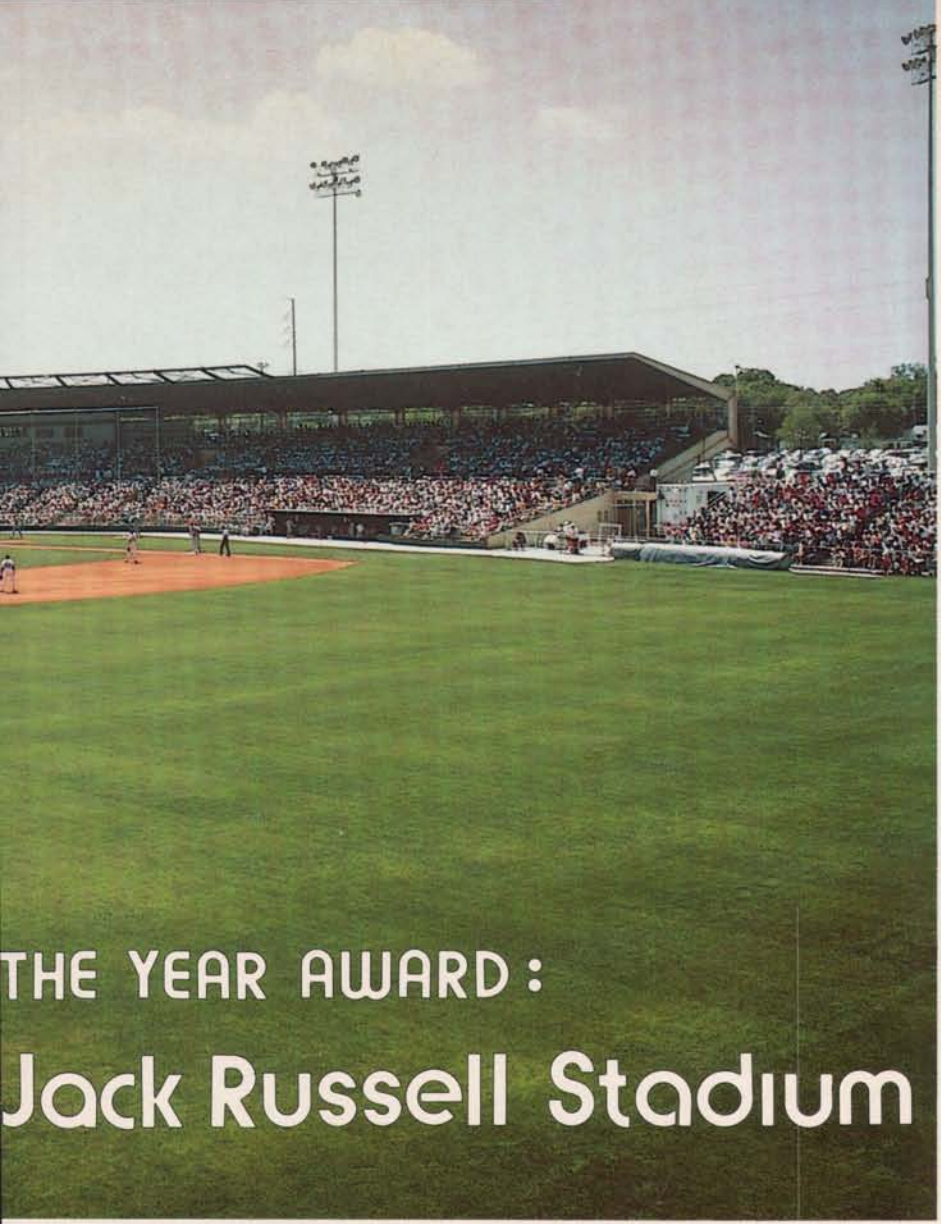

THE YEAR AWARD:
Jack Russell Stadium

Apparently, years ago a layer of crushed stone had been installed below a layer of clay to improve drainage. As more clay had been added season after season, this layer of stone was forgotten. When Timpanaro tried to take a deep sample of soil, the auger hit what appeared to be concrete ten inches below the infield surface. "Only a jackhammer can break through the concrete!" he quips.

