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## JACOBSEN TEXTRON

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populations. With all the chemical control methods recommended, annual bluegrass is still a major contamination in fine turf.

It's interesting that annual bluegrass isn't completely annual. Some plants are biennial and others perennial. Some produce a lot more seed than others. Some are more tolerant of high temperature and drought stress than others, and some winterkill more readily than others. It's this genetic diversity that makes them sometimes friend and sometimes foe. But

there is no question about the poor appearance of lawn or sports turf that has had large patches of annual bluegrass die out in the middle of the summer as a result of environmental stresses.

As a member of the faculty of the Agronomy Department at the University of Massachusetts some time ago, I recorded changes in plant populations over a steam tunnel in front of Stockbridge Hall. Annual bluegrass (shown below) was a major contributor to the changes observed.

Although many faculty and students on campus failed to understand what natural ecology was taking place on that steam line, we can learn something about the persistence of annual bluegrass and how nature has provided for its survival.

Try to live with it, or try to control it: either way, you are confronted with a grass that can be at its best one minute and at its worst the next. Some call it a basic grass; others a weed. It's all a matter of when you look at it and for how long.



1. In August, soil temperatures above the steam line were 80°F or higher through the root zone. No grasses or weeds could survive these conditions and all vegetation died. Note that on either side of the line, Kentucky bluegrass turf looked good.



2. As fall temperatures cooled the soil down to the 50s and 60s, annual bluegrass seed, already in the soil from the previous spring, germinated and produced a dense stand of nearly 100 percent bluegrass. By November, the annual bluegrass looked better than the Kentucky bluegrass on either side. Students and faculty commented on what a fine job we had done to improve the appearance of the turf. They thought we should seed the whole campus with what they perceived to be a new miracle grass.



3. Even in March, as the snow melted above the steam line, the annual bluegrass was green, and looked superior to the dormant Kentucky bluegrass on either side.



4. In early April, with the snow all gone and spring warming of soils under way, on either side of the steam line the Kentucky bluegrass was recovering nicely from its winter dormancy. Note that on the line the annual bluegrass had already turned yellow-green and had started to produce seed.



5. By the last part of May, not only was the annual bluegrass seeding all up and down the steam line, but seed along the edges of the line had germinated and produced plants that were also seeding. The massive quantities of seed produced by this grass at a one-and-a-half-inch lawn height of cut are evident. Annual bluegrass, when flowering like this, results in very poor quality turf.



6. As the end of June approaches, soil and air temperatures increase to a point at which the annual bluegrass wilts and weed seeds start to germinate. Soil moisture content and soil temperatures vary at the onset of wild depending on the management of the lawn or sports turf.



7. In mid-July, the steam line has become populated with nearly 100 percent spotted spurge. Some crabgrass is also evident. With increasing temperatures, even these weeds die out to leave only a cover of dead vegetation.



8. But that's not the end. Because of that heavy crop of seed produced back in April and May, there is plenty of annual bluegrass to reestablish the steam line again.

LM

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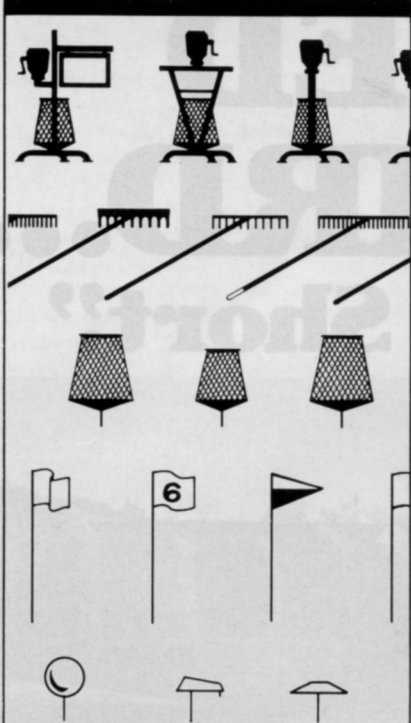
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More research is needed before TGR will be recommended for tees, says O.M. Scott's Larry Widell.

is the potential for excessive yellowing due to over-application.

Dobie says that he has also used Embark on Sharon Country Club's fairways for the last five years, to inhibit the growth of seedheads in the spring.

"It has worked effectively for inhibition and has slowed the poa down," says Dobie. "We've also been mowing the fairways for the past four years with the triplex greensmower. The combined practice has increased the course's bent growth up to 50 percent."

