

Spring brings new beginnings and hope for many things. However, spotty, thin turf cover in spring probably will not improve during the heat of summer, unless you take action.

By
Arden
Baltensperger

Spring Renovation: Warm Season Turfgrasses

If compaction is a problem, aerate the turf before renovating the turf to help improve growing conditions. Photo courtesy: Cushman.

Warm season turfgrasses respond better to spring establishment than cool season turfgrasses. They need warm days to germinate and develop. Searing summer heat will not take as great a toll on young warm season grasses.

By following recommended renovation techniques, you can repair or re-establish damaged turf areas, allowing them to withstand a summer of outdoor recreation.

The first step to renovating turf is determining what caused the turf to fail. Then, attempt to correct the problem. If you simply replace the turf area, the stress factors may again cause the turf to die.

The following are six common stress factors for warm season turf and some solutions to the problems.

Excessive Traffic and/or Soil Compaction. Re-route traffic to avoid excessive wear and correct compacted areas. Consider incorporating coarser textured soil or sand in the soil to modify the pore space in the total soil mix. This will help reduce future compaction. Cultivate the compacted areas with core or solid tine aerators.

Combining soil modification and aeration can help make a permanent change in the soil's air and water infiltration capabilities.

Internal and External Drainage. Correct surface drainage, if necessary. Eliminate low spots where water can collect. Improve soil drainage with drain pipe if soil modification and cultivation do not solve the problem.

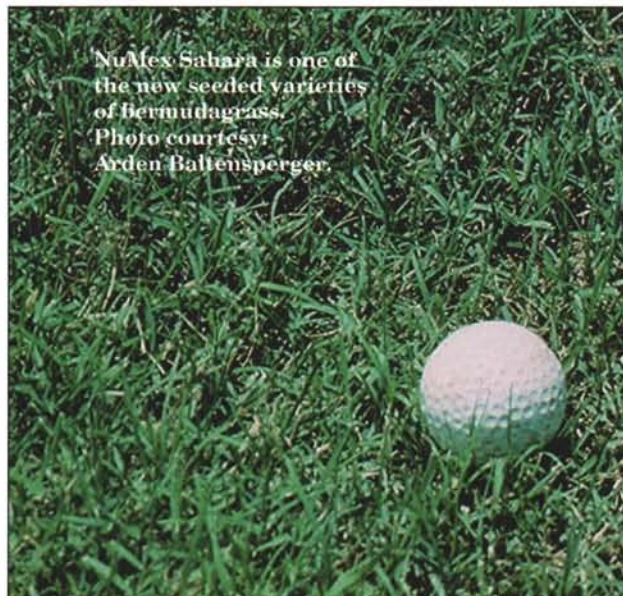
Winter Turfgrass Killing. Low temperatures and/or low soil moisture dur-

ing winter months can cause winter kill. Warm season turfgrasses in the transition zone are most susceptible. Reseed, sprig or sod winter killed areas with an adapted variety. If desiccation was the problem, water occasionally during winter dormancy in the future.

Shade Problems. Select shade-tolerant turf species and varieties, such as St. Augustinegrass, zoysiagrass or centipedegrass. If changing the turf species is impractical, prune trees to allow more light penetration. Raise the mowing height to encourage turf to produce more chlorophyll. Fertilizing more frequently may help replace some of the nutrients the trees use, reducing the competition between trees and turf.

Pest Damage. Whenever possible, select turf varieties that resist disease, insects and other pest problems. Maintain turf health through good cultural practices, which will help reduce the turf's susceptibility to problems. If pests do become a problem requiring a chemical treatment, have a trained chemical applicator apply the proper control according to product label instructions.

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NuMex Sahara is one of the new seeded varieties of bermudagrass. Photo courtesy: Arden Baltensperger.

