that happening two years in a row?

My recommendation is this: If you and/or your management felt the level of snow mold damage this spring was unacceptable, then plan to treat preventively next fall. If everyone was OK with it, continue to leave it untreated.

Lastly, and not surprisingly, snow

mold fungicides work (Figure 4, page 66). Despite the heavy pressures across the southern Great Lakes, I heard very few cases of disease breakthrough on treated areas. And, you don't have to break the bank to get good snow mold control in low to moderate pressure environments. Several solid fairway snow mold options exist for less than \$5,000.

Despite the spotty snow mold Continued on page 66

Continued from page 65

development across the region, our own snow mold research from last winter still provided excellent product evaluation results on pink snow mold (*Microdochium nivale*) from our Madison, Wis., location and on gray snow mold (Typhula incarnata) from our Marquette, Minn., location.

Other sites we tested include Wausau CC in Wausau, Wis., Giant's Ridge GC in Biwabik, Minn., and Cragun's Legacy Course in Brainerd, Minn. I urge you to look at these freely available results at our website to find treatments that work best for your situation. (https://tdl.wisc.edu/2020-2021-snow-mold-fungicide-research-reports/).

Acknowledgments

Our snow mold research program wouldn't work without a talented and committed group of people. First and foremost is Kurt Hockemeyer, who manages Wisconsin's Turfgrass Diagnostic Lab and directs our field product evaluation trials.

This year, we partnered with Professor Eric Watkins and Andy Hollman at the University of Minnesota on snow mold research at two sites in Minnesota, which was a success that we hope to continue next year.

Research Takeaways

- The conditions were perfect for snow mold to develop across Chicago and much of the southern Great Lakes. In January, a deep and insulating snowpack prevented the February cold snap from affecting fungal growth at the turf surface.
- In January and February, the snow machine never kicked on in Wausau and much of the northern Great Lakes. The February cold snap killed off most of the snow mold fungl and prevented snow mold from developing.
- Despite the spotty snow mold development across the region, last winter's University of Wisconsin snow mold research still provided excellent product evaluation results on pink snow mold (Microdochium nivale) from our Madison, Wis., location and on gray snow mold (Typhula incarnata) from our Marquette, Minn., location.

Lastly, the incredible superintendents who host our research and let us get excited about killing grass at their courses: Aaron Hansen at Wausau Country Club in Wausau, Wis.; Jay Pritzl at Timber Ridge GC in Minocqua, Wis.; Craig Moore at Marquette CC in Marquette, Minn.; Matt McKinnon at Cragun's Resort in Brainerd, Minn.; and Jeff Simondet at Giant's Ridge GC in Biwabik, Minn. Thank you to everyone for making our snow mold research successful year after year.

FIGURE 4



Despite the heavy snow mold pressure in certain areas, fungicides still provided excellent disease control.

Golfdom

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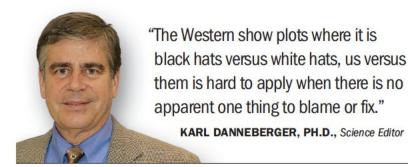
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PHOTO BY: PAUL KOCH, PH.D.



No water in the West

hen I was a little boy, I was an avid watcher of old Western movies and TV shows. Westerns, which we called cowboy movies or shows, focused on settling the Western Frontier. These old Westerns had a simple plot of maintaining or bringing law and order to the frontier. Conflict was rooted in good versus evil, civilization versus wilderness, settlers versus Indians, sheriff versus gunslinger, schoolteachers versus saloon dance-hall girls.

Watching TV shows like Rawhide, The Rifleman, Bonanza and Gunsmoke, the eventual outcome was assured — the good guy won. In cases where the show's conflict involved water rights, the outcome was not always as clear. Generally, water portrayed in Western movies was in short supply.

Prior appropriations, the doctrine that governs water rights in the Western United States, originated in the 1850s, initially based on mineral rights associated with the great gold rush in California. The doctrine simply stated the first one to get there and use it gets to keep it. In the face of population growth and demand, however, there was not enough water to go around.

In 1922, seven states and Mexico entered into the Colorado River Compact that divided up the river water into the upper basin consisting of Colorado, Utah, Wyoming and New Mexico and the lower basin consisting of Arizona, California and Nevada. Under the compact, a series of dams was constructed along the Colorado River in which each basin gets an equal amount of water. In the lower basin, California gets almost 59 percent of the water allocated from Lake Mead that was created by the Hoover Dam near Las Vegas.

In 1999, Lake Mead was at 95 percent capacity. From 2000 to 2005, the region was hit with the worst drought on record, and capacity dropped below 50 percent. Since then, the water level has dropped 143 feet to 1,070 feet this year. It is expected by April 2023 to drop to 1,047 feet. On Aug. 16, the federal government announced a water shortage for Nevada and Arizona, mandating water cuts.

Over the last 20 years, Southwestern golf course superintendents have been proactive in conserving and reducing water use on golf courses. In Las Vegas, water reduction on golf courses is achieved through small and large practices. Practices, for example, like leveling irrigation heads, upgrading to more efficient sprinkler heads, frequent irrigation audits and scheduling irrigation during times to reduce evaporation and runoff loss, are significant in reducing water loss and use.

Switching to effluent irrigation water and reducing or eliminating winter overseeding has resulted in significant water savings. In addition, Las Vegas and the Southern Nevada Water Authority have paid golf courses to remove turf areas. The result is golf courses have 20 percent less turf. Golf courses account for less than 7 percent of the water used by Las Vegas.

