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GOLF COURSE USE OF DIAZINON RESTRICTED

An Environmental Protection Agency (EPA) administrative law judge, after hearing testimony from numerous golf course superintendents, has ruled that the use of Diazinon for insect control on golf courses and sod farms should be restricted but not cancelled. The judge rejected a 1986 proposal for cancellation that claimed the insecticide posed "unreasonable risks" to birds which may feed on grass and insects treated with the product.

Judge Gerald Harwood ruled that use restrictions proposed by Ciba-Geigy, a major supplier of diazinon, and the benefits of the insecticide are sufficient to justify its continued use on golf courses and sod farms. Golf course products containing diazinon will carry restricted use labels. Uses of Diazinon other than on golf courses and sod farms will not change since they were not part of the proposed cancellation.

Golf course superintendents, independent ecologists and avian toxicologists presented testimony and data showing that applications made according to the restrictions proposed by Ciba-Geigy do not cause unreasonable risks to birds. The restrictions include an application rate of no more than two pounds of active ingredient per acre with a maximum of four pounds per acre in any 30-day period. All applications must

be followed with 1/4-inch of irrigation. Liquid applications must be made with a boom sprayer with as little overlap as possible. The new label will contain geographic and timing restrictions aimed at protecting certain sensitive species of migratory waterfowl.

Bill Liles, director of the turf and ornamental department at Ciba-Geigy, said the company was pleased with the united support from the turf industry. "We are especially happy with the strong support we got from the Golf Course Superintendents Association of America."

Diazinon has been approved for sale and use for more than 30 years and has been registered for the control of surface and sub-surface insects in turf for 25 years.

AMERICAN GOLF PROMOTES HEACOCK

American Golf Corp., Santa Monica, CA, has promoted Michael Heacock to vice president of golf course maintenance. Heacock joined the company in 1983 as a regional superintendent. American Golf owns or operates nearly 100 golf courses in the U.S.

Heacock is a former president of the Southern California Golf Course Superintendents Association. He has 15 years of experience in golf course maintenance. He is a graduate in turfgrass management from California Polytechnic University in Pomona.

GOLF COURSE MAINTENANCE VALUED AT \$3.5 BILLION

A joint report from the National Golf Foundation (NGF) and the Golf Course Superintendents Association of America (GCSAA) has estimated the annual worth of the golf course maintenance industry in the U.S. in 1987 at \$3.58 billion. This figure includes the cost of labor, equipment and supplies needed to maintain more than 1.2 million acres of land occupied by the nation's 12,384 golf courses.

GOLF SHOW BREAKS ATTENDANCE RECORD

The 59th International Golf Course Conference and Show held in Houston, TX, in February broke all previous attendance and show records, according to Clay Loyd, director of communications for the Golf Course Superintendents Association of America. "More than 13,000 golf course superintendents and turf managers attended the conference," said Loyd.

Not only was the attendance a record, a new high of 416 companies exhibited at the three-day show.

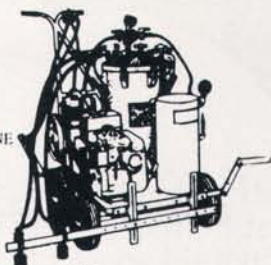
The 60th conference and show will be held at the Convention Center in Anaheim, CA, this coming February.

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John Segui

John Segui, superintendent of Waynesborough Country Club, outside of Philadelphia, PA, was elected president of the Golf Course Superintendents Association of America during its recent conference in Houston, TX. Dennis Lyon, superintendent of golf courses for the City of Aurora, CO, Parks Department, was elected vice president.

Segui, a 25-year member of GCSAA served on the association's board of directors for three years. He is past president of both the Central Pennsylvania Golf Course Superintendents Association and the Pennsylvania Allied Association of Golf Course Superintendents. He has also been active as a member of the Delaware Turfgrass Association, and the New Jersey, Delaware and Pennsylvania Turfgrass Councils, and the United States Golf Association.

Lyon, a member of GCSAA for 14 years, is the former secretary treasurer of the organization and chairman of the finance committee. He was a member of the certification and education committees for two years.

Replacing Lyon as secretary treasurer is Gerald Faubel, superintendent of Saginaw Country Club in Saginaw, MI. Faubel has been a member of GCSAA for 22 years and has served as a director. The outgoing president of GCSAA is Donald Hearn, superintendent of Weston Golf Club in Chelmsford, MA. He will serve one year as a director.

