

Overseeding

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From the other standpoint, avoid overpreparation of the seedbed. Remember, you're not establishing a permanent turf, only a temporary one. Overpreparation can mean problems with spring transition to bermudagrass when warm weather arrives.

About six weeks prior to the overseeding date, the field can be cored to prevent compaction of the soil. After the cores have dried, drag with a chain-link fence or do a light verticutting. This will pulverize the cores and assist in making a good seedbed when overseeding time arrives. Coring should be done several weeks in advance of the overseeding date "to allow coring holes to heal over, preventing a speckled growth pattern of winter grass," says McCarty.

David Kopec, a turf specialist at the University of Arizona, Tucson, warns against heavy verticutting at overseeding. "If you verticut heavily prior to overseeding, the bermudagrass will use its food supply to immediately repair and regrow from the damage inflicted from verticutting," he says. "The result is poor food storage for hardening off for the winter from the diversion of late-season regrowth caused by heavy verticutting. This means a less hardy and competitive bermudagrass in the spring — a slow transition."

Annual Bluegrass

Annual bluegrass (*Poa annua*) is a common winter weed throughout the South. It has an unsightly bunch-type growth, pale-green color and a prolific seedhead. Because traditional herbicides can damage the germinating perennial ryegrass, annual bluegrass control



Auburn University's crew at Jordan-Hare Stadium brushes perennial ryegrass seed into their Tifway bermudagrass. Photo courtesy: Coleman Ward, Auburn University.

must begin as much as 120 days before overseeding.

An application of Kerb 50 WP (Pronamide) 45 to 60 days before overseeding will control annual bluegrass without damaging the perennial ryegrasses. If Kerb must be applied fewer than 45 days before overseeding, charcoal should be used in conjunction with the application. Use two to four pounds charcoal per 1,000 square feet. Kerb is labeled in all 50 states.

Another herbicide option is Rubigan 1AS (Fenarimol), with three applications giving the best control of annual bluegrass. The last application of Rubigan must be made two weeks before the scheduled overseeding date.

A third pre-emergent herbicide choice is Bensulide (trade names of Betasan or Pre-San). This herbicide must be applied 120 days before the anticipated overseeding date. The waiting period allows for good control of annual bluegrass germination without interfering with the germinating perennial ryegrass.

Balan (Benefin) can be used in overseeded perennial ryegrass for annual bluegrass control with a 45-day waiting period necessary. Application rates vary for Balan and all other herbicides. Always read the label and get local recommendations from your chemical distributor or turf extension specialist.

Getting Prepared

About four weeks prior to overseeding, completely stop all nitrogen

fertilization. This helps slow the growth of bermudagrass, meaning less competition for the germinating perennial ryegrass. In addition, if nitrogen fertilizer is applied too late in the season, the bermudagrass may be more susceptible to winter injury.

Have your soil tested one month before overseeding. Based upon test results, apply phosphorus (P205) and potassium (K20) a week or two before overseeding. Apply no additional fertilizer until after shoot emergence of the ryegrass. This will be approximately two to three weeks after germination.

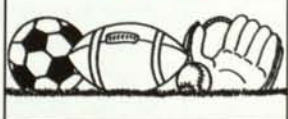
The bare minimum preparation for overseeding should entail light verticutting and topdressing. The suggested rate for topdressing is 0.25 to 0.50 cubic yards per 1,000 square feet before and after overseeding.

Hatcher at Oklahoma University suggests light verticutting prior to overseeding. "We actually do our overseeding in late September here at OU. We prepare the seedbed by dethatching, just scratching the surface of the soil." They dethatch in two different directions, and perennial ryegrass seed is then applied with a centrifugal spreader.

Immediately after seeding, drag the field to ensure good soil-to-seed contact. A stiff-wire power sweeper works well if used in several different directions.

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Overseeding

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Post-Seeding Care

The field may require three or four light irrigations per day until all seeds have germinated, since fall tends to be dry in the South. Once you have a good stand, irrigation should be reduced. However, keep a check on the soil moisture. Each new plant should tiller in about two weeks. Until that time, there is very little room for deficiency in moisture.

Apply a fungicide about seven days after seedling germination to avoid *Pythium* contamination. "Conditions are right for *Pythium* whenever there are extended periods with day temperatures about 75 degrees and night temperatures about 70 degrees," says Rich Hanrahan, senior technological development manager for the Chipco™ Specialty Products Group at Rhône-Poulenc Ag. Co. of Research Triangle Park, NC. "Because *Pythium* disease organisms can survive in thatch for extended periods before emergence, effective fungicide treatments provide the surest protection against outbreaks of the disease," he says.

