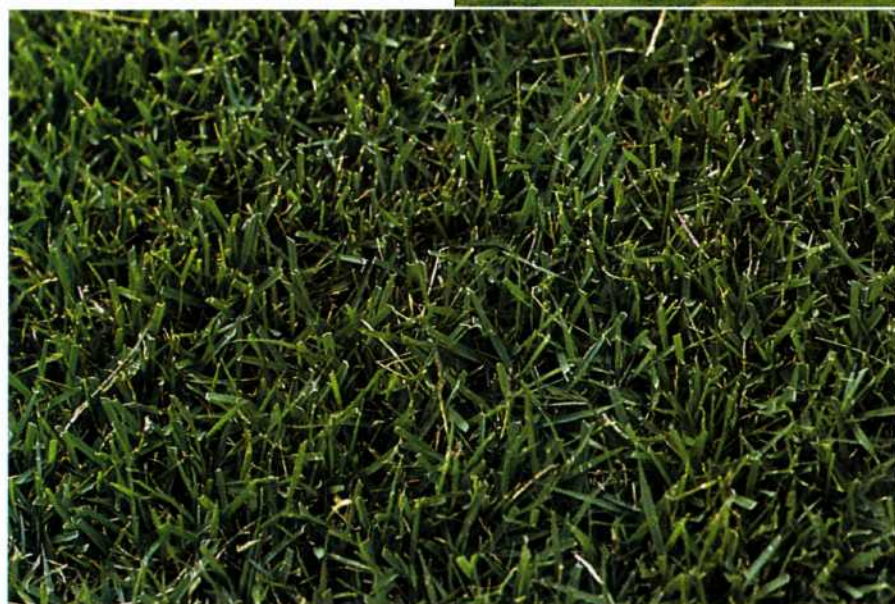




Turf of the Month:

Zoysiagrass



Zoysiagrass from Bladerunner Farms of Austin, TX, was used to establish the turf at Retama Park, a new horse-racing track in San Antonio. Photo courtesy: Bladerunner Farms.

With proper management techniques zoysiagrass can stay green even in hot, dry conditions while using less water than other grasses.

By Mike Augsdorfer

As a sports turf, zoysiagrass is best described as a first-round draft choice with tons of potential but not quite ready for major-league play. Zoysiagrass brims with potential: It is heat- and drought-tolerant, wears well, requires less water and fertilizer than bermudagrass and other popular athletic turfs, and rarely has problems with weeds or disease. However, zoysiagrass is very expensive to establish due to its slow germination and spreading rate. "Sticker shock" has limited the application of zoysiagrass mostly to a few golf courses, which use zoysia on tee boxes and fairways.

Zoysiagrass is a popular turf for home lawns in warm climates and in the transition zone. Propagation is ordinarily

by sprigs, sod or plugs. For many years establishment of zoysia by seed was considered impractical because seed germination was very poor. However, extensive research produced a treatment for zoysiagrass seed that drastically improves seed germination rates. Now most zoysiagrass seed is treated, usually by chemical scarification, a process that involves soaking the seed in a 30-percent solution of potassium or sodium hydroxide. Treatment improves germination rates from as low as two percent to as high as 90 percent.

Zoysia is native to eastern Asia, and much of the commercial zoysia seed on the market is harvested from natural outcroppings of zoysia in China. Zoysia is adaptable to many different soils and demonstrates good shade, salt and drought tolerance. Recommended mow-

ing height is 1/2 to 1 inch. Zoysia is so dense that weeds are not likely to be a problem; in fact, overseeding is almost impossible. "It's a broadly established, tenacious grass," says Art Wick, head of research and development at LESCO, Inc., in Rocky River, OH. "It's such a dense grass that once it's established, it chokes out weeds."

While zoysiagrass is generally resistant to most turfgrass diseases, pests can be a problem. "The problem with it here in the Southeast is mole crickets," says Ray Jensen, president of Tifton Seed Farms in Georgia. "The sandier soils catch more damage. The insecticides we have at this time are not effective." Nematodes also can present a serious threat to the turf.

