

Even more  
It's **kid proof**



## Denser, darker green Manhattan II takes the bruises *for* your athlete

What goes up must come down . . . and that goes double for athletes' knees and elbows.

Improved Manhattan II perennial ryegrass has a built-in cushion developed through genetic improvement. The greater tiller density of Manhattan II takes the punishment athletes dish out, then springs back to retain its great-



looking appearance. All that toughness . . . with improved mowability to boot!

Manhattan II also provides a darker green color than the old standard Manhattan; improved disease resistance, drought and shade tolerance as well as fertilizer savings.

Manhattan II was developed to save on maintenance costs . . . but the *real* saving is on knees and elbows!

"Fall on the leader"  
**Manhattan II**  
TURF-TYPE PERENNIAL RYEGRASS

Qualified turf associations can earn cash for turf research by saving Manhattan II blue tags. Contact your dealer for details.



Distributed by

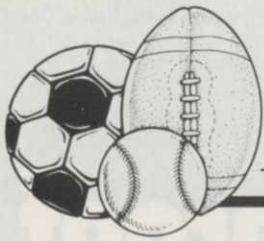
**Turf Merchants, Inc.**

P.O. Box 1467 • Albany, OR 97321  
Outside Oregon 800-421-1735  
503/491-3622 TWX 910-997-0733

**Turf-Seed, Inc.**

P.O. Box 250 • Hubbard, OR 97032  
503/981-9571 TWX 510-590-0957

Circle No. 139 on Reader Inquiry Card



**Dr. Don Waddington** has studied the connections between injuries and field conditions.



**Dr. Tom Turner** says turf-type tall fescues are highly adaptable in the transition zone.



**Dr. Dave Chalmers** recommends seeking the advice of extension agents.

fore they start because they use the wrong soil," says Dr. Joe Duich of Penn State University.

Soil tests provide the manager with a chemical analysis to see how much fertilizer is needed and an analysis of the soil's physical properties to determine the percentage of sand, silt, and clay.

Dr. Eliot Roberts, executive director of The Lawn Institute, says a good sports field should have about 85 percent sand. The sand promotes drainage, which is also a key to a well-maintained athletic field. But, he warns, mixing in small amounts of sand will act like cement and clog a field.

"Too little sand can be more harmful than doing it right," Roberts explains. "Either go all the way or leave it alone."

For athletic fields which need help, but are hindered by budget constraints, Roberts recommends grading or contouring the surface. This is done with a grooving machine, such as the Ditch Witch.

The grooving should run from goal line to goal line, perpendicular with the flow of the water off the surface (toward the sidelines). The slits should run parallel to each other, every six feet, and be 18- to 24-inches deep.

The soil should then be hauled

any land grant university, which usually has the main agriculture school in the state. Athletic turf seminars sponsored by the local extension service are becoming more popular.

### Rev up community support

Most extension agents consult free of charge which is an advantage to schools with low budgets. Schools that can't get in touch with an extension agent can often get free advice through a local golf course superintendent or landscape contractor. When pinching pennies, borrow equipment from concerned superintendents or contractors.

Community education can be difficult to achieve, but is important to any field managers. Indyk advises that if administrators don't listen, go to the PTA. Concerned parents have a way of getting action when it's a matter of their children's safety.

### Aerate often

Aeration is perhaps the biggest factor in maintaining a safe playing field. Every field, regardless of age, needs aeration to loosen the compacted soil. "Aeration is the difference between failure and success," Indyk says.

"We find the tendency is to not aerify anywhere near enough," says Roberts. He recommends aerifying, about three inches deep, in five different directions, "as often in the spring and fall as it is visually evident that the grass is weak because the ground is hard."

The cores on the field need to be broken to work as a top dressing, which stimulates grass growth. Breaking the plugs also helps keep the field level.