Aliette® (Rhône-Poulenc), Banol® (AgrEvo USA Co.) and Subdue® (Ciba Turf and Ornamental) are the three systemic fungicides currently available for *Pythium* control. Systemic fungicides do not require the frequent reapplication associated with traditional contact fungicides. As with all fungicides, alternating products can help avoid disease resistance.

In addition to fungicide sprays, fungicide-treated seed is a popular buy these days. Don Blasingame, a turf consultant in Starkville, MS, says, "Any overseeding program should include a fungicide seed treatment for protection from *Pythium*, which can produce seed and seedling rot. Strict, early disease management can make the difference in health and profitability of a turf stand." Glen Karaffa, product manager for Gustafson adds, "The differences seen between untreated and treated seed have been dramatic on side-by-side fields."

Experts often advocate watering athletic fields in the morning instead of evening to reduce turf moisture during the night. Good surface and subsurface drainage also play a key role. Avoid the common pitfall of overfertilizing because high rates of nitrogen cause lush, succulent growth that is very susceptible to *Pythium*.

Time for Bermuda

Just as in the fall, good cultural practices make for a smooth transition in the spring, according to Dr. Coleman Ward, extension turf specialist at Auburn University, Auburn, AL. Light verticutting when daytime temperatures reach 85 degrees will disrupt the crowns of the cool-season grass, allowing the bermudagrass to grow through. Heavy verticutting, however, can sever developing bermudagrass stolons.

With higher air and soil temperatures in the late spring, cool season grasses will respond vigorously to light periodic applications of ammonium nitrate or ammonium sulfate. The nitrate encourages the perennial ryegrass to grow very rapidly and "burn out."

Next, drop the mowing height but mow more frequently. Reducing mowing height and applying water-soluble nitrogen places a great deal of stress on the ryegrass. Mowing more frequently prevents the ryegrass from putting out new leaf growth, which depletes food reserves.

Reduction of irrigation will also place stress on the ryegrass. Be careful with this technique, however. Because the underlying bermudagrass has been getting moisture all winter long from the irrigation of the perennial ryegrass, it is not as drought-hardy as non-overseeded bermudagrass.

Another technique to speed the transition in favor of bermudagrass is chemical control. Dr. Ward says, "At Auburn we also use Kerb herbicide, applied 20 to 25 days before we want the ryegrass out. The application rate can range from one to three pounds active ingredient per acre. Bermudagrass has a very high tolerance for Kerb, while perennial ryegrass growth comes to a halt."

Although overseeding is a big job, one of the secrets to success is realizing it is a year-round process. Correct timing of your athletic turf management program can make all the difference in the ease of your transition periods. More efficient equipment, new varieties, innovations in fertilizer formulations and new pesticides can cut your work down to size. By viewing turf management as an interrelated process, you may be on the way to an easier transition. □

Robert E. Reaves is the editor of Golf Course Irrigation and Irrigation Journal and holds a Master's degree in horticulture from Oklahoma State University.

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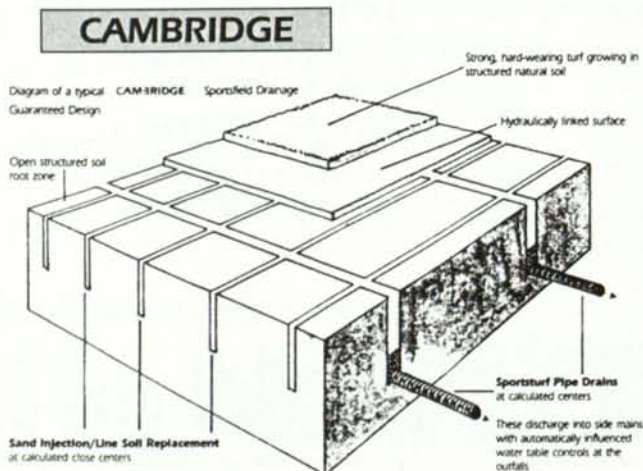
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CHAPTER NEWS

Colorado Chapter: The Colorado Chapter of the STMA had a great turnout for the June 29 Seminar/Workshop at Coors Field in Denver. Over 150 people attended, coming from all over Colorado and from Nevada, Wyoming, Nebraska, and even Dallas, Texas. Special thanks to Mark Razum and the Colorado Rockies for all their help and hospitality.