The city built a smaller stadium for the Bombers in 1985, eliminating the conversion to softball. The Phillies then moved their summer Carolina League team from Penninsula, VA, to the Florida State League and Jack Russell Stadium. At the same time, the Phillies moved their fall instructional league to Jack Russell from Carpenter Field, another city-maintained baseball complex a few miles away.

At Long's suggestion, Timpanaro started to remove some of the built-up infield clay in the fall after the instructional leagues. "When I measured from the pitcher's mound to the back of the infield, I discovered that the outfield grass had grown into the infield clay by as much as five feet in some areas," he recalls. "We cut out the excess grass with a sod cutter, removed up to six inches of clay with a Bobcat, and regraded the infield to take out the huge lip that had built up over the years."

At the same time, Timpanaro contacted an excavation contractor about removing the concrete and built-up clay. The estimate was nearly $250,000. "What we needed most was a new irrigation system and more field equipment, so we put off the excavation work," he says. But he looks forward with anticipation to the day the concrete layer can be removed.

Because the clay was hard and got slick when wet, Timpanaro purchased tons of bunker sand and mixed it into the clay until it was about 80 percent clay and 20 percent sand. At least once a week the infield dirt is spiked with a nail drag to keep it soft. Every day the dirt is dragged and watered. Leaf rakes and a high-pressure hose are used weekly to prevent lips from forming. Twice each month the edges are recut after the dimensions are checked. String is stretched along the base lines and diamond for a straight, sharp edge.

The sand improved the appearance and condition of the dirt, but it still got hard rapidly and stayed wet for too long. So Timpanaro experimented with Terra-Green soil conditioner in one spot behind first base last year. Pleased with the results, he mixed the conditioner into the top two inches of all the infield clay this past winter.

The first items Timpanaro repaired were the pitcher's mounds on the field and in the bullpens and batting tunnels. He removed the old clay on the front of each mound to a depth of six inches and replaced it with Beam Clay Pitcher's Mound Mix and a special clay from northern Florida called gumbo.

After each practice or game, the loose dirt is swept from foot holes, the depressions are wet down and successive layers of mound mix are applied, moistened and tamped down. The mounds are then watered and covered until the next game. Timpanaro has since amended the dirt in the batter's boxes and follows the same routine he uses for the mounds.

One dramatic change Timpanaro has made to the appearance of the field is replacing the clay on the warning tracks with crushed white shell. At the same time he installed new drainpipe along the outfield foul lines. The combination of the wrapped perforated pipe and the crushed shell has improved drainage considerably.

In 1986, it became clear that something had to be done about the antiquated irrigation system. The old galvanized pipe was deteriorating and leaking. "We were having two blowouts a week and the coverage was bad," Timpanaro adds. He was able to convince the Phillies and the city of Clearwater to invest in an automatic system for the entire field.

With two months to go before spring training, PVC pipe was pulled into the outfield at a depth of 14 inches so that it would not interfere with aerating. However, when the contractor tried to pull pipe into the infield, he could not get the blade of the machine more than six inches deep. That's when Timpanaro took the core sample and discovered the concrete.

Without time to remove the concrete, the pipes were laid directly on top of it, just four to six inches below the surface. There wasn't even room to install swing joints. Timpanaro decided to use the same heads he had before, but he wanted them slightly below grade.

The old manual system only had three zones in the outfield. The new system has 11 zones, one specifically for the infield dirt. Each zone has between seven and eight heads. Quick coupler heads for infield hoses were placed in the grass in front of second base and on the foul side of first and third base.

At extra expense, Timpanaro had all the valve boxes located together near the sideline fence, away from the playing field. A

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Phillies Restore
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Rain Bird controller was placed in the same area.