When water is scarce, zoysia will enter a dormancy period, allowing the

grass to survive through drought conditions. When the grass receives rain again, it will green up and begin to grow again. With proper management techniques zoysiagrass can stay green even in hot, dry conditions while using less water than cool-season turfgrasses or hybrid bermudagrasses.

Kevin Morris, program coordinator for the National Turfgrass Evaluation Program, is among those who think zoysia has tremendous potential. "Seeded zoysias will have a place in the market over time," says Morris. "It's the best grass for making it through the summer."

Dr. Milt Engelke of Texas A&M University at Dallas has been involved with much of the research on zoysiagrass in the U.S. "From a sports-turf standpoint, zoysia will provide density and resilience at a reduced maintenance level," he says. "I believe zoysia will start working its way into sports fields very soon."

"Living Astroturf"

Frank Whitbeck of Windrock Grass Farms in Little Rock, AR, says he's seen zoysiagrass used from Bel Air, CA, to Long Island, NY, primarily in home lawn and golf course applications. "I think Meyer Z-52 zoysiagrass will be the premier sports turf within the next five years in the U.S.," says Whitbeck. "It survives and thrives in virtually all weather conditions, needs less management than virtually all other turfgrasses and is more wear-resistant. It has been called 'The Living Astroturf.' But very few people in the U.S. have tried it as a sports turf."

Whitbeck cites establishment time as the primary reason why the sports-turf industry resists the use of zoysiagrass. "After they build a sand base on a sports-turf facility, they want to put down a grass that grows very quickly, so they put down bermuda," he notes. Researchers, however, are developing methods to produce zoysiagrass just as quickly as bermuda. "I think a lot of the effort to find a faster-growing zoysiagrass is not going in the right direction," says Whitbeck. "People are trying to find a faster-growing zoysiagrass. We need to find a way to establish a slow-growing zoysia faster."

Whitbeck notes that zoysia has been used with great success on fairways and golf tees throughout the U.S., and he believes zoysia would be equally effective as an athletic turf. "A zoysia root

system would automatically firm up a football field and create less damage," he notes.

Mike Richardson, research agronomist for Turf Merchants in Oregon, agrees. "For less damaging-type sports such as baseball, zoysia is as good as bermudagrass."

Zoysia shares a number of characteristics with bermudagrass. "It's similar to bermuda in a lot of applications," says John Foster of West Coast

Turf in Palm Desert, CA. "It's very tough and takes a lot of wear." Foster cautions that establishment of zoysiagrass in a sports turf application can take up to a year and a half. "Most varieties of zoysia are slow growers," notes Foster. "We are now in research on several new varieties."

