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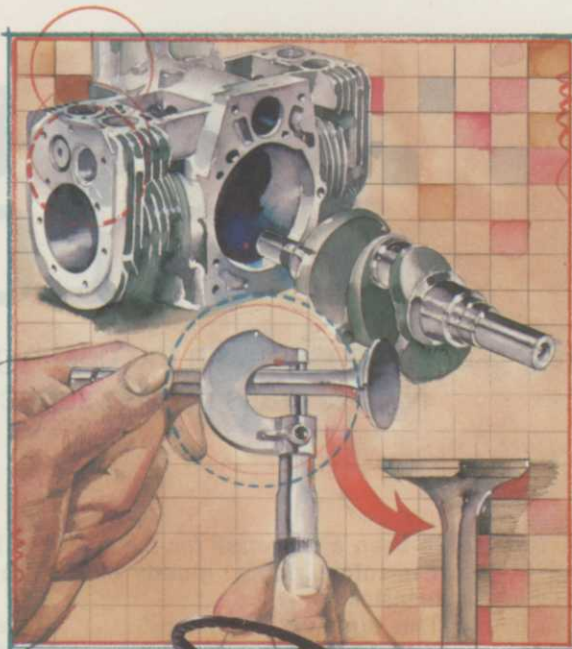
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## Only the Best For Our Kids

Safety is a big concern with the best high school sports program. Natural grass playing surfaces are usually the choice.

by Ron Hall, assistant editor

Kings Island and Oak Harbor, two small communities separated by about 250 miles of checkerboard Ohio farmland, don't have a whole lot in common. But they do share pride and a long-term commitment to excellence in their high school athletic programs. The evidence is two first-rate natural turf playing fields.

Small potatoes? Hardly.

The National Federation of State High School Associations reports more than 14,000 schools involved with high school football, more than 13,000 with baseball, and another 4,500 offering soccer programs.

Prep athletics continue to grow, but shrinking budgets result in many young athletes using facilities that are often poorly planned, worn out or neglected, sometimes even dangerous.

The importance of proper athletic field construction and maintenance came down hard at College Football Hall of Fame at Kings Island just a short drive from Cincinnati.

### Fall religion

The Hall of Fame, located on a knoll within eyesight of the large Kings Island theme park, displays relics of our fall religion beside the microchip wizardry of computers and film presentations. It is a neat slice of Americana; as American as the "rah rah" of a Saturday afternoon in the fall.

But when it came to the game itself, the Hall of Fame flopped when it built a field of its own in 1981. What should

have been a showcase for the sport turned into a sloppy, muddy headache instead.

This summer that changed.

The College Football Hall of Fame's Galbreath Field sports a new Prescription Athletic Turf (PAT) playing surface and is home field for a pair of nearby high schools, including nationally-recognized Cincinnati Moeller. It also hosts the Collegiate Division III championships, the Amos Alonzo Stagg Bowl.

### A tough choice

The PAT natural turf field was chosen even though an artificial surface received serious consideration.

"We're basically a high school stadium and we've seen enough to know that grass for growing young people is a safer surface," Don Schumacher, general manager of the Hall of Fame, says. "Also, cost was a major consideration. We figured it would cost about \$600,000 with synthetic turf and we might have to replace it in eight or nine years. The PAT cost \$300,000."

Strengthening the swing to grass was the availability of professional maintenance help from the nearby Jack Nicklaus Sports Center with its two golf courses. The Nicklaus Sports Center is owned and managed by the Taft Broadcasting Company which also manages the College Hall of Fame.

PAT, invented by Dr. William Daniel of Purdue University, provides

a flat, moisture-controlled playing surface. The turf is placed over a bed of 12 to 14 inches of sand which, at Galbreath Field, covers a network of 2-inch perforated tile (15 in all) running lengthwise every 11 feet apart. These tiles connect to a main drain which leads to a pump house.

A thick plastic sheet lies just below the layers of turf, sand, and tiles. Electronic sensors measure the moisture content. Watering is accomplished in two ways: via traditional in-ground sprinklers (Galbreath has 21 Toro sprinkler heads on the field and about 50 around the perimeter) and by pumping water back through the system beneath the field.

