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- RICHARD HURD

sider it. Joe and I will look to better ourselves. If we’re together for another 20 years, great, another five years, great. But as for right now, we have a good thing going. This is one of the best jobs you can ask for, and few people have this opportunity.”

A GOOD TEACHER

Perhaps the superintendent and assistant who have worked together the longest are Paul Voykin, golf course superintendent at Briarwood Country Club in Deerfield, Ill., and his assistant Moe Sanchez. Voykin has been working at Briarwood for 46 years, Sanchez for 43 years. One of the reasons for staying so long at one club is how members treat them.

“I like the people here very much, and they have been very good to me,” Voykin says. “They have taken pride in what I do. I’m a purist. I don’t look after the pool or the tennis courts – just the 18-hole golf course. I’ve always worked with a green chairman. I’ve made good relationships and formed an ‘ecology’ here for years. I have an excellent friendship with the village.”

Sanchez was a teenager when he started at Briarwood, following his father, who worked for Voykin for 44 years.

“My dad started with Paul in 1962,” Sanchez says. “Then I came up from Mexico and started in 1964 at the age of 15. “Paul raised me like his own son. I started reading books when I was younger. I never went to school in the states. Paul taught me English. I owe everything I know to Paul. The most important things Paul taught me was that everything has to be neat, to be observant, organized and retain a ‘spring fever’ attitude throughout the season. He taught me to be persistent and not let a job go to the next day and stay on top of things.”

Sanchez started out raking bunkers and mowing greens for three or four years. Then he became a mechanic.

“I was given the opportunity because the old one died,” he says. “I was a mechanic for

a while then Paul asked me to help him on the golf course. He started teaching me everything about it.”

“I’ve never had a better friend, and nobody has a better assistant,” Voykin says about Sanchez. “He thinks like I do when it comes to the golf course. Moe is right there by my side. I don’t have to tell him to be there when there’s a crisis.”

Voykin, who will retire in a year and a half, will recommend Sanchez for the superintendent job when he retires, even though Sanchez has no college degree and only some high school education. Yet Sanchez passes a tough Illinois pesticide test every year to receive a state applicators license, Voykin says.

“Members love Moe,” he says. “The problem is the demand for communication and appearing in front of committees. That’s difficult for those who aren’t used to it.”

Voykin says the club has assured him he will have a generous retirement package when he retires. In the meantime, Voykin doesn’t worry about Sanchez leaving Briarwood, as he would with a younger, college-educated assistant.

“Some superintendents have gotten awards for having 100 assistants move on to become superintendents in the field,” he says. “That’s admirable, but you have to start over every time they leave. Then you might get a better assistant or a worse one.”

Even though Voykin works seven days a week, he doesn’t come in first thing in the morning anymore because Sanchez takes care of the crew.

“For 44 years, I got up at 4:30 and went to work,” he says. “It’s such a relief to have Moe start the men off. When I get here, everything is humming and buzzing. When you have a guy like Moe, you can take real advantage of him and go on vacations or have him working seven days a week, but I never do. I have a great crew. My men do all the work, and I get all the credit.” **GCI**

Moe Sanchez was a teenager when he started working at Briarwood Country Club in Illinois. He followed his father, who worked for Paul Voykin at Briarwood for 44 years.

Jose Rocha followed his father and went to work at the Los Angeles Country Club at the age of 18 in 1982.

Joe McCleary, CGCS, has worked for the city of Aurora, Colo., for 17 years, and his assistant, Richard Hurd, has worked for the city for at least 16 years.



out in FRONT

The fundamental problem with localized dry spot is an organic coating that forms from the natural breakdown of organic substances. The coating prevents soil particles from absorbing water. Photo: Aquatrols

A proactive, multipractice approach to treating localized dry spots can make the battle easier

BY T.R. MASSEY

Golf courses can be frustrating places to work. Just when one turfgrass problem is contained, another breaks out. And when the weather patterns are like the ones that occurred during the spring and summer of 2007, there can be more problems than normal.

Consider the problem of localized dry spots. It's a condition that appears as an irregular patch of grass that shows drought stress for seemingly no particular reason. Research shows one of the main factors contributing to localized dry spot is hydrophobic soil, or soil that rejects water.

