

The Scotts Company. For instance, a severe summer drought in the Northeast and Mid-Atlantic will unquestionably create greater seed demand—particularly in Maryland, Delaware, New Jersey and eastern Pennsylvania, which has suffered one its worst droughts.

Fall seed demand will be higher than usual among North Carolina golf courses that feature bentgrass greens, says Fred Yelverton, associate professor and extension specialist at North Carolina State University. Yelverton reports that bentgrass greens at North Carolina golf courses have fried in the sweltering summer heat.

“We’re in the southern most range of bentgrass here, and we don’t have a lot of margin for error,” says Yelverton, adding that the Raleigh, N.C., area had 11 consecutive days of 100-plus-degree temperatures with high humidity and no wind — a recipe for disaster for bentgrass greens.

Off to a cool start

Weeks of 50 to 60 degrees weather this past spring and early summer in the Willamette Valley in Oregon slowed maturity of both tall fescues and, particularly, perennial ryegrass. Farms in and around the fertile Willamette, which supply much of the nation’s seed, didn’t begin cutting perennial ryegrass in most areas until about the third week of July. That’s 10 days to two weeks later than they’ve cut the past decade.

“We do 50 percent of our business in the four months starting in July,” says Steve Tubbs, of Tangent, Ore.-based Turf Merchants Inc. “Now we’re basically compressing everything into three months, meaning we have to clean seed faster, test it faster and ship it faster.”

While this puts pressure on the seed processors, it probably won’t be felt by seed buyers. “Some varieties will be tight, but on the whole the Oregon crop will be ample for fall 1999 and spring 2000 needs,” says Tom Stanley, marketing director for Hubbard, Ore.-based Turf-Seed Inc.

Also, there was carryover from the 1998 harvest, adds Horman, particularly with perennial ryegrass, meaning seed will remain in the pipeline until the 1999 seed is shipped. How much? Some marketers said a lot; others said “enough.”

Continued on page 44

and can be easily screened. “I doubt they (seed company executives) would have sold this seed if they had found any of these problems,” Levy adds.

Seed company executives point out that such instances are rare and that for decades superintendents and other turfgrass managers have been able to rely on seed companies to stay focused on quality. Seed companies have set up sophisticated testing regimens to better distinguish contaminated lots from clean lots. Bag contents are verified by trained analysts at universities and in commercial labs.

“When it comes to growing seed and analysis, Oregon has a reputation for quality and accuracy,” says Galen Troyer, Ampac Seed Co. sales manager.

But a few transient superintendents have found that certification requirements vary widely from state to state, sometimes linking the task of assessing seed quality to comparing apples and oranges. And some states don’t even have certification programs.

Continued on page 44

CULTIVAR	MARKETER	AVAILABILITY	PRICE
KEY (AVAILABILITY):			
A=expected surplus; B=adequate supply; C=limited supply.			
KEY (PRICE):			
H= higher price than last season; S= stable, equal to last season;			
L= lower prices than last season; NR = no response			
Perennial Ryegrass			
Accent	Medalist	B	S
Advent	Jacklin	B	L
Affinity	Turf Merchants	A	L
Ascend	Scotts	B	S
ASP 400	Advanta	B	S
ASP 410	Advanta	B	New
Blackhawk	Turf Merchants	A	L
Boardwalk	ABT/Olsen Fennell	B	S
Brightstar II	Turf-Seed	B	S
Caddie Shack	Medalist	B	S
Catalina	Turf-Seed	B	S
Charger II	Turf-Seed	B	S
Cutter	Pickseed West	B	S
Derby Supreme	International Seed	B	L
Dimension	Advanta	C	S
Divine	Scotts	B	L
Elegance	ABT/Olsen Fennell	B	S
Essence	International Seed	C	New
Evening Shade	Turf Merchants	B	S
Excel	ABT/Burlingham	B	S
Express	Pickseed West	B	NR
Fiesta II	Pickseed West	B	NR
Gator II	International Seed	C	New
Imagine	ABT/Lofts	B	S
Legacy II	Lesco	B	S
Line Drive	Lesco	B	S
Laredo	Turf Merchants	B	L
Majesty	Scotts	B	S
Manhattan 3	Turf Merchants	B	S
Mardi Gras	ABT/Zajac	B	S
Monterey	Jacklin	L	S
Morning Star	Pennington	B	S
Palmer III	ABT/Lofts	B	S
Panther	ABT/Zajac	B	S
Paragon	Turf Merchants	C	S
Pennant II	ABT/Burlingham	B	S
PhD	International Seed	B	L
Precision	Advanta	C	S
Prelude III	ABT/Lofts	B	S
Prizm	ABT/Zajac	B	S
Radiant	ABT/Burlingham	C	S
Rodeo II	Turf Merchants	A	L
R2	International Seed	B	L
Seville	ABT/Willamette	B	S
Seville II	ABT/Willamette	C	S
Sonata	Pennington	B	S
Shining Star	Pennington	B	S