"Don't misunderstand," Schumacher says. "I'm not anti-artificial turf, but when you combine the savings, the utility of use and some concern for younger players, and then we have professionals to maintain it—the PAT is right for us."

The field is excellent for Moeller which shares the field with neighboring Kings High School. Moeller, perennial Ohio champion, is consistently ranked as one of the finest high school football teams in the nation and this season hosted Christopher Columbus, Miami, FL, and Cathedral Prep, Erie, PA, at Galbreath. Gerry Faust coached and won honors at Moeller before being tabbed as head coach at the University of Notre Dame in 1981.

But, Galbreath Field was anything but championship prior to this season.



Carved from a woodlot in 1981, its natural soil base had literally been chewed into a dustbowl by almost daily rounds of football and soccer. Built with a 21-inch crown, forward passes at the Hall of Fame field resembled mortar lobs and long passes in soccer games took parabolic routes to their destination.

"The first year we had 18 or 19 high school games," Schumacher explains. "We didn't have any rain and the field was dry every game. We tore the turf (the field had been seeded with fescue) pretty badly, but we thought maintaining a field was easy and that

everybody could do it."

Management at the College Hall of Fame pulled out all the stops in 1982, scheduling a full program of youth football and soccer in addition to the high school games and season-ending state playoff game.

Disaster struck.

"The field started to tear up," Schumacher says. "By the time we made it to Thanksgiving the top six inches of material were churned to a pudding. It wasn't even safe to walk on. What a mess."

The field was resodded with bluegrass in March 1983 in an attempt to

bring it back to life. Youth football and soccer programs were dropped.

The bluegrass looked good ("We found the bluegrass tended to regenerate and it also made for better footing," Schumacher says) but the basic problem remained. Rains turned the surface mushy and conditions weren't good for the Stagg Bowl which featured Augustana and Union City Colleges.

When officials from the National Football Foundation and Hall of Fame, Inc., owners of the field, went looking for answers they didn't have far to go. Spinney Field, the PAT prac-



**The College Football Hall of Fame, Kings Island, OH.**



**Mel Hoover** of Oak Harbor, school superintendent and grounds superintendent.



Filling in around irrigation lines at Galbreath Field, King's Island.

tice field for the Cincinnati Bengals professional football team, was nearby. Eventually a meeting was arranged with PAT proponent Daniel at Purdue in Lafayette, IN.

"Now that we have a surface that can control the moisture, we can somewhat control the wear," Schumacher explains. "We're very eager to get to the fall of 1985."

This past year marked a renewed interest in the sand-concept PAT system with the University of Mississippi removing an old artificial surface in favor of PAT at Vaught-Hemingway Field in University, MS. PAT fields have been in use at three high schools, two in Indiana and one in Michigan, for the past decade with all three holding up well under intensive use. There have been problems, however, although they don't appear to have been a result of the PAT concept.

### Alkalinity woes

In Evansville, IN, for instance, an inability to keep healthy turf on a PAT field was eventually traced to the high alkalinity of the city water supply. Bob Meyerholtz, who oversees the field, says efforts to grow first Bermudagrass, then fescue, then zoysia failed as the alkalinity of the soil, irrigated with city water, climbed to a pH of 8. Meyerholtz, a teacher of agriculture at Reitz Memorial High School, says phosphoric acid is now

added to water used on the field and the turf is showing "a definite improvement in growth, color, and standability."

Meyerholtz admits the terrific usage the field gets (it is used by the junior high and high school teams from two schools) keeps it from being a showcase. "We have so many things on it, including band practices once or twice a week. We do have a problem

## The PAT natural turf field was chosen even though an artificial surface received serious consideration.

in keeping grass in the center of the field," he says.

### Tax money used

PAT remains beyond the financial reach of most high schools, however, even ones like Oak Harbor in North-western Ohio, the beneficiary of a tax windfall from a nearby nuclear power plant. Once one of the poorest districts in that part of the state, the Benton-Carroll-Salem District (of which Oak Harbor is a part) has literally

uncorked a magic genie.