Tim Bowyer, Ph.D., of Southern Turf Nurseries in Georgia, admits that estab-

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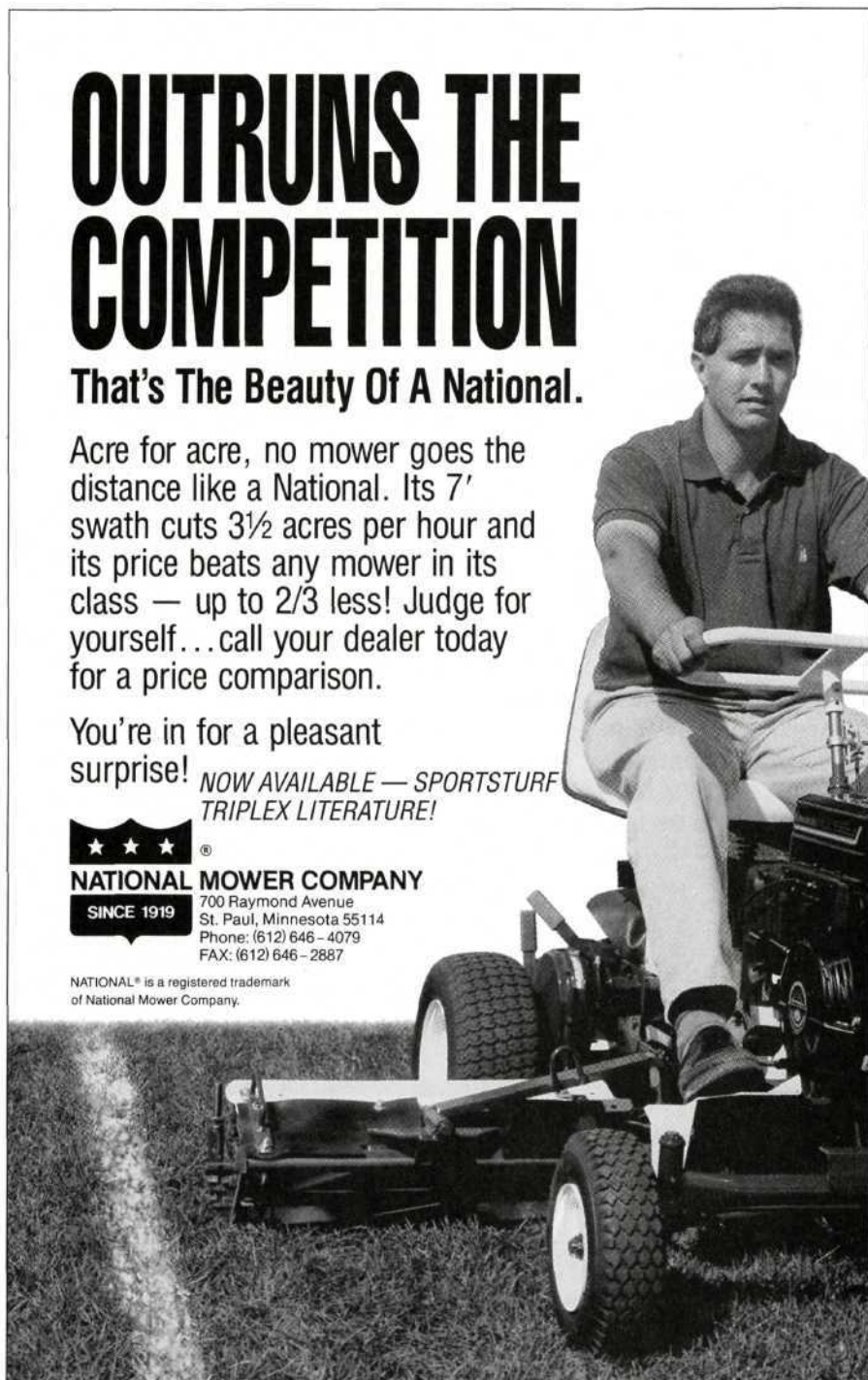
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Zoysiagrass

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ishment time contributes to the high cost of using zoysiagrass. "It's two to three times the cost of bermudagrass," notes Bowyer. "It is generally installed by sod, which increases cost. It also tends to be very slow to recover from injury and traffic damage."

Researchers are continuing to pursue methods of making zoysiagrass more economical to install. "We are trying about seven different treatment programs," says Dennis Combs, vice president of Fine Lawn Research in Lake Oswego, OR. The goal is to find a treatment process that will allow faster germination of zoysiagrass seed. "The majority of zoysia will continue to be sodded until the cost comes down," admits Combs.

Dr. Charles Murdoch, turf specialist at the University of Hawaii, says zoysia-grass is used extensively for home lawns on the islands but not as a sports turf. "The problem is it doesn't recover from wear quick enough," says Murdoch.

While zoysiagrass is generally resistant to most turfgrass diseases, pests can be a problem.

Although zoysia is ideally suited to the tropical climate and can sustain the heavy traffic that sports fields in Hawaii must tolerate, the extremely slow recovery rate of zoysiagrass restricts it to home lawn use.

Zoysia is one of the most environmentally sensitive turfgrasses available, according to Nat Emmons of Jacklin Seed. "Zoysiagrass is incredibly tough, and it's also very slow growing, which

means less clippings and lower maintenance," he explains. "It is one of the most efficient water and fertilizer users, and it gives a good surface at a high cut level."

Milt Engelke notes that careful turf management is the key to working with zoysiagrass. "Zoysiagrass does not like high bulk-density soils, and sports fields tend to get compacted," he relates. "Aerification is going to be extremely important."