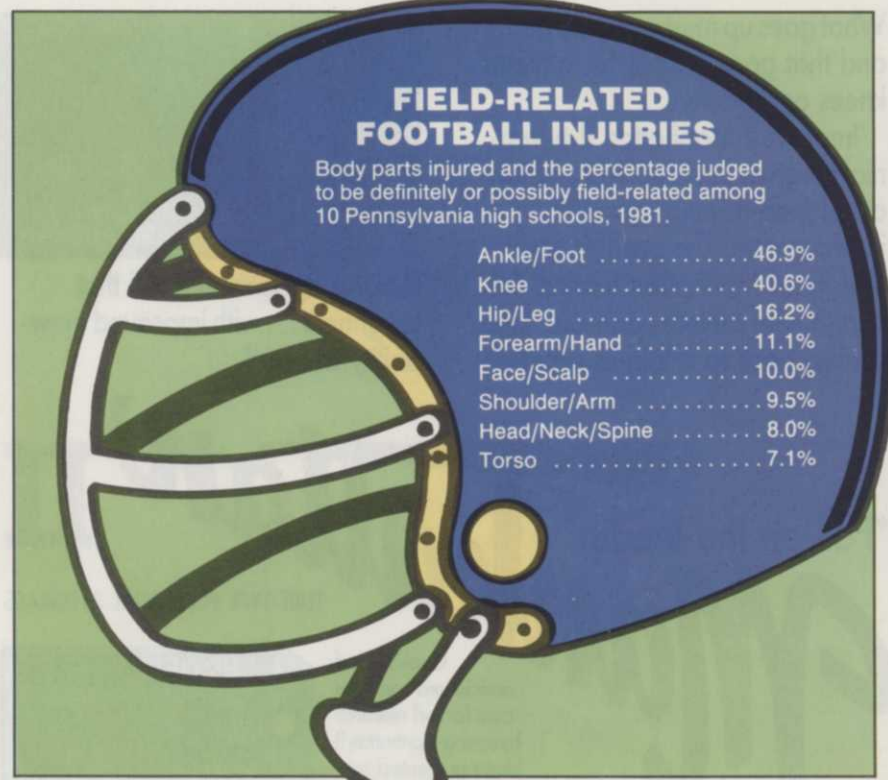
Roberts recommends dragging a

chain-link fence over the cores to break them up. An upside-down harrow will also work (see WT&T "Job-talk" April 1986).

### Sample the soil

While aeration can help many fields, some fields need complete renovation. An extension agent can complete soil tests which are necessary in evaluating the type of maintenance a field needs. Although many managers concentrate solely on turf quality, soil needs to be a primary focus in an athletic field.

"The majority of fields are dead be-



# INTRODUCING THE CUSHMAN EAGLE.™

A new standard of performance.



Until now, there's never been a utility vehicle designed and built specifically to meet your turf-care needs.

But now there's the Cushman Eagle.

The Cushman Eagle is not a converted golf cart. It's not a redesign. It's a revolutionary new turf utility vehicle that sets a new standard of performance.

You can choose from more options to meet a wider range of needs. Bodies made of sleek, dent-resistant polyurethane or time-tested diamond-plate steel. Models that allow four passengers to face forward. You get a smoother,

more comfortable ride. More responsive handling. And longer service life.

The Cushman Eagle is the kind of rugged, reliable vehicle you've come to expect from Cushman, the leading manufacturer of cost-efficient time savers. A comparison will convince you of its performance. The price will convince you of its value.

Test drive one at your Cushman dealer today or call for more information. You'll see that nothing else works as well or looks as good as the new Cushman Eagle.

*Our Reputation is Built to Last.*

## CUSHMAN

5291 Cushman, P.O. Box 82409, Lincoln, NE 68501

Toll-free: 1-800-228-4444

© Outboard Marine Corporation, 1986. All Rights Reserved.  
Circle No. 114 on Reader Inquiry Card



Larry, what makes Fairway Fertilizer with TGR™ Poa Annuia Control so different from other weed control products? "Instead of acting like a

conventional herbicide, the new Scotts product slows the growth of the *Poa* plant, diminishing its competitive ability. The result is a gradual, more natural transition to desirable grasses without a sudden decrease in playing surface quality."