"The state says you can't save the money," School Superintendent Mel Hoover says of an ambitious project to upgrade the school's athletic facilities. "You have to use it and have a reason for using it, so we're using it."

The school sports a lush new football field encircled by a rust-colored, latex-based, all-weather track with accompanying permanent metal stands and concession stand. A baseball diamond with a grass infield, four new tennis courts, a football practice area and an encircling cross country course complete the athletic complex.

Price tag for all the above? About \$650,000, according to Hoover.

Even with the taxes generated by the Davis-Besse nuclear power plant, however, school officials keep a careful eye on expenses.

Subsoil taken from the football field site, for instance, was used to create a hill on the school's cross country course. And, when it became apparent the seed that had been planted the previous fall on the football field wasn't going to provide an attractive playing surface, Hoover and a handful of volunteers (mostly teachers) resodded the field themselves.

"We got a pretty good crop of weeds from the straw that was on the seeds, but we didn't feel like the grass was going to mature," he recalls. "We waited to see what was going to happen, but we couldn't wait any longer because we had to give the sod enough time to anchor itself."

Hoover, who built and operated a nearby golf course prior to heading the neighborhood school, remains protective of the field which is built over native clay soils.

The field gets "tender care," he says, including liberal applications of the soil conditioner Turfas and regular aeration. Fertilizer for the turf (a mixture of Nugget, Cheri, and Adelpi Kentucky bluegrasses) is applied four times annually, while irrigation is provided by electronically-timed Toro Mistamatic sprinklers and drainage by four-inch field tile with off-field catch basins.

Hoover admits his school could have spent more on its athletic fields, but he doesn't feel the extra expense would have accomplished anything.

"I think we have excellent facilities and they stay in good shape," he points out. "The key, I think, is keeping them well maintained." **WT&T**





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**P***oa trivialis*., often called rough bluegrass, is native to northern Europe, temperate Asia, and North Africa, and has been introduced to both North and South America and Australia.

Brought to the United States from Europe during the Colonial period, it is best adapted to moist, shaded areas from Newfoundland to North Carolina and from Alaska to California.

*Poa trivialis* produces a moderately-fine textured, light green, medium-dense turf. It is a cool-season, sod forming perennial which spreads by creeping leafy stolons, and may be found growing in soils with a pH from 5 to 8, with the best growth between 6 and 7.

Beside being well-adapted to damp, shaded locations, it is also found growing in wet meadows, in fertile grasslands and along ditchbanks. *Poa trivialis* has the ability to germinate and grow at low temperatures, displays good color retention in the fall, produces early spring greenup, germinates rapidly

with good seedling vigor, and has excellent winter hardiness.

Rough bluegrass has also been useful for winter overseeding of dormant warm-season turfs in the South. In southern overseeding mixtures, rough bluegrass is usually combined with improved turf-type perennial ryegrasses (10 to 15% *Poa trivialis* with 85 to 90% perennial ryegrass by weight).

Rough bluegrass does not tolerate drought and is likely to be short-lived on dry sites. The root system is fibrous, relatively shallow, and annual in nature. It may be severely damaged or killed during periods of moisture stress, especially in dry sandy soils. *Poa trivialis* also has poor wear tolerance and will not persist under heavy traffic.

There are approximately 2.3 million seeds per pound. The seed germinates under a wide temperature range with peak germination occurring at approximately 50 degrees F. Below 40 degrees F. less than 50% of the seed will germinate.

Rhizoctonia brown patch, leaf spot, and dollar spot are the most common diseases associated with *Poa trivialis*, however grey snow mold, pink snow mold, ophiobolus patch, pythium blight, fusarium blight, rust, stripe smut, and powdery mildew have also been reported as occurring on this species.

Before the release of Sabre *Poa trivialis* in 1977, no domestic cultivars were commercially available and most of the seed was imported from Europe. European common types are normally taller, lighter green, and form a looser sod than Sabre. Common types are of limited value for quality turf in moist shaded lawns or for winter overseeding. However, these common types may be useful for forage purposes in cool, moist environments, normally found in northern Europe.

Development of cultivars with lower growth habit, darker color, denser sod, improved disease resistance, and reduced seed shattering would be helpful in expanding the potential useage of this species.