Keith Karnok, a professor of turfgrass science at the University of Georgia, is one of the leading localized dry spot researchers who says the fundamental problem is a coating that forms from the natural breakdown of organic substances. When plant matter, such as roots, peat and other soil amendments, breaks down in normal microbiological processes, they form an organic compound that coats sandy soil particles and prevents them from absorbing water. Some believe the coating consists of fulvic acid.

Karnok's research shows that when decomposing plant matter is extremely dry, fulvic acid forms and coats individual sand grains, making it repel water. This hydrophobicity is more severe at shallower depths, so it occurs in the top 1 to 2 inches of the soil profile. Coarse soil textures and sandy soils are most likely to be water repellent, Karnok says.

"It's a natural phenomenon," he says. "You can't stop it, but you can treat it. In high-sand-content soil, it's common. Nine to 18 months after construction, dry spots begin to appear."

Once localized dry spots appear, superintendents should use a variety of approaches to treat them. Most people use wetting agents, Karnok says. Wetting agents are a chemical compound known as surfactants. The name is borrowed from three words – surface, active, agents – because it works to cause a physical change on the surface of liquids, Karnok says. A surfactant bonds with water and the organic coating on sand particles, allowing the soil to become wet.

MIX IT UP

Jason Regan, golf course superintendent at the Selma (Ala.) County Club, says he's had success battling localized dry spots because of the program he's developed.

"If I wasn't on this program I'd have a problem," Regan says. "I've built the program during my 10 years here. When I arrived here, I was treating it after it happened. Now I'm in front of

Localized dry spots are a constant battle for superintendents, who often use wetting agents to combat the problem.
Photo: Aquatrols



it. It just took a while to learn. I haven't had any problems this year in spite of a drought."

Regan's plan begins with spraying Revolution, a wetting agent, in mid- to late March each year, then applying it all summer long. He applies it on fairways and uses four ounces per 1,000 square feet on the greens once a month. He's also applies another wetting agent, Dispatch, which he injects into the irrigation system, using 48 ounces per acre in the fairways.

"It's been so dry this year, I've had some spots where the irrigation system doesn't cover," he says. "The wetting agent has done a tremendous job. We haven't had any rain at all – the driest year on record – and it's worked out great for me."

Regan also applies another surfactant, Aquaduct, at a high rate then drenches it in with water for 15 minutes.

"We're doing drench applications once a month on the greens," he says.

A CONSTANT PROBLEM

In Columbus, Ohio, Don Sutton, CGCS, at Kinsale Golf and Fitness Club, has more of a problem with localized dry spots on fairways than greens. Kinsale is a 4-year-old private facility designed

by Arthur Hills.

"I use wetting agents on my greens, and it takes care of the problem," he says.

Sutton treats entire greens, not just the areas affected by localized dry spots.

"I treat the fairways as needed and spot spray areas that have been a problem historically, such as some of the knobs on fairways," he says.

In June, when Ohio was in a drought, Sutton made spot treatments often and a complete course application in the third week of the month. Other practices are included, too.

"I do quite a bit of aerification on tees, greens, fairways and roughs," he says. "It's a cultural practice to help eliminate a lot of dry spots. Proper aerification will help it. I core aerify at least once a year, deep-tine greens at least once a year, and a use my AerWay with solid tines for fairways about three times a year. That allows water a channel to get down in the soil."

Though common sense would dictate hand-watering in the worst localized dry spot areas, Sutton says it doesn't work sometimes.

"The soil doesn't accept water," he says. "You have to use a wetting agent or surfactant to get it to accept water."

Localized dry spots are a constant problem in the summer months for Sutton.

"From my experience here, we haven't reduced them," he says. "It almost becomes a thing in which you're going to have a certain number of them, and you're dealing with the same spots every year."

While it takes a good bit of man-power to fight localized dry spots, Sutton says it's not one of his biggest problems.

"It's something you expect to happen, and you go out and deal with it," he says.

LABOR AND WATER

Like many other superintendents, Paul Cushing, director of golf construction and maintenance operations at Vellano Golf Club in Chino Hills, Calif., likes to get out in front of the localized dry spot problem instead of reacting to it.

"Instead of putting a Band-Aid on the problem, which is by hand-watering time and again, I find the source of the irrigation problem," Cushing says. "We just installed the new Toro 835 heads, which I can adjust to customize the spray to fix the dry spot in the area. That's made fighting dry spots a little bit easier."