Since 2000, Lake Mead has dropped 140 feet. If the water level drops an additional 175 feet to a lake level of 895 feet, water will no longer flow through Hoover Dam to anyone downstream. Given the trend over the last 20 years and what looks to continue well into the future, what will impact the economic, social and environmental health of the lower basin over that time? How will urban and rural areas, as well as golf courses, adapt to water cuts? What will golf and golf courses look like or be in 20 years?

Future water allocations, mandates, cuts and planning are not going to be easy or simplistic as those portrayed in old Western shows. The Western show plots where it is black hats versus white hats, us versus them is hard to apply when there is no apparent one thing to blame or fix. One apparent thing that today's water issues and the old Western movies share in common is there never seems to be enough water to go around. Θ

Karl Danneberger, Ph.D., Golfdom's science editor and a professor at The Ohio State University, can be reached at danneberger.1@osu.edu.

Now is the time for snow mold control

COURSES WITH WET WINTERS MAY BE SUSCEPTIBLE TO SNOW MOLD. EXPERTS SHARE THE BEST WAYS TO KEEP THE PATHOGEN AT BAY

Snow mold is a blanket term for several different pathogens that favor prolonged cool and wet conditions. While gray and speckled snow mold are more prevalent in areas with extended snow coverage, pink snow mold occurs as far south as Mississippi and Texas.

"For a good portion of the winter, the disease can occur really anywhere in the country that can have wet conditions during the winter that persist in the 40s and 50s," says Paul Koch, Ph.D., assistant professor in the department of plant pathology at the University of Wisconsin-Madison.

Koch says in southern parts of the country, snow mold won't be long-lasting or damaging. A few years ago, Tennessee suffered a large snow event and superintendents in the state saw pink snow mold on their courses. While these occurrences are infrequent, Koch says, "Just because you might be in the South, it's not a disease that you can completely ignore."

Superintendents should limit contact of infected areas when the pathogen is fully active as it is spread by rain and by golf course traffic. Signs of fluffy mycelium patches in the areas with snow mold mean spores are active.

"If you drive your mower through it, if you're allowing golf cart or golf walker traffic to go through that, they can easily spread it," Koch says. "We've seen pictures where you can see the streaking of the disease from the mower."

Cultural controls such as mowing or rolling to get moisture off the turf will help limit the pathogen's spread. Koch also suggests limiting nitrogen applications when the turf is most susceptible, as nitrogen will only fuel the snow mold pathogen in those ideal conditions. Koch says superintendents should also look to increase airflow, whether that's through tree pruning or tree removal, to help the turf dry out faster.

Koch recommends strobilurin and DMI fungicides for preventive snow mold applications as well as for some curative control. Fludioxonil is another option for pink snow mold control. ③



Streaks of pink snow mold show traffic as the likely source of its spread on this golf course in British Columbia. (Photo courtesy of Paul Koch)

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Amguard

CHUCK SILCOX, PH.D.
Product development manager

Anticipate you're going to have snow mold because you can't

go back midwinter and treat. Remember the disease triangle: You have the pathogen, you have a host and you have the environment. You have to get all three factors to interact for the disease to develop. Ideally, you'd put an application on in late fall and forget about it. In spring, if you have some areas with snow mold and it looks like you're going to have a period of relatively cool, damp weather, then it's probably worth making a fungicide application, which can cover the early spring diseases as well. Culturally, you want to rake and/or mow and lightly fertilize to get the turf growing and get recovery.



PBI-Gordon Corp.

BRIAN AYNARDI, PH.D.

Northeast research scientist

Pink snow mold is most prevalent in cooler climates,

particularly the Northeast, Upper Midwest and Pacific Northwest (also referred to as Microdochium patch), but it can occur throughout most of the country including on bermudagrass putting greens. Gray snow mold is found in areas of prolonged snow cover greater than 40 days. The best prevention for gray and pink snow mold is fungicides applied in the fall prior to snow cover. For pink snow mold, additional applications may be made when snow cover does not exist, particularly in the spring as the pathogen is active at temperatures well above freezing. Resistance is not a concern with gray snow mold, but there is a high risk for resistance to develop with the pink snow mold pathogen, *Microdochium nivale*, including documented resistance to the dicarboxamides.



BRET CORBETT

Director of technical services

Aerifying and verticutting and anything you can do to remove

as much thatch as possible will help combat snow mold. Make sure you continue to mow until growing ceases. For preventative sprays, typically, you need a combination of fungicides to be effective. These would include combining a contact fungicide, with Qols, DMIs, and SDHIs. Managing healthy turf is the best way to prevent any disease or decrease the severity of a disease. Follow best management practices, develop an IPM program, get ahead with proper scouting, make sure you put preventive fungicides out before the snow cover and decrease the amount of nitrogen per year. That's your best way to eliminate the disease pressure.



Syngenta

MATT GIESE, M.S.

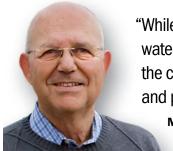
Technical services manager

Snow mold management requires a little bit of past

knowledge about what happens on your course and what's effective. If you have a couple of low-pressure years and get lulled into a sense of complacency where two active ingredients combined are effective, and then you get a heavy-pressure year, those two active ingredients may not be able to sustain that level of control. You need to take more of a preventive approach — especially if your threshold for damage is low. I look at snow mold protection the same as car insurance. You don't wait until you have an accident to buy insurance. Similarly, you have to put that insurance in place before snow mold occurs with preventive fall applications. If there is consistent damage every year, it certainly makes a lot of sense to try and manage it preventively rather than waiting until after you actually have it.



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"While arid parts of the U.S. deal with water restrictions every year, the rest of the country needs to be more proactive and prepare for water shortages ..."