Seed Supplies

CULTIVAR	MARKETER	AVAILABILITY PRICE	
Perennial Ryegrass (continued)			
SR 4200	Seed Research	B	S
SR 4330	Seed Research	B	S
SR 4400	Seed Research	B	S
Premier II	Barenbrug USA	C	S
Stallion Supreme	ABT/Lofts	B	L
Sunshine	Pickseed West	B	NR
Top Hat	International Seed	B	L
Wilmington	Lesco	B	S
Wind Dance	Pennington	C	S
Wind Star	Pennington	B	S
Wizard	ABT/Burlingham	B	S
Turf-Type Tall Fescue			
Adobe	Scotts	B	S
Adventure II	Turf Merchants	B	S
Amigo	Medalist	B	S
Anthem II	Turf Merchants	B	S
Apache II	Turf-Seed	B	S
Arabia	Jacklin	B	S
Arid 3	Jacklin	B	S
Avalon	ABT/Olsen Fennell	B	S
Avanti	Turf Merchants	A	L
Aztec	Scotts	B	S
Bonsai 2000	Turf Merchants	B	S
Bravo	Lesco	B	S
Coronado	Turf-Seed	B	S
Crossfire II	Pickseed West	C	S
Dixie Green	International Seed	B	L
Duster	Pennington	B	S
Empress	ABT/Lofts	B	L
Falcon II	ABT/Burlingham	B	S
Finelawn Petite	ABT/Lofts/Finelawn	B	L
Finelawn 5GL	Fine Lawn	B	L
Finelawn 88	ABT/Lofts	B	L
Gazelle	ABT/Lofts/Zajac	B	L
Houndog	International Seed	B	L
Houndog 5	International Seed	B	L
Jaguar 3	ABT/Zajac	B	S
Laramie	Lesco	C	S
Marksman	ABT/Burlingham	B	S
Micro	Turf Merchants	A	L
Millennium	Turf Merchants	C	S
Mustang II	Pickseed West	B	S
Nashville	Advanta	C	NR
Palisades	ABT/Olsen Fennell	B	S
Pride	International Seed	B	L
Rebel Jr.	ABT/Lofts	B	L
Rebel Sentry.	ABT/Lofts	C	S
Rebel III	ABT/Lofts	B	L
Regiment	Advanta	B	L
Renegade	ABT/Burlingham	B	S
Scorpion	ABT/Zajac	C	S
Shenandoah	ABT/Willamette	B	S
Shenandoah II	ABT/Willamette	C	S
Stetson	Lesco	B	S
Southern Choice	ABT/Burlingham	B	S

CULTIVAR	MARKETER	AVAILABILITY PRICE	
SR 8200	Seed Research	B	S
SR 8210	Seed Research	B	S
SR 8500	Seed Research	B	S
Sunpro	Pickseed West	B	S
TarHeel	Turf-Seed	C	H
Tulsa	Advanta	B	L
Virtue	Pennington	B	S
Wildfire	Advanta	B	New
Wyatt	Scotts	B	S
Fine Fescues			
Anvil	International Seed	B	New
Aruba creeping red	Medalist	B	New
Attila hard	Turf Merchants	B	L
Azure	ABT/Lofts	C	S
Badger creeping	Scotts	C	New
Banner III chewings	Scotts	B	S
Brigade hard	Scotts	B	S
Brittany	Lesco	B	S
Cindy red	International Seed	B	S
Dawson	Advanta	B	L
Defiant	Lesco	B	S
Discovery hard	Turf-Seed	B	H
Eco chewings	ABT/Burlingham	C	S
Eureka hard	Fine Lawn/Int'l Seed	C	S
Flyer creeping	Fine Lawn Research	B	S
Hector	Advanta	C	L
Intrigue chewings	Turf Merchants	C	S
Jamestown II	ABT/Lofts	B	S
Jasper creeping	Pickseed West	C	S
K-2 chewings	ABT/Burlingham	B	S
Longfellow chewings	International Seed	B	S
Marker	International Seed	B	S
Minotaur hard	Turf Merchants	C	H
Moxie creeping red	ABT/Olsen Fennell	B	S
MX-86AE sheep	Jacklin/Medalist	B	S
Nordic hard	ABT/Zajac	B	L
Quatro sheep	International Seed	B	L
Raymond	Advanta	B	S
Reliant II	ABT/Lofts	C	S
Rescue 911 hard	Medalist	B	S
Scaldis	Advanta	B	L
Shademark	Lesco	B	S
Shademaster II	Turf-Seed	B	H
SR 3100 hard	Seed Research	B	S
SR 3200 blue	Seed Research	B	S
SR 5100 chewings	Seed Research	B	S
Tiffany chewings	Turf-Seed	B	S
Trapeze chewings	ABT/Zajac	B	S
Vista red	ABT/Zajac	B	S
Vernon hard	ABT/Burlingham	B	L
Victory II chewings	Pickseed West	B	S
Warwick hard	Turf Merchants	B	S
Bentgrass			
Backspin	Turf Merchants	B	S
Bavaria velvet	Turf Merchants	C	H