Warm Season Turfgrasses

Bermudagrass

There are more commercially available varieties of improved bermudagrass than ever before. You can choose from several improved seed propagated bermudagrasses in addition to many good vegetative varieties. High-quality certified seed is available in the hulled or unhulled form.

Bermudagrass has medium fine to fine leaf texture, high density, heat and drought tolerance, salinity and flooding tolerance in addition to wear tolerance and recuperative capacity. It does require more nitrogen fertilization than most other warm season turfgrasses, and it is subject to winter kill in the transition zone areas.

The following are some of the newer seeded bermudagrass varieties and their characteristics.

■ NuMex Sahara is a recent release from New Mexico State University. It is shorter growing and denser than Common bermudagrass, and it has excellent drought tolerance. The variety, which is distributed by Farmers Marketing Corp., is intended as a general purpose turfgrass for warm, tropical and subtropical regions.

■ Guymon was released by Oklahoma State University. It is very cold tolerant and somewhat coarser in texture than Common.

■ Sonesta is an O.M. Scott & Sons Co. variety that is expected to be available later in 1992. It is similar to the experimental strain tested in the National Test as NM S-3. This variety is denser, shorter growing and has rated better than Common in turfgrass quality.

You can obtain commercially a number of other seed propagated bermudagrass varieties, but there is little performance data available. In addition, several other experimental seeded varieties are being tested.

There are also many vegetatively propagated bermudagrass varieties available for sprigging and sodding.

Technical Credit: Arden Baltensperger, Director of Turfgrass Research, Farmer's Marketing Corp. and Emeritus Professor, New Mexico State University.

Other Warm Season Turfgrasses

There are several other warm season turfgrasses that are used in certain pockets of the United States.

■ Centipedegrass is sometimes referred to as *poor man's grass* because it requires such little maintenance. It has an especially low fertility requirement. Centipedegrass is adapted to the Southern U.S. It is established either vegetatively or by seed.

■ Kikuyugrass is a coarse-textured grass that is adapted to warm, humid tropical regions. It is aggressive and grows well in Mexico, Southern California and Hawaii.

■ Buffalograss has gained popularity as a low maintenance turfgrass for moderate to low traffic areas. Several improved seeded and vegetatively propagated buffalograss varieties are now available. It does well in low traffic areas with reduced fertilization and mowing.

■ Bahiagrass is a coarse-textured grass that is adapted to southern coastal areas. It is used primarily for low-quality, low-maintenance turf-grass areas.

Technical Credit: Arden Baltensperger, Director of Turfgrass Research, Farmer's Marketing Corp. and Emeritus Professor, New Mexico State University.

Zoysiagrass

Zoysiagrass forms a dense, hardy turf that endures both high temperatures and humidity. It survives and even thrives with minimal maintenance. There also are zoysiagrass cultivars that show winter hardiness well into traditional cool season turf zones. However, zoysiagrasses grow slowly and the turf density makes it more difficult to maintain with a rotary mower. Zoysiagrass may be desirable for specialty use where you need a dense, slow-growing turf. You can establish zoysiagrass from plugs, sprigs, sod or seed. However, because of its slow growth rate, consider sodding for spring repair.

Meyer and Emerald are older, widely used cultivars. Newer cultivars tend to be less dense and retain better color in cool temperature.

■ El Toro is a *Zoysia japonica* that is adapted to Southern California, the South and into the transition zone. It is not as winter hardy as Meyer. It has broader leaves, is more open and spreads faster. In areas where it is adapted, it greens up quicker in the spring and maintains color longer in the fall.

■ Belair is similar in cold tolerance to Meyer, but it has broader leaves and better rust resistance. It also spreads better and has good fall color retention. It is a popular cultivar in Texas.

■ Cashmere is a dwarf, dense zoysiagrass. It has the finest leaf and is the densest of the zoysiagrasses. Cashmere is adapted to the South, so it winter kills in freezing temperatures.