The CCSTMA is planning a Seminar/Workshop on August 24 at the Pleasantview Sports Complex in Boulder. Make plans now to tour the facility and nine sand-based fields of this new, state-of-the-art soccer complex. Morning educational sessions will be followed by an afternoon of on-field demonstrations. More details on this event will be announced soon.

Also in the planning stages is the October 19 business meeting and golf tournament. Site, times and other details will be announced shortly. Please RSVP your plans to attend to the 24-Hour CCSTMA Hotline/FAX: (303) 438-9645.

For more information on the Seminar/Workshop, the Colorado Chapter or other upcoming activities, contact Ross Kurcab, Denver Broncos, at (303) 649-9000.

Southern California Chapter: The Southern California Chapter's September 24 meeting at Dodger Stadium will include a tailgate lunch and group attendance at the game between the Dodgers and the Padres. The Southern California Chapter also is making plans for an October field day. Details on both events will be announced soon.

Southern California is the host Chapter for the National Sports Turf Managers Association Conference which will take place January 24-28, 1996. This will be a super event with educational sessions, great tours and a top notch trade show. Anyone interested in lending a hand prior to or during the conference is invited to contact Chapter Coordinator Steve Guise at phone/fax: (714) 578-0215.

For information on the Southern California Chapter and upcoming activities, contact Chris Bunnell at (619) 432-2421.

Midwest Chapter: For information on the Midwest Chapter or upcoming events call The Chapter Hotline (708) 439-4727.

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Thatch Control



Dragging the field with wire mesh or chain-link fence helps dig up any remaining thatch prior to overseeding.



Verticutting the field keeps thatch in check during transitions from rye to bermuda and back to rye.

Photos courtesy: Chris Bunnell.

The Key to Turf Management

By Barbara Augsdorfer

Thatch provides cushioning for football and soccer players and children at play, and a healthy layer of thatch is the mother's milk of baby turf. However, if left unchecked, thatch can be as much a curse as a blessing: Ask any baseball outfielder who has had a ball "snake" away from him. Thatch may be a sure thing, but unlike death and taxes, thatch can be controlled.

"You can't worry about creating thatch. When you get it, you get rid of it," says Alan Sigwardt, head groundskeeper for Joe Robbie Stadium in Miami, FL. Because the stadium is a multiuse facility, Sigwardt has to balance his turf-care program to meet the needs of both the baseball Marlins and the football Dolphins. "The Marlins were on a two-week road trip [right after the All-Star break] in July, so we core-aerified and topdressed the field with sand," he explains. "That will be the last time I think it out for this year."

Sigwardt manages the stadium complex with a staff of five. They verticut once a year during the summer and overseed the 419 bermuda with perennial ryegrass.

When the Dolphins start pre-season camp, Sigwardt must adjust his thatch management strategies accordingly. "We bring the turf height up from 3/4 inch to one inch for NFL, and let the thatch get a little thicker," he explains. "It's so tropical here that the bermuda doesn't go completely dormant, and the divots created by football players don't heal well."

By the end of the football season the turf has taken a real beating. "We resod every January," Sigwardt continues.

"Last year after the Super Bowl, as soon as the game was over, we were running sod cutters and removing sprinkler heads. We did a total replacement job — liner, irrigation pipes, everything. It was a six-month job that had to be completed in six weeks — in time for Opening Day for the baseball season."

Listen to the Coach

Communication is an important aspect of thatch management. "One of the key things is communication between the coaches and the people taking care of the field," says Scott Cisson, landscape architect for Arizona State University in Tempe. "We handle things according to preferences of the coaches," he states.

Cisson explains that the late Jim Brock, who coached the ASU Sun Devils baseball team to several College World Series titles, was instrumental in the turf process. "He liked to use a blend of manure and sand for topdressing, so we would adjust our schedule around what he wanted," Cisson explains. "We would work with each of the coaches, and if the coach did not have a preference, we would do whatever was applicable in a particular situation."

The baseball fields at ASU can be used well into winter, which can make for a tight 90-day turnaround to get the field ready for spring. Other fields are maintained on an as-needed basis.

The Weather Factor

For many turf managers, thatch management varies each year depending on weather conditions. Every turf manager knows that rain coupled with drainage problems or too much rain for the drainage system to handle in too short a time period can cause major prob-

lems on turf. If a turf manager is fortunate enough to have a say in the design of the field, he can solve many problems *before* they begin.