New directors elected are Joseph Baidy, superintendent of Acacia Country Club in Lyndhurst, OH, and Kenneth Sakai, superintendent of Sunnyvale Golf Course in Sunnyvale, CA. Directors serving the second year of their term include, Stephen Cadenelli, Metedeconk Golf Course in Manasquan, NJ, and Randy Nichols, Cherokee Town and Country Club, Dunwoody, GA.

**WASHINGTON'S GOSS
RECEIVES USGA AWARD**

Roy Goss, who recently retired as extension agronomist for Washington State University at Puyallup, was awarded the United States Golf Association Green Section Award. He was honored for a host of advancements he made in turfgrass management during his 30 years with the University.

Goss is a member of the SportsTURF magazine advisory board and is consultant for the Seattle Seahawks. He plans to expand his consulting work since he has retired.

**WATSON RECEIVES TURF
SCIENCE AWARD**

Dr. James Watson, vice president and agronomist for The Toro Co., in Minneapolis, MN, has been awarded the Fred V. Grau Turfgrass Science Award by the Crop Science Society. The award is presented for significant career contributions in turf science and is named for Dr. Fred V. Grau, the first extension turf specialist in the U.S.

In addition to his work for Toro, Watson is adjunct professor of horticulture and landscape architecture at the University of Minnesota and consultant to the National Football League.

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Managing Your Exposure To Liability on the Playing Field

By Neil J. Dougherty

During the last decade we have witnessed a tremendous increase both in the number of sports-related lawsuits and in the size of settlements and the jury awards achieved. It should not be surprising that this trend has been reflected in rising insurance costs, decreased insurance availability and, all too often, curtailment of sports programs. While litigation involving playing fields constitutes only a relatively small portion of the total liability picture, it is both important and, to a degree, controllable.

A recently completed survey of approximately 450 sport-related lawsuits brought in the New York/New Jersey metropolitan area, revealed that ten percent of the cases alleged that the injury in question was caused primarily by improper field conditions. Sixty percent of these (six percent of the total) alleged that the field in question was inadequately maintained. The remainder focused on field layout and/or the nature and selection of field-related equipment such as fences or bases.

Since the civil laws of our country permit virtually anyone to sue anyone else at anytime for any reason, there is little that can be done to insure the elimination of lawsuits as long as there remains a possibility of injury. The contention that many sports by their nature present some risk of injury is no longer a reliable defense. Sports facility managers must begin to reduce their exposure to legal action by giving special consideration to all possible areas where negligence could be alleged.

It is possible to minimize the potential for injury and to maximize the likelihood of winning any lawsuit based on alleged acts of negligence. This is best done with a careful program of risk management and a thorough understanding of the principles of legal liability.

In order to prevail in a lawsuit the *plaintiff*, or injured party, must establish several elements through a greater weight of evidence. First of all, the plaintiff must prove the *defendant* has a duty to provide for the safety and welfare of the plaintiff. He must prove that the defendant breached that duty by failing to provide the appropriate standard of care. The defendant, either by omission or commission, must be proven guilty of an act of negligence.

Furthermore, the plaintiff must have sustained damages or suffered an actual loss to his person, property or interest. The potential for these damages (injuries) should have been foreseeable or predictable under the specific circumstances in question. Finally the plaintiff must prove that the alleged negligence of the defendant caused or ag-

gravated the specific injury or loss in question. This last concept is referred to as *proximate cause*.

The relative safety of the playing field is a function of design, construction, maintenance, and a variety of judgemental issues involved in daily operations. All fields, for instance, should meet or exceed appropriate design and safety standards where they exist. Particular attention should be paid to the necessity for a smooth, level and unobstructed surface, as well as to the daily effects that weather may have on the relative safety of that surface.

Costly litigation regarding playing fields often can be linked to common design and/or construction faults. The most obvious fault is an uneven surface. Abrupt changes in grade or holes caused by poor grading, ero-

A recent study of sport-related lawsuits revealed that ten percent alleged that the field was inadequately maintained.

sion during construction and settling make even new fields potentially hazardous. These problems can be further complicated by rocks not removed from the topsoil, improperly installed sprinkler heads and poorly located drainage grates.

Another common design error is a lack of adequate "buffer space" around the playing field. When this space is reduced by seating, track and field structures or even trees and buildings, the chance of injury increases. The increased demand for football and soccer fields has caused some parks and schools to dangerously reduce the amount of space between adjoining fields in order to provide more fields in a given area.

