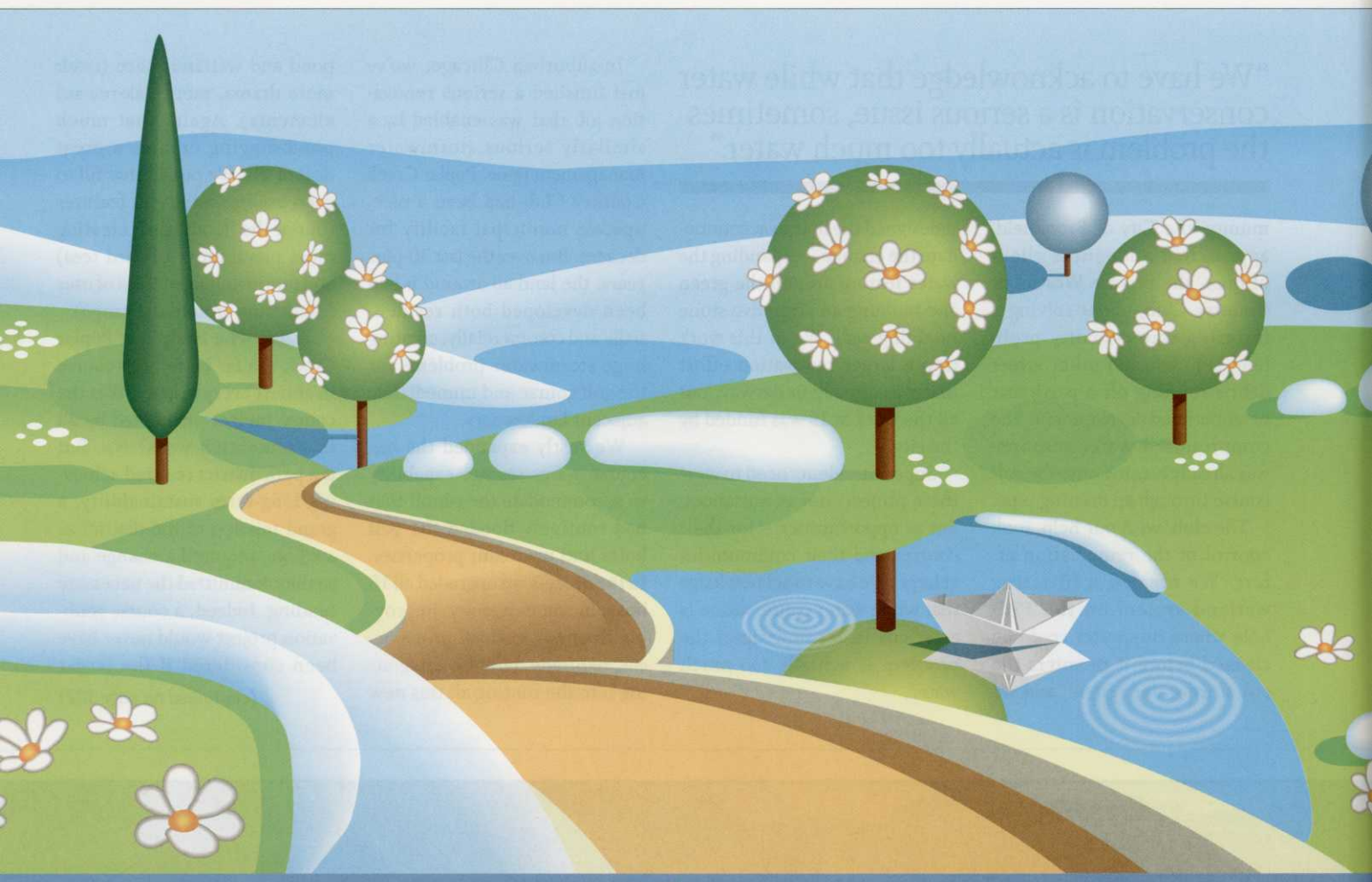


# Early to rise

A short, warm winter means early *Poa* emergence. Superintendents discuss their strategies for coping.

By Helen M. Stone

As if golf course superintendents didn't have enough to worry about, springtime temperatures set records across the nation. According to the National Ocean and Atmospheric Administration (NOAA), more than 15,000 daily record-high temperatures we set in March. Meteorologists used words such as "astonishing" and "amazing" to describe the phenomenon, and NOAA declared it the warmest March on record in the contiguous United States.