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Seed Supplies

CULTIVAR	MARKETER	AVAILABILITY PRICE	
Bentgrass (continued)			
Cato	Pickseed West	B	S
Century	ABT/Burlingham	B	S
CEO	International Seed	B	S
Cobra	International Seed	C	S
Crenshaw	ABT/Lofts	A	S
Grand Prix	Lesco	C	S
Imperial	ABT/Burlingham	C	S
L-93	ABT/Lofts	B	S
Lopez	ABT/Zajac	B	S
Mariner	Pickseed West	C	S
National	Pickseed West	C	S
Penncross	Tee-2-Green	B	S
Penneagle	Tee-2-Green	B	S
PennLinks	Tee-2-Green	B	S
Penn G-2	Lesco	B	S
Princeville	Lesco	B	S
ProCup	Scotts	A	L
Putter	Jacklin/Medalist	B	S
Southshore	ABT/Lofts	A	S
SR 1020	Seed Research	B	S
SR 1119	Seed Research	B	S
Tiger	International Seed	B	S
Tracenta	Advanta	L	H
Trueline	Turf Merchants	C	S
Viper	International Seed	B	L

Continued from page 41

Says Tubbs, "We figured we might be able to count 20 million pounds of carryover on a 200-million-pound crop, but our crop is late this year and I'm practically out of perennial because of the carryover I've already shipped."

As sunny as this year's harvest appears, there are some clouds.

"The traditional northern turfgrass varieties of (Kentucky) bluegrass and fine fescues will be in tight supply this year," says Mike Baker, senior vice president for Pennington's Oregon division. "The market has responded accordingly to small harvests across the seed industry of Kentucky bluegrass and creeping red fescue with significant price increases in these varieties."

Ronnie Stapp, executive vice president of Pennington's seed division, blames hot, dry weather in eastern Washington for the less-than-stellar bluegrass crops. As for the creeping red fescues, Stapp says that farmers over-produced these varieties several years ago, driving down the price. Many of the farmers diverted their fields to other crops as a result, but last season there was large usage of creeping reds, therefore the shortages.

Similar market forces — but on a much larger scale — played into this year's mostly favorable seed harvest. More farmers in the Willamette Valley grew grass seed this season because of depressed prices in commodities like corn and wheat.

"Agriculture is generally in the tank," said International Seeds' Dozler. "Consequently, a number of farmers jumped into grass seed production." Dozler sees a buyer's market, particularly for varieties used in overseeding. ■

Ron Hall is managing editor of Landscape Management, Golfdom's sister publication.

Testing debate continues/Continued from page 41

In Florida, for example, where the certification program fell by the wayside, inferior quality seed prompted some turf managers to file lawsuits against seed companies after it was allegedly determined that a few Florida seed producers had sold turfgrass seed using fraudulent certification tags from Georgia, says John Mascaro, a turfgrass consultant with Coral Gables, Fla.-based Turf-Tec International.

Such stories are enough to make any superintendent wonder if the seed inside bags truly correlates with what's on the tags. Is an independent test from a third-party testing lab necessary to be certain about quality? The answer to that question varies depending on who you talk to in the industry.

It's no surprise that reputable seed companies stand by their products, as well as their production, testing and certification processes — from seed stock and field inspections to harvesting, conditioning, and on to final bagging and tagging. In fact, some seed company executives note that recent industry consolidation has been a boon for end users because an improved profit structure has allowed companies to concentrate on higher quality products, additional research and a more stable grower contracting situation.