Some types of sports equipment, such as fixed pedestal bases, can be hazardous when used by relatively low skilled softball leagues which allow stealing and sliding. While these bases may be appropriate for skilled baseball players, their unyielding characteristics make them particularly hazardous when used with an unskilled group. In all sports, the selection and use

of equipment must be appropriate to the level of skill or knowledge of the participant.

Improperly placed or inadequately protected spectator areas can create an unknown and unnecessary danger for individuals wishing to watch a game or practice. Moreover, the benches and bleachers themselves become a hazard to the players if not sufficiently removed from the playing field.

While fencing can be critical to controlling the use of athletic areas, attention must be paid to the type and height. Most sports have clear specifications regarding the nature and height of appropriate fencing. In addition to the selection of the materials, care is required in determining the placement of posts (usually on the outside of the field) and guide rails. Skinned dirt tracks inside fences add an important safety dimension to fencing.

Even the best designed and constructed facilities can become unsafe if they are not subject to regular maintenance procedures and sound supervisory judgement with regard to daily use. Increased use necessitates increased maintenance. The center of football fields, the goal mouths of soccer fields and the skinned areas of baseball and soccer fields must be maintained according to the amount of use they receive. If increased maintenance cannot be provided, field use must be curtailed to reduce the risk of a lawsuit. The cost of increased maintenance is relatively minor when compared to the cost of litigation brought about by a needless injury.

Judgement is also required in balancing field use with weather conditions. Extremely wet or dry conditions increase the wear of the sport on the field. Increasing use during periods of drought or excess rainfall requires superior irrigation and drainage. The cost for these items is also easily determined. If wet or dry weather conditions are common in a particular area, field use will need to be curtailed or an investment will need to be made in drainage and irrigation.

To protect itself from future litigation, the sports turf industry needs to develop and follow general guidelines to avoid unnecessary injuries. The following guidelines, while by no means all-inclusive, may help reduce exposure to negligence related lawsuits.

1. Make certain that all new fields and facilities meet or exceed all current safety standards. Be particularly attentive to matters relating to surfaces, lighting, buffer zones and the presence of obstacles in the play area. The safety of both natural and artificial surfaces has been improved in the past five years. Be sure the architect design-

continued on page 36



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Managing Your Exposure

continued from page 34

ing your sports facility is incorporating these recent improvements in his plan.

2. Develop and implement procedures for the routine inspection and upkeep of all fields and surrounding facilities. Maintain comprehensive inspection and repair records. Assign inspection and corrective responsibilities to knowledgeable individuals. Utilize these individuals to establish written procedures for preventing and correcting deficiencies. Review records frequently to assure that all procedures are being followed.

3. Establish an appropriate schedule for cleaning, mowing, irrigating, marking, in-

field preparation, fertilization, aeration and weed control. Make appropriate modifications in the schedule as dictated by weather conditions and use levels. Do not use caustic materials to line or mark fields.

4. Require coaches and recreational supervisors to inspect fields before use. This double check system greatly reduces the possibility of negligence-related injuries. Develop a simple checklist for this purpose and utilize their feedback as part of a simple and efficient mechanism for initiating corrective actions. Develop an orientation session on field safety for coaches and recreational supervisors. Use this as an opportunity to open up lines of communication with key field users and to explain their role in field maintenance.

5. Post signs with care and use rules by each field. Include a telephone number for notification in the event of user-noted maintenance problems. These rules also should be included on all field reservation forms. Encourage participation of all users in a "Field Safety Program."

6. When hazardous areas are revealed during inspections or reported by users, make appropriate modifications to keep participants away from them until repairs can be completed. Move activity away from the hazard whenever possible. Install barriers and post warnings when the areas cannot be kept free of activity.

7. Provide adequate space around each field for a buffer zone. There should be room for waiting players (substitutions) to warm up and for the spectators as they come and go. Overcrowded conditions are a frequent cause of injuries.

In addition to the critical issue of accident prevention, there are several legal arguments and professional procedures which can assist greatly in the formulation of a defense in the event of a lawsuit. Principal among these is good recordkeeping. Inspection and maintenance checklists, repair records and other similar documentation provide hard evidence of the nature and frequency of managerial efforts to guarantee a safe facility. The absence of such records,

on the other hand, can help to persuade a jury that a given field was carelessly and/or improperly maintained.