■ Korean common currently is the only seeded zoysiagrass available. It has a coarse texture and moderate shade tolerance. It's not as dense as Meyer and it is adapted as far north as the upper transition zone. Researchers are working with several new varieties of seeded zoysiagrass, which are expected to be released in the near future.

Sodding, plugging, sprigging and hydrostolonizing remain the most popular methods of renovating zoysiagrass turf.

Technical Credit: Jack Murray, Turfgrass Germplasm Services, Inc., Bradenton, FL.

St. Augustinegrass

Although it is coarse-textured, St. Augustinegrass is shade-tolerant and easy to mow. It thrives in warm, humid areas of the South and coastal United States. St. Augustinegrass produces good-looking turf in shady areas where other warm season turfgrasses fail to thrive.

St. Augustinegrass is established vegetatively with sod, plugs or sprigs. Its stolons spread rapidly, so it can cover an area quickly.

The chinch bug remains one of St. Augustinegrass's primary pests. Newer varieties are resistant to the chinch bug, have finer leaf texture and have better color retention.

■ Floratam has been the most popular of the St. Augustinegrasses. Its resistance to chinch bug attacks made it popular in the late 1970s and 1980s. However, it is not as shade-tolerant or cold-tolerant as some other varieties.

■ Seville is a dwarf variety. It has a finer leaf texture, producing a smoother looking turf. However, it is susceptible to chinch bug problems.

■ Delmar has moderate cold tolerance. It is adapted north to the Gulf states and into Texas. It greens up faster after cold snaps and retains its color longer after the temperature drops.

■ FX-10 is a newly released variety that has enhanced drought resistance. It has good shade tolerance and a more upright growth habit.

Technical Credits: John Wildmon, Lake City Community College; Virgil Meier, O.M. Scott.

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Cultural Turf Management. All cultural practices should take into account the limitations and optimal growing requirements of the turf. Different environmental conditions will require different maintenance levels. Fertilize, mow and irrigate according to turf needs. If you find yourself constantly renovating a given area, evaluate your maintenance practices.

Spring Renovation Techniques

After you have corrected the cause of the problem, establish the new turf or build up thin turf. As a general rule, if there is at least 50 percent or more healthy turf, follow a seedbed preparation program with either seeding, plugging or sprigging. If there is less than 50 percent healthy turf, the best alternative may be to kill off the turf and weeds. Then reseed, sod or sprig the entire turf area.

If you plan to kill off the existing turf, apply a chemical, such as glyphosate, when turf and weeds are actively growing. Follow the

application rate on the product label and don't spray on windy days or if rainfall is expected within 24 hours. Allow the chemical to work for about 10 days. Either power rake the area to remove the thatch or scalp the lawn with a mower to 1/2- to 1/4-inch high.

In moderately damaged areas, you can prepare the seedbed with a vertical mower. Slit seeders can be helpful in areas where annual damage repair is necessary.

Warm season turfgrass is established with seed, sod, sprigs or plugs depending on availability, monetary considerations and time constraints.

If you find yourself constantly renovating a given area, evaluate your maintenance practices.

Soil temperature is critical for warm season turfgrass establishment. The optimum soil temperature for germination and root growth for bermudagrass is 75 to 80 degrees F. The minimum soil temperature for seeding is above 60 degrees F. If you seed or sprig below that temperature, a poor-quality stand could result. It's a common mistake to seed before the temperature warms up adequately.

The upper limit for root and shoot growth for most warm season turfgrasses is 100 to 120 degrees F. Therefore, once you've started your warm season turf, it should continue to grow satisfactorily through the summer.

If you decide on seeding, pay attention to seed quality. The cost of seed often is only a minor part of the total expenses in renovation. However, seed quality can greatly affect the results. Look for high-quality, certified seed that is weed-free and has a high germination rate.

Seeding rates on sod-forming turfgrasses, such as bermudagrass and buffalograss, are impor-

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tant. A low seeding rate will result in a lower turf density and somewhat coarser texture during the first year or two.