According to Dobie, the suspicion is that Embark's growth retardants cause poa to be stronger during the summer months because the poa

plant doesn't expend carbohydrate reserves. When poa growth retards in the spring, bent growth also slows, but it recovers faster. Soon the bent encroaches on the poa.

Dobie says that as an added benefit, seeding into a fairway one or two days after Embark is applied causes seeds to germinate before the poa recovers, and the new plants do not take in the Embark.

### Cutless on horizon

A long-awaited, soon-to-be-released regulator is Elanco's Cutless, which selectively inhibits growth. Experimental results have been quite positive in selective growth inhibition. Hummel says Cutless has performed well in golf course experiments, resulting in about a 90 percent bentgrass concentration where there was once 50 percent poa.

Cutless treatment can involve three to four years of continuous application, with several spring and fall applications used in conjunction with plant growth regulators. According to Hummel, the growth regulators in Cutless can knock the poa back, but will not kill it completely. However, courses can expect six good weeks of effective poa control.

"You can spray it on any time of the Year," advises Niven, "at 1/2-lb. per acre. But it will yellow the turf at rates exceeding 1 1/2 pounds per acre. Cutless has more flexibility to be used throughout the year at lesser rates."

"All things considered, Cutless is our choice," admits Niven. "It controls the poa, we have fewer clippings due to slower growth, water savings because the plant is healthier and requires less water, and we get broad-leaf control as an added benefit." LM

**"WHEN I HEARD ABOUT U.S. SAVINGS BONDS' COMPETITIVE RATE... I COULDN'T BELIEVE MY EARS."**

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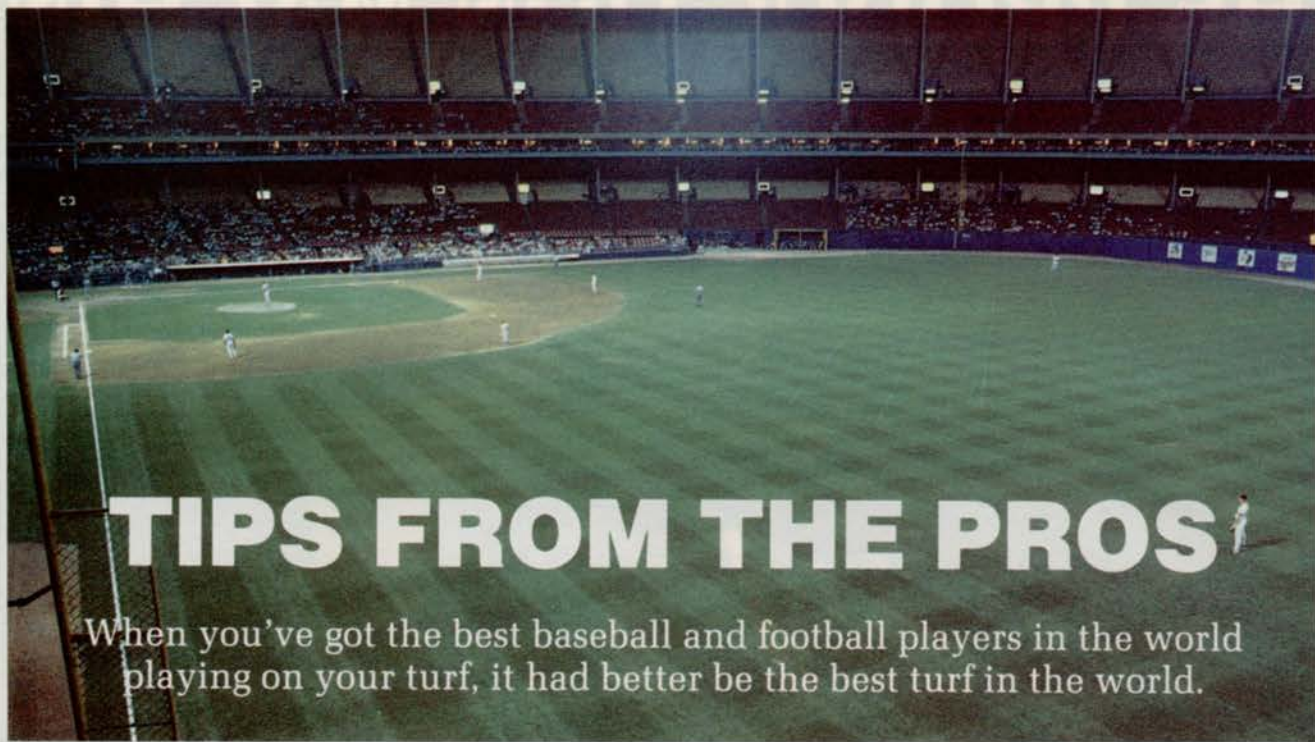
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# TIPS FROM THE PROS

When you've got the best baseball and football players in the world playing on your turf, it had better be the best turf in the world.

