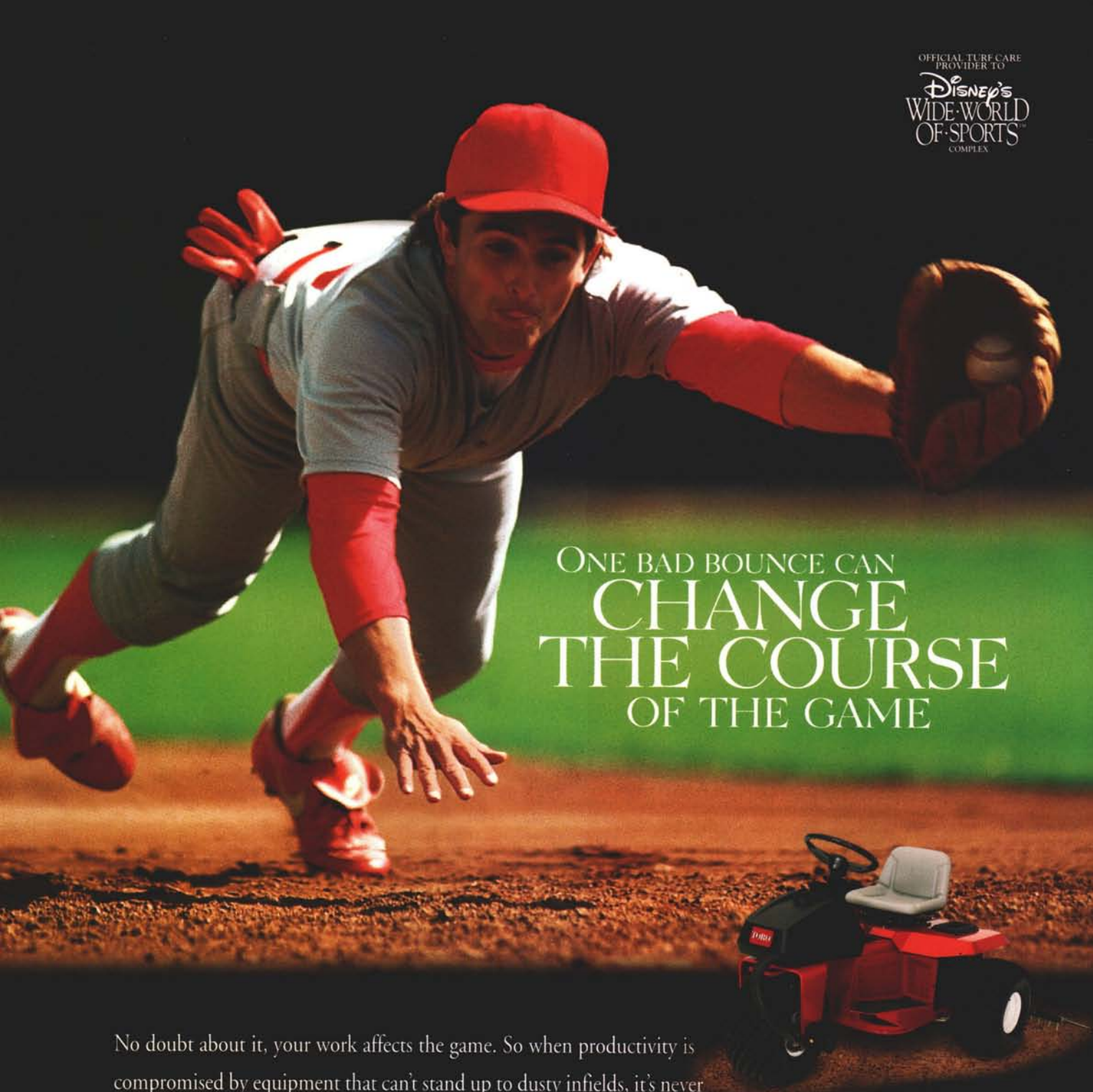

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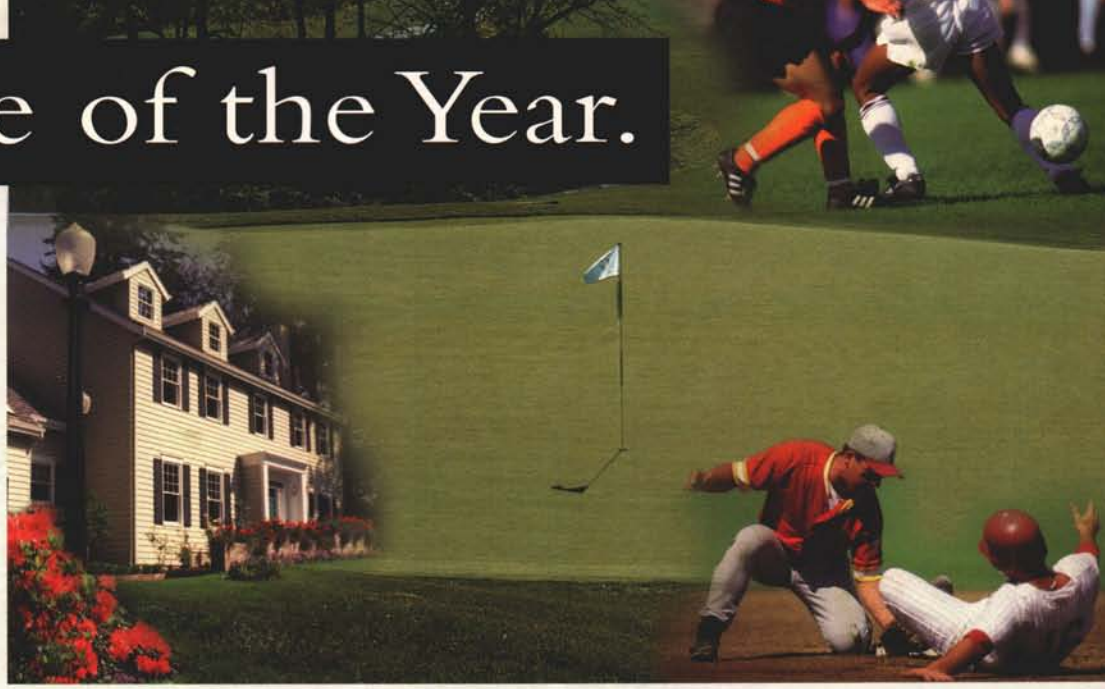

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VOLUME 15, NUMBER 6 JUNE 1999

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On the Cover:

Harvesting sprigs from the Blue Valley School District Agronomy Center.
Courtesy: Jody Gill

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Soil Stabilizers

Sports turf managers are constantly searching for tools to help keep their fields safe and playable through extended seasons. Over the years, several companies have introduced soil stabilizing products to help strengthen turf against the punishment of athletic competition.

While there's no shortage of opinions on the effectiveness of each individual technique, supporting research is more difficult to come by. I can't presume to tell you which product, if any, is right for you, but it's always important to know what's out there.

In a previous column, I discussed the use of crumb rubber topdressing to stabilize and strengthen soil. I urged readers to explore recycled products that could benefit both fields and the environment. Now, I turn my attention to products that are originally manufactured as soil stabilizers.

Polypropylene

Several athletic turf soil inclusions currently available are made up of polypropylene. This thermoplastic material is safe, non-toxic, and non-carcinogenic. Fibers are not bio-degradable; they won't break down from contact with naturally occurring chemicals, alkalis, and acids.

The following describes several currently available products that use polypropylene materials to stabilize athletic turf:

• Turfgrids polypropylene fibrillated fibers are incorporated directly into a field's root zone. The product claims to give additional strength and stability by reinforcing the base soil and root structure.

When mixed into the soil base, the fibers provide a support system for developing roots. They act as underground anchors to give roots three-dimensional strength and prevent surface break-up.

• Netlon Advanced Turf consists of small pieces of polypropylene mesh randomly oriented in a turfgrass root zone. Blended into the growing medium, the mesh elements interlock with each other and with root zone particles. The goal, again, is to create a stable, three-dimensional structure as the roots become entwined with the polypropylene material.

The system claims to help turf resist compaction, drain more quickly, develop greater root density and depth, experience reduced divot size, and recover from injury quickly.