But before you could get the shorts and sunglasses out for good, temperatures close to normal quickly returned, along with dire weather warnings in the Midwest. Weatherman have been blasted for inaccuracy since the Babylonians used astrology to forecast temperatures in 650

DREAMSTIME

B.C., but today's climate patterns seem to make all the new technology and computer models about as accurate as reading the stars.

The warmer temperatures made *Poa annua* control an earlier issue than usual. "We have been relatively wet, and with the mild winter temperatures this was one of the worst *Poa* seasons I have seen," says Roger Meier, CGCS, golf course superintendent at Valhalla Golf Club in Louisville, Ky.

Annual bluegrass causes several types of headaches on the golf course. The rapid seedhead development is first, and PGR (Plant Growth Regulator) sprays to control the pesky intruders must be timed with the appearance of the "boot" or seed sheath. Some superintendents use Growing Degree Days (GDD) to start their program, while others rely on weather patterns. Phenology clues, such as forsythia blooming, are also employed.

"A turfgrass plant doesn't recognize the calendar," says Dean Mosdell, technical manager for Syngenta. "When conditions are right, it wakes up and grows regardless what the calendar says."

"Spring temperatures have been higher in most of the northern tier states and that translated into earlier *Poa annua* maturity and seed head production," says Roger Storey, vice president of the turf and ornamental division of SePRO Corporation.

"You want to put down Embark right after the last frost," says Kevin Hicks, superintendent at Couer d'Alene Resort Golf Course in Couer d'Alene, Idaho. "This year we sprayed on March 15, and we're usually done around the first of May."

With the famous "floating green," Coeur d'Alene is a destination course, and needs to be in top condition during its relatively brief play-

Once the right weather conditions are in place, *Poa annua* moves quickly to seedhead development.

"We put our last application of Cutless down about last Halloween, and we started up again about four weeks earlier than normal – about the first of April."

*— Clay Stewart, Idle Hour Country Club*

ing season. "We have seven months to make money," says Hicks. "If I make a mistake, it affects revenue."

The challenge lies in the large percentage of *Poa annua* on the course. When Hicks began working on the course nine years ago, the greens and fairways, originally seeded bentgrass, were largely *Poa*. "I was in a meeting this morning where the rep had a product that promised to take out the *Poa*," Hicks says. "I wouldn't have any grass left!"

A split application of Embark "carries us through the heavily seeded part of the year," says Hicks. "Then we use a combination of Primo and Proxy for trailing seedheads."

During mid-summer, Hicks switches gears again. "We've been really happy with Legacy; it's a combination product and gives us very effective long-term control."

"Initial applications of Legacy at the lowest label rate recommendation should be started after the bentgrass is fully active," says Storey. "After the initial application, rates can be increased to gain the desired turf growth and clipping reductions."

Strategies to deal with *Poa* will vary depending on how what percentage of the turf is "infested." Clay Stewart, superintendent at Idle Hour Country Club in Lexington, Ky., is "only looking at less than five percent on the greens and 10 percent on the fairways." The unusual weather

BUGWOOD.ORG

"A turfgrass plant doesn't recognize the calendar. When conditions are right, it wakes up and grows regardless what the calendar says."
*— Dean Mosdell, Syngenta*

patterns has affected his application timing as well.

"We put our last application of Cutless down about last Halloween," he says, "and we started up again about four weeks earlier than normal – about the first of April."

"Under a Cutless program, it is important to continue applications through the summer months during the periods that *Poa annua* is stressed," says Storey. "The most significant declines in *Poa annua* population are achieved by continuing the program starting in the spring and continuing through the summer and into the fall."

Stewart sprays every two weeks with 10-13 ounces per acre of Cutless on putting greens. On fairways, approaches and tees he uses eight ounces of Cutless mixed with six ounces of Primo every three weeks. PGRs should be watered in after application.

"We vary our rates according to the weather," Stewart says. He is on a season-long program to suppress the annual bluegrass. "We make the rates a little higher in the spring and fall and back them off in the summertime. It also depends on whether we are also spraying fungicides and which ones we are using – some have growth-regulating properties. So we'll back off that week because you don't want to shut everything down."

The type of PGR and the rates and application timing will also depend on whether the goal is control or elimination. "Primo is used when maintenance is the goal," says Mosdell. "If control or elimination is the goal, you can use stronger PGRs such as Trimmit."

"In the Southwest, superintendents use Trimmit on bentgrass greens in early summer until it gets really hot," says Dr. Dave Kopec, turfgrass specialist with the University of Arizona Cooperative Extension in Tucson. "At that point, the *Poa* retreats. Then they can pick up applications in the early fall."