But even many seed companies are taking a closer look at their quality assurance programs. "What some companies are doing is taking larger sample sizes and even growing the material out to ensure that it's clean," says Rick Elyea, Tee-2-Green turfgrass consultant in Hubbard, Ore.

Few people in the industry question testing labs, which operate under guidelines set by the International Seed Testing Association, the Association of Official Seed Certifying Agencies and the Association of Official Seed Analysts, among other non-profit organizations. But in recent years concerns have surfaced about the small amounts of seed being tested. At least some say larger samples should be tested to better gauge seed quality.

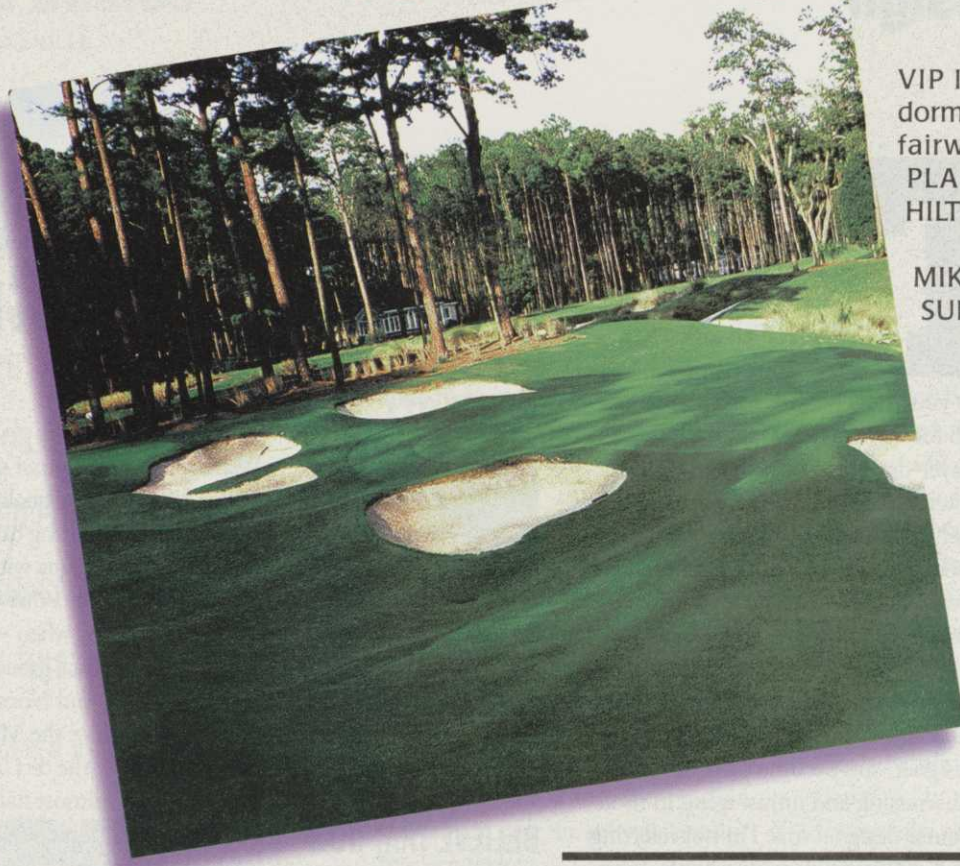
Levy says it was the USGA Green Section that alerted his company to potential problems about five years ago after courses that were supposedly planted with clean seed began experiencing problems. "USGA officials wanted to find out if the seed was the source," he says.

Now Seed Technology is recommending increased seed-testing amounts of about 50 grams to better uncover potential problems. But Levy admits most certification labs aren't equipped to handle the extra amounts.

"We're talking about making a pretty major jump, from 2.5 grams — about a tablespoon — to 50 grams, or about a tenth of a pound." Depending on an analyst's experience, such seed tests could require more time and expense, increasing from about one or two hours to several days and from \$50 to as much as \$500 or even \$1,000.

Says Skip Lynch, technical agronomist for Corvallis, Ore.-based Seed Research of Oregon: "If you need to be sure that the seed is clean, additional sampling can be done using larger sizes. But that costs money, and those costs will no doubt be reflected in your final price." ■

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The annoying phone call came on a recent Monday evening when I was watching a 1992 U.S. Open rerun on the Classic Sports Network. "Say, uh," the despondent caller

said. "Do you know a PGA Tour player we could join forces with? Our client insists we need a player-designer to get the job."