• SportGrass uses polypropylene to create a sort of hybrid natural-grass/artificial-turf surface. Synthetic polypropylene blades tufted into a woven backing are imbedded in a layer of amended sand, and a natural-grass surface is installed over the top. The fibrillated synthetic blades invite the root system to grow through the fibers and the horizontal backing.

Like the other products mentioned, SportGrass operates on the principle of anchoring roots. The system claims to maintain a level and consistent surface through heavy-use schedules, and to protect the crown as well as the root zone.

• The GrassMaster system directly inserts polypropylene tufts up to 20 centimeters into established turf at two-centimeter intervals. On average, only three fibers are injected for every 97 blades of natural grass.

Again, the intention is to encourage roots to entwine with the synthetic fibers, combining the strength of artificial turf with the benefits of natural grass.

GrassMaster fields are ready for high-intensity play immediately after installation. The system claims to increase field durability even in high-use situations.

Steve Berens, Editor
(773) 755-4611

Tip o' the Month

A Sound Environment

by OPEI

If you're planning any equipment purchases this year, invest in the health of the grounds you maintain by making environmentally sound choices. Manufacturers now offer equipment that runs up to 70-percent cleaner than previously available products. When available, choose Environmental Protection Agency (EPA)-certified engines to help keep the air clean.

The Outdoor Power Equipment Institute also offers these suggestions to help keep your existing equipment environmentally friendly:

• Keep all outdoor power equipment in good condition through regular maintenance; keep blades sharp and all vents and working components clean and free of obstructions.

• Plan ahead for efficient outdoor maintenance by clearing work areas of debris, keeping pets and children away from work areas and machines, and having all attachments and supplies readily available.

• Mow, edge, roto-till, and trim in the most efficient patterns to save time and fuel.

• Save lawn clippings, and spread them around plantings to help hold moisture in the soil and inhibit weed growth.

• Recycle yard waste by starting a compost pile. Compost becomes an excellent soil addition. Use a chipper/shredder to process leaves, branches, and other waste into forms suitable for composting.

OPEI is a trade association whose membership is primarily composed of US manufacturers of powered lawn and garden maintenance products, components, attachments, and services.

June 27-July 1

Floyd Perry's Groundskeepers Management Academy, Nashville. Other dates and locations: July 5-9, Indianapolis; Aug. 16-20, Bethel, CT; Aug. 23-27, Colonial Heights, VA; Aug. 30-Sept. 3, Orlando; Sept. 12-16, Dallas; Sept. 19-23, Denver; Oct. 10-14, Davis, CA. Contact Grounds Maintenance Services: (800) 227-9381.

July 16-18

Turfgrass Producers International (TPI) meeting, Holiday Inn South, East Lansing, MI. Contact TPI: (800) 405-8873 or (847) 705-9898.

July 21-23

TPI Summer Convention & Field Days, Holiday Inn South, East Lansing, MI. Contact TPI: (800) 405-8873 or (847) 705-9898.

July 24-26

16th annual International Lawn, Garden & Power Equipment Expo (EXPO 99), Kentucky Exposition Center, Louisville. Contact Sellers Expositions: (800) 558-8767.

July 27

Midwest Regional Turf Foundation's Midwest Regional Turf Field Day, West Lafayette, IN. Contact Bev Bratton: (765) 494-8039.

August 18

Michigan Turfgrass Field Day, Hancock Turfgrass Research Center, Michigan State University, East Lansing, MI. Contact Kay Patrick: (517) 321-1660.

Correction

In the April 1999 issue of *sportsTURF*, improper credit was given to the second image in the article "Laser Grading: Know what you're getting." The image was supplied by Grove Teates of Alpine Services, Inc.: 5313 Brookeville Rd., Gaithersburg, MD 20882; phone: (800) 292-8420; fax: (301) 963-7901; e-mail: asi@alpineservices.com. We apologize for the oversight.

STMA MESSAGE

Sports Turf Managers Association

Do Your Homework!