As a general rule, suggested planting rates for bermudagrass under good seeding conditions (using seed with a germination rate above 85 percent and a seed purity above 98 percent) are 1.5 to 2 pounds per 1,000 square feet for unhulled seed and 1 to 1.5 pounds per 1,000 square feet for hulled seed.

Check with your local extension agent or seed supplier for recommended planting rates in your area for the seed varieties you select. Seed coatings will affect the number of seeds per pound and, therefore, the seeding rates. Check to be sure you are applying seed at a high enough rate.

Once you have decided whether to use seed, sprigs or plugs, you need to choose a planting method. You will achieve the best results with good seed-to-soil contact.

Aerating and Broadcast Seeding. Aerate thoroughly with a core aerator that creates holes about two- to three-inches apart. Break up the cores using a drag or tine harrow. Then, broadcast

seed over the turf area. The seed will take advantage of the air space opened up by the aerator. This method will not result in a high germination rate unless there is good seed-to-soil contact.

Overseeding. A slit-seeder uses vertical cutting blades to slice into the soil and turf, creating a miniature furrow. Then, grass seed drops into the furrow. For thorough coverage, divide the seeding rate in half. Make two passes at a 45-degree angle, leaving a diamond-shaped pattern.

Plugging. As an alternative to sodding, you can renovate with turf plugs. Either purchase pre-rooted plugs or cut plugs from sod squares. An auger makes drilling plug holes quicker. Install the plugs between six- and 12-inches apart, depending on the species and growing conditions. Slow-growing species, such as zoysiagrass, require closer spacing to provide uniform coverage in a reasonable amount of time. The closer you install the plugs, the more quickly the turf will cover. However, the more plugs you use, the more expensive the job will be.

Sprigging or Stolonizing. Some warm season turf varieties must be estab-

lished vegetatively. Sprigs or stolons are living pieces of grass plants. They require a well-prepared seed bed. Scatter them at a rate of one to six bushels of material per 1,000 square feet. Topdress and water well.

After Care

Newly planted turf needs adequate moisture and warmth to thrive. Water immediately after planting. Keep the soil and seed moist during the first 10 to 14 days, or until the seed germinates. Water at least once a day or more frequently, wetting the top inch of soil.

After germination, back off the irrigation frequency. Water more deeply and infrequently, slowly reducing frequency until you are irrigating according to recommendations for your turf species.

Following a spring renovation program can give you healthy turf that will withstand a summer of recreation. □

Arden Baltensperger is Emeritus Professor of Agronomy at New Mexico State University where he conducted extensive research on bermudagrasses. He also is Director of Turfgrass Research for the Farmer's Marketing Corp.

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HAMILTON NAMED TURF PROGRAM COORDINATOR

George Hamilton has been appointed to coordinate the Pennsylvania State University agronomy department's two-year turfgrass management program. The program combines four eight-week sessions and a six-month professional internship. It is oriented toward training golf course managers and other landscaping superintendents.

Hamilton has earned a bachelor's and master's degrees in agronomy from Penn State. He has taught turfgrass courses and headed development of the university's Landscape Management Research Center since 1982.

SCHOLARSHIPS AWARDED AT VIRGINIA TURFGRASS CONFERENCE

Scholarships were awarded at the 32nd Virginia Turfgrass and Landscape Conference and Trade Show sponsored by the Virginia Turfgrass Council, the Virginia Cooperative Extension Service and Virginia Tech.

The Noram Scholarship for \$1,000 was presented to Tom Wilson. The \$500

Thomas B. Hutcheson, Jr. Scholarship went to Mike Johnson and Michelle Frazier. Four \$500 scholarships were awarded by the Virginia Turfgrass Council to Scott Jordan, Pat Spillane, Dan Wheeler and John Anderson, students in the two-year Agriculture Technology School at Virginia Tech. The Larry S. Jones Memorial Scholarship for \$1,000 was awarded to Kayle Bigelow.