Cushing prefers to aerify dry spots with three-fourths-inch solid tines, then topdress the area with compost.

"It gets organic matter in the holes, which allows you to hold a little more water," he says.

Once Cushing has aerified the spot, he sets up sprinklers on mounted skids that attach to quick couplers.

"Then I go for a slow, meticulous watering on a dry spot for seven or eight hours and get a lot of water on the ground with a low precipitation head," he says. "I put out about 15 to 20 heads on dry spots in the day. That's the last thing I do, once I have the holes open, after I've aerified. That breaks up the surface tension that's not allowing water into the soil. Once you've broken the surface tension, you can get water into the ground."

Cushing also applies surfactants, which are used regularly by 87 percent of superintendents in America, according to Karnok's research. Cushing sprays fertilizers every couple of weeks and mixes Surfside in with it.

"I use Surfside on the greens," he says. "Anytime I spray anything on the greens, tees and fairways, I have a little of it in the tank. It makes the water wetter. It makes it stick to the plant better and works in the soil better. It's a great wetting agent."

In a dry year like 2007, localized dry spots take more of Cushing's resources.

"It takes people away from their second job and puts them with a hose in their hands," he says. "It's all labor and water, but 10 to 15 percent of your budget goes to fight it."

"We're below normal precipitation – we've had three inches of rain so far, and we're used to 15 of 16, so localized dry spots have become more of an issue than in other years," he adds. "It's a top-five problem for me this year."

A HIGH PRIORITY

At the Denver Country Club, golf course superintendent Doug Brooks doesn't have a drought situation, but he says it doesn't matter when localized dry spots appears, it's a high priority. His program includes various practices, too, such as consistent aerification, the use of wetting agents, hand-watering and the use Surfside in drenches.

"I usually do three or four drenches a year, and every spraying I do, I put it in," he says. "There's some chemistry that I'm not qualified to discuss, but it makes everything a little more efficient."

Brooks uses a relatively small percentage of his overall budget to fight localized dry spots.

"It's all your practices you do regardless, so you have to do it anyway," he says. **GCI**

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Eighty-seven percent of superintendents in the U.S. use surfactants according to research by Keith Karnok, Ph.D.

Ten to 15 percent of superintendent Paul Cushing's budget goes to fight localized dry spots. That money is spent on water and labor.

To help treat localized dry spots, superintendent Jason Regan injects a wetting agent into his irrigation system, using 48 ounces per acre in the fairways.



Aerifying, topdressing and adjusting irrigation heads also can help in the fight against localized dry spots by breaking up surface tension. Photo: Aquatrols

INTERSEEDING GAINS POPULARITY:

Superintendents Acknowledge Impressive Results

Since the introduction of Penncross in 1955, the Penn bents from Tee-2-Green have been synonymous with quality. The varieties are universally respected and proven reliable due to pre-introduction trials by Dr. Joe Duich and a half-century of turf trials completed with widespread use by superintendents. In fact, more golf courses use Penn bents on greens, tees and fairways than any other variety.

Today, thanks to the superiority of the Penn bents, these varieties are proving themselves over and over. The new generation of Penn varieties are bred to perform better and provide more beautiful turf with additional qualities such as disease resistance, salt tolerance and the ability to provide better turf under low mowing conditions demanded on fairways and greens.

But for all the ingenuity and advances, superintendents are still faced with the looming question: How do I efficiently and

economically convert my greens to one of the new and more advanced, disease-resistant Penn varieties?

■ Not-So-Costly Conversions

The most effective means of conversion is a complete renovation. However, starting from scratch is rarely an option for most superintendents. Renovations are costly and lead to a significant loss of play while the new turf takes time to establish and properly grow-in. For this reason, many superintendents have looked to interseeding for the answer.

Interseeding is a process that seeds the improved Penn bentgrass varieties into an existing stand and, due to their competitive nature, the stronger, more advanced variety gradually takes over. The process is gaining popularity among superintendents as a way to convert older bentgrass and *Poa annua* stands to one of the more advanced Penn

bents.

Although the conversion process achieved through interseeding is slower than renovation – perseverance really works; sometimes it may take several seasons to convert to the new variety – the process does not disrupt play and can be achieved with minimal extra cost and very little time.