Chad Casella is the head groundskeeper for the Piedmont Phillies, the single-A affiliate of the Philadelphia Phillies, in Kannapolis, NC. The team moved from Spartanburg, SC, last year, and Casella made the move as well. "We have a new field that was constructed in late 1994 and finished early this year," Casella says. "The sod was laid 18 days before Opening Day."

During the field's construction, Casella specified a sand base. "We've received as much as three inches of rain in an hour," he says. "The field drained in 30 minutes."

The Tifway II hybrid bermuda is mowed at 3/4 to 5/8 of an inch and fertilized every seven to ten days. During road trips longer than four days, Casella, along with one full-time assistant, runs a slicer to improve drainage. Topdressing is done once each spring, summer and fall to keep thatch in check during the season. He verticuts the field in the fall after the season.

Turf managers must perform magic to get green grass when everyone's lawn is yellow. "We verticut during the transition time in June and July to take out rye, then again in September before we overseed the bermuda with rye," says Sam Clay, head groundskeeper for the Tulsa (OK) Drillers, the double-A affiliate of the Texas Rangers. "We have bermuda 419 in the summer and overseed with perennial rye. We have rye in April, bermuda in summer and rye again in fall," he explains. "That way we have color in April and May." The bermuda is usually cut at 5/8 of an inch but raised to one inch when the rye is down.

Tifway 419 and common bermuda are used on the field for the Greenville Braves, in Greenville, SC, the double-A affiliate of the Atlanta Braves. Field Superintendent Matt Taylor has to topdress his field every month because his field sits on a clay base. "We aerify every month and topdress with a mix of 80-percent sand and 20-percent peat," he explains. "We mow every day and pick up the clippings and keep the thatch at 1/4 to 1/2-inch thick. "During the spring we have to slice to get the bermuda to rise."

Aggressive Maintenance

"We have a full-blown turf-management program here," says Sal Genito, a landscape architect and the manager of grounds for California State University, Fresno. The turf is Santa Ana hybrid bermuda. Practice fields are topdressed in May, and the main baseball field is topdressed in June with 25 tons of sand. Also in June, the football practice fields are dethatched and aerated. Bulldog Stadium is dethatched and aerated in July. Overseeding begins in late August or early September with Medalist 10.

"We have a standard," Genito explains. "We want to maintain at least 1/2 inch of thatch. We monitor that throughout

the season, then make recommendations to the coaching staff or adjustments to our schedule. Once that 1/2 inch of thatch is gone, we resod the fields."

Genito did some research before selling his aggressive turf-management program to the people who make the budget decisions. His research of facilities throughout California revealed some interesting facts. For example, the Rose Bowl in Pasadena and Stanford Stadium in Palo Alto are "restricted-use" facilities. The Rose Bowl hosts 50 events and Stanford Stadium hosts 25 events each year. "These facilities have tremendous thatch-management programs," he reveals. On the other end of the spectrum, facilities such as Anaheim Stadium and the Los Angeles Memorial Coliseum host more than 100 events each year. Both facilities have to be resodded each year. "I just wanted to highlight the fact that you can't arbitrarily use a field and expect it to hold up," he says.

For Chris Bunnell, grounds supervisor with the Escondido Union School District in Escondido, CA, and president of the Southern California STMA, appearance and performance, while important, are second and third behind safety. "I have middle and elementary

schools, including playgrounds and sports fields," Bunnell explains. "This means everything from recess to youth soccer and adult baseball leagues. We are more concerned with safety than performance — for example, ball roll. If we can keep bare spots from appearing, we're happy."

Bunnell and his staff service 19 sites totaling 120 acres of turf. "It's like a small golf course with 19 holes," he says. His staff of 12 uses aeration to control thatch. Overseeding with perennial rye and some slit-seeding is also done. A potential liability headache is avoided by not applying chemicals to the turf on school days.

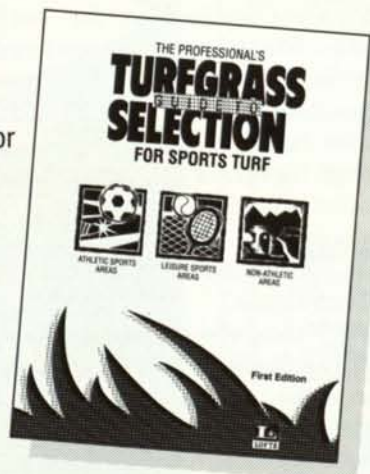
Thatch management is clearly one of the most important aspects of a turf manager's job. Sports turf managers must walk a fine line among safety, performance and aesthetics. Successful thatch-management can play a key role in maintaining field safety, performance and appearance. Proper thatch management also aids in disease control and in maintaining the overall health of the turfgrass. Solid thatch-control techniques are a key component of an overall turf-management program. □