In the event of a lawsuit, the plaintiff's attorney will almost certainly ask a number of questions which can greatly affect the outcome of the case and which can be simply and convincingly answered if appropriate records have been maintained. While written documentation is not, in and of itself, a requirement, it is important to realize that the legal process tends to be rather slow, especially in civil cases, and most of the questioning will occur several years after the incident. It is, therefore, absolutely foolhardy to expect to provide the type of accurate factual response that will best impress a jury entirely on the strength of your memory.

If pressed to provide a single word which would summarize the issues of accident prevention and the avoidance of negligence, one could only choose *professionalism*. Well-trained professionals with a sincere concern for the quality of their work tend to maintain safer facilities. They are concerned for the welfare of the individuals who depend on them and, as a result, they plan thoroughly, document their work and supervise carefully.

There is little question that those responsible for a park, university, school or other sports facility can reduce the incidence of injuries and the potential for lawsuits by employing a professional sports turf manager. Even in situations where injuries do occur, the likelihood of a successful lawsuit based upon negligence is minimized when the field is maintained by someone who is considered a professional by his peers, maintains complete records and understands the relationship between field use and maintenance.

Editor's Note: Neil J. Dougherty is director, School of Applied Health Sciences, Rutgers University, New Brunswick, NJ 08903.

Suggested References

Burke's Guide to Playground Planning, The J.E. Burke Co., New Brunswick, NJ, 1970.

Dougherty, Neil J., (ed.), *Principles of Safety in Physical Education and Sport*. The American Alliance for Health, Physical Education, Recreation and Dance, Reston, VA, 1987.

Flynn, Richard B., (ed.), *Planning Facilities for Athletics, Physical Education and Recreation*. The Athletic Institute, North Palm Beach, FL, and American Alliance for Health, Physical Education, Recreation, and Dance, Reston, VA, Revised 1985.

A Handbook for Public Playground Safety, Volume I: General Guidelines for New and Existing Playgrounds, U.S. Consumer Product Safety Commission, Washington, DC.

A Handbook for Public Playground Safety - Volume II: Technical Guidelines for Equipment and Surfacing, U.S. Consumer Product Safety Commission, Washington, DC.

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Port Charlotte

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put down 24 pounds of nitrogen (per 1,000 square feet) with spreaders and a boom sprayer to grow in the ryegrass and the bermudagrass." At the same time the parking lots and surrounding landscape were sowed with bahiagrass.

Remembering the thatch at Arlington, Burns aerified and verticut five times that summer. A Jacobsen 720 sweeper was used to vacuum up the thatch. "We didn't need to topdress last year, but I plan on it this year," Burns adds.

The thing that Burns will always remember about his first spring in Florida were the mole crickets. Minor league games are played at night under the lights. While the crickets hide deep in the soil during the day, they tunnel to the surface in the evening. "When the lights came on the crickets seemed to come out of nowhere flying and crawling all over the field and stadium," he recalls. "I had no idea how big of a pest they were. I first noticed their burrows in the field after we pulled the tarp for a night game after a day of rain. That night when the lights came on they started flying everywhere. From then on, Burns started noticing burrows on many of the fields.

After consulting his chemical suppliers and a few golf course superintendents, Burns planned his attack. He mixed Orthene into his boom sprayer one evening before a game. When the lights came on, they started emerging from the soil. For nine innings, Burns waited to make his move. At the end of the game, he fired up his Cushman truckster with the boom sprayer and caught the

crickets in the act. His next move was to aerate all the fields and apply a fertilizer containing Oftanol, a long-acting soil insecticide. He didn't stop there. He also spread Baygon bait around the fringes of the fields. "I'm trying to create a buffer zone around the stadium now," states Burns.

Burns needed a similar plan of attack for fire ants. The small ants establish colonies in mounds of soil and cause painful bites when foraging for food. "We kick over and drench each mound we find with Orthene." Burns is trying Amdro bait in the landscaped areas around the complex.

The only disease problem Burns has had to solve occurred last August. "We had pushed the bermudagrass so hard that year to get it established we created a perfect environment for *Helminthosorium*. First I noticed damage on one of the practice fields. Then, I discovered the players were tracking it onto the stadium field. Fortunately, Rangers were wrapping up their season." Burns applied Dyrene and cut back on nitrogen and water on the stadium field. This year he plans to cut nitrogen applications in half and boost potassium during the summer.