The products and field systems Steve Berens documents on the adjoining page represent only one subgroup of the soil additives being researched and marketed internationally as improvements for root zone conditions and/or overall field condition. Soil amendment products and sports field systems differ greatly. Some improve drainage, while some are designed to hold moisture in the root zone. Some create compaction resistance, while some increase compaction. Some have been researched extensively, and some have not.

As a sports turf manager, you may — and should — be asked to provide recommendations on the best choices for your fields. Before making any decisions, you first have to ask yourself what you're trying to accomplish by adding soil amendments or new playing surfaces at your facilities. Is it to improve drainage? Are you trying to stabilize the soil from divoting? Are you trying to mechanically strengthen the soil for higher load bearing? Are you trying to alleviate some existing compaction issues?

For many of us, it is a combination of all the above and then some. Increasing the performance and playability of our sports fields is our main objective. It is important to understand not only what you want to accomplish with your fields, but also what you can expect to gain from different options.

For example, it's important to know what different products do to expand or lessen the soil's ability to breathe. Isn't this really what we're trying to accomplish: a well-drained soil that allows us to develop the deepest, densest, and healthiest root systems for dense, stable, and wear-resistant turf at the playing surface?

We can only know for sure what a product does to the soil structure through scientific research and/or years of trial and error. Unfortunately, I see more trial and error these days than good research. Good research is defined as a minimum of three years of study by an accredited agronomist.

I read an article a few years back by a renowned turf expert titled, "Wolf in Sheep's Clothing." It prompted me to question further the ability of a product to perform over and above the recommendations of a consultant. I began reading research papers and comparing product and system literature with stated research reports. I started checking performance results from on-field test trials conducted by sports turf managers on their fields, and sought input from other sports turf managers on the results of their experiences with the products or systems installed on their fields. Your STMA networking contacts are a vital component in this personal research.

We want the best possible sports fields, and we may need to add products to our root zones or install field systems to provide the benefits we're seeking. As a sports turf manager, you have the responsibility to do your homework to prepare yourself to make the best decisions possible concerning improvements to your fields.

Stephen Guise, STMA President
(714) 704-0403

Harvesting sprigs from the Blue Valley School District Agronomy Center. *Courtesy: Jody Gill*

Growing Bermudagrass in Kansas

by Jody Gill and Sam Ferro

One school district's turfgrass solution

Blue Valley School District comprises 91 square miles in the Johnson County suburbs of Kansas City. In early 1995, the school district embarked on an ambitious upgrade of its District Activity Center (DAC). Improvements included new baseball and softball fields.

That same year, the Midwest experienced "100-year flood rain levels." These intense rains brought light to some field problems at the DAC. The school district brought in Turf Diagnostics and Design (TD&D) to evaluate the problems and suggest improvements.

TD&D made several recommendations, including improving the grades, adding subsurface drainage, and changing the warning tracks. However, company President Chuck Dixon had something more radical in mind. He suggested the school district switch from the traditional cool-season grasses that were in use (rye, fescue, and bluegrass), to warm-season bermudagrass.

School Board members, parents, and district boosters expressed many doubts about the plan. Burmuda simply wasn't used in Kansas, and many felt it would never survive the occasionally harsh winter weather.

However, a newer strain of common-type bermuda, Quickstand, had the potential to withstand Kansas winters, which generally experience low temperatures of -10 degrees F, and occasionally -20 degrees F. The particular strain featured winter hardiness, quick spring green-up, and the safety of bermuda compared to the rough and clumpy tall fescue fields that were common in the area. Bermuda also offered significant heat tolerance advantages over bluegrass fields, and Kansas summers often experience long stretches of 90- to 105-degree F weather.

First summer

When the school board finally agreed to the proposal, we solicited several local turf farms to grow the Quickstand. No one was interested in the project, so the district set out to develop a turf farm of its own. The school board set aside a 10-acre site, and the Blue Valley School District Agronomy Center was born.

(A) Practice field one day after sprigging. *Courtesy: Jody Gill*

had brought complete turf coverage with a thick layer of stolons over the surface and primary roots more than six inches deep.

(B) Same practice field five weeks after sprigging. *Courtesy: Jody Gill*

Contractors tilled the farm and applied a 10-20-20 fertilizer in June 1996. They applied agricultural lime to all areas that would be sprigged to increase the soil pH to between 6.0 and 7.0. Sprigging at a rate of 750-bushels per acre began late in the month.