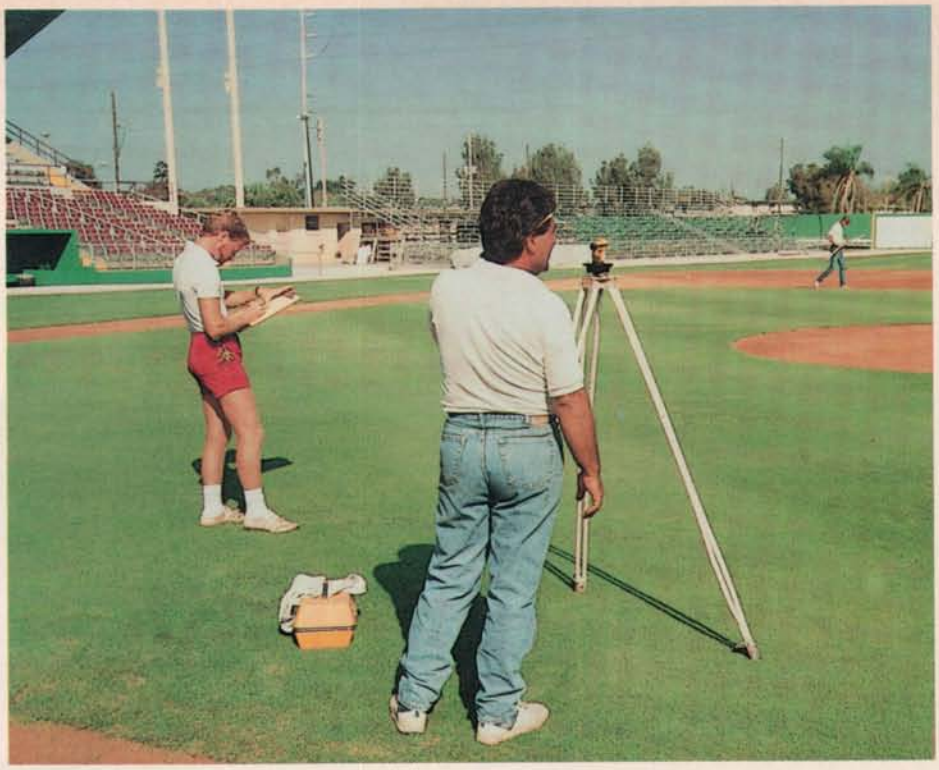
Soon after completion, the trouble began. Nozzles were sticking and water was leaking out around the nozzle and seal. The cause was traced to sand fouling the seals. After checking the water pressure, the decision was made to change to Toro 640 Checkomatics.

"At this point it was too late to make the changeover," said Timpanaro, "because the overseeded ryegrass was already in and I only had two weeks until opening day of spring training. After spring training, we had only one week until the opening day of the Florida State League season. So we had to wait until the end of the season."

In November 1987, Timpanaro was able to change the heads everywhere except in the infield. This past November he brought in a jackhammer to break open holes big enough in the concrete beneath the infield for the heads and swing joints. The entire irrigation system was completed in time for overseeding this past December.

One of Timpanaro's most important advisors is Joe Clay, superintendent of Clearwater Country Club. Clay was recommended to Timpanaro by a local chemical distributor for two reasons, his knowledge of turf and the fact that his part-time consulting business could provide much of the equipment needed for spraying and turf maintenance. "Ron teaches me baseball while I teach him turf," explains Clay. "There are big differences between golf turf and baseball turf."

First Clay helped Timpanaro create a sound fertilization program. Since there are long stretches when the field is used almost constantly, Clay recommended that at least half of the nitrogen be slow-release IBDU.



Timpanaro (center) checks infield elevation with transit.

Together they worked out a schedule of monthly applications of 16-3-11 from April through October. Before overseeding last winter they applied a greens mix fertilizer (10-2-10) with 75 percent IBDU due to the forecast for another warm winter.

Since the Phillies play on artificial turf at Veterans Stadium in Philadelphia, they want the ball to come off the grass fast. "The Phillies want to judge the players' talents on a fast surface to simulate AstroTurf," explains current general manager Tom Mashek.

"To speed up the bermuda you need to keep it thin and short without a lot of thatch," Timpanaro advises. "The surface can't be puffy and it must be smooth." When Timpanaro explained this to Clay, the answer was obvious—verticutting and topdressing.

But Jack Russell Stadium didn't have a verticutter. Timpanaro and Clay rented Ryan Mattaways and cut both the infield and outfield turf in two directions. It was also aerified to a depth of three inches.

The debris was removed with a Turf Vac purchased for the AstroTurf infield located next to the stadium. By hand they topdressed the infield with a mixture of 90 percent bunker sand and 10 percent peat and dragged it into the remaining bermuda. The process was laborious, taking more than 100 man hours.