Burns uses a mixture of the old and the new in infield preparation. The foul lines on the stadium field are painted by hand with a four-inch brush three times a week. Since the lines are burned into the practice fields with diesel oil, he has only one field to paint. After pulling a string tight from the corners of the plate to both foul poles, he applies white latex paint with a brush on top of the string. "It may seem old-fashioned, and I wouldn't do it with more than one field or

a football field, but it takes longer to clean a paint sprayer than it does for me to paint the lines by hand."

Hand raking the edges of the basepaths is a rule at Charlotte. Burns doesn't allow the drag within two to three inches of the infield grass to prevent lips from forming in the turf next to the basepaths. Still, wind and sliding players will push some infield mix onto the turf. Once a week Burns has his crew hose the clay out of the turf. After spring training, he puts the verticut reels on a Toro Greensmaster and strattles the edges of the basepaths to make sure the level of the basepaths matches the level of the soil under the turf. The edges are trimmed every other week to keep them sharp.

The infield of the stadium is mowed with a Jacobsen walk-behind greens mower at 1/2-inch. Burns is a fanatic about mowing straight. "Detail makes a big difference on a field," he adds. One detail he notices that few others do is the moisture level of the basepaths. Turf gets lighter as it dries. By watching the color of the infield dirt, he knows when it needs to be wet down. If it's too wet the players slip—too dry and it crumbles. Just the right moisture is required for the mounds and the batter's boxes. The last thing Burns does every night is to recondition all the mounds and batter's boxes and cover them with tarps. That includes the bullpens.

Since the Rangers play a portion of their games on artificial turf, where the basepaths are carpet not dirt, Burns has sodded the basepaths on one field. "Rather than buying artificial turf for one field, we thought we'd try to make one natural field play like an artificial field," he says.

The busy season ends each year at Charlotte with the instructional leagues from September through October. Burns looks upon the players in the instructional leagues with admiration. "A lot of those guys don't have to be here, they just want to be to improve their skills."

You get the feeling that Burns too wants to keep improving. He turned down the groundskeeper's job at Dodger Stadium last year because union rules would only allow him to supervise, not participate. "You have to be on the field working to really know what's going on," he states. "When somebody has enough faith to give me responsibility, I don't want anything holding me back."

Burns thinks the biggest challenge in sports turf management is keeping a stadium field in top shape for both baseball and football. "At the most important time of the year for baseball, it takes one heck of a turf manager to keep both baseball and football teams happy. But, there's got to be a way."

Burns' hard work is paying off. Baseball Commissioner Peter Ueberroth has called the Port Charlotte complex one of the best in major league baseball. "It sets a standard that other teams need in order to improve," he stated. 🐞



Mole crickets would burrow to the surface during night games at the stadium.

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PENN STATE PROMOTES FIELD HARDNESS TEST

The Department of Agronomy at Pennsylvania State University in University Park, with a little help from Australia, has developed a reliable way to quantitatively measure athletic field hardness. Dr. Don Waddington and Trey Rogers, a graduate student working on his Ph.D., obtained a portable, computerized impact tester used "down under" for measuring the hardness of dirt roads. They initiated a series of tests to measure the affect of various types of surfaces and maintenance practices on field hardness.

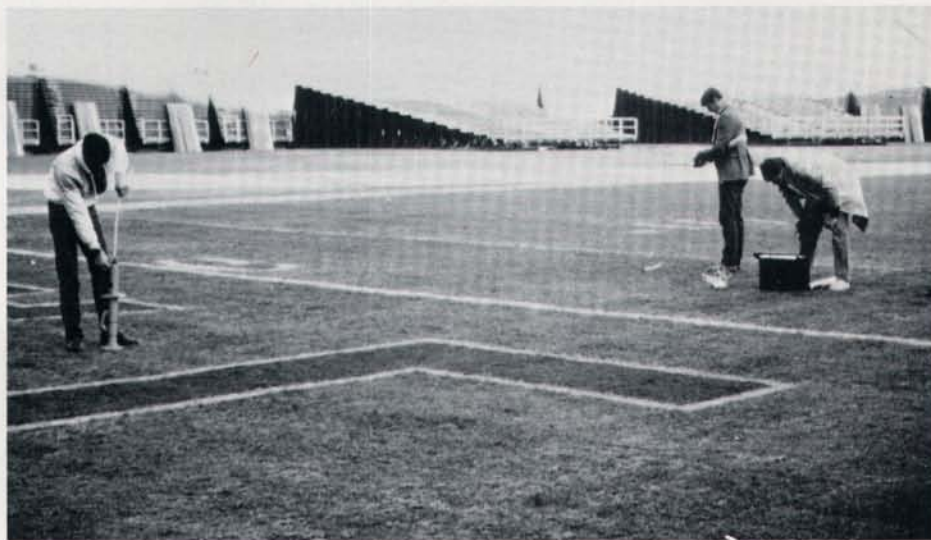
After trying the device at the University's Joseph Valentine Turfgrass Research Center, Beaver Stadium and many of the practice and intramural fields on campus, Waddington and Rogers started taking the device to area high schools to gauge the hardness and safety of both natural and artificial playing surfaces. "We perform our tests on actual playing fields to simulate a hand, elbow or knee hitting the turf," says Waddington.