MIKE KENNA, PH.D., Research Editor

Golf's use of water

he heat wave in the West this year is raising more concern about how much water golf courses use. We should use the term arid instead of drought for much of the Southwest. Compared to other parts of the country, they have a deficiency every year. Ten to 15 inches of precipitation is not enough to maintain fine turfgrass for golf.

The concern about water management on golf courses is not new. The USGA has addressed this going back to the 1930s, and the USGA Water Resource Center is an excellent source of information. The Water Resource Center provides specific information for golfers, course facilities and communities.

The droughts in the central part of the U.S. in 2011 and 2012, prompted the Nov. 6-7, 2012 USGA Water Summit, held in Dallas, Texas. The proceedings of this meeting, Golf's Use of Water: Solutions for a More Sustainable Game, summarizes presentations from experts in science, government, business, academia and golf to identify and discuss the most challenging issues regarding golf's use of water. The summit is translated into three languages: English, Spanish and Mandarin.

The website states, "With communities continually working to provide sufficient quantities of safe drinking water, it is understandable that water use for recreational purposes is heavily scrutinized. While golf courses contribute to communities by providing green space, positive economic impact and recreation for those who play the game, it is also true that golf course irrigation is a necessary component of their management. It is the responsibility of golf's leadership to ensure that our most valuable natural resource is used in the most forward-thinking, responsible manner."

Even though the Water Summit is already more than eight years ago, water problems are still a significant resource problem for golf in the West. New information is updated in the "Latest in Water Resources" at the top of the webpage. It would be worth your time to visit the website and see how golf needs to continue to address water use.

Another area of the website examines case studies that showcase real-world solutions successfully implemented by golf courses. There are 133 case studies at golf courses that deal with all aspects of water and a few other turfgrass problems such as drainage and naturalized rough.

There is a water budget calculator, best management practice (BMP) conservation templates and information on drought emergency plans in the Water Management Tools section.

A water budget is an estimate of the amount of water that is needed for a course throughout the year. There are additional links on how to use the water budget calculator and a step-by-step demonstration. The BMPs provide a template for the course superintendent and club officials to help conserve water. The drought emergency plan has a step-by-step guide and downloadable spreadsheet to prepare for drought events.

While arid parts of the U.S. deal with water restrictions every year, the rest of the country needs to be more proactive and prepare for water shortages during periods of drought. The investment in research and education to deal with water conservation on golf courses provides practical solutions for you to use.

Benjamin Franklin said, "When the well's dry, we know the worth of water." Just ask a superintendent dependent on municipal water in the Western U.S. Water shortages create conflict pitting state against state and region against region. Make Twain said, "Whiskey is for drinking. Water is for fighting." Much has changed since Franklin and Twain's time, but there is still a lot of truth and wit about people's reactions to water shortages.

I hope you take the long view of how much water your course is using and, more importantly, find ways to conserve water. I recently visited my parents in Southern California and am still a little stunned at the number of golf courses closed due to water availability or how much it costs. If you add increasing land value and labor costs, it emphasizes the need to be proactive rather than reactive to periods of drought. **G**

Mike Kenna, Ph.D., is the retired director of research, USGA Green Section. Contact him at mpkenna@gmail.com.





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Fighting grubs, fall armyworms in the Texas Hill Country

VAALER CREEK GOLF CLUB FACES CONSTANT FALL ARMYWORM PRESSURE BECAUSE OF THE COURSE'S LOCATION

By Robert Schoenberger

bout halfway between Austin and San Antonio, Vaaler Creek Golf Club's 100 acres of maintained turf is surrounded by live oaks, scrub grasses and other foliage native to the Texas Hill Country. That natural beauty can make Todd Leist's job a big pain in the neck.

"We're out in the country, so we have a lot of native grasses and trees where the armyworms can lay their eggs on the native plants," says Leist, superin-



Todd Leist

tendent of Vaaler Creek inside the Rockin J Ranch in Blanco, Texas. "All of the sudden, we get infestation moving in from those natives. By the time you've

had a chance to get it sprayed out, you can lose a lot of turf."



Vaaler Creek Golf Club has lost a lot of turf due to fall armyworm infestations.

To control regular grub outbreaks and fall armyworm infestations, Leist treats the course twice a year, wall to wall, with chlorantraniliprole. A heavy spring application followed by a lighter fall application keeps grubs and armyworms under control, he says.

"At first, I was doing 8 ounces per acre of the liquid, wall to wall, and then a booster of 4 ounces in the fall around October. I still wasn't getting quite the control I needed on the grub side, so I boosted that to 12 ounces per acre in the spring, around early April, and then a booster of 6 ounces of liquid in the fall, around late September early October. I've had a lot better results," Leist says.

For the past two years, he says he's used granular pesticides — 300 pounds per acre in the spring, 150 pounds per acre in the fall — so he can apply fertilizer and chlorantraniliprole at the same time.

For courses that can afford it, Leist says wall-to-wall coverage with chloran-traniliprole offers superintendents peace of mind because it provides such long-term pest control. However, courses that don't have the grub and armyworm pressure from native foliage that he has may not be able to justify that cost.

"The wall-to-wall option isn't viable for everyone," Leist explains. "You can do a buffer around the property. We did that at my previous course ... We would do a two-boom spray rig around the property, and that would catch grubs and armyworms before they got into the property."

BUG-CONTROLLING FREEZE

In most years, Leist credits chlorantraniliprole for the lack of grubs, armyworms and bugs on his course, but this year, the massive February storm that dropped snow and freezing temperatures across the state seems to have killed off a lot of insects and larvae.

"Normally, in my shop area, the wash bay lights stay on 24/7, and they'd just be covered in bugs," Leist says. "This year, I could have counted on my hands how many bugs we saw."