That really changes the way you think about growth regulators. How does it fit in with current turf management practices? "Fairway Fertilizer with TGR Poa Annuia Control has proven to be effective in reducing *Poa* populations even under conditions that would normally enhance their growth. Extensive testing has shown that this product fits in with a range of different management practices. Treat your turf with successive fall and spring applications until the *Poa annua* has decreased to the desired level."

What about those ugly *Poa annua* seedheads? "A significant benefit of the new product is a reduction in the visibility of *Poa annua* seedheads after one

application. When applied before seedhead emergence in the spring, the treatment will slow the emergence of the seedhead stalk, resulting in fewer visible seedheads and more uniform turf color and playing surface."

How about color response? "This formulation provides not only selective control of *Poa annua*, but also extends the greening response well beyond what an equal rate of fertilizer alone can achieve."

For more information on Scotts new Fairway Fertilizer with TGR Poa Annuia Control, call your ProTurf Tech Rep. Or call Scotts direct at 800-543-0006. In Ohio, call collect (513) 644-2900.

**"Now, with Scotts®  
new TGR™ technology,  
you can outgrow your  
*Poa annua* problems."**

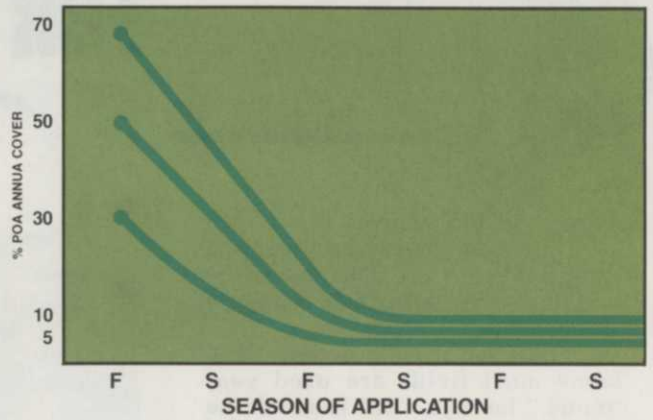
Dr. Larry Widell, Scotts Research project leader (Plant Growth Regulator R&D), talks about new Fairway Fertilizer with TGR™ Poa Annuia Control.



\*Scotts trademark for its turf growth regulator technology



Aggressive bentgrass can be seen encroaching into an area of *Poa annua* treated with ProTurf Fairway Fertilizer with TGR Poa Annua Control.



Typical *Poa annua* population suppression is shown over time with continued use of Scotts Fairway Fertilizer with TGR Poa Annua Control. The degree of control may be influenced by turfgrass management techniques, climate, soil type and *Poa annua* biotype.



The treated area (left) in this mixed *Poa annua*/bentgrass fairway has been converted to predominantly bentgrass after three applications.

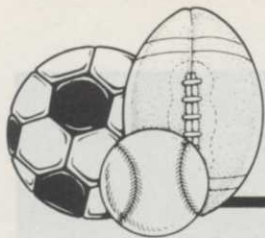


Notice the selective elimination of the *Poa annua* and the increased greening of the treated plots 7 weeks after application to a mixed stand of perennial ryegrass, Kentucky bluegrass and *Poa annua*.



Fewer seedheads are apparent in fairways when treated in the spring. The lens cap indicates the upper right corner of the treated plot.





# FOR SAFER TURF....

away, and the grooves filled with sand. The sand helps trap water and carry it into the soil. Roberts says the best time to renovate a field is in early spring or fall.

"There isn't really a good time, since most fields are used year 'round," he says. "But it should be done when the grass grows best. The summer is too hot and it doesn't heal rapidly."