The checkered pattern of the grass at Cleveland Stadium becomes more defined when continually cross-cut.

In the "old days," the talk was about how baseball fields could be maintained to influence the outcome of a game. Today, professional athletic turf managers concentrate on getting the best playing surface, not on trying to gimmick a field to influence play.

"The greatest influence you can have is on the speed of the ball," says David Frey, who handles the field at Cleveland (Ohio) Stadium. Grass density, mowing height and grain all affect how fast a field plays.

"But anything you do to influence play can work against you," Frey adds. "Let's say you've got a pitcher who tends to be hit on the ground. You can cut higher to slow the ball down, but the opposing team can see that and bunt successfully.

Frey considers the attractive striping pattern he gets on his field especially important for television. Frey says that it is important to mow regularly, so that no more than one-third of the grass blade is cut off at any one time.

Actually, most of the changes we make are with the dirt," says Frey. "Topdressing will slow the ball down some, just as adding moisture or softening up the dirt slows things down."

Field condition is Frey's main concern, and adequate drainage—especially surface drainage—plays an important role.

"If you're spending money on a field," says Frey, "it's more important to end up with a proper grade than to install subsurface drainage. A proper grade will keep water moving off the

field, so you don't end up with compacted areas and puddles."

At Milwaukee County (Wisc.) Stadium, veteran Harry Gill agrees that anything done to affect play can work against you as well as for you. Other than occasionally orienting infield grain one direction or the other at the team's request, his "tricks" involve growing grass and managing dirt for optimal playing conditions.

One of Gill's favorite practices involves overseeding. He broadcasts seed over high-wear areas of the football field or baseball outfield just before games so that players push the seed into the ground with their spikes. Gill takes pride in getting free use of these high-priced "seeders."

Players digging in around home plate and carving out landing areas in front of the pitcher's mound are more of a problem.

"You don't want someone getting a broken ankle sliding into a hole at home plate," says Gill, "and some of these guys will dig in up to their knees if you let them."

To deter the players' excavating tendencies, Gill has his grounds crew place hard-packed clay bricks two inches below the soil surface in these areas. They make the bricks by combining two types of clay soil with a coarser material, watering the mixture, packing it into cake tins, and setting these in the sun to dry.

Gill uses his best clay on the mound and around home plate. For the basepaths, he uses a mixture of 50 percent sharp sand, 30 percent clay loam and 20 percent pure clay.

"We do a lot of watering during the day before a game," says Gill. "We keep the basepaths just short of mud."

Gill applies slow-release fertilizer every seven weeks. "It's about eight weeks to full bloom, with a total cycle of 14 weeks," says Gill. We mow every day with a Jacobsen Trim King, keep the clippings short and leave them on the field, because 70 percent of the fertilizer goes into the leaves and returns to the soil through the clippings."

## Mowing patterns

Gill's triplex operators follow three different mowing patterns. Gill says that they maintain a pretty regular rotation of these five patterns, but admits to changing the rotation occasionally for television coverage or "because we're just feeling 'ornery' one day."

Nothing draws people's attention to the quality of a natural sports field than the beautiful striped or checkered pattern created by mowing. It takes a quality reel mower and an experienced operator to create this professionally finished "television coverage" look.

In his nine years at Cleveland Stadium, Ed Shaner has seen several triplex mowers come and go. His last one had fixed reels with no front rollers and a manual reel lift.

"I had to stay on the grass on turns," he says. "I couldn't get the straight-edge striping from the infield to the warning track, and it still scalped the grass along the edges."

Before that, he used an old hydraulic trimming mower.

"The seat was too high," says

Shaner, adding that the low seat of the Jacobsen Tri-King 1471 gives him a better viewing angle for accurate striping.

### That checkered look

To get the checkered pattern at the stadium, he first cross-cuts the field parallel to one foul line, laying down one set of stripes. The next day, he cross-cuts along the other foul line, striping at a 90-degree angle to the first cut.

Shaner makes striping the field look easy, but on each cross-cutting turn he must steer, adjust traction speed, and raise and lower the reels—all within the space of a couple of seconds. In this case, the mower makes his job easier.