The hard freeze allowed him to delay his spring pesticide application until May because Leist says he wasn't seeing the pest activity he usually expects in April. On the other hand, the freeze killed off about 1,500 square feet of turf on his No. 4 green.

"It's a very undulated green and has north-facing slopes. Unfortunately, the snow that we had was a very dry snow. When the snow fell, it was so dry that a lot of it blew off of the north-facing slopes, especially on that green, so that's where we got a lot of winterkill," Leist says, adding that he doesn't have an on-site nursery and the sod farms in Texas lost much of their turf to the weather, so he's had to sacrifice portions of his practice putting green to fill in damaged turf.

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PHOTO BY: VAALER CREE!

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syngenta.

*Jonathan L. Larson, Carl T. Redmond and Daniel A. Potter, SCI. September 2011.

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The Shop // MUST-HAVE NEW PRODUCTS







1 Yamaha UMax UTV

YAMAHA's UMAX utility vehicles combine power, performance and comfort, the company said. The UTVs are available in six colors, have luxurious bucket seats, include an underhood storage compartment and feature 20-inch tires — all with the quietness of a golf car. The UMAX is strong, versatile and reliable, serving your maintenance team's needs.

2 | Maredo GT333 HiVibe Roller Greensmower Head

The GT333 HiVibe-Roller greensmower head, part of the MAREDO GT series, is divided into six roller sections. If the shaft is driven, each roller section pushes down a certain distance, one after another. Even undulated areas are treated, achieving a higher impact. Maredo-BV.com

3 DC to AC Inverter

Designed with the golf cart in mind, STENTEN'S DC to AC inverter features a waterproof housing for mounting in the battery compartment. Convenient wire length allows for multiple mounting locations, and a covered AC plug keeps the elements out when not in use. It converts from 12 VDC to 110 VAC, its output current is 0.07 A and its output wattage is 0.96 W. It comes with ring terminals, an AC-hinged plug and a 1-Amp in-line fuse.

Stenten.com

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CHECK OUT MORE NEW EQUIPMENT ONLINE

To stay up to date on all the latest products and services, visit golfdom.com/ category/ products



4 | Club Car Golf Carts

CURTIS INDUSTRIES updated its Club Car Onward, Precedent and Tempo model golf carts with a 48-volt air conditioning system. The models protect users from the sun, heat, rain, dust and insects. The self-contained system requires only three wire connections to the vehicle. Its stylized, low-profile design allows enough clearance to park in most standard garages, and an overhead console features multispeed fan control and four adjustable louvered vents.

CurtisIndustries.net

5 Infinity by Harman INF-BC4 Pre-Amp Bluetooth Controller

The Infinity by Harman INF-BC4 Pre-Amp Bluetooth Controller from PROSPEC ELECTRONICS gives users ready command to playback functions and fits on virtually any dash. Waterproof to IPX6 standards, it has a central rotary encoder and large buttons that can be operated with gloves and in rough, jarring conditions. Once paired to the Bluetooth-enabled device, the power and volume are operated with the rotary encoder. The three rubberized buttons provide control over play/pause, previous and next tracks.

ProspecElectronics.com

6 | Redexim Verti-Cut Series

The Verti-Cut series from **REDEXIM** comes in 80-, 64- and 51-inch versions; the larger units can verticut more than 107,000 square feet per hour and 86,000 square feet per hour, respectively. Blade spacing is standard at 1.18 inches with spacing kits available, and the working depth is easily adjustable down to 2 inches. The 51-inch model is sized to be used on smaller tractors as well as the Redexim Carrier walk-behind multifunction implement carrier.

Redexim.com

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19th 10e with...

Jeremy Hreben CGCS // Indian Spring GC, Marlton, N.J.



After 18 holes, what can I get you? Lately, I've been having a Kentucky Mule — a Moscow Mule with bourbon instead of yodka.

Tell me about Indian Spring. It's an 18-hole municipal course. It sits on 150 acres. Two acres of greens, 20 acres of fairways. I've been here for 11 years. We have pushup greens and average around 45,000 rounds. I try to balance everyone's needs and spend as little money as possible while producing the best conditions.

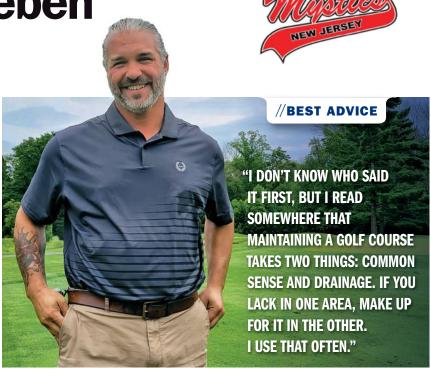
Do you have a family? I have a wife of 15 years; she is a two-time breast cancer survivor. And, I have a 13-year-old daughter who plays competitive softball. She's right-handed, and she hits lefty and righty. Travel softball is nonstop; I'm lucky to have a job that allows me to see her play.

How did you get into the business?

By chance, really. I got out of the military and was having difficulty finding a job using my military training. A golf course was the only company that would hire me. I was on the crew and enjoyed it. Pretty quickly, because people left, I was one of the senior employees on staff. I was given a lot of responsibility in a quick amount of time, and I turned out to be pretty good.

BROUGHT TO YOU BY





What teams do you root for? I root for the New York Giants, which is difficult living in the Philadelphia area. I don't follow a lot of sports other than my daughter's softball team. So, my favorite team is her team, the New Jersey Mystics.