## Seed selection

The variety of seed used on an athletic field makes a difference. Roberts emphasizes the necessity to always choose a name variety. "There's a bunch of these name brands out, and there's not a great deal of difference," Roberts says.

New varieties provide improved insect and disease resistance. Common varieties or blends don't guarantee enough cushion to a field, he says.

On cool-season fields, Roberts recommends using bluegrass (Adelphi, Baron, Touchdown, Glade, Merit, Midnight, Aspen). Bluegrass spreads by rhizomes. It holds together well under use and also forms a good sod. The rhizomes will automatically fill in divots in the field.

Turf-type tall fescue (Rebel, Houndog, Mustang, Olympic, Falcon, Apache) doesn't have the rhizomes found in bluegrass. Roberts describes it as a "clump-type" turf. It needs to be seeded close together. Despite the fact that it won't form sod, turf-type tall fescue does offer improved disease and insect resistance and provides a rugged cover.

Dr. Tom Turner, extension turf specialist at the University of Maryland, says turf-type tall fescues are best to use in the transition zone.

"In Maryland, we're strongly pushing turf-type tall fescues," he says. "You have to irrigate bluegrass in Maryland for it to survive well. It's too hot and humid in the summer."

Turner says Maryland is "in a hotbed of anti-pesticide groups." With improved insect resistance, the turf-type tall fescues offer a good compromise.

Perennial ryegrass (All\*Star, Repel, Manhattan II, Citation II, Fiesta, Pennant, Derby, Palmer) also doesn't spread by rhizomes, but, Roberts says, it is ideal for overseeding, repairing, or renovating a field. Several new varieties of ryegrass contain endophytes, which naturally fight insects.

Ryegrass can be blended with



Dr. Eliot Roberts

In order to build or maintain a good athletic field, Dr. Eliot Roberts, executive director of The Lawn Institute, suggests following these five guidelines:

1. **Land**—First assess the grade/slope of the land.

2. **Soil**—Take core samples to determine the depth of the topsoil, subsoil, and rock layer. Determine the mixture of sand, silt, and clay. To promote drainage, good fields should be about 85 percent sand. (See related story for an easy way to renovate a poorly constructed field) Check the physical properties of the soil such as the particle size.

While looking into the soil, consider how it will work with the installation of drainage, tile lines, and the irrigation system.

3. **Consultant**—Bring in a consultant or local extension agent who is knowledgeable in the design of drainage and irrigation systems. If you haven't determined the properties of the soil, use the consultant to do that at the same time.

4. **Seed**—Select a name seed variety with improved disease and insect resistance. The turf should be able to compete with weeds and take wear. Stay away from common varieties and blends.

Bluegrass works best in cool-season grass areas because it spreads by rhizomes. Turf-type tall fescues are recommended for areas in the transition zone because of insect resistance and drought tolerance. Ryegrasses are good for overseeding and repairing.

Most southern states use bermudagrass on athletic fields. Bahiagrass and kikuyagrass also work in some regions.

5. **Maintain**—After constructing a good athletic field, maintenance should not be neglected. Aeration is the number-one priority for any field. Aeration should be done as often as necessary in the spring and fall, in five directions, at a 3-inch depth.

Irrigation and cultural treatments can be determined by the soil analysis and turf variety used.

If you have any specific questions, be sure to consult your local extension agent.

WT&T

bluegrass, but Roberts advises against mixing it with tall fescues. "The ryegrass is more aggressive and tends to colonize," he explains. "It doesn't make for a uniform surface."

In warm-season turf regions, bermudagrass is most commonly used on sports fields. Some gulf coast states use bahiagrass. Several regions of Southern California use kikuyagrass, despite the fact that the Soil Conservation Service has outlawed it because it spreads into agricultural crops.

Centipedegrass won't take the wear of an athletic field. St. Augustinegrass and zoysiagrass get too thatchy and spongy to work well.