Striping accuracy depends on lining up precisely with the foul line and maintaining a consistent amount of overlap on succeeding passes. He corrects the pattern midway through by sighting down a line running through second base from either first or third base while mowing in from the outfield.

After Shaner establishes the mowing pattern with his first two cuts, he simply "drives between the lines" on subsequent cuttings. By following the same direction of cut, the striping intensifies as the season goes on.



The field at Municipal Stadium in Cleveland is mowed regularly, so that no more than one-third of the grass blade is cut off at any one time.

The dramatic checkered mowing pattern created with the Trim-King draws people's attention to the high-quality turf at Cleveland Stadium. At other sports fields, the striking,

"ready-for-prime-time" look assures everyone—from spectators and players, to team owners or school board members—that this is professionally maintained turf. **LM**

## Another tip: water removal system

David Frey of Cleveland Stadium swears by his Super Sopper. His what?

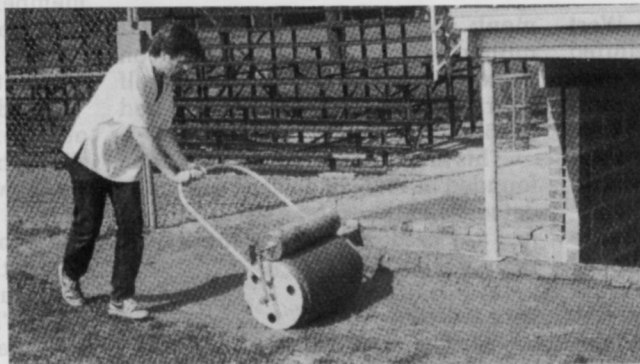
"During a concert last year, we got a lot of rain," Frey remembers. "If we didn't have a Super Sopper, we wouldn't have been able to play football the next day."

The Super Sopper is a water removal system that works like a giant sponge.

Attached to a metal drum that can be ridden, pulled by a tractor or walked behind (depending on size) is a cylinder of special foam. When rolling the unit over standing water, the foam sucks up the water and deposits it in the middle of the drum for easy disposal.

Super Soppers have been successfully used at the 1988 LPGA Crestar Classic, the 1987 Little League World Series and the 1987 American League Playoffs in Detroit. In a Miami-Buffalo NFL game in 1987, a Marlin model removed 20,000 gallons of water in four hours prior to kick-off.

According to Mike Harding, president of Kuranda USA, the Super Sopper has been marketed in North America only 1½ years even though it was invented in Australia in the mid-70s.



The Super Sopper, from Kuranda USA, uses a foam center to absorb and efficiently remove water from virtually any athletic surface.

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One of the beauties of the Super Sopper is that it can be used on any surface from turfgrass to asphalt without harming either itself or the surface. It can pick up to one inch of standing water with just one pass.

Though it hasn't caught on among golf course superintendents yet, the Super Sopper has applications in that market.

"One of the worst possible golf situations is to have a hot day and then have an inch of rain in one hour," notes Frey. "Before the water drains, it'll cook. But with a Super Sopper, you wouldn't have to worry about that."

The Super Sopper comes in five sizes, from the Marlin that removes up to 100 gallons of water a minute to the Mackerel, a 15-inch diameter drum with a six-gallon tank. The smaller units are especially good for youth baseball diamonds, Harding says.

Super Soppers were used in Seoul, Korea, at the 1988 Olympics. Shea Stadium, Buffalo Bison Stadium and Pimlico Race Track all have them.

Prices range from \$459 for the walk-behind to \$15,000 for the largest riders.

# SURVIVING A DISASTER

Three years ago a flood devastated Preston Country Club.  
Today the course is more competitive than ever.

by Carl Kovac, contributing editor



The ton of silt left behind by the flooded Cheat River were used to add to the contour of the course.

Three years ago last month, West Virginia's Cheat River, glutted by torrential rains, roared over its banks, causing hundreds of millions of dollars in damage in 29 of the state's 55 counties. It destroyed some 1,000 homes, ravaged farms and claimed more than 40 lives.

One of the victims lived in a house at the Preston Country Club, just outside Kingwood, county seat of Preston County.

Art George, the club's superintendent and a member of its board of directors, recalls the flood.

"It hit the club about midnight on November fifth. The fire department came and woke (the victim) earlier that night. They told him he'd better get out. He said he had lived all his life in the area; that the river had never crossed the road (along the bank at the country club); and he wasn't about to leave. They found his body two days later, about eight miles downstream."