I, not being a kind soul, replied: "Scott Hoch surely must still be available."

Deep moans emanated from the other end of the line. I was forced to make up for my vile comment by launching into my youthful, ignorant speech about ideals, integrity, honor and all that other righteous stuff that means nothing anymore.

The sad truth is that the notion of the "player-designer" has become the most ludicrous, embarrassing and unjust trend in modern golf-course design. Now, I'm not referring to the Ben Crenshaws, Tom Weiskopfs, John Foughts and Greg Normans of the world. They actually visit their courses in progress, study the art, care about what they do and use their background as players to help create interesting design strategy. They *are* practicing golf architects.

I refer to the disturbing notion that golf architects, who have spent years working and building their businesses into respectability, now must have partners in crime who don't know anything about golf architecture.

Preferably, the new partners should have PGA Tour wins (it used to be that victories in the Majors were required to crack the design ranks). The new design associates should also be available about five Mondays a year where they will be asked to show up at construction sites wearing silver Persol sunglasses and logo-drenched shirts so they can point shamelessly at some dirt and say: "Boy, I didn't know bulldozers were that big."

The concept of the player-designer seems logical. A great golfer plays hundreds of courses around the world. He studies the game his entire life and is able to refine design strategy in the field thanks to his vivid imagination as a player.

Well, Crenshaw and Bill Coore have proved to be an excellent team, and their work certainly has a timeless quality partly because of their vast knowledge and appreciation of the game.

Player-Designers: Partners in Crime

BY GEOFF SHACKELFORD



DO PEOPLE REALLY BELIEVE THAT GOLF COURSE DESIGNS ARE ENHANCED BY JOE TOURPRO'S PLAYER-DESIGNER STATUS?

Weiskopf and his former partner, Jay Morrish, were a different but equally appealing example of how a design pairing can bring together each person's unique talents with sound results.

Fought has built a thriving business and seems embarrassed when you mention he played his way into the final group of the 1983 PGA Championship. And Norman has disappeared from the Tour since the Masters because he loves spending time in the dirt building courses.

These days, almost half of the Tour's top 125 are involved in course designs, basically lending their names for generous fees. Those fees usually include photos with the clients and nice opening-day appearances.

As one architect recently told me, however, he could count the number of weeks he was on site, while he could compute the number of minutes his player-designer partner appeared to offer his wisdom. Needless to say, the architect wasn't complaining; he was just pointing out that not only do player-designers provide little in the way of wisdom, they do it in short time.

Whatever happened to the build-it-and-they-will-come mentality, instead of this brand-recognition obsession? Do people really believe that golf course designs are enhanced by Joe Tourpro's status? Are average American golfers so shallow that they believe that they're getting more for their money by playing courses designed with player-designers involved?

Sadly, the answer is probably "yes." The unfortunate reality is that player-designers have become the necessary evils of the golf-architecture business. Like it or not, more and more Joe Tourpros will sign up to lend their names to projects, collect big checks and do those things they do. Whatever they are.

Geoff Shackelford's latest book is The Golden Age of Golf Design. He can be reached at geoffshac@aol.com

Take Note

THERE'S AN ART TO DASHING OFF MEMOS. SO IF YOU WANT TO PEN POWERFUL AND PERSUASIVE MESSAGES, READ THIS HANDY HANDBOOK.

BY MARK LUCE

Course improvements are looming, you need new mowers, and your computer is dying. But to get the funding to correct these problems, you have to do something you enjoy as much as a trip to the dentist — write a memo.

Penning a memo might be your vision of Dante's 12th level of hell. But without that written request, your course might burn brown in the summer sun. Learning to write powerful, convincing and effective memos will not happen overnight, but L. Sue Baugh's, "How to Write First Class Memos: The Handbook for Practical Memo Writing" (NTC, \$12.95), will get you on the way.

From the most common mistakes to rough drafts, from how to get a reader's attention to proof-reading, Baugh's book is a boon for even the most reluctant and hesitant writers.

While it's impossible to cover everything that's in Baugh's book here, you can learn the memo-writing basics.

Write or talk

Getting the right message to the right people can sometimes work through simple conversation. But people have a tendency to forget. How many times have you left a conversation saying, "Oh, I wished I would've said ..."

Memos give you the chance to think of what you want to say, allow the receiver to consider the question and let you save the information for future reference.

Ramblin' man

The biggest problems with memos are poor organization and a lot of bureaucratic babble. To solve the first problem, make sure that your most important information comes first and least important information last. This style is called an inverted pyramid. Baugh writes: "Once you have stated the main idea, subsequent information should support, explain, elaborate or qualify the idea and its meaning to the reader. The information should be given in a logical progression without skipping steps or jumping from one fact to another."