Overseeded Bermudagrass greens require a different regime. "You can uses multiple applications of Legacy, but you need to be careful when the Bermuda breaks dormancy," Kopec cautions. "The PGR can actually slow the Bermuda down, because it's taken in by the roots as well as the shoots." In the summer, *Poa* isn't an issue in Bermudagrass greens because the vigorous growth will choke out the invader.

Of course, the bottom line is that healthy, vigorous turf will minimize *Poa* infestation no matter what type of grass is grown. "As soon as we are able to control moisture and grow healthy turfgrass plants, we can combat the *Poa* and keep it in check," says Meier.

"We actually have a good climate here in Kentucky for *Poa* control," Stewart says. "It

"As soon as we are able to control moisture and grow healthy turfgrass plants, we can combat the *Poa* and keep it in check."

*— Roger Meier, Valhalla Golf Club*

gets hot and dry in the summer and *Poa* doesn't like that. So with the PGRs the *Poa* gets regulated and the bentgrass justs crawls right over the top of it."

Even the most diligent program will not result in complete eradication. Stewart is in the fifth season of his program. "By no means do we eliminate it, but we've been able to significantly reduce it," says Stewart. "Especially in our fairways – we've seen a significant reduction."

The take-away message? If you are on an ongoing program for *Poa* managment, keep your timing on schedule. As temperatures rise, PGR rates should drop. Hot, dry conditions are *Poa annua's* worst enemy. The best advice is the same as you have heard for almost every turfgrass challenge. Provide the best possible growing conditions for your turf, and you should be able to sail through the summer ahead. **GCI**

*Helen Stone is a Las Vegas-based freelance writer and frequent GCI contributor.*

Application of PGRs have to be properly timed to affect *Poa annua*.

BUGWOOD.ORG

# Liquid assets

By John Torsiello

## Wetting agents get the most out of the moisture on your course.

Somewhat remarkably, the number of wetting agent products on the market has increased during the past 35 years from four or five to more than 130.

There are several reasons for the explosive increase. But a primary igniter for this amazing burst of product is the increased expectations of golfers who now consider smooth, fast greens and pristine fairways to be a given. This, of course, has meant closer mowing heights and more intensive management to maintain the new standards, while at the time ensuring turfgrass health.

"There is little doubt that wetting agents are more popular or used more today than ever before," says Dr. Keith Karnok, a professor specializing in turf management at the University of Georgia's College of Agricultural and Environmental Sciences. He estimates a whopping 90 percent of superintendents use wetting agents as an integral part of their management program.

"Currently, wetting agents are the best tool or management practice for managing localized dry spots caused by water-repellent soils," he says.

Depending on the situation, wetting agents can help improve fertilizer and pesticide efficacy, Karnok says. "Certainly, we have shown through research, wetting agents applied to a water-repellent rootzone can improve irrigation efficiency significantly," he says. "We now have some evidence that wetting agents applied to non-water-repellent soils will improve irrigation efficiency."

Traditionally, superintendents have employed wetting agents during hot, dry conditions, says Andy Moore, agricultural marketing manager for Aquatrols. In recent years, with the advent of new, unique chemistry, turf managers are realizing specific wetting agents can help them balance water and air in the rootzone in wet and dry conditions.

"More people are beginning to use our products for overall water management rather than just curing dry spots," Moore says. "We also see more people using our Dispatch technology because it can save them money on water and energy costs, as well as make all their soil-directed inputs (fertilizers and chemicals) more efficient."

Soil surfactants contribute to healthier, more resilient turf that withstands stresses and maintains quality. They can also contribute to significant water and energy savings during the irrigation season. All this leads to enhanced playability of the course, which should bring in greater revenues, Moore says.

"Not that I am saying by using our products all problems are solved. However, managing water effectively and efficiently can have a big impact on the bottom line. Water is at the foundation of all other agronomic practices. If water is being used effectively it can impact turf health, which impacts the turf's response to stress and the need for other inputs."

Chuck Champion, president of KALO, says university research over the years has confirmed the

DREAMTIME

value of soil sufficants.

"Next to labor costs, the purchase of city water and utility costs for pump stations represent the highest budget expense for most golf courses. Pumping hundreds of thousands of gallons of water on a course over a few days is not unusual for large courses during summer months," Champion says. "Wetting agent applications can pay for themselves in water and utility cost reductions." He says quantifying that savings is subjective.

"There are many claims about water savings but realistically 5 percent to 15 percent less water used to maintain equal turf quality should be possible with wetting agent use," he says.

Bert Brace, vice-president/formulator for AQUA-AID USA, says superintendents are better understanding how each product works and are adjusting chemistries as conditions, expectations and budgets demand.