ROYALS HONOR MAN OF THE YEAR



George Toma, (right) head

groundskeeper for the Kansas City Royals, and his boss Herk Robinson, the Royals' general manager, displayed the plaque Toma received after being named SportsTURF's Man of the Year. Toma has been a groundskeeper for more than 45 years, spending more than 35 years in Kansas City.

Toma accepted the award on behalf of hard working groundskeepers across the country who keep sports fields not only looking good but also in top playing condition.

CONNECTICUT FORMS PGMS BRANCH

The Professional Grounds Management Society has formed a Connecticut branch to serve the needs of local landscapers, contractors and grounds managers.

Elections were held in North Haven, CT on January 14. The election results were: Gary M. Dickinson, Blue Cross/Blue Shield, president; Francine Vallillo, Branford, vice-president; Bruce Adams, Imperial Nurseries, secretary; and Richard Shaffer, The Hartford Ins. Group, treasurer.

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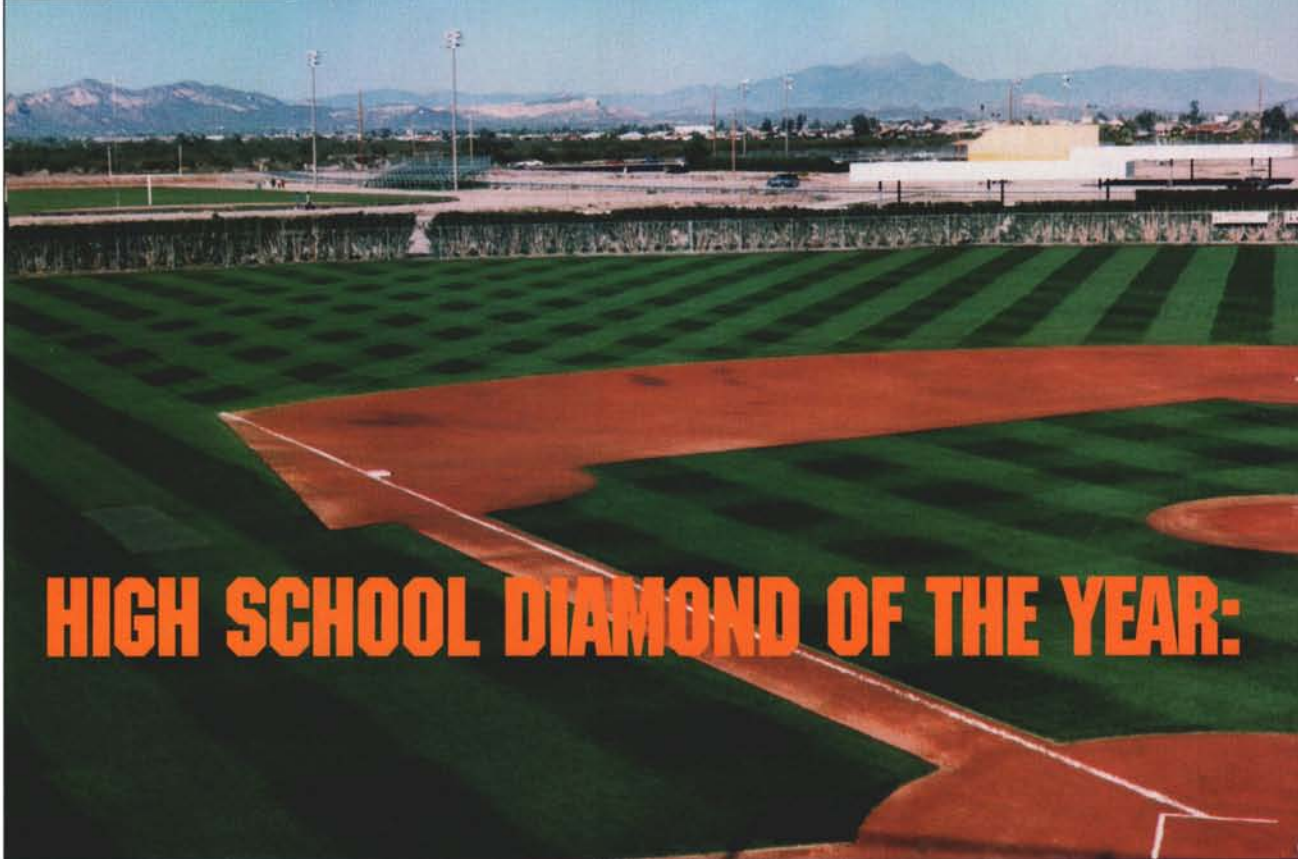
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HIGH SCHOOL DIAMOND OF THE YEAR:

By
**Theresa
Delia**

Apache Junction is a small town east of Phoenix, AZ shadowed by the mysterious Superstition Mountains. Deep in those peaks and far back in history, the “Lost Dutchman’s” mine remains, if it exists. The Dutchman’s legend is famous in Arizona; an old Dutch miner claimed to find a vast gold mine, but died before revealing where it was.

Many have gone into the hills seeking this elusive treasure, yet none have found it. But the town of Apache Junction has a treasure of its own—Prospector Field at the Apache Junction High School, Diamond of the Year in the High School/Park Division.

The high school has approximately 900 students. In addition to the award-winning diamond, there are two baseball fields, a softball field, a practice football field and a game football field.

It’s a lot to care for, especially when the athletic grounds department consists of two men, head baseball coach Mark Cisterna and grounds crewman Chad Mulholland, a native of Ohio, who moved to Apache Junction with his family when he was 12. An avid hockey player in his native state, he considered baseball “a past-time in the summer.”

When Mulholland arrived in Arizona, he quickly found that hockey players were not in big demand, so he joined the baseball team. Cisterna, his coach and industrial arts teacher, recalls the young

man enjoyed working on the field.

“His work ethic in school was very good and he had a bunch of pride for the field,” Cisterna says. “When the school wanted to hire a groundskeeper, I had Chad in mind.”

Mulholland was hired in the fall of 1990. “I took a liking to the field,” he says. “I graduated from high school and took a year to go to college. I thought I wanted to be a probation officer. But the field drew me back.”

Mulholland did not finish college. His formal turfgrass education lies in a few seminars, and through watching, learning, and doing.

“It came by trial-and-error,” Mulholland explains. “Mark and I tried different things.”

Cisterna has been caring for the field since he was hired as head baseball coach in 1984. For advice or information, or even to borrow equipment, he turns to Chuck Manning, golf course superintendent at the Gold Canyon Golf Course outside the city.

“The field has been a hobby of mine,” says Cisterna.

When it comes to the field and its care, Mulholland’s philosophy is straightforward: “If something isn’t right, make it right.”

Excellence On A Budget

Although there are six fields to care for, the annual budget Mulholland and Cisterna work with is \$5,000.

“When it comes to money, you have to pace yourself,” says Mulholland.

Apache Junction’s budget doesn’t permit many “high-tech” ventures, but one experiment that did pay off was a soil test done four years ago at the suggestion of Manning. They discovered that the pH balance in the soil was too high. A fertilizer was prescribed to reduce the pH in the soil and for the past three years, the school has had a set fertilizer program. Pure-Gro granular fertilizer has been applied once a month to the sand-based field.

The school does not have a variety of equipment to supply the grounds department. They have one mower—a Toro 216 riding triplex.

“We like to cut the short grass, at 5/8 inch, because it makes the practice enjoyable and it keeps the injuries low,” Mulholland continues.

When time and season permits, Mulholland mows all six fields himself. Every few weeks, he changes the pattern of striping on the field.

