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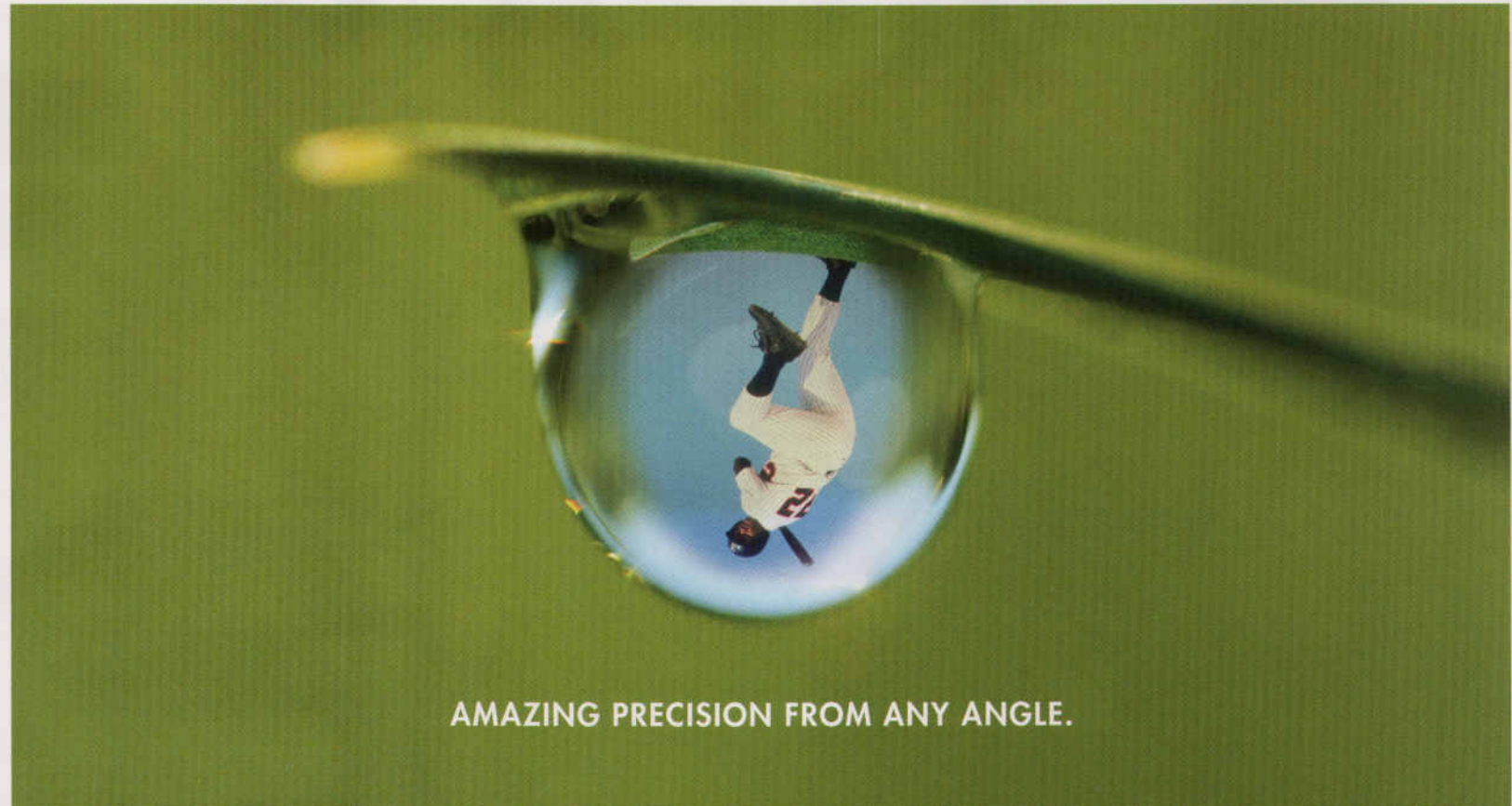
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FEATURES

Field Science

- 08** Choosing the best time for seeding mixtures of Kentucky bluegrass and perennial ryegrass
- 12** Playing defense vs. free radical damage
- 16** Hybrid bluegrass vs. Kentucky blue and tall fescue in transition zone
- 22** Pros and cons of using perennial ryegrass for sports turf