■ Expand Your Routine

Superintendents who have successfully used interseeding as a way to introduce a new variety, are quick to point out the process usually only requires an extra step to the already established aerification routine.

Mark Kuhns, director of grounds at Baltusrol Golf Club in Springfield, New Jersey, has had great success interseeding Penn A-4 on the greens.

“When we started here in ‘99, we had a general thinning from the severe conditions of that year where the turf was anywhere from 20-80 percent loss on some of the greens,” explains Kuhns.

Kuhns looked to an aggressive, but effective method of interseeding to get his greens converted to Penn A-4. The most intense part of the process begins in August with aerification. Kuhns uses quarter-inch hollow core quad tines approximately three inches deep and takes most of the top material off. Next, seed is broadcast on the greens followed by a spiking machine with brushes on the back to get seed and sand in all the holes. The end result is a wonderful seed bed that the crew syringes until germination.

“The *Poa annua* that we’ve been competing with cannot compete with the Penn A-4’s. We’re up to approximately 60-80 percent bentgrass on our greens now because of this interseeding process.”

But the interseeding process still continues for Kuhns.

“This is one of three times that we’ll do it. And every time that we aerify, we do the interseeding. Anytime in the spring when we want to lightly spike the greens with the triad and put some sand on, we will also



Country Club at Castle Pines, Castle Rock, CO

“I’ve been doing it now for two years and I’ve seen an overall appearance, vigor and turf quality and texture in all my greens. I’ve been really excited about it.”

Dave Phipps, superintendent, Stone Creek Golf Club, Oregon City, Oregon

seed during that time.”

“It’s all part of the process and if we can seed into that process with success, we’re going to do that. It’s just one more step on the rung, on the ladder here.”

■ **Keys to Success:** **Soil to Seed Contact**

Now that the process of interseeding has been around several years, critical keys to success are starting to evolve. Soil to seed contact is the most crucial aspect for germination, therefore interseeding typically occurs during the aerification process.

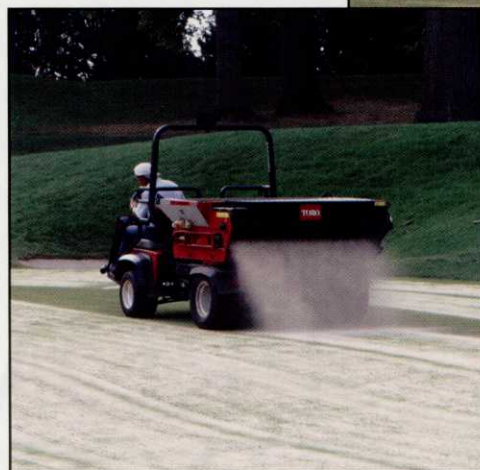
When Bob Maibusch, golf course superintendent at Hinsdale Golf Club in Clarendon Hills, Illinois, was in a position to restore the club’s 100-year old fairway turf, he turned to a combination of Velocity and interseeding. He used Velocity to eliminate the *Poa annua*, while the interseeding process was used to establish new turf.

“We used a 50/50 combination of Penn-Links II and Penneagle II, but found that the depth of the spiker-seeder was tearing some turf up. So we wrapped the drum in the same material we use for lining our bunkers and that reduced the depth that the spiker went into the soil, but it was still deep enough for the seed to take hold,” explains Maibusch.

The combination of Velocity and interseeding worked well and Maibusch had germination in five to seven days of seeding. And now, two years after the interseeding process occurred, the fairways are more than 90 percent bentgrass.

■ **Keys to Success:** **Turf Surface Grooming**

Whether it’s a result of spiking, verticutting or topdressing, superintendents regularly groom the turf surface throughout the growing season. This presents great opportunities to introduce an improved seed into the stand, enabling additional opportunities to build up the Penn bentgrass seed bank and providing further competition to the *Poa an-*



Right: Topdressing greens at Baltusrol Golf Club after aerification. Top: Preparing to broadcast Penn A-4 seed on greens at Baltusrol Golf Club.

nua seed in the soil.

“Every time I open up the greens, whether it’s deep verticutting or aerification, I like to reintroduce seed into the green,” says Dave Phipps, superintendent at Stone Creek Golf Club in Oregon City, Oregon. “I’ll throw about a half pound of Penn A-1 in there and I’m seeing some tremendous results.”