Clarifying unclear writing takes time and effort. Remember that big words do not impress, so keep it simple. And if you're unsure whether your memo is ready to send, have someone who is unfamiliar with what you're writing read it over. If they are confused, you have more work to do.

Get it right

What makes Baugh's book helpful is that she outlines the process — not just the thinking and planning but the writing. She breaks the writing of a memo down into three simple steps:

- **Preparation:** In this stage, you figure out the purpose, topics and needs the memo will fulfill. Ask yourself who you are writing for, what they need to know and how you want them to respond.
- **Writing:** The organization and writing. Don't, Baugh warns, fall into the perfection trap. "In many instances, people suffer from the paralyzing expectation that their memos must be perfect, or more important or official sounding than their other communications. As a result, they lose their own 'voice' and adopt a stiff, unnatural style that confuses rather than communicates." Be yourself.
- **Review:** Double and triple-check the facts, dates, names, prices, spelling and grammar. And always keep in mind your purpose — effective, persuasive communication.

This small primer should get you on the road to better writing, but the book is certainly more helpful. It includes a laundry list of commonly misspelled words (do not rely on spell-check because it will burn you), explanations of common grammatical errors (which/that, who/whom, council/counsel) and more than 60 pages of model memos.

You'll probably never be Hemingway. But you will gain respect and trust by learning to write effectively. And everyone will be on the same page.

Mark Luce, a freelance writer who lives in Lawrence, Kan., now communicates exclusively by memo. This column appears occasionally in Golfdom.

More golf courses have discovered that sodding is economical, efficient, reliable and smart

BY DOUG FENDER

Once considered a costly alternative to establishing turfgrass, sodding is increasingly winning favor as a viable method on new and existing courses.

Some course owners embrace sodding because it takes less time to establish, allowing them to open the course sooner and almost immediately recoup their sizable investments. Many superintendents like that sod generally requires less irrigation than seeding and hydro-sprigging, has potentially fewer erosion and runoff concerns, and requires less-intensive nurturing.

Sod's newfound popularity is reflected in increasing sales to golf courses, which have climbed steadily to nearly \$500 million in recent years. Sod purchases by golf courses now account for about 8.1 percent of

Sod Story

With a Happy Ending



total annual sod sales, up from 4.7 percent in 1988, according to a recent survey by Turfgrass Producers International.

To be sure, no single method of establishing golf turf is right for every course. A small, money-strapped municipality may prefer the lower up-front costs of seeding or sprigging, while a national resort developer may opt to sod a course so it will be ready for eager guests or to streamline the environmental permitting process.

Superintendents, architects and developers are finding it sometimes pays to look beyond initial costs when weighing options to seed, sod or hydro-sprig. Along with cash-flow considerations, other factors must be mulled, including climate, soil, water costs, surrounding environment, long-term maintenance and equipment considerations, and the course's intended use.

Defining the choices

Seeding, long the predominant method of establishing turfgrass, has won over many turfgrass managers because of its low initial costs compared to sodding. But, after closer analysis, what is becoming apparent to many turfgrass managers is that additional expenses for labor, water, fertilizers, herbicides and equipment wear that are required to establish seeds and sprigs over the first few years may sometimes put sod on a nearly level economic playing field.

When seeding, there are other considerations as well. Along with preparing the soil, mechanically dropping the seeds, watering and fertilizing, superintendents must hope the seeds take root and heavy rain or wind doesn't wash or blow them away.

Hydro-sprigging/seeding can be a bit more complicated and slightly more expensive. Live sprigs are planted, and careful nurturing is required. Results can be more dependable than seeding, but the method also takes lots of water, fertilizer — and patience.

In fact, for seeds to sprout or for hydro-sprigs to take root, sometimes twice as much water is needed compared to sod. All that water is expensive in some parts of the country, and it sometimes causes erosion. To counter washouts and erosion and achieve uniform grass coverage, more grow-in manpower is often needed, along with additional time and money to prepare soil and carefully monitor growth.

Besides saving water, some turf managers like the fact that sodding has other potential environmental benefits. It protects the soil with a dense pre-established grass covering, which helps to prevent erosion. That's particularly true on steep inclines. With sod, irrigation strengthens the root system that has already started to take hold instead of washing away soil. Sodding also practically guarantees uniformity.