Facilities & Operations

- 24** Seven habits of highly defective sports turf managers
- 28** Off-field maintenance: be careful what you wish for!
- 30** McAfee Coliseum's turf grown locally

Irrigation & Drainage

- 32** Smarter irrigation for sports turf maintenance


STMA Field of the Year

- 40** Wiggins' showcase wins Schools/Parks Softball Award

DEPARTMENTS

From the Sidelines	6
STMA President's Message	7
John Mascaro's Photo Quiz	17
STMA In Action/SAFE Foundation . . .	42
STMA Chapter Contacts	48
Marketplace	47-48
Advertisers' Index	49
Reader Information Form (Green Mediator)	49
Q&A	50

On the cover: Jim Wiggins, Tomball TX School District, displays some "home turf" he brought to an away playoff game. That field won the 2007 STMA Schools/Parks Softball Field of the Year Award.



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My local newspaper is running a series on cheap gas prices in the region, pinpointing with maps where locals can buy gas for—\$3.29 a gallon. I ask, define “cheap”? I can remember when it was 65 cents a gallon and paying friends 50 cents for gas money (and feeling the financial hit!).

Sports turf managers are dealing with not only record fuel prices but also the rising cost of fertilizer. I asked Dr. Cale Bigelow, assistant professor of agronomy at Purdue University who studies soil fertility and cultural practices, why fertilizer prices are up:

“There are a variety of reasons. Number one is simple supply and demand,” he says. “Other large countries like China and India are buying a lot of the supply to feed people. Number two is the higher price of natural gas, which is used in the manufacturing process and this cost must be passed on to the consumer.

“Another reason is the increased demand for nutrients in this country to maximize corn biomass production; corn is the primary crop used for ethanol and that equals big bucks right now,” he continues. “Furthermore, high transportation and shipping costs are also being passed along. Finally, a weak U.S. dollar means fertilizer companies have less purchasing power for foreign products.”

I asked Bigelow if there is anything sports turf managers can do to control these costs.

“This is really tough but one thing to look at is tweaking and refining your overall programs and trying to tailor programs to the site a little better,” he says. “Bermudagrass and species like turf-type tall fescue will require slightly less fertilizer but revisiting things like nutrient cycling in terms recycling grass clippings in taller cut turf may make more sense now. This is easier said than done on closely mowed fields, of course.

“Nutrient application rates can be adjusted, at least slightly. If you normally go at 1 pound, try 3/4 pound instead. Check your nutrient sources. For some managers shifting from all granular sources to light, frequent liquid applications may make sense and save money. Among granular sources, some of the natural organics with longer feeding duration are becoming more viable in terms of overall fertilizer program costs,” he says. “Bottom line is that managers are still going to have to promote growth and vigor for recovery.”

What does the future hold?

“This is anyone’s guess at this point but I don’t see it getting any better anytime soon,” Bigelow says. “The U.S. Department of Agriculture stats say that the average fertilizer prices that farmers paid in June 2008 were 77% higher than in June 2007. Now is certainly the time to carefully inventory each turf site and invest in soil testing. Information such as organic matter that influences the overall annual nitrogen requirement, as well as phosphorus and potassium levels may allow managers to further refine applications. Then they can apply more specific products to those areas truly needing some of these nutrients.”

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SportsTurf (ISSN 1061-687X) (USPS 000-292) (Reg. U.S. Pat. & T.M. Off.) is published monthly by m2media360, a Bev-All Communications company at 760 Market Street, Suite 432, San Francisco, CA 94102. POSTMASTER: Send address changes to Sportsturf, P.O. Box 2120, Skokie IL 60076-7820. For subscription information and requests, call Subscription Services at (847) 763-9565. Subscription rates: 1 year, \$40 US & Poss.; 2 years, \$65 US & Poss.; 1 year, \$65 Canada/Foreign Surface, 1 year, \$130 Airmail. All subscriptions are payable in advance in US funds. Send payments to Sportsturf, P.O. Box 2120, Skokie, IL 60076-7820. Phone: (847) 763-9565. Fax: (847) 763-9569. Single copies or back issues, \$6 each US/Canada; \$9 Foreign. Periodicals postage paid at San Francisco, CA and additional mailing offices. COPYRIGHT 2008, SportsTurf. Material may not be reproduced or photocopied in any form without the written permission of the publisher.