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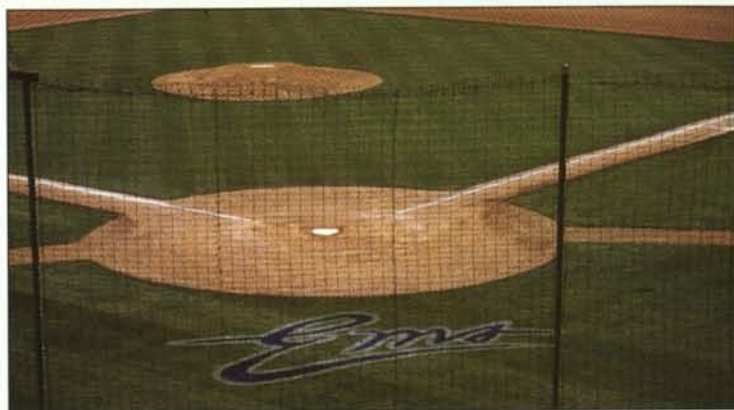
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Turf of the Month



The Eugene Emeralds baseball field utilizes rough bluegrass in a mixture with other grasses. Photo courtesy: International Seeds, Inc.

Rough Bluegrass

By Mike Augsdorfer
and Craig Edminster

Not long ago most experts in the field of turf management had pretty much dismissed rough bluegrass (*Poa trivialis*) as a useless grass. Some turf managers even considered it to be a weed, like its distant relative, annual bluegrass (*Poa annua*). Recently, however, turf managers have shown a renewed interest in rough bluegrass.

Rough bluegrass is a paler shade of green than Kentucky bluegrass. Though rarely used as a monoculture, rough bluegrass can be mixed with other species, such as perennial ryegrass, for use in cool climates. Rough bluegrass displays excellent cold and shade tolerance, but it is not used as frequently as Kentucky bluegrass because rough bluegrass is not as wear resistant as Kentucky blue. However, rough bluegrass grows very well on moist, poorly drained soil.

Poa trivialis has quietly taken over a portion of the market in regions where winter overseeding is a yearly occurrence. It is no longer merely a specialized species for use on moist, shady lawns. If seed production came closer to matching demand, rough bluegrass would seriously challenge the improved perennial ryegrasses as the grass of choice for winter overseeding.

Rough bluegrass is a sod-forming perennial adapted to cool, wet, shady areas. It has a moderately fine texture and a root system that is quite extensive but shallow in depth. Rough bluegrass

is intolerant of drought or moisture stress and will enter temporary summer stress-induced dormancy or simply die.

Limited Use

Professional-level sports turf managers have used *Poa trivialis* as part of an overseeding mixture on a limited basis. Ed Mangan, who oversees groundskeeping operations for the Atlanta Braves at Atlanta-Fulton County Stadium, used rough bluegrass as part of his overseeding mix in 1991 but was disappointed with the results. "It didn't really handle the baseball traffic," he explains. "It will work for shady areas but does not stand up to heavy traffic." Mangan currently uses perennial rye for overseeding and does not anticipate using *Poa trivialis* in the future.

Chip Toma, who oversees turf-maintenance operations for both Kauffman Stadium and Arrowhead Stadium in Kansas City and also serves as a consultant to the National Football League for the Super Bowl fields, admits that rough bluegrass has very limited applications in terms of professional-level sports fields. "If we're at a Super Bowl we may have a little bit, but not much," he relates.

Trevor Vance, who works with Toma at Kauffman Stadium, uses *Poa trivialis* in some of the turf islands around the perimeter of the stadium but not on the field itself. "It's a tough grass, but it's got such an off color that we simply don't use it on the field," he explains.

Although he does not use *Poa trivialis* as part of his overseeding mixture, Neil

Griffin, head groundskeeper for the Eugene Emeralds minor league baseball team in Eugene, OR, has accepted the challenge of managing rough bluegrass as part of his sports turf, rather than trying to take it out as a weed. "There are steps you can take to control it, but it's too costly and time-consuming to do," he notes. While his fertilization and irrigation programs limit the appearance of rough bluegrass on the infield, the grass is prominent in the outfield. "It's pretty hardy, and it definitely will spread," says Griffin. "We play soccer on the field in the winter, and the *Poa* will cover up bare spots in the outfield."