Phipps looks at it as one additional, but small, step in the overall topdressing program, requiring just one extra guy to put seed down.

“I’ve been doing it now for two years and I’ve seen an overall appearance, vigor and turf quality and texture in all my greens. I’ve been really excited about it!”

■ **Low Cost, High Results**

The minimal time requirement coupled with zero loss of play makes the interseeding process appealing to superintendents all across the country.

“It’s real simple,” details Phipps. “Just 25 pounds across the whole golf course, which is about 140,000 square feet, at roughly a half pound per thousand. It’s not that big of an outlet, so maybe \$200 per application.”

For superintendents looking for an efficient and economical way to incorporate the most advanced Penn bentgrasses onto greens, tees and fairways, interseeding may

be the perfect answer. It may take a few seasons for the new stand to dominate, but the end result is a much improved playing surface that is easier to manage – all at a cost that won’t break the budget.

■ **Learn from the Best**

As a way to collectively offer interseeding techniques, Tee-2-Green Corp. created a video featuring interviews and advice from the following superintendents: Mark Kuhns, Baltusrol Golf Club; Sean McCue, Country Club at Castle Pines; Bob Maibusch, Hinsdale Golf Club; Dave Phipps, Stone Creek Golf Club; and Kevin Ross, Country Club of the Rockies.

These superintendents represent a variety of courses including both private and municipal, as well as a wide range of geographic locations.

The video is free upon request and can be ordered by visiting the Tee-2-Green Web site, www.tee-2-green.com.

TEE 2 GREEN

By John Torsiello

PROMOTE GROWTH

DONE AT THE RIGHT TIME, VERTICUTTING IMPROVES TURFGRASS HEALTH

Golf course superintendents have no magic bullet at their disposal for their ongoing battle to maintain the best turfgrass conditions possible. But one of the best weapons superintendents have in their arsenal is verticutting, a process that has gained popularity and now is common throughout the country for all types of turfgrass.

Verticutting is the thinning of turfgrass by blades or wire tines that cut perpendicularly to the soil in a shallow swath or a deep cut. Both methods can promote lateral and vertical grass growth. Yet, a deeper cut removes more material to allow moisture and oxygen to reach the root zone more easily.

"In this area, verticutting is fairly common," says Tom Johnson, golf course superintendent of New Richmond (Wis.) Golf Club. "I've been doing it regularly for about 15 years, and I've seen good results in the overall health and quality of our greens. People on the green committee comment if we miss verticutting for one reason or the other."

Verticutting is an important turf management tool to reduce thatch, says Tim Haines, golf course superintendent at Binks Forest Golf Club

in Wellington, Fla., a KemperSports-managed facility. Thatch ties up chemicals and reduces efficacy, making it difficult to move water into the soil profile. Verticutting helps alleviate those problems, Haines says.

Verticutting can be used to control graining, remove thatch, prepare for seeding, cultivate the soil or disperse core materials following aerification, says Anthony Williams, CGCS, at Stone Mountain (Ga.) Golf Club.

Also, verticutting is useful on courses that have newer turfgrass varieties that might tend to form thatch quicker than traditional varieties.

"Today's ultradwarf Bermudas and new varieties of bents seem to produce more thatch," Haines says. "Thus, the frequency of verticutting should be increased. With fairways that have bentgrass and Bermudagrass, thatch is also an issue. I will verticut a couple of times a season on both types of grasses."

David Phipps, golf course superintendent at Stone Creek Golf Club in Oregon City, Ore., says many of the new bentgrasses, like the As and Gs and Ts, are extremely aggressive and require a lot of cultivation. Heavy verticutting can be used in conjunction with light topdressing to help

incorporate sand into the surface.

"I verticut my greens to enhance a more vertical growth habit," he says. "Regular verticutting stimulates branching and tightens the turf."

LOCATION

Most superintendents will topdress greens and water heavily following verticutting. One of the benefits of verticutting, unlike aeration, is that the process has little impact on the playing surface, which is crucial to maintain to keep customers happy.

"We might verticut greens on a slow day, such as a Monday," says Steve Lane, CGCS, at Twisted Dune Golf Club in Egg Harbor, N.J., an Empire Golf Club Max facility. "You might see a slight difference in the roll on the greens the day it's done, but the grass bounces back quickly, and in a few days, you have optimum playing conditions."