A cropduster applied ammonium nitrate during the first and second weeks of sprigging due to saturated soil conditions. Fertilization in the third week consisted of a 10-20-20 fertilizer, plus liquid chelated iron and root development mix applications. Combined with heavy irrigation the first two weeks and mowing heights of less than one inch, this routine allowed sprigs to grow and spread rapidly.

Over the next several weeks, weekly fertilizer kept the bermudagrass growing aggressively. Irrigation was scaled back as the sprigs rooted and started to grow laterally. By the time the farm was turned over to the Blue Valley grounds team at the end of August 1996, the nearly fully established Quickstand exhibited excellent color and vigor.

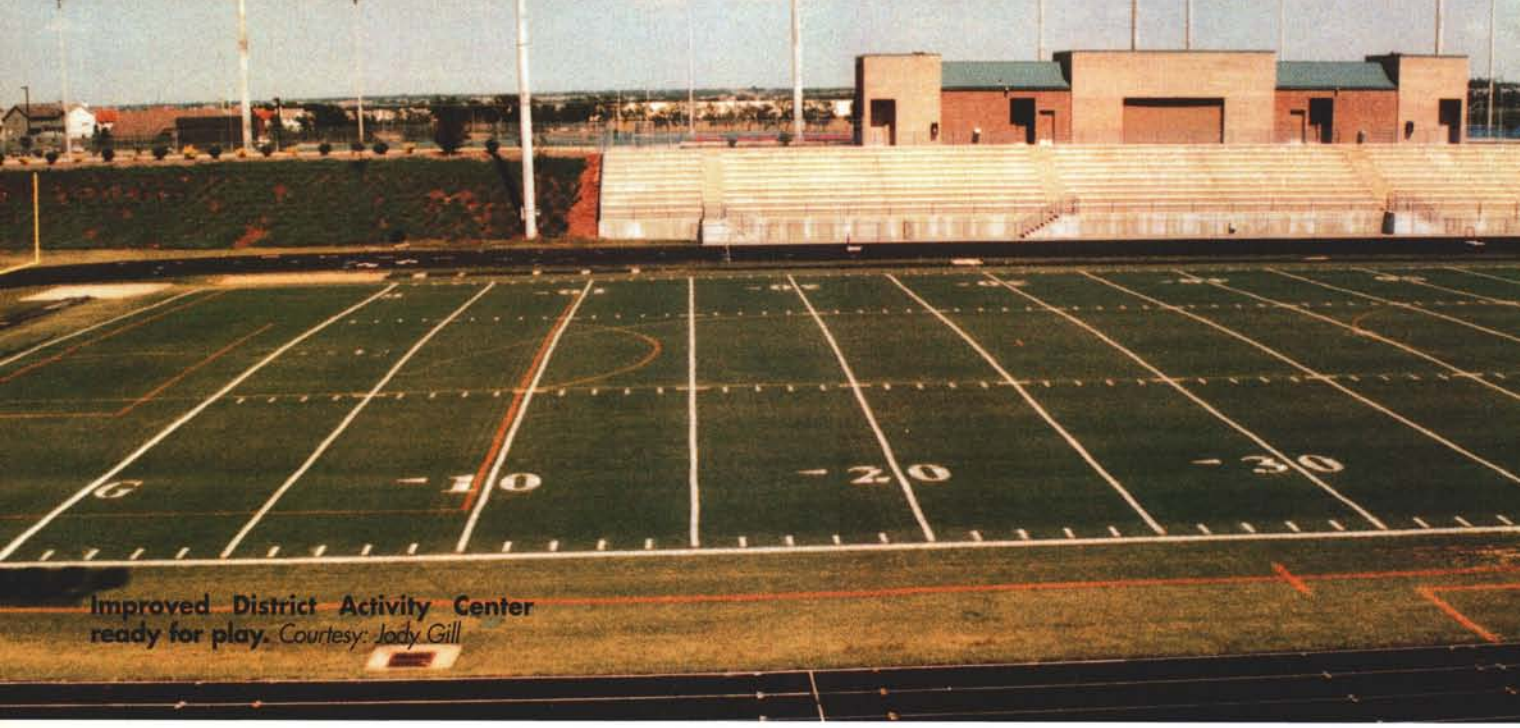
Temporary setback

Rain delayed a planned fall 1996 harvest. The school district chose to forgo a risky November harvest in favor of cool-season sod installation. A rescheduled summer 1997 harvest would benefit other sites.