Although many of the characteristics of rough bluegrass may seem like disadvantages, they can actually be assets. *Poa trivialis* offers a number of significant advantages to the sports turf manager.

Transition: When used for overseeding, rough bluegrass is considered an "easy transition" species. It can be eliminated rapidly with fertility/water management, cultural practices or naturally by summer and warm-season induced stress.

Reduced seeding cost: Seed counts in *Poa trivialis* are in the neighborhood of 1.9 to 2.2 million seeds per pound, making for very cost-effective seeding rates. Whether used exclusively or in a polyculture mixture, rough bluegrass can save an estimated minimum of 20 percent on seed cost.

Low soil temperature tolerance: Rough bluegrass is capable of germinating in soil temperatures from 40 to 50 degrees F. This quality is particularly valuable when continual "sweetening" of overseeded areas is practiced in the winter months.

Competitiveness with annual bluegrass: Winter overseeding with *Poa trivialis* can effectively reduce annual bluegrass contamination by effectively competing for soil nutrients and sunlight. Similar growth habits, tolerance to low mowing and preference for cool, wet soils make for excellent natural competition of the two species. As a result of this competition, populations of annual bluegrass may decline significantly over time.

Avoidance of iron chlorosis: Under alkaline soil conditions (higher than 7.5 pH), *Poa trivialis* appears to have a tolerance to low available iron levels and will not exhibit yellowing or chlorosis unless the pH is extremely high.

Nitrogen use: Rough bluegrass appears to be an excellent user of soil nitrogen when the soil is very wet and cool. Under these denitrified soil conditions *Poa trivialis* continues to exhibit its inherent light green to green turf color.

Rough bluegrass is recommended for permanent turf areas in moderate or intense shade as well as for winter overseed blends and mixtures. It can also be

used as a noncompetitive, reduced maintenance, easy-transition winter ground cover for soil stabilization in warm climates like Southern California. Seeding rates of as little as 80-120 pounds per acre are recommended.

Poa trivialis requires an extensive management program. Supplemental irrigation is needed for dense and aggressive tillering. Extended periods of moisture stress will result in an unattractive purplish-brown leaf discoloration and ultimately complete senescence or death. Its roots respond favorably to light, frequent irrigations.

The most desirable fertilization program for *Poa trivialis* involves splitting applications of a balanced fertilizer in moderate amounts with N-P-K ratios of 5-2-1. Applications should be made at establishment and during active fall, winter and early spring growth. Heavily shaded areas must be managed with greater nitrogen levels and higher mowing heights.

Rough bluegrass prefers mowing heights in the range of 1/2 to two inches; however, it can be mowed lower if necessary. Mowing heights of more than

two inches generally result in reduced turf quality.

Phenoxy-based turf chemicals can be used to control broadleaf weeds in *Poa trivialis* with excellent results. While rough bluegrass is reportedly vulnerable to a variety of turfgrass diseases including leaf spot, brown patch, stripe smut, *Microdochium* patch and *Typhula* blight, it has not been used extensively enough to determine its true susceptibility to disease.

Perhaps the most valuable asset of *Poa trivialis* is how competitive it is with annual bluegrass in heavily contaminated and compacted soils. If uniform turf color is not a major concern but choking out potential *Poa annua* infestations is, rough bluegrass may be the perfect choice for overseeding. With all this plus its easy transition capabilities when overseeding, rough bluegrass will undoubtedly gain in popularity as greater supplies of seed become available. □

Craig Edminster is the director of research at International Seeds, Inc., in Halsey, OR.

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*The Man Behind M.S. Deal Stadium
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G.C. Trivett

By Bob Tracinski

Tucked in the foothills of the Blue Ridge Mountains of western North Carolina is M.S. Deal Stadium, the pride of the small town of Granite Falls. The stadium was built in the early 1940s, and the original field consisted of two to three feet of native soil, mostly hard-packed clay, over a pile of old granite rock. Initially, the stadium, field and school building formed the high school campus. In 1977, a new high school was built, and the facility became a middle school.

G.C. Trivett joined the Granite Falls Middle School staff that year, fresh from earning his degree in Health and Physical Education at Appalachian State University, as a physical education teacher, head football coach and athletic director. Groundskeeping was not part of his job or high on his list of priorities. The school's custodial staff mowed the bermudagrass field with a Bushhog.

The field was superior to the other school-related fields in the area. "Although we had a skinned infield and no formal field maintenance program, the field hosted the 1982 state baseball championship," Trivett recalls.