“Whenever we get sick of looking at the pattern, we change it to what we think will look good,” Mulholland says. “It’s pretty easy. We have three basic ways of changing the pattern and after mowing it for a few weeks, a new pattern emerges.”

When he is not mowing, he is weeding or edging. If the school can afford it, he overseeds. Hunter I-40 heads with



PROSPECTOR FIELD STRIKES GOLD

Each player helps care for his own position, in addition to Cisterna and Mulholland changing the diamond's mowing pattern every few weeks.

stainless-steel risers make up the irrigation system, but with the recent rain, irrigation hasn't been a big issue, notes Mulholland.

The rest of their equipment stock consists of a McClane edger, a weed eater and a three-wheel all-terrain vehicle to drag the infield. The edges of the infield grass are also power sprayed periodically so a lip does not form.

Game Preparation

Approximately 50 games are played on the diamond during the seven months it is used. Along with their own high school games, the summer baseball league practices there. The field has also seen play by the Men's Over 30 Senior World Series.

When it comes to game time, the whole team pitches in to help. They drag the infield, paint new foul lines, and chalk the base lines. Each player also takes care of his own position.

After the game, the field is spruced up, the foul lines and base lines are raked again and the clay on the pitcher's mound is packed.

Long Distance Compliments

Comments about the diamond from school officials and faculty are positive. "The school administrators let us know we are appreciated," says Mulholland. "We also get word from other students if someone is 'messing around' when they shouldn't be out there."

Opposing teams have also expressed their admiration concerning the field, but in a different way. Teams from all corners of the state have requested to play on Prospector Field, even if it means giving up a home-field advantage.

"Other teams have requested just to play in our park, especially the northern teams," Cisterna says. "We only play about six or seven games on the road a year."

Sometimes the school receives requests from teams, on their way to another game, to practice on their field.

"Some of the eastern teams have to travel a long way to games," Mulholland explains. "It is easier for them to stop here and practice."

Even rivals from Glendale High School appreciate the field. The Glendale players read an article in *USA Today* about the playing field of their rival. They knew the field was well cared for, and, when they played their game against Apache Junction, they complimented the grounds staff and players on the field.

Mutual Respect

Cisterna has seen many students over the years who became interested in field maintenance. None, he says, were as enthusiastic as Mulholland, who is considering enrollment in Mesa Community College in Mesa AZ. The school offers a two-year horticulture and management program.

"I know I'll lose him someday to a

better position because he's that good," Cisterna acknowledges. "But, it will probably be one of the happiest days of my life."

Mulholland has known Cisterna since he was 15 years old. The respect and admiration are mutual.

"Whatever he knows, he has tried to pass it on to me," says Mulholland.

Future Goals

Despite a tiny budget, Mulholland and Cisterna have big plans for the immediate and distant future. They reached one goal when they began a special work study program for students interested in turf care management. Juniors and seniors gain experience working on the field. After graduation, Cisterna and Mulholland try to place students in sports field work.

Other goals may be *very* far in the future. Cisterna would like to buy a tarp for the field. The soil drains well, but recent rains have made it more difficult. Mulholland would like to landscape the outside of the field and install a warning track.

One purchase the school may never make is lights for night games. For 16 years, night games played on the field have relied on moonlight.

"Lighting is not even *close* to the budget," Mulholland laughs. "It would be nice if we had lights, but it's okay without them too. It reminds me of old-time baseball." □

Fertilizer/Pesticide Combinations Offer Relief

By Bruce F. Shank

Economic and environmental concerns are high on nearly every sports turf manager's and golf course superintendent's list today. It naturally follows that they welcome technology which offers relief. Applying granular fertilizers impregnated with needed pesticides is that type of technology.