"When we were done the infield was brown," recalls Clay. "Fortunately, the past two winters have been warm and the bermuda bounced back up within weeks. We wanted a good base of 419 before overseeding in December." After verticutting, Timpanaro was able to lower the height of the infield turf to 9/16 inch.

The outfield was a bigger problem. More than an 1¾ inches of thatch had built up over decades. It is primarily common bermuda that has been left untouched for as long as anyone can remember. Instead of verticutting, Timpanaro and Clay chose to heavily aerify the outfield and work the soil cores mixed with sand into obvious low spots.

"Ron has had problems with *Helminthosporium* in the overseeded ryegrass in the outfield and along the sidelines during the past few winters," Clay remarks. "I think

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Ornamental plantings around the stadium were renovated.

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GREEN SECTION ANNOUNCES CONFERENCE SCHEDULE

The USGA Green Section has released the 1989 spring schedule for its educational conferences. The series of one-day conferences, which are open to superintendents, their staff and other club officials, cover a variety of golf and maintenance issues.

The dates and sites of the upcoming conferences are April 5, Lakeside Country Club, Houston, TX; April 10, Seattle Golf Course, Seattle, WA; April 11, Oakmont Country Club, Oakmont, PA; April 20, JDM Country Club, Palm Beach Gardens, FL; April 20, Troon Golf Course, Scottsdale, AZ; and May 11, Elkhorn Resort & Golf Course, Sun Valley, ID.

GCSAA CEUs and other professional educational credits may be available. For additional information, call (201) 234-2300.

BRANDT RECEIVES GCSAA DISTINGUISHED SERVICE AWARD

The Golf Course Superintendents Association of America (GCSAA) has honored James W. Brandt, CGCS, with its Distinguished Service Award for his notable contributions to the superintendent's profession. The award was presented during the 60th International Golf Course Conference and Show in Anaheim, CA.

Brandt, a past president of the GCSAA, recently retired after 35 years as golf course superintendent at the Danville Country Club in Illinois.

In addition to his GCSAA service, Brandt was an officer of the Indiana GCSA and the Midwest Turfgrass Foundation. He helped organize the Central Illinois GCSA and served as its president for five years. He was instrumental in starting the turfgrass education program at the University of Illinois in Urbana.

He earned a bachelor's degree from Oklahoma State University in Stillwater, and a master's degree from Purdue University, Lafayette, IN.

LEEWOOD GOLF CLUB NAMES NEW STAFF

Leewood Golf Club, Eastchester, NY, has announced the appointment of a new club golf professional, Timothy Nevin; a club manager, Charles Torrance; and a club greens superintendent, David Frey.

Nevin was formerly the head pro at Osiris Country Club (CC), Walden, NY, and an assistant pro at North Hills CC, Manhasset, NY, Wykagyl CC, New Rochelle, NY, Quaker Ridge CC, Scarsdale, NY, and Ardsley CC, Ardsley-on-Hudson, NY. He was also the golf coach at Fordham University, Bronx, NY.

Torrance was assistant manager of Tamarack CC, Greenwich, CT. Frey was assistant superintendent at the Stanwich Club, also in Greenwich.

The board of governors approved George Lewis as an honorary life member of the club in appreciation of his 26 years as the course professional.

MERION GOLF CLUB HONORED

The Pennsylvania Turfgrass Council has awarded a lifetime honorary sustaining membership to the Merion Golf Club in Ardmore, PA. The award was presented at the 12th Annual Joseph Valentine Memorial Golf Tournament, which was sponsored by the Pennsylvania Turfgrass Council and held on the Merion golf course.

The club's membership and staff were honored for exemplary contributions to the turfgrass industry in Pennsylvania. On hand to receive the award for the golf club were Scott Smith, president; Richard Valentine, golf course superintendent; Peter Burford, manager; and William Kittleman, golf professional.

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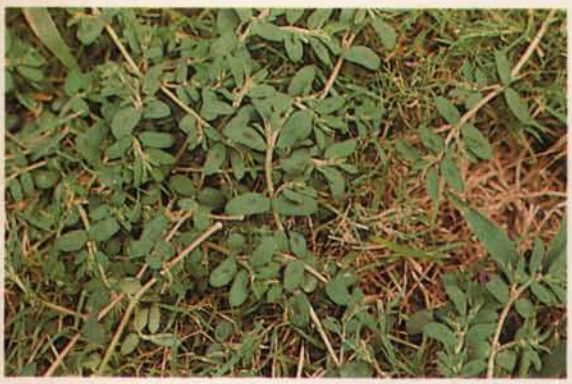
Goosegrass. Photo courtesy: Rhone Poulenc.