When environmental permitting problems hampered efforts to seed and hydro-sprig Blackstone GC in Frisco, Texas, owners opted to install turfgrass sod, which streamlined the permitting process and allowed the 18-hole championship course to open on schedule.

Costs, timing, delays

No one can deny that a pallet of sod costs considerably more than trays of turfgrass plugs, a bag of seed or a bushel of sprigs. Depending on the region of the world, a course may budget up to three times as much to lay down sod instead of seed.

Turf Types

Selecting turfgrasses can be a complicated process. The decision must strike an appropriate balance between adaptability, durability and playability. In other words, turfgrasses must be able to survive the climate, handle more than 100 rounds a day, and golfers need to like the way the ball bounces. Here are a few guidelines:

■ Cooler regions:

Greens — Creeping bentgrass for new construction because it provides good putting surfaces. But performance is superior only in certain regions.

Tees — For larger tees (100 square feet) that receive little or no shade and can experience intensive management, consider creeping bentgrass. For relatively small tees that receive significant shade and cannot be maintained intensively, opt for a perennial ryegrass or a combination of ryegrass and Kentucky bluegrass. In more arid areas, Kentucky bluegrass can be used alone.

Fairways — The preferred grass is creeping bentgrass, but it requires more intensive management and generally a larger budget than some alternatives. For lower-budget and lower-management courses, Kentucky bluegrass.

Roughs — Consider 60-30-10 mixture, by weight, of Kentucky bluegrass, fine fescues and perennial ryegrass.

■ Moderate regions:

Greens — Despite occasional problems with midsummer performance, consider creeping bentgrass. Bentgrass cultivars that exhibit heat stress tolerance and good midsummer rooting should be selected.

Tees — Primarily perennial ryegrass and creeping bentgrass, although zoysiagrass and bermudagrass are good choices. In more arid, higher-elevation areas, consider a Kentucky bluegrass/perennial ryegrass combination.

Fairways — There is probably no grass ideally suited to the area. Turfgrass specialists can help decide between creeping bentgrass, perennial ryegrass, zoysiagrass and bermudagrass.

Roughs — An equal mixture, by weight, of Kentucky bluegrass, fine fescues and perennial ryegrass.

■ Warmer regions:

Greens — Creeping bentgrass provides superior putting surfaces.

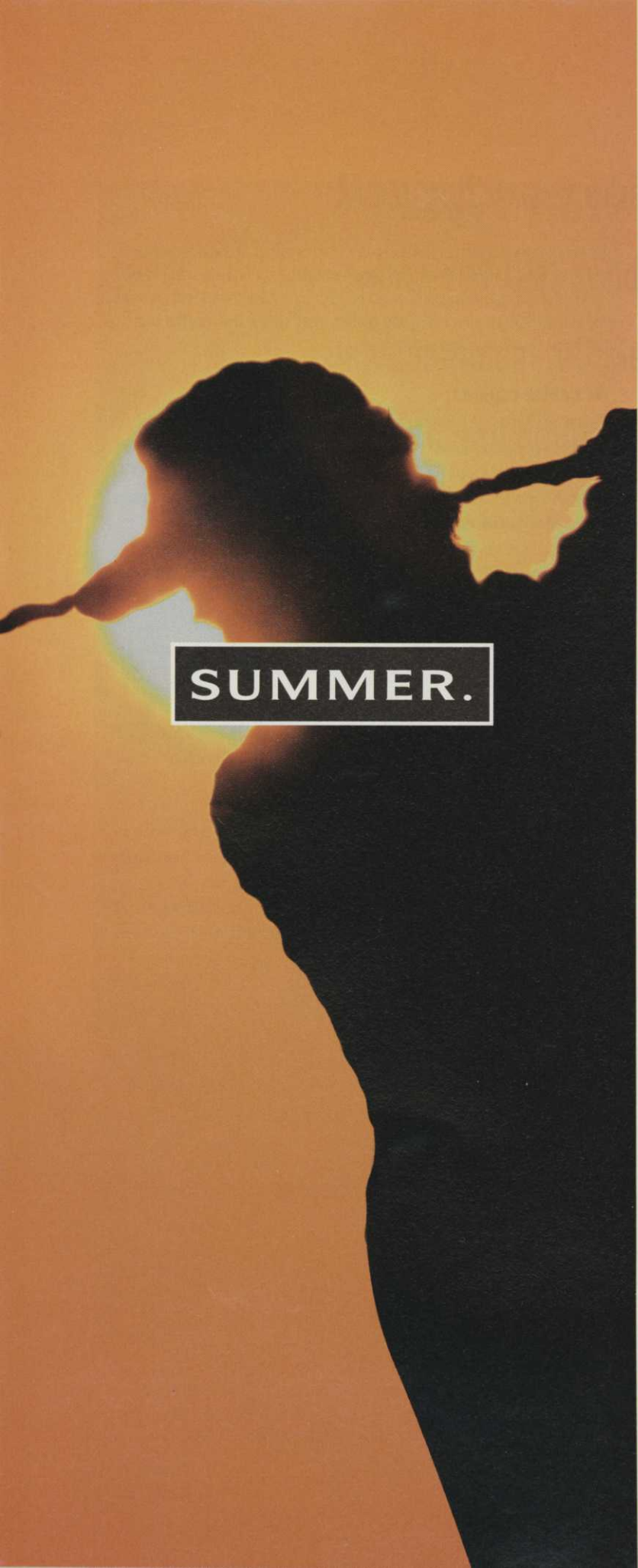
Tees — Often bermudagrass, zoysiagrass (particularly semishade) and hybrid bermudagrass.