To manage a good athletic field, just remember:

## The key to top turf

To manage a good athletic field, just remember GRASS.

**G**et advice from a professional consultant or extension agent;

**R**ev up community support for the needed budgets or equipment;

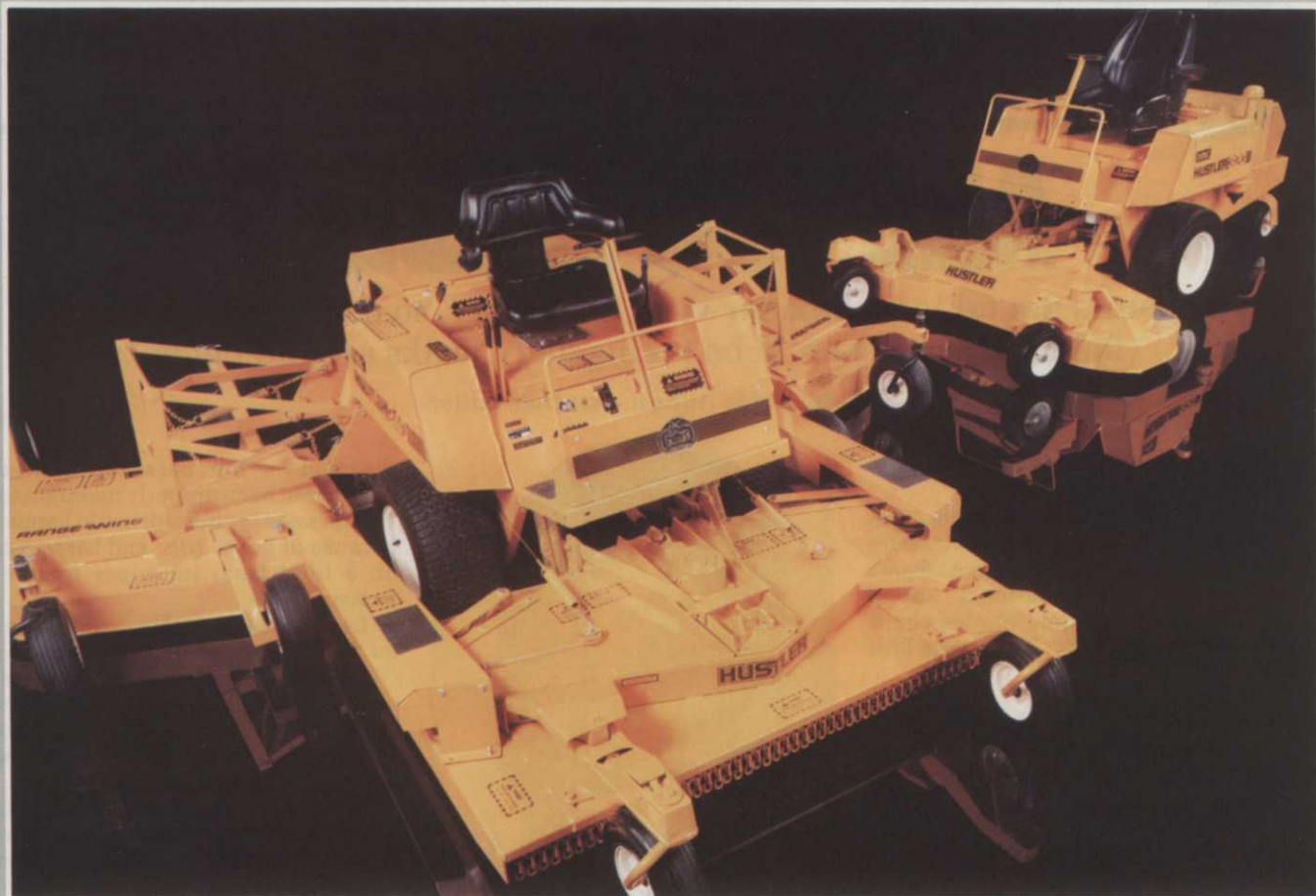
**A**erate a good field regularly and often; but, if the field needs help;