Spurge, an annual broadleaf weed.

Drought and Stress Complicate Preemergence Weed Control

Crabgrass.

If you had to rank the top cultural practices necessary to maintain turf on golf courses and sports fields, weed control would undoubtedly be near the top.

Mowing, irrigation, drainage, fertilization, compaction relief and renovation would have to come before weed control. But the next major hurdle after achieving cover on high-use, recreational turf is the quality of that cover, and weed control leads the pack when it comes to professionally maintained turf.

Quality in turf management means uniformity. In standard lawn care, that may be interpreted as a neat appearance. While appearance is important in golf and sports turf, uniformity is essential for playability and safety, two of the highest goals set by superintendents and sports turf managers. The ultimate achievement and the highest form of professionalism comes from providing all three.

That's a huge challenge when the large size of high-use, recreational turf areas is taken into account. Greenskeepers were appropriately named at one time, because they were most concerned about the quality of greens. Today their concern for quality extends beyond greens to all parts of the golf course, because new technology has enabled them to achieve higher standards for larger areas.

Turf managers at stadiums, parks and universities are incorporating much of the technology developed for golf courses into all types of sports fields. Furthermore, manufacturers are now developing products for both golf courses and sports turf, as the two large turf markets expand at an amazing clip and standards for these markets continue to rise. This is proving to be a major benefit to golf and sports turf, since they face limitations not experienced in residential or commercial turf.

Preemergence weed control is a perfect example. The demand for recreational turf is endless. In many cases, renovation and reseeding cannot be restricted to certain times of the year due to use patterns. Maintenance practices for weed control must fit into an increasingly smaller window of time. Herbicides can't interfere with seeding, sodding or transition in the fall or spring. This is forcing superintendents and sports turf managers to rethink previous weed control products as well as cultural practices that encourage weed encroachment.

Turf managers are gaining a clearer understanding of the effects of irrigation, aeration, verticutting, fertilizing, overseeding and mowing on weed infestation as research agronomists delve more deeply into these areas. Superintendents and groundskeepers are realizing that all these practices have some impact on root development and growth of the desired turfgrass. By adjusting each practice to encourage the health of the turf, it can best compete with annual grasses and broadleaf weeds.

The purpose of preemergence herbicides is to prevent germination of hard-to-control annual grasses such as crabgrass, goosegrass, and annual bluegrass. By establishing a chemical barrier in the top 1/2 inch of soil during peak germination periods, these products interrupt the growth of weed seedlings and prevent them from becoming established.

The key to their effectiveness is timing. Crabgrass begins to germinate when temperatures average more than 55 degrees F. for two weeks in the spring. For the next four to six weeks the majority of the crabgrass seed will germinate. If the herbicide is there to disrupt growth, it will prevent the establishment of most of the crabgrass seedlings.

The peak germination period for goosegrass is generally three to four weeks later than crabgrass. It also extends for four or more weeks. This often necessitates a second application of herbicide to lengthen the life of the chemical barrier in the soil.

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Hal Culpepper, superintendent of Lookout Mountain Golf Course in Tennessee wants the absolute best turfgrass possible. He uses **RegalStar™**. Hal says the first year he used **RegalStar™**, the results were obvious and better than the pre-emerge products he had been using. Yet, he says to see the full results, you should use **RegalStar™** 3 years in a row. Now he has no unwanted grasses, no weeds, and a healthy root system that has been unaffected by 3 years of drought and severe winters. Hal remarks, "How can you grow better turfgrass than this?"

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Drought and Stress
continued from page 28

Annual bluegrass produces seedheads during the summer. This seed begins to germinate primarily from late summer into the fall. If you treat the soil with preemergence herbicide in late summer you can reduce the spread of this weed, which is tough to control with postemergence herbicides.

Drop spreaders are preferred over cyclone-type spreaders for granular applications on fine turf.