The field is used for baseball practices and games, softball practices and games, soccer practices and games, football practices and games, physical education classes and community sports programs. The school's baseball season begins February 15 and, with Legion games, the high school's tournament and the playoffs, could continue into mid-August, wrapping up just in time for football practice to begin. In addition, the field has hosted a state baseball championship, two state American Legion championships, two Region 10 National Junior College championships, numerous Division I college baseball games and several high school tournaments.

Granite Falls lies just within the transition zone; 30 miles to the northwest

only cool-season grasses will survive. Though winter does bring some snow and a few sub-zero days, winter temperatures average about 50 degrees, generally allowing year-round field use.

Trivett strives to do the best job possible. He is constantly learning, improving his skills, and looking for a better way to do things. He readily admits that, even when calling on all available resources, trial and error are a big part of this process. "Frequently, my best teacher has been my own bad experience from trying something the first time," he relates.

His interest in field conditions developed from his desire for safe playing surfaces that allow all players to make the most of their potential. At first, he initiated small changes. The mowing moved from a Bushhog to a flail mower to a rotary mower, and field conditions improved.

In 1983, an inspection team for the school district condemned the poles of the old lighting system and decided that a middle school didn't really need a lighted field. "Those were fighting words," Trivett notes. "A few individuals got the ball rolling, and it spread throughout the town. Through a concentrated but highly informal process of donations and fundraising activities, the commu-



Head groundskeeper G.C. Trivett takes the same care with pre-game preparations of the skinned areas as any minor league team would.

nity came up with the \$43,000 needed in just two months. The new lighting system was installed in 1983."

Learning From Others

In 1986 Trivett attended a seminar on athletic-field management given by Dr. Ed Kajihiro. He immediately joined the STMA and began reading all he could regarding sports turf management. He attended as many field-maintenance seminars as his time and budget would allow. "I was especially motivated by Floyd Perry's seminar at Baseball City in Orlando, FL, in 1991," says Trivett. "Seeing the facility, the quality of the fields, and how much money went into the equipment and budget was like a challenge for me. I wanted to do it right and knew with the big spirit of our little community we'd find a way to accomplish it."

Also in 1991, Trivett became a member of the Professional Grounds Management Society (PGMS) and has since become the national organization's 43rd certified grounds manager. "Going through the program and achieving the certification was well worth the effort," Trivett says. Trivett also is a certified pes-



Most of the football field lies within the baseball outfield area. The sideline of the football field almost touches the grass at second base, and the skinned basepath between second and third bases lies just within the football field.

ticide applicator and a member of the NC Turfgrass Council and the Southern Turfgrass Association. Recently he has spoken at several seminars, helping others find a way to improve their fields. In February 1994, Floyd Perry held a seminar at M.S. Deal Field.

Trivett says, "I came into this knowing nothing about field care but found that all the resources are there just waiting to be tapped. The key is going after that information — reading the magazines and association publications, going to the seminars, and not being shy about asking questions and seeking advice, in person and by phone. Then, after gathering the information, you need to work through it and put it to use in a form that fits your needs."

As Trivett learned the principles of aeration, fertilization and pest control, those maintenance practices became an integral part of his field maintenance program. An initial soil test revealed little organic matter and several deficiencies. Composted sawdust was added as an organic source. Each year's fertilization program was adapted to specific needs. P and K ratios and organic content are now regularly in the acceptable range.

Equipment on a Budget

Equipment was a high priority, but Trivett recalls that the budget was pretty slim. "We began to acquire the necessary equipment, such as aerators, sprayers and mowers, through the process of creative begging," he admits. "It wasn't quite that bad, but we did call golf courses, schools, colleges and anyone else who could help with equipment to set up a borrowing or short-term rental situation."

Trivett looks for equipment that doesn't stress his budget yet can meet specific needs, improve field conditions and increase efficiency. "We put out the word that we were looking for used equipment that could be refurbished," he explains. "We purchased our triplex reel mower from a local golf course. It's now 23 years old. I just made a 14-hour round trip to pick up a used bunker rake. I took it in for repairs, replaced the sand rake with an infield drag, and it works great. We also entered a joint-purchase, split-use arrangement with two other schools on some new equipment, including our sprayer with a 20-foot-boom."

Trivett's assistant Bronze Baker handles the lion's share of the mowing and

an assortment of other tasks as necessary. Trivett says, "Baker is dedicated to this field and doing things right. His assistance has allowed us to move up one more notch in our maintenance program."