# ***POA TRIVIALIS***

## **A Specialty Use Turfgrass**

by **Richard Hurley**, Ph.D., Vice President and Director of Research and Agronomy, Lofts Seed Inc., Bound Brook, NJ

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## Management

Rough bluegrass as a permanent turf is limited to shaded sites in the cool humid and cool semi-arid regions of the U.S. (zones 1, 5, 6, and 7). It should not be used for a permanent turf in transition or warm-season zones (zones 2, 3, 4, and 8) or in full sun in cooler climates (zones 1, 5, 6, and 7).

For permanent turf a seeding rate of two pounds per 1,000 square feet is recommended. Three pounds per 1,000 square feet is suggested when using a seed mixture designed for shaded sites, such as 30% *Poa trivialis*, 30% shade tolerant Kentucky bluegrass, 20% fine fescue, and 20% turf-type perennial ryegrass.

In shaded areas rough bluegrass may be mowed lower than other cool-season grasses (as low as 1/2-inch). Applications of a 25:5:10 or equivalent complete fertilizer should be applied once in early spring before trees leaf out and in mid- to late-fall after the leaves have fallen.

Dandelion and broadleaf weeds may be controlled with 2,4-D, however injury to *Poa trivialis* may occur if this herbicide is applied at higher than normal rates or when temperatures are above 85 degrees F.

Rough bluegrass benefits from

both light and frequent irrigation because it is shallow-rooted.

When used for overseeding dormant warm-season putting greens, *Poa trivialis* seeding rates of 15 to 20 pounds per 1,000 square feet are recommended. However, rough bluegrass mixtures containing 85% perennial ryegrass with 15% rough bluegrass, or 60% perennial ryegrass

## Look for Landscape Manager's Guide to Bentgrasses in the January 1985 Golf Issue of WT&T.

with 25% chewings fescue and 15% rough bluegrass are desirable.

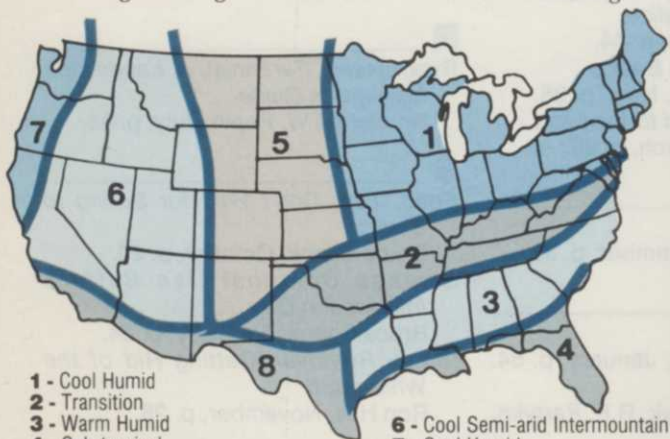
Once established, *Poa trivialis* can withstand heights of cut below 3/16-inch. Frequent light verticutting is necessary to prevent grain from developing. Light frequent applications of soluble nitrogen at 1/2 pound per 1,000 square feet is recommended every two to three weeks after winter overseeding.

During establishment, irrigate lightly 3 to 4 times per day between 10 a.m. and 4 p.m. Once the turf is established, syringing during mid-day may be necessary when dry, windy weather causes surface drying. If rough bluegrass is damaged by heat or drought, premature spring transition may occur.

## Improved varieties

Sabre was developed by Dr. C. Reed Funk and Bill Dickson at Rutgers University and released in 1977. It has a medium leaf texture with a darker green leaf color when compared to Danish common. Sabre, like other sources of *Poa trivialis* is sensitive to heat and drought and is susceptible to dollar spot and brown patch disease. Sabre has performed well when used as a component in mixtures for use in overseeding dormant warm-season turfs. It is also useful for permanent turf in damp cool, shaded locations in temperate climates. **WT&T**

Dr. Hurley studied *Poa trivialis* as part of his graduate work under Dr. C. Reed Funk at Rutgers University and is currently working on an improved variety of rough bluegrass for the landscape market for Lofts Seed Inc.



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