"Presently, superintendents have three modes of action for wetting agent/surfactant chemistries to choose from in today's market and four ways to apply the chemistries," Brace says. "The three modes of action for surfactants are hydrating, penetrating and corrective. The four different ways to apply surfactants include tank spraying, injection, granular and hand watering pellets."

David Dore-Smith, superintendent at Copperleaf Golf Course in Bonita Springs, Fla., says soil sufficants helped him get through some potentially devastating weather in recent years.

"We have experienced two of the worst droughts over the past two years in this region and are now entering a third," he says. "The use of wetting agents has allowed me to prevent turf damage and continue to provide quality conditions for both our members and reciprocal players during these trying conditions."

Wetting agents have proven to be invaluable in providing consistent conditions," he says. "Hotspots are greatly reduced, thus eliminating over watering, playability is improved due to improved ball roll, labor is reduced due to not needing to chase after 'hot spots' and overall turf quality is 'superior.'"

Tim Schaefer, superintendent at Emerald Falls Golf Club in Broken Arrow, Okla., has used wetting agents in the past few years and the results have been promising.

"We have several different types of soil on our property, so a wetting agent is needed in some areas more than others," he says. "The best result we saw was water penetrating into the areas where we applied it instead of running to the valleys and further saturating them."

Dave Libby, superintendent at Prouts Neck Country Club in Scarborough, Maine, believes there is significant value in using soil sufficants. The first benefit, he says, is water savings. He has been able

"We have several different types of soil on our property, so a wetting agent is needed in some areas more than others. The best result we saw was water penetrating into the areas where we applied it instead of running to the valleys and further saturating them."

*— Tim Schaefer, Emerald Falls Golf Club*

"We have experienced two of the worst droughts over the past two years in this region and are now entering a third. The use of wetting agents has allowed me to prevent turf damage and continue to provide quality conditions for both our members and reciprocal players during these trying conditions."

*— David Dore-Smith, Copperleaf Golf Course*

to extend his interval between irrigation cycles dramatically. Given normal rainfall he may irrigate fairways three times a month now as opposed to three times a week in the past. He also sees a more uniform turf performance and fewer localized dry spots. And, he has found that fertilizer and fungicide inputs decreased because turf wasn't suffering from inconsistent moisture stresses.

When David Phipps, superintendent at Stone Creek Golf Club in Oregon City, Ore., started using wetting agents on the fairways there was a dramatic difference from the previous year. The first and foremost difference was the uniformity in which the turf appeared during the stressful times of the summer. "There were far fewer dry areas," he says. "It also seemed we were far more effective with water."

Scott Pavalko, superintendent at Cog Hill Golf and Country Club in Lemont Ill., has used wetting agents, most recently spraying Dispatch, an Aquatrols product, 16 ounces per acre every two weeks with his normal preventative fungicide rotation.

"What I like best is that it is safe to tank mix, spray in the morning and water in at night. We had chronic LDS problems on fairways," he says. "We are also a public facility with very early tee times, which makes it very difficult to spray and water in a wetting agent immediately. Using wetting agents has made our overnight watering more effective."

Some wetting agents can be applied all year, depending on where a course is located and the local climate. The main use period is throughout the growing season, whatever that might be in a locale. Some products are used on an as-needed basis. The volume used depends on the product.

Karnok says wetting agents can be applied anytime throughout the year.

"It depends on the objective. If the objective is to affect drainage or water movement in the root zone, wetting agents can be applied anytime," he says. "For the control of localized dry spots caused by water-repellent soil, they are often applied in early spring and through the summer and into the fall. However, depending on the severity of water-repellency, region of the country, type of rootzone, turfgrass species and weather conditions, there may be advantages to using wetting agents throughout the year. The rate in which a wetting agent is applied, depends on the specific product. Recommended rates range from four ounces to 16 ounces per 1,000 square feet. Superintendents should always follow label directions."

Despite the apparent panacea soil sufficants offer in these days of extremely variable weather conditions and enhanced expectations for pristine playing conditions at all times, the use of

## Getting it in the ground

Using a golf course fertigation system in conjunction with the use of soil sufficants is becoming commonplace.

Andy Moore, agricultural marketing manager for Aquatrols, says injection has a number of benefits; it is a very low labor-cost way of treating the entire golf course; it is a great way to save on water and energy; it helps to smooth out problems with irrigation coverage; and it improves playability across the entire golf course.