In late August, nitrogen fertilization was stopped at the farm to discourage top growth. Increased phosphate and potassium fertilization would prepare the turf for winter.

As dormancy approached in mid-October, the farm experienced vertical growth of 0.5 inches per week and rhizome elongation of 1.5 inches per week. Rooting had increased three inches in one month.

The final mowing height was set at 2.5 inches. The turf went fully dormant in mid-November. Five months



Improved District Activity Center ready for play. *Courtesy: Jody Gill*

Harvesting and planting

The winter of 1996-97 brought no snow cover, and the lowest recorded temperature measured -17 degrees F. The bermudagrass survived with no winterkill, and the stolons and rhizomes remained thick all winter. The turf was fully green by mid-May.

Summer 1997 gave the Blue Valley crew its first opportunity to harvest and plant sod and sprigs from the turf farm. They chose four of the school district's athletic fields for renovation.

One month before the harvest, the crew sprayed each field with Roundup, raked to remove vegetation, and resprayed. They performed fertility tests, and made final preparations for sprigging and sodding.

In early June, the crew harvested and planted sprigs at a district high school football field. They moved on to two middle school game fields in late June/early July. Each field was sprigged at 900 bushels per acre.

Fully established by mid-July, the sprigged high school field performed well by August. The middle schools were fully established by early September.

Large-roll sod harvested from the farm also provided a new surface for the DAC football field in early July.

Sod and sprig harvest areas at the farm fully re-established within six weeks. The turf survived the following winter without winterkill once again, despite a recorded low temperature of -11 degrees F.

The 1998 harvest proved even more successful than the previous one. Operational changes based on lessons learned allowed reductions in both costs and establishment time.

Harvested sprigs were planted at two high school football practice fields at the beginning of June, and at two middle school football fields early in July. A doubled sprigging rate of 1800 bushels per acre resulted in full turf establishment within five weeks.

Large-roll sod installed at a new middle school football field September 15 hosted games in early October. As before, all harvest areas re-established within six weeks.

Experimentation

To more efficiently convert fields to Quickstand, the Blue Valley grounds crew began experimenting with simple oversprigging into existing cool-season turf. To prevent competition from the existing turf, the crew killed the fields with Roundup 10 days before sprigging. Two days before sprigging, they saturated the fields with water to allow maximum penetration of sprig planter presswheels.

The procedure cut labor and equipment costs by 50 percent compared to the first bermuda conversion in 1997. However, the new, preferred method applied only to fields where grading was not necessary to re-establish the crown.

Performance

Though it's still dormant in early spring, the bermuda is thick and dense enough on most fields to support heavy play without overseeding. Even when damage occurs in the spring, the bermuda rapidly recovers on its own during the heat of summer.

The school district closes and fences off all of its bermuda fields in early November to maintain the thick, dense blanket of turf and stolons achieved by raising mowing heights in September and October. This provides insulation to protect the rhizomes from extreme winter temperatures and possible winterkill. Fields are irrigated as needed during the winter to prevent plant desiccation.

Blue Valley has received many positive comments on its Quickstand bermudagrass fields from coaches, players, and patrons. While some fields are not candidates for Quickstand conversion due to winter use requirements, there are still many fields eligible and waiting for conversion.

Jody Gill has served as grounds manager for Blue Valley School District since July 1996. In addition to the turf farm, he manages more than 600 acres of athletic fields and grounds.

Sam Ferro is vice president of Turf Diagnostics and Design, Inc. (TD&D), a consulting and testing firm serving the sports turf, golf, and landscape industries. To contact the company, write: 310-A North Winchester, Olathe, KS 66062; phone: (913) 780-6725; fax: (913) 780-6759; e-mail: turfdiag@turfdiag.com; or visit www.turfdiag.com.