Well-timed fertilizer and pesticide applications will always be needed for high-use recreational turf. The stress on golf course and athletic field turf gives the edge to weeds, insects, and diseases. Cultural practices, including a well-planned nutrition program, and selection of turfgrass cultivars with superior traffic tolerance and pest resistance can decrease pest pressure on athletic turf. But, breakdowns in natural defenses do occur frequently and require treatment.

Rather than making treatments separately, you can build them into your turf fertilization program by using fertilizer/pesticide combinations. The key is timing, especially if the fertilizer contains a high percentage of soluble nitrogen.

Most modern turf fertility programs are based around granular slow-release products. This basic nutrition package is then supplemented as needed according to soil and tissue sample analysis.

Fertigation and spraying (spoon feeding) are two methods of supplementing a fertility program. However, they require either specialized equipment or labor. Many turf managers don't have the necessary equipment at their disposal and are operating under tight manpower constraints.

Advantages Of Combinations

Rather than forgo supplemental fertilization and needed pesticide treatments, consider the advantages of combination products. "Combination products offer many advantages to turf managers," states Dr. Bruce Augustine, fertilizer product manager for Lesco, Inc. "Not only are they convenient because you can perform two jobs at once, but the bags are relatively easy to store and don't require rinsing or have disposal restrictions.

Because they are in granular form, they have less odor than liquid formulations and are applied with spreaders, which are relatively easy to calibrate. Yet, they are as effective as sprays in most tests."

Augustine is quick to point out that sprays, especially herbicides, produce visible results faster than dry formulations. "For example, you don't see leaf curl within minutes as you would with phenoxy sprays. That doesn't mean they are less effective."

The success of granular combination products is tied to getting the active ingredient of the pesticide off the carrier into the plant, explains Dr. Dean Mosdell, manager of product development for O.M. Scotts. For contact products, such as postemergence herbicides and fungicides, the carrier must adhere to the leaf surface long enough to deliver the pesticide. Smaller particles adhere well to a damp leaf surface. Once in place, they should not be washed off foliage by rainfall or irrigation for roughly 24 hours. On the other hand, soil-active materials, such as preemergence herbicides and insecticides, must be watered in following application. "Read and follow the application directions carefully for maximum effectiveness," says Mosdell.

Particle Type and Size

The fertilizer carriers are either homogenous or blended products. The advantage of homogenous products is that each particle contains all ingredients. For this reason, all ingredients are dis-

tributed evenly by the spreader. Homogenous products tend to be more expensive than blended products.

Blended products contain separate particles of a nitrogen source, a potassium source, and a phosphorous source. Nitrogen sources might be urea, methylol urea, and sulfur-coated urea. Diammonium phosphate is the standard source of phosphorus while the potassium source might be either potassium chloride or potassium sulfate.

Both homogenous and blended products can be impregnated with herbicides, insecticides, fungicides, and growth regulators. Another option is to impregnate an inert carrier, such as corn cobs or clay, with the pesticide and mix it with the fertilizer particles.

Formulators offer a choice of particle sizes of their combination products. Larger particles are typical for home lawns and utility turf areas. "Particle size becomes important when grass is cut short," states Augustine. Smaller size provides more particles per square foot. Better coverage is important for pre-emergence herbicides, contact herbicides and fungicides. "Particle size is less critical for soil insects since they move around," he adds.

Mosdell reports that combining fertilizer with certain pesticides can improve their performance. "We've seen better activity with broadleaf herbicides and our growth regulator when they were combined with fertilizer," he states. "Synergism is something we are looking at closely."

Mosdell urges turf managers to check results of university tests for combination products. "Formulation can make a difference in performance," he said. "There can be a difference in effectiveness between brands. You can't go strictly by the ingredients."

Properly timed fertilizer/pesticide combinations can cut the number of applications you make in half during the year. This saves labor and enables you to make necessary pesticide treatments to keep turf in play without criticism from those critical about pesticide applications. Both provide some important relief. □



Fertilizer/pesticide combinations can be applied with spreaders, which are easier to calibrate than sprayers.