Trivett is the first to note that the road to success has not been trouble-free. For example, in the fall of 1986 he overseeded the Tifway 419 bermudagrass field with a cool-season grass for added color and cushioning. Unfortunately, he used K-31 fescue. "I didn't know any better at

the time," he says. Now, nine years later, he has almost made the transition back to 100 percent bermudagrass. "I had to do it gradually, with maintenance practices that favored the bermudagrass, because the fescue took hold so well, wiping it out at once would have devastated the field."

Trivett spurred the purchase of an automatic irrigation system using Toro 670 heads that was both workable and

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Trivett

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affordable. Funds for the project were raised by selling advertising space on the eight-foot block outfield wall. Trivett takes a little time at the start of each season to drop in on past advertisers and sell the space for another year. The 35 to 40 ads currently bring in \$150 each. Trivett and a group of volunteers did the installation. While a few areas needed a second try with a little more glue on the joints, the end result was great.

Most of Trivett's efforts have met with success. In 1990, the skinned infield was sodded with Tifway 419 bermudagrass. Again Trivett used a volunteer crew with no previous experience, this time with no glitches. Laying sod green side up is a lot easier than installing irrigation pipe and sprinkler heads.

Next came the warning-track installation. Trivett used a two-to-three inch layer of local gray granite rock dust on top of an area that he had treated with glyphosate to remove vegetation. The track is 15 feet wide in the outfield and ten feet wide along the sidelines. It also happens to be exactly a quarter-mile around, making it great for physical education classes, track and recreation for local exercise fans.

Maintenance Practices

With 350 students on some part of the field nearly every school day and all the after-school and community activities, the field has little, if any, downtime. Trivett has developed an aggressive maintenance program to keep the field in top shape. He core aerates once a month from May to September,

using a double pass on the entire field and adding a second double pass in high-use areas. The cores are dragged back in for topdressing. Additional topdressing material, including calcined clay, sand and a more porous soil are incorporated when time and funds allow it.

"We've reached a fairly decent percolation rate through this program," says Trivett. "Generally we can take a two-inch rain and still play within two hours, but when this heavy soil becomes saturated, water infiltration is very slow. We've used 21 bags of calcined clay during this spring's rains, but we haven't missed a game."

Annual soil tests form the basis for the fertilization program. Trivett applies a 10-10-10 fertilizer at the rate of 750 pounds per acre in the early spring. Monthly application of 34-0-0 begins in June. Overseeding with the PhD blend of perennial ryegrasses takes place in October, timed to coincide with optimum weather conditions.

Using a reel mower at alternating right angles creates a checkerboard pattern, and during the football season, mowing direction is alternated every five yards to create a light-dark striping. The field is kept at a 3/4-inch height, with the outfield cut at least three times a week and the infield daily — twice on game days.

Trivett changed the management program slightly to accommodate this season's extremely wet weather. "We sure didn't run the irrigation system in June," he notes. "We had to use the rotary mower at one point to cut the grass short enough for the reel mower to handle. We then began mowing the outfield every day and the infield twice a day just to keep up."

Integrated Pest Management (IPM) practices dictate pest control. Trivett says, "So far, we've only had to contend with grubs once or twice. We've had a few problems with clover and chickweed, and are using a three-way formula to control them. We've had to treat for crabgrass occasionally. We use a handheld tank sprayer filled with glyphosate to spot treat any weeds that crop up in the warning track."

Trivett takes the same care with pre-game preparations of the skinned areas as any minor league team. "We nail drag two or three times a year," he notes. "I use the mat drag before each game, then again after the infield practices when I reset the bases." Trivett also mat drags once more and changes the bases again after the fifth inning. "Our greatest wear comes during girl's softball in the fall," he says. "The bases must be moved in to attain the regulation size. Second base is in the grass, and the grassed sections by first and third base get heavy wear. These areas generally need resodding at least once during and after the season."

Excessive wear is avoided by rotating practice sessions and drills for various sports along with PE class workouts. Football drill sites are moved each day. Soccer goals are simulated with strategically-placed cones to avoid wear within the actual goal mouth.

Trivett has enough space in the baseball outfield to turn the football-soccer field at an angle to the baseball field, limiting wear on the infield. The football sideline closest to the stands almost touches the grass at second base and the skinned basepath between second and third bases lies just within the football field. The grassed baseball outfield then becomes the rest of the football-soccer field.

The pile of granite rock below the field creates a unique field maintenance situation for Trivett. "We hit granite when we

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