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Who is in your "Hall of Fame"?

As you dive into this issue, please pay attention to the call for nominations for the STMA Founders' Awards. The STMA Awards Banquet at the national conference is an extremely exciting night. The association recognizes many deserving members that evening. The night is capped off with the presentation of awards named in honor of the original four founders of STMA. Each award has its unique criteria reflective of the award name-sake's values or passions.

I encourage each member to take a few minutes, read through the criteria for the awards and reflect on someone in your career who made a difference to you. Consider submitting a nomination and maybe enlisting peers to nominate the same person. Each of us has that one professional who turned on the light bulb or challenged us to expand our dreams and goals.

Receiving a Founders' Award is as high an honor as STMA can bestow. Until STMA offers enshrinement in some version of a Hall of Fame, the Founders' Awards certainly identifies four new Hall of Famers to the membership each year. Nominate a special person and be in San José on January 16, 2009, where we'll all learn more about four people who have enriched this profession and association.

Let me take a minute to thank Eric Schroder, this magazine's editor. Word on the street says it's rare for an editor to stay at one magazine for as long as Eric has been with *SportsTurf*. Personally, I'm in no hurry to give him up. A few years ago, the STMA Board on behalf of membership challenged Eric and the publisher to make this magazine a better tool for sports turf managers. We wanted more science, more meat and potatoes, more gloss and less fluff. Because this is STMA's official magazine, we want it to be a primary instrument to deliver education to members. We left the vision to Eric with little other direction. Eric accepted the challenge, identified a better way for STMA members to be part of the solution and has delivered!

I'm never going to be satisfied with everything in the magazine. As Eric will attest since he is the first to know, there have been times when I've been disappointed in something I've seen or read in *SportsTurf*. If you pull out an old issue and compare it to the product in front of you today, well, it's easy to see Eric is a valuable member of our team.

Credit also goes to those who've stepped up to support STMA and *SportsTurf*, but for now, I thank you, Eric. Eric turns to baseball metaphors regularly so I'll use an old one. STMA asked you to step to the plate in a critical situation for us, and you hit it out of the park. Your job parallels ours in a way. We don't know what it takes to do a job like yours, but we can tell when the job's getting done. Thank you for doing a great job, Eric!



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Choosing the **best time** for seeding mixtures of Kentucky bluegrass and perennial ryegrass

By Dr. John Stier

Combinations of Kentucky bluegrass and perennial ryegrass are commonly used for sports fields in the northern section of the U.S. because they mix well together from an appearance standpoint.

Each species also brings valuable contributions to the pairing. Kentucky bluegrass has an appealing texture (leaf width) and perhaps the best general appearance of any cool-season grass. It produces underground creeping stems (rhizomes) that produce new plants when a gap occurs in the surface turf cover, providing an evenly smooth turf. Kentucky bluegrasses tend to have tremendous genetic uniformity, meaning each grass plant looks and acts like all the others if a single cultivar is planted.

However, its slow rate of establishment is unacceptable in many situations: seed germination can take anywhere from 1-4 weeks depending on temperature. It can take longer to fill in an area as shoot production is slower than some other grasses and many weed species. Furthermore, pure stands of Kentucky bluegrass are subject to the dramatic die-back symptoms caused by necrotic ring spot disease.

Perennial ryegrass can germinate in 5-7 days: its ability to provide a quick turf is the main reason it's usually mixed with Kentucky bluegrass. Seed distributors also like to use perennial ryegrass in mixtures because it is cheaper than Kentucky bluegrass. Pure stands of perennial ryegrass are often not desirable because the species is subject to diseases such as gray leaf spot and crown rust or environmental stresses such as winterkill or drought.

A common goal is to achieve a turf stand that is about 50% each Kentucky bluegrass and perennial ryegrass. Recommendations for the proper amount of perennial ryegrass to use in mixtures with Kentucky bluegrass varies but is generally less than 50% by seed weight. Too much perennial ryegrass in a seed mixture results in a virtually pure stand of perennial ryegrass turf because its fast germination and establishment crowds out and prevents Kentucky bluegrass from getting established.