To maintain effectiveness throughout peak weed-germination periods, manufacturers have placed emphasis on lengthening the residual of their products. They discovered that these products were also controlling other grassy weeds such as foxtail and barnyardgrass, in addition to annual broadleaf weeds such as prostrate and spotted spurge, oxalis, and knotweed. Fall applications were controlling henbit, chickweed and dandelion.

By using preemergence herbicides, turf managers were making new headway with their postemergence weed control programs. Products such as benefin (Balan), bensulide (Betasan), DCPA (Dacthal), oryzalin (Surflan), oxadiazon (Ronstar), pendimethalin (Lesco Pre-M and Scotts Weedgrass Control) and siduron (Tupersan) were found on more and more golf courses, stadiums, universities, parks and resorts.

Most recently, herbicide manufacturers have found that they can lengthen residual activity and increase the number of weeds they control by combining different preemergence herbicides. This allows the rates of the individual components to be reduced without sacrificing the level of control. Examples are Elanco Team and XL, Regal's Regalstar, and Scotts Goosegrass/Crabgrass Control.

If you are late applying preemergence herbicides, some relief is available. A few of the herbicides have a postemergent effect on crabgrass in the one- or two-leaf stage. A postemergent herbicide called fenoxaprop (Acclaim) provides selective control of crabgrass in established turf. However, it has no residual activity, so many turf managers are applying it in combination with preemergence herbicides.

One large area of concern to superintendents and sports turf managers is the effect of aerification on the herbicide barrier. The latest feedback from university turf specialists is that the degree of control lost by aerification does not justify withholding this valuable technique while preemergence herbicides are in place. On the other hand, severe verticutting is not advised.

The most obvious concern about preemergence herbicides is their effect on reseeding and overseeding. Only siduron will control some annual weeds without affecting the germination of desirable grasses. But siduron's activity is one of the shortest, and it can harm bermudagrass. Siduron may be used when reseeding cool-season turfgrasses.

The other preemergence herbicides will prevent germination of grass seed. Activated charcoal applied at a rate of 250 to 300 lbs. per acre will tie up some preemergence herbicides in case seeding is necessary during the residual period. Since the herbicides stay in the top 1/2 inch of soil and do not leach down further into the rootzone, removing treated turf with a sod cutter before resodding or seeding should also remove the herbicide.

New research has raised the question of whether preemergence herbicides significantly hamper the knitting of new sod and the root development of young turf. Turf specialists at Texas A&M University in College Station and Virginia Polytechnic Institute and State University in Blacksburg caution that some preemergence herbicides add to other stresses placed upon young turf or sod to inhibit root growth.

This effect may have been amplified by drought during the past two years in golf and sports turf. Other factors known to contribute to root pruning are nematodes, compaction, acidic soils, overfertilization, excessively low mowing, diseases, and potassium deficiency. If annual weeds are a problem in your area, it's important to correct these other stresses through aerification, pest control, proper irrigation, mowing higher, and adjusting soil pH and nutrient levels before applying the herbicides.

The researchers found that oxadiazon has the least impact on rooting since plants absorb this material primarily through stems and foliage instead of roots. However, a group of preemergence herbicides known as dinitroanalines (DNAs), function through root uptake, and therefore have the greatest potential for root pruning. For this reason, manufacturers of these chemicals do not recommend their use on new sod or spring treatment on tall fescue seeded in the fall. DNA compounds include benefin, oryzalin, pendimethalin and trifluralin. These products are effective when used according to label instructions and are less expensive.

Extension turf specialists agree that a severe infestation of annual grasses will hamper the establishment of sod or new turf more than preemergence herbicides will. In areas with severe annual grassy weeds, one option is to fumigate the seedbed before installing sod or sowing seed, and to insist on quality weed-free sod and seed. Once the turf has established a good root structure, preemergence herbicides can be utilized to keep the turf weed-free.

Boom sprayers and spray pattern indicators keep overlap to a minimum.

Dr. James Beard, professor of turfgrass science at Texas A&M, reminds turf managers that even though turfgrasses are perennials, their root systems tend to be annual in nature, especially for warm-season turfgrasses. Carbohydrates stored in the roots during late summer and fall are depleted over the winter, causing dieback of roots. In the spring, roots must regenerate before they can adequately support new growth of foliage and stems.

Placing additional stress on turfgrasses in late winter and early spring can slow transition and possibly thin turf over a period of