What's the best thing you've ever bought? My 1987 Jeep Wrangler. I bought it for \$2,200. It was completely stock. Now, it's got a 6-inch lift and 33-inch tires. I take it off-roading, climb rocks, go through lakes ... it's a beast.

What's your proudest day at work?

The day I received my certification from GCSAA four years ago. I wanted to do something that made people take me seriously. I'm kind of a fun guy, and I joke around a lot. I wanted to prove to people that I know what I'm doing. It took me a

couple years to accomplish getting certified, but it's something I'm very proud of.

Thank you for your service! What can you tell me about your Army career? I joined the Army at 17. Blowing

stuff up sounded like fun. I was a combat



engineer. I specialized in explosives and demolition: dynamite, C-4, plastic, arming and disarming land mines and clearing minefields. I

was stationed in Germany a couple years, and I did a deployment in Bosnia.

Have you considered using that expertise on the golf course? There are a couple areas I've thought about it ... but I don't think I could get away with it.

As interviewed by Seth Jones, August 3, 2021.

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- Dismiss NXT
- Fungicides

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- · Warm Season Take-All Root Rot, Bipolaris Leaf Spot, Fairy Ring, Mini Ring, Large Patch
- Cool Season Anthracnose, Brown Patch, Dollar Spot, Fairy Ring



In support of FMC's Give Back to Local Chapters initiative, each Kalida unit purchased during EOP will generate \$25 to your local GCSAA chapter.

GOLF & LAWN SOLUTION OFFERINGS

Solution For:	Product	Recommended Rate/ Acre	Acres Treated
Anthracnose Brown Patch Fairy Ring	Kalida, 64 oz.	17 oz Cool Season	3.7
<i>Bipolaris</i> Leaf Spot Take-All Root Rot Mini-Ring Fairy Ring	Kalida, 64 oz.	17 oz Warm Season	3.7
Brown Patch Fairy Ring Pythium Root Dysfunction	Fame SC, 64 oz.	16 oz	4
Annual Bluegrass Weevil Ants Mole Cricket Chinch Bug	Triple Crown Golf, 1 gal	25 oz 45 Days Apart	5.1
Dollar Spot Gray Leaf Spot Spring Dead Spot	Rayora, 2.5 gal	62 oz	5.2
Yellow Nutsedge Green Kyllinga	Dismiss NXT 60 oz.	5 oz Cool Season 10 oz Warm Season 7.5 oz St. Augustine	12 6 8.1
Difficult to Control Broadleaf Weeds Grassy Weeds Sedges	Solitare WSL 2.5 gal	174 oz	1.8
Broadleaf Weed Tank Mix Partner	Quicksilver T&O 8 oz.	2 oz	4
Silvery Thread Moss	Quicksilver T&O 8 oz.	6.7 oz	1.2
Pre-emergent Crabgrass Goosegrass Yellow Nutsedge Green Kyllinga	Echelon 1 gal	36 oz Warm Seasoon 24 oz Cool Seasoon	3.5 5.3

QUALIFYING FUNGICIDES

Product Name	SKU Number	Oct Rebate Per Unit	# of Units	Oct Rebate	Nov-Dec Rebate Per Unit	# of Units	Nov-Dec Rebate
Fame [*] SC fungicide, 16 oz.	11008393	\$120			\$50		
Fame SC fungicide, 64 oz.	11008557	\$350			\$150		
Fame [®] SC fungicide, 2.5 gallons	11009500	\$900			\$300		
Fame* +C fungicide, 2.5 gallons	11008377	\$40			\$25		
Kalida™ fungicide, 64 oz NEW	11013671	\$115			\$75		
Rayora™ fungicide, 2.5 gallons	11003880	\$75			\$50		
Rayora™ fungicide, 2.5 gallons: 6+ Units	11003880	Volume Rebate: \$170			Volume Rebate: \$170		

QUALIFYING HERBICIDES

WOALII TINO IIERDICIDES							
Product Name	SKU Number	Oct Rebate Per Unit	# of Units	Oct Rebate	Nov-Dec Rebate Per Unit	# of Units	Nov-Dec Rebate
Blindside [*] herbicide, .5 lb.	11008351	\$15			\$10		
Dismiss" NXT herbicide, 10 oz.	11008409	\$25			\$15		///
Dismiss" NXT herbicide, 60 oz.	11008589	\$150			\$100		
Dismiss® NXT herbicide, 60 oz.: 8+ Units	11008589	Volume Rebate: \$200			Volume Rebate: \$200		
Dismiss [*] South herbicide, 16 oz.	11008474	\$35			\$25		
Dismiss' Turf herbicide, 6 oz.	11008475	\$15			\$10	1	
Dismiss' Turf herbicide, 64 oz.	11008336	\$100			\$60		
Dismiss" CA herbicide, 6 oz.	11008357	\$15			\$10		
Echelon [®] 4SC herbicide, 1 gallon	11008464	\$40			\$30		
Echelon® 4SC herbicide, 1 gallon: 16+ Units	11008464	Volume Rebate: \$75			Volume Rebate: \$75		
QuickSilver T&O herbicide, 8 oz.	11008447	\$25			\$15		
Solitare" WSL herbicide, 3/4 gallon	11008369	\$15			\$8		
Solitare [®] WSL herbicide, 2.5 gallon	11013862	\$30			\$20		
Solitare" herbicide, 1 lb.	11008482	\$20			\$12		
Solitare [®] herbicide, 4 lb.	11008522	\$70			\$35		
Xonerate [*] 2SC herbicide, 12 oz.	11008590	\$105			\$70		