The impact tester consists of a weight attached to an accelerometer, a device which measures how fast an object speeds up or slows down. "The faster the weight stops, the harder the surface is," explains Waddington. A hard, rigid surface not only stops a falling object quickly, it also absorbs very little energy upon impact. "If I held my hand out and you threw a baseball at it, that's going to sting," he states. "But, if I move my hand back as the ball hits, it won't seem as hard because I'm slowing down the stopping action." Sports turf should do the same.

The impact tester is connected to a vibration analyzer which displays the impact as a curve on an oscilloscope screen. The analyzer stores up to 50 impact readings at one time. "We can take readings from many locations on a field quickly and easily," Rogers points out. The results can be loaded into a computer for further analysis and storage.

Rogers and Waddington are looking specifically at the effects of mowing height, soil compactness, soil moisture and aeration on field hardness. Fields at two dozen high schools have been tested. "After you visit a number of schools, you start to see a pattern," says Rogers. "All of the practice fields are in poor condition. That's bad because that's where athletes spend 80 percent of their time and those fields probably get a quarter of the care that the game fields get."

The researchers are concerned that maintenance of many high school fields is



Penn State students demonstrate the impact tester at Atlanta-Fulton County Stadium.

neglected. At many schools there is no one whose primary responsibility is to maintain the grounds and playing fields. Often those duties fall to someone such as a building custodian who doesn't have the proper knowledge or training to care for a field.

Athletic field conditions have begun to improve as a result of the Penn State tests. Suggestions for maintenance and renovation programs developed by extension agronomist Jack Harper were sent to each school. Subsequent visits have shown that some of the schools are following the suggestions and improving their fields. "Results (from a survey of state high schools) showing that one in five injuries may be field related should be an incentive to construct and maintain high-quality playing surfaces," says Harper.

In addition to measuring field hardness, Waddington and Rogers measure shear resistance, or traction.

The Penn State research is unique because it focuses on how soil properties affect both the playing field surface and how the game is played. "In the past, the study of soil physical properties in turf areas has been primarily aimed toward providing a good environment for the turfgrass," Waddington states. "Now, there's a lot more interest in how the soil actually affects the play of the game." "We don't want just green cover anymore," says Dr. Al Turgeon, head of the Department of Agronomy, "our goal is to have a well-engineered field."

MESH STRENGTHENS SAND-BASED FIELDS

Tests at Texas A&M University at College Station have shown that small, rectangular pieces of plastic mesh mixed into a sand root zone before seeding or sprigging greatly improve the durability and wear-tolerance of natural surfaces. The work by J. B. Beard and S.I. Sifers confirms results obtained by the Sports Turf Research Institute in Bingley, England.

The two- by four-inch pieces of mesh made by Netlon Ltd. of Blackburn, England, are incorporated into the top six inches of sand or sand/soil mixture at a rate of 2.5 kilograms per cubic meter (roughly seven pounds per cubic yard). The pieces of mesh become interlocked in the sand to spread out weight placed on the surface of the soil. The roots of the turfgrass grow through the mesh and become anchored in it.

Beard and Sifers subjected Tifway bermudagrass growing in a USGA root zone mix containing the mesh to wear designed to simulate typical wear inflicted upon sports turf. Divots made in the turf grown in mesh were 35 to 45 percent smaller than those made by the same method in turf without mesh. A compression displacement test to simulate horse hooves or tires showed shallower penetration in the mesh soil than the soil without mesh. Tests to simulate lateral shear stress were inconclusive, but still suggested a certain amount of benefit.