Chuck Champion, president of KALO, says, "The most cost-effective way to apply wetting agents is through irrigation injection. This is a labor-free method for spoon-feeding small volumes of wetting agent over the entire golf course over an extended time for preventative treatment. This method allows wetting agent costs to be spread over the entire golf course acreage."

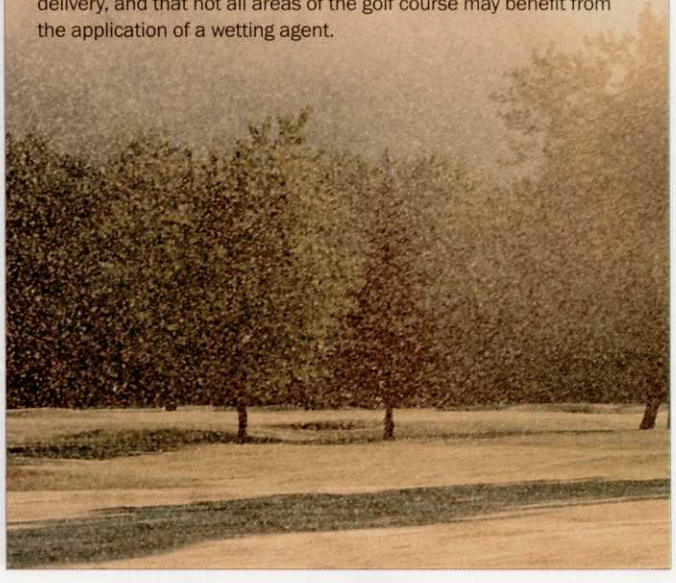
Most injection systems will allow for rate adjustment for golf greens separate from other turf areas. It's best to have a proportional injection system that is programmed with the metering pump to keep the wetting agent injection in a consistent parts-per-million application rates. When the water pumping system is shut down, the wetting agent metering pump shuts down as well. These systems need to be monitored regularly to avoid spills or to ensure that application rates are calibrated properly.

"This summer will be the first summer that we will use wetting agents through fertigation," says Tim Schaefer, superintendent at Emerald Falls Golf Club in Broken Arrow, Okla. "Our goal is to be able to fine-tune our fairway wetting agent program so that we are only applying it where we actually need it. If we are able to achieve this, the cost saving could be very significant."

Dave Libby, superintendent at Prouts Neck Country Club in Scarborough, Maine, began wetting agent use with injection products.

"They worked great," says Libby. "We have since moved away from that because we find that we want more control of when and where the agents are applied. I think injection is a great way to apply wetting agents for those courses with limited resources, or limited spray windows. Healthier turf and fewer input makes everyone happier."

Dr. Keith Karnok, a professor specializing in turf management at the University of Georgia's College of Agricultural and Environmental Sciences, says superintendents need to keep in mind that an irrigation system needs to be in good working to achieve uniform delivery, and that not all areas of the golf course may benefit from the application of a wetting agent.



soil sufficants is not without some potential drawbacks, or at least concerns.

"The biggest drawback is cost," says Schaefer. "I would love to apply wetting agents in our fairways from June until September but can't afford to. We have to pick and choose when and where we want to apply them."

Libby says long-term products can have some drawbacks in rainy years.

"The 90-day products aren't really all that special from a chemistry standpoint. Their longevity is derived from the high rate at which they are applied and their resistance to downward mobility in the soil profile. This means that if you apply 16 ounces of a product in the spring and end up having a really wet year, the turf can become soft and soggy."

Moore advises that superintendents ask for proof about what is being claimed by each wetting agent product before using.

"Many states do not regulate the sale of soil wetting agents, a lot of stuff is put into containers and claims are placed on the label. This leads to confusion for the turf manager. Don't take anyone's information on face value. Ask questions and make sure you know what you are using."

Karnok says identifying the "best" wetting agent is virtually impossible, since every wetting agent cannot be tested under all the varying conditions one would find in the field. Also, new products are being released constantly. The degree of potential phytotoxicity is a major concern. Some wetting agents should be watered into the soil and off turfgrass leaves as soon as possible after application, whereas irrigation can be delayed with some products.

Brace says more and more superintendents will be using surfactants as the demand for water increases and water quality decreases.

However, new chemistry for wetting agents is slow to develop as raw material suppliers are conservative about investing in development costs for new basic chemicals, says Champion.

"The size of the market is limited and there are too many products chasing too few customers these days, so product technology has remained much the same in recent years."

It is clear that wetting agents will likely become an ever more important tool in a superintendent's arsenal to insure superior playing conditions in the coming years. **GCI**

*John Torsiello is a Torrington, Conn.-based freelance writer and frequent GCI contributor.*