QUALIFYING INSECTICIDES

SKU Number	Oct Rebate Per Unit	# of Units	Oct Rebate	Nov-Dec Rebate Per Unit	# of Units	Nov-Dec Rebate
11008513	\$15		11/1/1	\$10		
11008459	\$4			\$2		
11007753	\$120			\$60		
11008457	\$4			\$2		
11008521	\$30			\$20		
11008520	\$30			\$20		
	Number 11008513 11008459 11007753 11008457 11008521	Number Oct Repate Per Unit 11008513 \$15 11008459 \$4 11007753 \$120 11008457 \$4 11008521 \$30	Number Oct Repate Per Ont Units 11008513 \$15 11008459 \$4 11007753 \$120 11008457 \$4 11008521 \$30	Number Oct Repate Per Unit Units Rebate 11008513 \$15 11008459 \$4 11007753 \$120 11008457 \$4 11008521 \$30	SKU Number Oct Rebate Per Unit # of Units Oct Rebate Per Unit Rebate Per Unit 11008513 \$15 \$10 11008459 \$4 \$2 11007753 \$120 \$60 11008457 \$4 \$2 11008521 \$30 \$20	SKU Number Oct Rebate Per Unit # of Units Oct Rebate Per Unit # of Units 11008513 \$15 \$10 11008459 \$4 \$2 11007753 \$120 \$60 11008457 \$4 \$2 11008521 \$30 \$20

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FMC GOLF SOLUTIONS

		Activo			,		
Solutions	Fackage Sizes (Formulation Type)	Ingredient(s)	Tolerant Turf	Oz/Acre Oz/	oz/1000ft²	Target Weeds⁺	Application Timing & Tips
	10 fl oz	Sulfentrazone	Creeping Bentgrass, Perennial Ryegrass	5	0.12	Yellow Nutsedge	EMEDGE
UISMISS NATIONAL Herbicide	60 fl oz	+ Carfentrazone	Cool-season turf	5 - 10	0.12 - 0.23	Kyllinga Purple Nutsedge**	**Two applications
	(Suspension Concentrate)		Warm-season turf	6 - 15	0.137 - 0.35		
			Creeping Bentgrass, Perennial Ryegrass	8-12	0.184 - 0.275	Yellow Nutsedge	PRE-EMERGE/EARLY POST-EMERGE
Echolon 48C	1 Gallon	Sulfentrazone +	KY Bluegrass, Tall Fescue Warm-season turf	18-24	0.413 - 0.551	Kyllinga Crabgrass	*Ask about our Performance
TOTAL HOUSE	(suspension Concentrate)	Prodiamine	Bermudagrass*	24-36	0.551 - 0.826	Goosegrass	Assurance Program and our
			St. Augustinegrass	18 fb 18	0.413 fb 0.413	Poa annua	Fransition Zone Assurance Program
(6 fl oz		Creeping Bentgrass	4	0.092	Vellow Nittsadga	POST-EMERGE
8	(Suspension Concentrate)	Sulfentrazone	Cool-season turf	4 – 8	0.092 - 0.18	Kyllinga	Labeled for directed sprays in
DISTURBER	54 TI 02 (Suspension Concentrate)		Warm-season turf	6-12	0.137 - 0.275	Purple Nutsedge**	**Two applications
Oismiss South	1 Pint (Suspension Concentrate)	Sulfentrazone + Imazethapyr	Bermudagrass, Zoysiagrass, Centipedegrass, Buffalograss, Bahiagrass, Kikuyugrass	9.5 – 14.4	0.220 - 0.331	Purple Nutsedge, Yellow Nutsedge, Kyllinga Tropical Signalgrass***	POST-EMERGE Not for use on St. Augustinegrass or Seashore Paspalum ***Used with Xonerate (see below)
6	1 Lb (Water Disp. Granule)	Sulfentrazone	KY Bluegrass, Tall fescue, Rough Bluegrass, Perennial ryegrass	16 – 20.8	0.367 - 0.478	Crabgrass, Yellow Nutsedge, Kyllinga, Dandelion, White	POST-EMERGE
Solitare	4 Lb (Water Disp. Granule)	+ Quinclorac	Bermuda, Zoysia, Centipede, Seashore Paspalum, Buffalograss	16 – 32	0.367 - 0.735	Clover, Dollarweed, Ground lvy	Not for use on St. Augustinegrass, Bahiagrass, or Bentgrass
•	% Gallon (Water Soluble Liquid)	Sulfentrazone	KY Bluegrass, Tall fescue, Fine fescue, Perennial ryegrass, Rough Bluegrass	5.4 – 9 Quarts/Acre	4 – 6.5	Crabgrass, Yellow Nutsedge, Kyllinga, Dandelion, White	POST-EMERGE
Solitare WSL	2.5 Gallon (Water Soluble Liquid)	† Quinclorac	Bermuda, Zoysia, Centipede, Seashore Paspalum, Buffalograss	5.4 – 10.7 Quarts/Acre	4-7.9	Clover, Dollarweed, Ground lvy	Not for use on St. Augustinegrass, Bahiagrass, or Bentgrass
	8 fl oz	Carfentrazone	Cool and Warm season turf	0.9 – 2.1	0.023 - 0.048	Broadleaf Weeds	POST-EMERGE Addition of a non-ionic surfactant
QuickSilver	(Emulsion in Water)			2 - 6.7	0.046 - 0.154	Silvery Thread Moss	(NIS) can improve control
& Blindside	½ LB (Water Disp. Granule)	Sulfentrazone + Metsulfuron	Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass, Zoysiagrass	6.5 – 10	0.15 - 0.23	Dollarweed, Doveweed*, Virginia Buttonweed*, Yellow Nutsedge, Kyllinga, Clover, Wild Violet, Ground Ivy, Spurge, Winter Annuals	*2 applications may be required *2 Not for use on Bahiagrass, Kikuyugrass, Seashore Paspalum
			Creeping Bentgrass	3 (up to 4 apps)	0.06 (up to 4 apps)	POST Poa annua	Fairway and tees only
	12 = 0.1	_	Cool- season turf	3 to 6	0.06-0.14	POST Poa annua	Apply 6 fl oz 2 appl. 21 days apart
Xonerate 2sc	(Suspension Concentrate)	Amicarbazone	Bermuda-overseeded with ryegrass	8-9 (x2 apps)	0.18-0.21	POST Poa annua	Apply 14 days apart
1 O Minne			Warm-season turf	9-14 (x2 apps)	021-0.32 (x2 apps)	POST <i>Poa annua</i> , Tropical Signalgrass	For Tropical Signalgrass in bermudagrass, apply spring or fall w/ Dismiss South (9 x 7.2oz)