The long-term benefits of verticutting are considerable.

"My goal, in terms of turfgrass health and playability, is customer satisfaction," Phipps says. "If the greens are healthy and smooth, then my job becomes much easier."

Haines believes verticutting improves mowing quality, which, in turn, improves ball roll and speed.

The practice also is becoming common on fairways and tees boxes.

"Verticutting is beneficial to the entire course because the blades grow higher on fairway and tee-box grass and might lay over," says Bryan Barrington, superintendent at Golf Club at Oxford Greens in Oxford, Conn. "With verticutting, you're permitting the blades to stand up so you can cut off runners, and, in effect, groom the plant to be healthier. It also improves air flow and water penetration so you can get a better cut. We're fortunate because we have large tee boxes that are square or rectangular. I can send a guy out to verticut the tee boxes, and he can make two passes and be done. With odd shaped tee boxes, it might take more time to verticut."

Fairways and tees are important but not as important as the greens, Phipps says.

"If you can verticut your fairways and tees, then your budget is probably a lot bigger than mine," he says.

DEPTH

The depth of the cut varies according to what part of the course is being verticut – a shallower cut on the greens and deeper elsewhere.

"We'll cut the greens about an eighth of an inch, and a quarter of an inch to a half an inch on the fairways," Barrington says. "If you go deeper than that, you're really pushing the machine."

TIMING

The frequency of verticutting and the time of year the practice is done can vary according to weather conditions and grass type. Superinten-

At Binks Forest Golf Club, superintendent Tim Haines verticuts to reduce thatch, which makes it easier for water to move into the soil. Photo: Binks Forest Golf Club



At the Golf Club at Oxford Greens, verticutting is common on fairways and tee boxes, as well as greens. Photo: Golf Club at Oxford Greens



dents should consider the turf type they have carefully and avoid stress periods or being too aggressive with depths of cuts at times when recovery would be slow, Haines says. Superintendents should avoid any practice that will stress turf in severe weather, such as prolonged periods of heat or dry conditions. This will avoid making turf more susceptible to disease.

“Ideally, I would like to lightly verticut once a week during the growing season and as needed during the off-season,” Phipps says. “I’ve learned you have to be patient and not too aggressive. I use the Thatch-Away units, and they can pick up quite a bit of material in one pass. If I set them at barley cutting height, they become an effective grooming tool.”

Gus Nelson, CGCS, at San Clemente (Calif.) Municipal Golf Course, verticuts several times a year depending on the growth of the turfgrass, but mainly it’s during the growth cycles of spring and fall.

Johnson verticuts every 10 days to two weeks and follows that with regular mowing and rolling. It depends on how fast the grass is growing.

“When the temperatures in the Midwest are in the 90s during the summer, we have to be careful and might step back on verticutting,” he says.

Verticutting should be done when turfgrass is growing and not under stress, Williams says.

“The general rule of thumb is to verticut as often as recovery and improved turf health are noted,” he says. “I do it every 10 days in some areas of the course, but it might be wise to limit verticutting to two or three times a year in other areas.”

METHODS

Verticutting methods vary. Technological ad-

vancements have increased the efficiency of verticutting machines and reduced the man power needed for the process.

“Some of the newer verticutting systems have made it much easier to clean up debris because the machine picks up more of it,” Lane says.

“Technology makes it a lot easier than it was 10 years ago because the machines are more powerful and can handle more work,” Barrington says. “I prefer not to have the person verticutting keep emptying the debris catch baskets because of the time involved. I’ll send a couple of guys out behind the cutter and blow the debris off the greens.”

Turf species and time of year must be considered before verticutting, says Patrick O’Brien, the USGA’s Green Section southeast director.

“For example, ultradwarf Bermudagrass varieties don’t respond well to heavy verticutting, especially in the presence of other stress factors such as shade, drought and low fertility,” O’Brien says.

COST

Cost factors, such as the need for additional equipment and man-hours to undertake the process, are other aspects of verticutting superintendents should consider.

“On putting greens, labor and time aren’t a consideration because of only having two to three total acres per course to do,” O’Brien says. “On fairways, because of more acreage, it can be a significant cost, about \$100 per acre or higher.”

Many of the new bentgrass varieties are extremely aggressive and require a lot of cultivation. Photos: Stone Creek Golf Club