Most recommendations suggest the amount of perennial ryegrass be limited to between 5-30% of the seed mix weight. A previous study at the University of Wisconsin-Madison showed that common types of Kentucky bluegrass are less competitive with perennial ryegrass than improved Kentucky bluegrass cultivars. Common types include low-cost cultivars such as Park, Kenblue, Alene, Ronde, and South Dakota. Improved types make up the majority of the cultivars sold commercially but often cost more than common types.

Information from our previous study has been increasingly used in contract specifications for sports field construction but is really limited to situations where seeding is done in late summer and the field is given nearly a year or longer to establish. Many sports fields are constructed under tight timelines, though, and such an extended establishment period is often not available.

Dormant seeding

In some cases sports fields are seeded in the spring and need to be played on later that year. However, spring is also a prime time for many weeds to germinate and the heat of summer often reduces cool season grass growth. Sometimes contracts require grass to be seeded the year before play is to begin, but construction delays result in the grass being seeded too late in the fall for germination to occur. This is called dormant seeding: the grass seeds are expected to survive the winter and germinate the following spring. Dormant seeding is often an accepted practice for roadsides, golf course roughs, and some lawns but not much is known about its success rate in areas prone to winters with below freezing temperatures.

One of the goals of the University of Wisconsin-Madison turf program is to provide research-based information that can be used by the sports turf industry. Because of the uncertainty involved with seeding cool-season sports turf mixtures at different times of the year, and the potential difficulties sports field managers may face if a particular mixture is seeded at the wrong time of year, we compared the relative success of seeding various Kentucky bluegrass:perennial ryegrass mixtures in late summer, as a dormant seeding in late autumn, and as an early seeding in spring. Our idea was to use the three seeding times to determine the best time for various seed mixtures to be seeded before football game season that begins in mid to late August.

We seeded plots to mixtures containing 95, 80, 70, or 0% Kentucky bluegrass with the remainder being perennial ryegrass. The varieties used were all high quality, commercially available cultivars. Kentucky bluegrass cultivars were equal proportions of Touchdown, Odyssey, and Fairfax. Perennial ryegrass cultivars were equal proportions of Manhattan 4, SR 4500, and Fiesta 3. The soil type we used was a Batavia silt loam with a pH of 7.4.

Plots were seeded in late summer (about September 1), as a dormant seeding in late November, and in late April about three weeks after winter



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snow melted. We fertilized with a starter fertilizer (13-26-12) at the time of seeding to provide 0.5 lb P per 1,000 square feet. Additional fertilizer was applied in early October (summer-seeded plots only), late May, early September, and early October using 25-2-4 to supply 1 lb N per 1,000 square feet with each application.

Irrigation was applied following summer and spring seedings to encourage germination; dormant seedings were irrigated at the same time as spring seedings. Afterwards, irrigation was applied once each week during the growing season to replace 100% of the estimated evapotranspiration, which was determined with a Toro SitePro irrigation program using data from a Campbell Scientific weather station.

We rated each plot for turf quality every month, weed cover in mid-June before we applied herbicide to control broadleaf weeds, and counted the amount of Kentucky bluegrass and perennial ryegrass plants in a representative area of each plot several times over the year. Beginning in mid-August, we simulated four games of football each week through mid-November using a Brinkman Traffic Simulator. We conducted the first study in 2004/2005 and repeated the study in 2005/2006.

We found that turf quality varied depending on the year and month. In general, turf seeded to 100% perennial ryegrass tended to provide the best quality during May and June, but in one of the 2 years crown rust disease severely reduced turf quality during August and September compared to the mixtures with Kentucky bluegrass. All three mixtures with Kentucky bluegrass gave good turf quality by July of the first study, but had unacceptably low turf quality until September of the second study due to lower spring temperatures, which suppressed growth.

Dormant seedings produced the worst turf quality, though plots seeded

to 100% perennial ryegrass were less affected by seeding time than plots seeded to mixtures of Kentucky bluegrass and perennial ryegrass. Dormant seeded plots had high levels of weeds that required herbicide application (Fig. 1). Turf seeded in late summer, as usually recommended by university extension programs, had few weeds and wouldn't have required herbicide applications.