**ALWAYS READ AND FOLLOW LABEL DIRECTIONS. Consult product label for full and detailed target weed lists and use rates prior to using the listed products. Triple Crown Golf and Talstar Select are RESTRICTED USE PRODUCTS. FMC logo, Blindside, Dismiss NXT, Dismiss, Echelon, Fame, Kalida, Solitare, QuickSilver, Rayora, Talstar, Triple Crown, and True Champions are trademarks or servicemarks of FMC Corporation or an affiliate. Xonerate is a trademark of Arysta LifeScience North America, LLC.



FMC GOLF SOLUTIONS

Colutions	Package Sizes	Active	Use	Use Rates⁺	Target Dects/Diseases	Annication Timing & Tine
	(Formulation Type)	Ingredient(s)	Oz/Acre	Oz/1000ft ²	iaiger rests/ Diseases	
≪ Kalida"	64 fl oz (Suspension Concentrate)	Fluindapyr + Flutriafol	12 – 17	0.25 - 0.4	Take-All Root Rot, <i>Bipolaris</i> Leaf Spot, Anthracnose, Large Patch, Brown Patch, Fairy Ring, Large Patch, Dollar Spot	Apply the high rate (17 fl oz/A or 0.4 fl oz/1000ft²) preventatively at 14-28 day intervals when conditions are favorable for disease development.
Rayora"	2.5 Gallon (Suspension Concentrate)	Flutriafol	32 - 62	0.7 – 1.4	Dollar Spot, Gray Leaf Spot, Spring Dead Spot	Apply preventatively at 14- or 21-day intervals when conditions are favorable for disease development at the high rate. Apply on a 14-day interval for curative Dollar Spot. For Spring Dead Spot, apply 62 fl oz/A preventatively in the fall using two applications 21 – 28 days apart.
🔻 Fame	1 Pint (Suspension Concentrate) 64 fl oz (Suspension Concentrate) 2.5 Gallon (Suspension Concentrate)	Fluoxastrobin	8 – 16	0.18-0.36	Brown Patch, Fairy Ring, Summer Patch, Take-All Patch, Large Patch, Pythium Root Dysfunction	For spring diseases, apply Fame SC when soil temperatures at 2-in. reach 55-60 F.
🎖 Fame +C	2.5 Gallon (Suspension Concentrate)	Fluoxastrobin + Chlorothalonil	Pints per acre: 4 – 16	Ounces per 1000 ft ² : 1.5 – 5.9	Anthracnose, Dollar Spot, Brown Patch, Gray Leaf Spot, Leaf Spot, Pythium Blight, Pythium Root Dysfunction	Fame +C combines systemic and contact active ingredients for effective control. For foliar diseases, use appropriate nozzle tip and spray volume to maximize leaf coverage. Under severe disease pressure, apply on 14-day intervals.
Triple Crown	1 Gallon (RUP) (Suspo-Emulsion)	Bifenthrin Zeta-Cypermethrin Imidacloprid	10 – 35	0.23 – 0.80	Controls 30+ pests including: ABW, White Grubs, Ants, Billbugs, Chinch Bugs, Fire Ants and Mole Crickets	Controls both surface and sub-surface pests and also works as part of a rotational program. Treatment timings vary depending on cool- or warm-season turf and the target pest/life stage.
TELECT WHOM	1 Gallon (RUP) (Suspension Concentrate)	Bifenthrin	5 – 40	0.33 - 1.0	Fire Ants (inc. quarantine), Billbugs, Chinch Bugs, Armyworms, Cutworms, Webworms, and more	Long-lasting residual control when applied in temperate regions. Controls over-wintered annual bluegrass weevil adults for 3 to 4 weeks.