**S**ample the soil and renovate the field if necessary;

**S**elect seed carefully, using name varieties only;

WT&T

*EDITOR'S NOTE: Special thanks to Dr. Fred Grau of the Musser Turfgrass Foundation and Dr. Eliot Roberts of The Lawn Institute for their time and effort in providing the WT&T staff with background information used in this series of articles.*



## The New HUSTLERS... 320 and 340

Excel's new generation has extra diesel power and HUSTLER tough features that deliver peak operating efficiency and performance.

The 16-bushel Hi-Lift BAC-VAC™ attachment gives turf a clean sweep and dumps clippings where you want them.



The new generation HUSTLER 320 and HUSTLER 340 let you unleash rugged water-cooled diesel power for the toughest chores. The new diesel engines team up with a solid heavy-duty "mainframe" and dual tail wheels to make the new 320 and 340 HUSTLER tough and built to last. It all works together to make the new-generation HUSTLERS quieter, more efficient, more economical and more rugged than ever. Of course, they still have the famous HUSTLER dual-hydrostatic, pumps, direct drive-wheel motors and twin-lever steering that give true zero-degree-radius turning. Anyone can drive a HUSTLER because twin-lever steering lets the operator have total control of speed, forward, reverse, turning and braking, all in the palm of one hand. Look at the 21.5 hp, HUSTLER 320 or the powerful 28.5 hp, HUSTLER 340 at your nearby HUSTLER dealer today.

Or call toll free:

**1-800-835-3260**

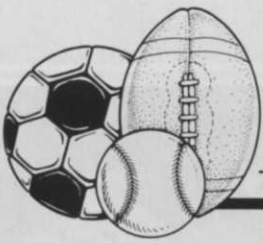
In Kansas, call 1-800-362-1049



EXCEL Industries, Inc. • Box 7000 • Hesston, Kansas 67062



25 Years of Quality



# ARE YOU LIABLE?

The courts are taking a broader view of liability, so conscientious athletic field managers should be taking daily walks around fields.

by Heide Aungst, associate editor

**T**he game: Texas Christian University at Alabama.

The date: October 26, 1974.

The play: TCU's tailback carries the ball on an end sweep. An Alabama player pushes the tailback out of bounds from the front. Another chops his legs from behind. The tackle flips the tailback.

End of play.

Former TCU tailback Kent Waldrep watches that play over and over again. Not on videotape, but in his mind.

That play left him paralyzed from the neck down.

"I'll remember that moment the rest of my life," Waldrep says. "I can think and visualize exactly what happened and what I felt like it was yesterday."

What he felt the moment his head hit the artificial turf was nothing. Nothing.

Then, within minutes, the tremendous pain started.

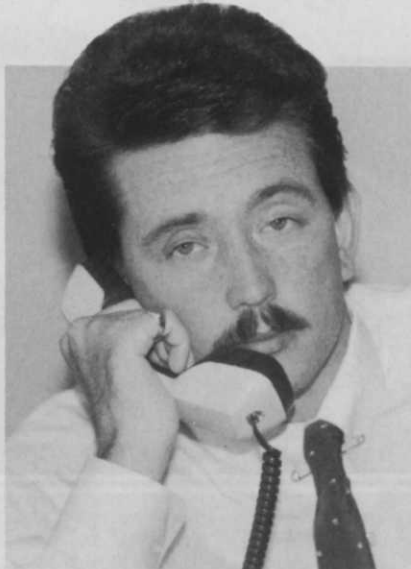
He spent a month in an Alabama hospital, then went to an acute spinal cord injury center in Houston for three months. He even became one of the few Americans permitted to receive experimental treatments in the Soviet Union.