The flood waters destroyed five houses on the country club grounds; washed away the cart storage building, most of the carts, a pump station and one-third of the clubhouse; crippled all of the maintenance equip-

ment; and dumped an estimated 1 million cubic yards of silt and sand on 70 percent of the 18-hole, par 72 golf course. Estimated damages totaled \$1.16 million.

This marked the first time the club, founded in 1926, had ever been inundated, "and the water exceeded by 10 feet any recorded flood of the river," George reports.

## 'Are we dead?'

Preston Country Club nestles in a valley surrounded by some of the picturesque mountains for which the state is famous. "It covers the only flat ground available in the area for a golf course," says George. In addition, he points out, the club is one of the few assets in an economically depressed county in an economically depressed state. You don't exactly have to be wealthy to join; dues are \$500 a year.

"The first thing we had to decide," says George, "was, are we dead or are we going to rebuild? The stockholders met, and we voted to rebuild."

Hearing of the club's plight, golf course architect Michael Hurdzan of Columbus, Ohio, offered his assistance. "He volunteered his time to tell

us what to do and to help supervise the reconstruction," George says.

Says Hurdzan: "I'm a West Virginia native, and when I heard about what happened, I called and offered my services at half my normal fee. A coal company sent a plane to pick me up. When I saw all that devastation from 1,000 feet, I forgot about my consulting fee."

George and Hurdzan wrote a letter to every magazine related to golf courses, telling what happened and asking for help (*WEEDS TREES & TURF*, Jan. 1986).

## Money dribbles in

Small checks—\$5 and \$10—began dribbling in from around the country, but a lot of help came from area businesses, club members and neighbors, George says. "A coal company supplied a truck, bulldozers and backhoes, and a timber company sent us a log skidder and a crew for a month at no charge. Now you have to remember that they were hit by the flood, too, but West Virginians are the kind of people who help their neighbors in times of adversity."

Hurdzan agrees. "It was yet another example of the fortitude and strength of the people of West Virginia, who are no strangers to hard times."

It took a month just to remove the debris the rampaging Cheat had left on the acreage. It got kind of tricky at times. "In addition to uprooted trees, logs, parts of houses, and several cars," George explains, "we had a couple of 500-gallon fuel tanks that had come downriver from someplace, propane tanks, and ammunition from Camp Dawson (a National Guard facility) just upstream. We had to sift through every pile of debris before we burned it."

Then there was the silt. "That was our biggest problem," says George. "It ranged from one-half inch to eight feet deep and it would suck your boots right off. We salvaged all of the greens we could by hosing and shoveling off the silt. We couldn't afford to have it trucked away, so we decided to make it work for us."

Before the flood, Preston Country





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Club was about as flat as Kansas. "By piling the silt in mounds along the fairways and around the greens—we made bunkers out of some—then seeding them, we changed the whole contour of the course," George explains. "In fact, it's a better, more demanding golf course now than it was before the flood."

Only four holes escaped any damage. Workers had to build three new greens and re-seed 70 percent of the course, using a Kentucky bluegrass blend on the fairways and bentgrass on the greens.

### The missing carts

All of Preston's 27 EZ-Go golf carts were destroyed or washed away ("We never did find one of them," says George) and were replaced with new EZ-Gos. An old Ford tractor totaled by the flood waters was replaced with a new Massey-Ferguson. The club's Cushman utility vehicle, Jacobsen mowers, Turfco top dresser and Ryan aerator were sent to a firm in Pittsburgh, Pa., to be reconditioned or rebuilt.

Unfortunately, insurance only provided \$75,000 for reconstruction of the clubhouse. The money was used



Art George points out one of the new silt bunkers on Preston Country Club's course. These slopes have made the course more challenging.

to pay off the mortgage on the damaged building and a new clubhouse was built for \$240,000. There was no flood insurance on the rest of the buildings. "We didn't carry flood coverage on the other buildings," George explains, "because no one thought the Cheat would ever flood to that extent."

However, says George, "we were able to get a \$500,000 disaster relief loan at three percent from the federal government." Members, he quickly adds, began paying their dues early to help out "and we set out to sell 80,000 additional shares in the club to existing stockholders at \$1,000 a share. So far, we've sold about \$85,000 worth."

It was originally estimated that it would take five years to fully restore the club. Today, one would never know there had been a flood, although there is some fine tuning to be done.

"Actually, we began playing on a jury-rigged golf course in the spring of '86, using one of the holes as two," George says, with not a little pride. "I can remember standing on a slant par-three and hitting a nine-iron over a guy on a D-9 Caterpillar dozer to get on the green." **LM**

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