Dick Stuntz, superintendent at Alvarado Country Club in Lawrence, KS, has used zoysiagrass extensively on the golf course. "We use it on fairways and tees predominantly," he says. "I just think it's an excellent grass for transition zone." Stuntz thinks that since zoysia performs so well as a turfgrass for golf, other athletic applications are natural. "For an athletic field, zoysia grass is very wear-tolerant, perhaps better than any other sports turf," he explains. Zoysia is so tough, says Stuntz, that only about one out of five golfers can take a divot that won't grow



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back from the base of the plant — and those are John Daly-type swings. Zoysia's only drawback, according to Stuntz, is that if the grass is seriously injured, it is very slow to recover.

Paul Thomas, head groundskeeper at Towson State University in Maryland, has experimented with zoysia on intramural fields at the school. "We seeded an intramural field with zoysia last summer," he relates. "It germinated over a period of 10 days to three weeks." Thomas had a goosegrass problem in some areas of the field, but the zoysia was able to compete with the goosegrass and establish itself in those areas as well.

Thomas expects to do less maintenance on the field with zoysiagrass than he would with another turfgrass. "I haven't done any irrigation on it," he notes. "It's more drought-tolerant than other turfgrasses." Thomas plans to install zoysia on another intramural field this summer but has no plans to use it on his varsity athletic fields. He explains that the wear and tear on the intramural fields is not as great as on a varsity field, which keeps the zoysiagrass from being exposed to serious injury.

Racing on Zoysia

Bladerunner Farms of Austin, TX, recently started distribution of a patented strain of zoysiagrass called ZoyBoy™. The new strain was used to establish the turf track at Retama Park, a new horse-racing track in San Antonio. "It's never been used before for race-tracks in the U.S.," explains David Doguet of Bladerunner Farms. "It has a real dense turf and a good rhizome system. We felt that it would hold up well under the stress of racing."

Doguet says zoysia has not been widely accepted as a sports turf because its slow establishment rate made the grass very expensive to produce. "Zoysia was very expensive to grow and sell," notes Doguet, "and the recuperative ability of the older varieties was very slow; but the new varieties (of which ZoyBoy is the first) are faster growing." Doguet says that ZoyBoy spreads much faster than other varieties of zoysiagrass. He admits that he was "a little worried" about the grass early in the season because the weather was cool, but the turf has performed well despite the cool weather.

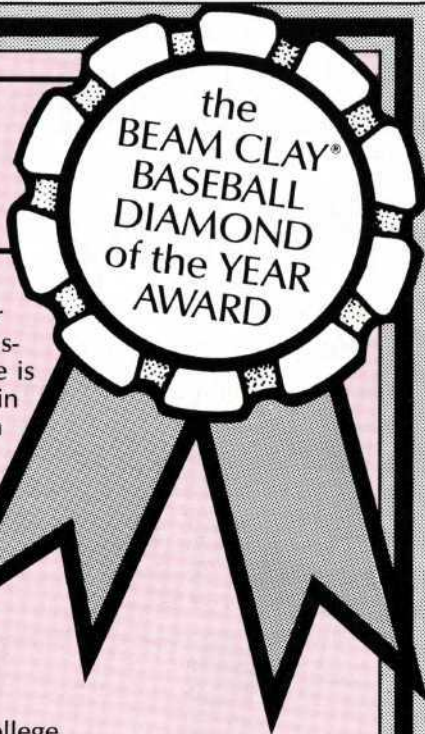
The Retama Park racetrack was the very first application of ZoyBoy, and Doguet hopes to use the grass on some

athletic fields and golf courses very soon. Doguet thinks zoysia will be used more often for racetracks and other sports turf applications in the future. "I think as it proves itself at Retama, we'll see more activity," he says.

If the initial cost of establishing zoysia grass can be put in perspective as an investment, zoysia can be a sound choice economically because maintenance costs for zoysiagrass can be substantially lower than maintenance costs

for other turf types. Engelke believes the advantages of zoysiagrass outweigh some of the problems associated with the grass. "Biologically, the zoysiagrasses have the characteristics needed for environmentally sensitive turf," he notes. "I think it's a grass that will start to show its worth." As environmental awareness increases throughout the sports turf industry, zoysiagrass should establish a position among the top turfgrasses for athletic applications. □

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