We also found that seeding time had a profound effect on the amount of Kentucky bluegrass that became established in a turf. Both late summer and dormant seedings produced turf that had 60-75% Kentucky bluegrass when seed mixtures contained at least 70% Kentucky bluegrass seed by weight (Fig. 2). However, turf seeded in the spring needed 95% Kentucky bluegrass in the seed mix to provide more than 50% Kentucky bluegrass in the turf stand.

We also found that perennial ryegrass in lower-lying areas tended to die out during winter but the impact was relatively minor partly because of the short time frame, just over 1 year, for each of the studies. While perennial ryegrass can continue to dominate mixtures with Kentucky bluegrass for years in states such as Missouri and Kentucky, we wouldn't expect the same results in areas prone to severe winters because it lacks the cold temperature tolerance of Kentucky bluegrass.

In a large perennial ryegrass cultivar trial, subsidized by the National Turfgrass Evaluation Program, we've lost an average of about 80% of the perennial ryegrass since the trial was planted in September 2004. Most of these losses have occurred following the winters of 2005/06 and 2007/08. ■

Dr. John Stier is professor and chair, Department of Horticulture, University of Wisconsin-Madison.

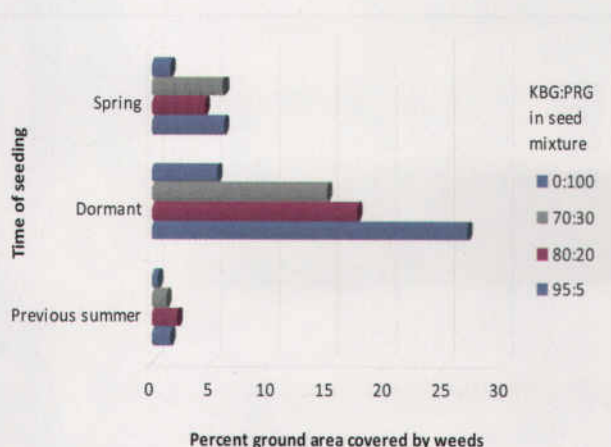


Figure 1. Time of seeding Kentucky bluegrass:perennial ryegrass mixtures affects the amount of weeds in the turf differently depending on the mixture used.

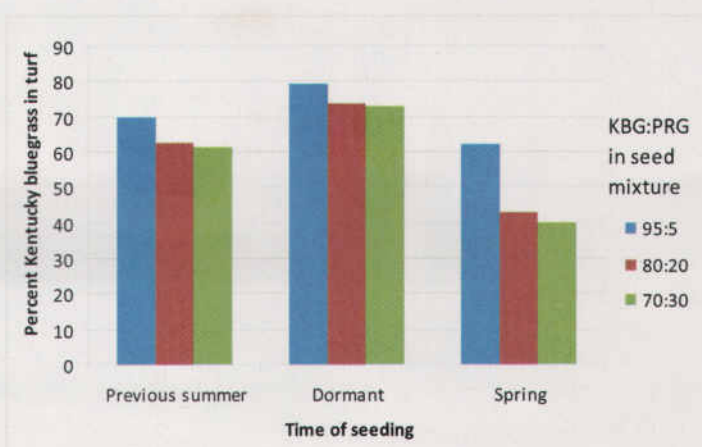


Figure 2. Time of seeding various Kentucky bluegrass:perennial ryegrass mixtures results in different amounts of Kentucky bluegrass in the turf stand.

Study results you can use

Our results suggest that if an area must be seeded in the spring, only pure perennial ryegrass seed or perhaps mixtures containing mostly perennial ryegrass can be relied upon to give acceptable quality turf by the beginning of football season. However, in northern climates where perennial ryegrass is subjected to winterkill, or if crown rust disease is undesirable because of the orange

appearance of the turf and resulting orange powder on clothes/shoes, then seed mixtures containing 70% or more Kentucky bluegrass should be used. Such seed mixtures should be planted the summer or fall the year before the fields are to be used. Dormant seedings should not be relied upon to give acceptable turf quality and are most likely to require herbicide applications.