Fairways — Bermudagrass dominates.

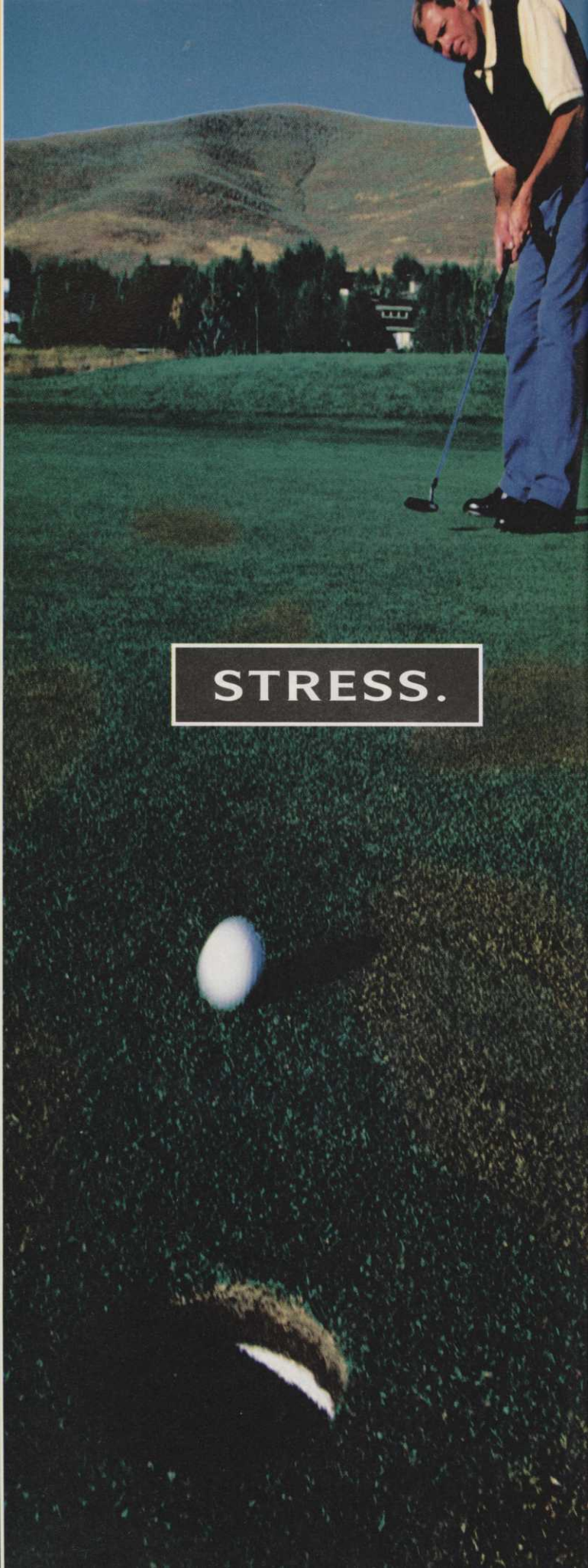
Roughs — St. Augustinegrass, the most shade-tolerant of warm season grasses, and hybrid bermudagrass dominate, with tall fescue used for shady areas.

But other real and overlooked costs must be considered when examining overall expenses to establish turf. When sodding, courses can be playable within two months, allowing thousands of rounds to be completed before the first golfer steps up to a tee on a seeded course.

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SUMMER.



STRESS.