Through all the physical pain, Waldrep had to endure the emotional trauma of starting life over in a wheelchair.

And, there were more frustrations. Less than a year after the accident, TCU officials stated they would no longer be responsible for his medical bills. An attorney advised him not to sue TCU.

But Waldrep did file suit in 1976 against the manufacturer of the artificial turf in Alabama's stadium.

The case was settled out of court in 1984, and, as is common in settlements, he can't talk about the case, even to mention the company he sued. But *Sports Illustrated* reported the suit was against American Biltrite, the manufacturer of Poly-Turf and the contractors who put it down.



**Kent Waldrep: Paralyzed on artificial turf.**

Although most law suits involving athletic fields focus on artificial turf fields, suits on natural fields may not be far off.

## Going to court

Jim Leatzow, senior vice president of Financial Guardian Insurance, says field managers need to be aware that cases involving playgrounds and parks also affect athletic fields.

"The courts are taking a broader view of responsibility," Leatzow warns. "They hold a degree of liability and responsibility if someone is hurt because something is not properly maintained. The courts will ask, 'Is there something that could have been done to prevent the injury?'"

Leatzow cites a case involving a swing set which was set in concrete. The soft cover around the swing set had worn away because no one had maintained it. A child, misusing it, slid down the end support pipe and broke his leg. His parents sued and won a sizeable amount.

Leatzow says it didn't matter if the child was misusing the equipment. The court only looked at the fact that

the child was hurt because the covering had not been properly maintained.

The same type of suit could happen because of holes, ruts, and bare spots on a field from improper maintenance.

Leatzow says the No. 1 precaution for field managers is common sense.

"By that I mean look for the foreseen problem, like equipment which is not up to snuff," he explains. "Make sure the field is properly lighted, no lights are burned out."

Besides the mechanics of a field, the actual field condition is important. Eliminating hard bare spots, holes, and rocks in the field should be a primary concern. Poor drainage is also a major problem. If someone were to sink into a spot, twist and break a leg, a field manager could become the center of a lawsuit.

"All you have to do is walk around," Leatzow says. "You should be making daily inspections of all athletic facilities."

Critics say the responsibility for an injury on a natural turf field would be too difficult to prove. But Leatzow points to the *Deep-Pocket Theory*.

The theory, more formally known as *The Doctrine of Joint and Several Liability*, allows an injured party to collect regardless of whom is at fault.

An example of this occurred in California when a drunk driver, racing to cross railroad tracks before a train, ran off the road and into a gas station. The station exploded, injuring a man in a nearby phone booth.

The man sued. He collected from the phone company.

## Profit motivated

In the case of artificial turf, it may take an actual court case to get standards or improvements, but even out-of-court settlements impact on liability insurance.

"The vast majority of cases never get to court," Leatzow says. "The insurance industry is profit motivated. For that reason, it's more expedient at



# AQUA-GRO®

SOIL WETTING AGENT

## The #1 Solution To Your Water Management Problems...

AQUA-GRO® soil wetting agents have become the best selling wetting agents for turf and landscape simply because they work. For more than 30 years AQUA-GRO has helped you solve the toughest water related problems—compaction, localized dry-spots, puddling, thatch and disease—while *saving you labor, money and water.*

- Saves labor by alleviating localized dry spots and compaction and reducing the need for aerifying, syringing and rebuilding.
- Saves money by increasing fertilizer and pesticide effectiveness because chemicals are distributed uniformly in the root zone.
- Saves water costs by 30-50% because more water uniformly penetrates the root zone...so plants get more and you waste less.

A patented blend of non-ionic organic wetting agents, AQUA-GRO *is the only 100% active blend of wetting agents available.* We don't believe you should pay for water. AQUA-GRO works by reducing water's natural tensions, ensuring more uniform penetration and drainage through all types of soils and thatch. AQUA-GRO lasts because it won't leach.

AQUA-GRO is available in liquid concentrate and spreadable granular formulations from your local distributor.