FMC LAWN SOLUTIONS

Solutions	Package (Formulation Type)	Active Ingredient(s)	Tolerant Turf	Use Rates [†] 1000ft ²	Target Weeds⁺	Application Timing & Tips
Dismiss	10 oz (Suspension Concentrate)	Sulfentrazone +	Cool-season turf	0.12 – 0.23 oz	Yellow Nutsedge Kyllinga	POST-EMERGE
Herbicide	60 oz (Suspension Concentrate)	Carfentrazone	Warm-season turf	0.23 - 0.35 oz	Purple Nutsedge**	**I wo applications
			Perennial Ryegrass	0.184 – 0.275 oz	Yellow Nutsedge	
©	1 Gallon	Sulfentrazone +	KY Bluegrass, Tall Fescue Warm-season turf	0.413 - 0.551 oz	Kyllinga Crabgrass	PRE-EMERGE/EARLY POST-EMERGE
Echelon 45C	(Suspension Concentrate)	Prodiamine	Bermudagrass*	0.551 – 0.826 oz	Goosegrass	*Ask about our Bermudagrass Performance Assurance Program
			St. Augustinegrass	0.413 fb 0.413 oz	Poa annua	
8	6 oz (Suspension Concentrate)	Sulfentrazone	Cool-season turf	0.092 – 0.18 oz	Yellow Nutsedge Kvllinga	POST-EMERGE Labeled for directed sprays in
Dismiss	% Gallon (Suspension Concentrate)		Warm-season turf	0.18 – 0.275 oz	Purple Nutsedge**	ornamental beds **Two applications
Oismiss	1 Pint (Suspension Concentrate)	Sulfentrazone + Imazethapyr	Bermudagrass, Zoysiagrass, Centipedegrass, Buffalograss, Bahiagrass, Kikuyugrass	0.220 – 0.331 oz	Purple Nutsedge, Yellow Nutsedge, Kyllinga	POST-EMERGE Not for use on St. Augustinegrass or Seashore Paspalum
0	1 Lb (Water Disp. Granule)	Sulfentrazone	KY Bluegrass, Tall fescue, Rough Bluegrass, Perennial ryegrass	0.367 – 0.478 oz	Crabgrass, Yellow Nutsedge, Kyllinga, Dandelion, White	POST-EMERGE
Solitare	4 Lb (Water Disp. Granule)	Quinclorac	Bermuda, Zoysia, Centipede, Seashore Paspalum, Buffalograss	0.367 – 0.735 oz	Clover, Dollarweed, Ground Ivy	Not for use off St. Augustinegrass, Bahiagrass, or Bentgrass
0	3/4 Gallon (Water Soluble Liquid)	Sulfentrazone	KY Bluegrass, Tall fescue, Fine fescue, Perennial ryegrass, Rough Bluegrass	4 – 6.5 oz	Crabgrass, Yellow Nutsedge, Kyllinga, Dandelion, White	POST-EMERGE
Solitare WSL	2.5 Gallon (Water Soluble Liquid)	Quinclorac	Bermuda, Zoysia, Centipede, Seashore Paspalum, Buffalograss	4 – 7.9 oz	Clover, Dollarweed, Ground Ivy	Not for use off St. Augustinegrass, Bahiagrass, or Bentgrass
QuickSilver	8 oz (Emulsion in Water)	Carfentrazone	Cool and Warm season turf	0.021 – 0.034 oz	Broadleaf Weeds	POST-EMERGE Used in combinations with postemergence broadleaf herbicides
& Blindside	% LB (Water Disp. Granule)	Sulfentrazone + Metsulfuron	Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass, Zoysiagrass	0.15 – 0.23 oz	Dollarweed, Doveweed*, Virginia Buttonweed*, Yellow Nutsedge, Kyllinga, Clover, Wild Violet, Ground Ivy, Spurge, Winter Annuals	*2 applications may be required *2 Not for use on Bahiagrass, Kikuyugrass, Seashore Paspalum
Xonerate 250 Herboide	12 oz (Suspension Concentrate)	Amicarbazone	Cool- season turf	0.06-0.14 oz	POST Poa annua	Apply 6 fl oz 2 appl. 21 days apart



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FMC LAWN SOLUTIONS



Solutions	Package (Formulation Type)	Active Ingredient(s)	Use Rates [†] 1000ft²	Target Pests/Diseases	Application Timing & Tips
	16 oz (Suspension Concentrate)				
▼ Fame	64 oz (Suspension Concentrate)	Fluoxastrobin	0.18 – 0.36 oz	Brown Patch, Fairy Ring, Summer Patch, Take-All Patch, Pythium Root Dysfunction	For spring diseases, apply Fame SC when soil temperatures at 2" in reach 55-60 F.
	2.5 Gallons (Suspension Concentrate)				
*Fame	25 LB Bag (Dispersible Sand Granule)	Fluoxastrobin	1.2 – 4.6 lbs	Brown Patch, Fairy Ring, Summer Patch, Take-All Patch, Pythium Root Dysfunction	Fits your lawn turf application requirements and is a premium Strobilurin priced at a reasonable cost per 1,000 square feet.
Triple Grown:	1 Gallon (Suspo-Emulsion)	Bifenthrin Zeta-Cypermethrin Imidacloprid	0.23 – 0.80 oz	ABW, White Grubs, Ants, Billbugs, Chinch Bugs, Fire Ants, Mole Crickets	Triple Crown works on both surface and subsurface pests. Treatment timings vary depending on cool- or warm-season turf and the target pest/life stage.
PRDFESSIONR, MOUND	1 Gallon (Suspension Concentrate)	Bifenthrin	0.33 – 1.0 oz	Billbugs, Armyworms, Cutworms, Webworms, Chinch bugs, Mosquito	Talstar Professional insecticide is the number one product used for the control of mosquitoes. Please refer to our FMC Mosquito Promise Program.
valster, (sii)	25 LB Bag (Dispersible Verge Granule)	Bifenthrin Zeta-Cypermethrin	1.15 – 4.6 lbs	Fire Ants, Fleas, Ticks, Mole Crickets, Chinch bugs, Earwigs, Crane Flies	Talstar XTRA featuring Verge granule technology is proven to eliminate dangerous fire ant colonies in 15 minutes.
TREETS OF THE COMMENT	25 LB Bag (Dispersible Sand Granule)	Bifenthrin	1.15 – 4.6 lbs	Fire Ants (inc. quarantine), Billbugs, Chinch bugs, Armyworms, Cutworms, Webworms, and more	Talstar PL granular insecticide features a sand core granular structure that penetrates mulch with no odor and no watering needed.



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EARLY ORDER PROGRAM

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