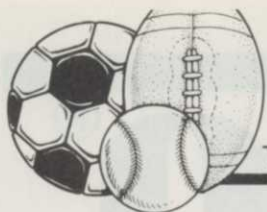
 **AQUATROLS CORP.  
OF AMERICA, INC.**

1432 Union Avenue, Pennsauken, NJ 08110  
**The Water Management People**

For a free, illustrated brochure call:  
**1-800-257-7797 In NJ (609) 665-1130**



Circle No. 104 on Reader Inquiry Card



**Insurance expert Jim Leatzow says athletic turf managers are liable for injuries on natural turf.**

times to settle out of court, rather than fighting the case on principle."

In the Halbrook case, college baseball player Scott Halbrook hit his head on Monsanto's AstroTurf (see accompanying story), allegedly causing his death. Monsanto assistant general counsel Frank Vible says the company offered a settlement in September, 1985, for purely economic reasons.

"It was not an admission of guilt," Vible says. "We felt that the economics indicated that it would be a lengthy trial and there would be a lot of sympathy for the plaintiff."

Dan Holland, attorney for the Halbrook family, says they decided to accept the settlement because Monsanto offered enough money.

"None of us will ever know if we made the right decision," adds Alan Halbrook, Scott's father. "But I got the information I went after."

Opponents of artificial turf say it will take a well-publicized case which actually goes to court before

anything will be done about the problems with artificial turf. Most of the cases are settled out of court with a non-disclosure clause.

**No choice but to settle**

Waldrep feels he had no choice but to settle. When TCU cut off its financial

support, Waldrep was left without medical insurance. The bills had to be paid.

"I couldn't afford to go to court and lose," he says of his decision to settle. "I wish it could have been me. It was an extremely hard decision...almost like giving up, and I've never given up on anything in my life."

Although Waldrep's and Halbrook's cases were serious, a vast number of lawsuits today aren't. Leatzow feels there should be an incentive not to sue frivolously. In Europe, if someone sues and loses the case, the loser is then responsible for the other party's attorney's fees.

Without such incentives, athletic field managers need to be extra cautious about properly maintaining an athletic field.

Rash lawsuits could make it difficult for schools to get liability insurance. Not having insurance could put some sports programs in jeopardy.

As the old adage goes, "An ounce of prevention..." **WT&T**

## One wheelchair is too many

by Dr. Kent Kurtz

"Why is it that people wait until someone gets hurt to fix a playing field?"

Jeff Wishard, 26, speaks from his wheelchair:

"Neither the doctors, coaches nor my teammates are really sure how my accident happened. One theory is that, on impact, my head may have been forced down into the ground.

"The practice field was in real poor condition. That particular field was used for many activities other than football, and was extremely hard. The only maintenance to the field was a weekly mowing.

"When the field was wet, it was muddy. During the hot, dry weather in the fall, the surface was hard and traction was very poor. It was comparable to the farmer's field adjacent

**Jeff Wishard: "Neither the doctors, coaches nor my teammates are really sure how the accident happened. One theory is that, on impact, my head may have been forced down into the ground."**

to the school."

Some people are beginning to question whether the satisfaction of making a desperation tackle or scoring a touchdown is really worth the risk of becoming a paraplegic or quadriplegic.

The incidence of catastrophic injuries (those that result in permanent spinal cord disability) is not large when based upon player populations of 100,000. Data indicate that, in 1984, 1.575 million football young men played college and high school football, but only 0.38 percent were injured severely. Most spinal injuries occur during regular games to defensive players, and the majority are associated with blocking and tackling.

Such is the case of young Wishard, who suffered through a football field injury which has left him a quadriplegic.

Wishard lives in Davis, Ill. (pop. 550). Parents Ron and Sandy own an automotive body shop and gasoline

Dr. Kent Kurtz, executive secretary of STMA, is a WT&T advisor.

