

Four Zoysia Varieties Promise Shade Tolerance, but at a Price

By Mary M. Porter

The name zoysia may not roll off the tongues of many people outside the industry, but those same people may soon be rolling out this new grass for golf courses, parks, and home landscapes,

according to Texas A&M turfgrass breeder Dr. Milt Engelke.

The new zoysias will be seen first in parks and on golf courses before they are adapted to existing home lawns. "It's

TABLE 1 CURRENT PRODUCERS OF ZOYSIAGRASSES

"Diamond"

Producer	State	Contact	Phone Number
Southwest Turf	TX	Terry Jungman	972/474-2821
West Coast Turf	AZ, CA	John Foster	800/447-1840

"Cavalier"

Producer	State	Contact	Phone Number
Gardner Turfgrass	TX	Sam Peterson	888/221-0422
Horizon Turfgrass	TX	Willy Gavronovic	409/532-8599
Quail Valley Farms	AR, LA, MS, MO, OK, TN	Roger Gravis	800/666-0007
Rod Farms	TX	Glenn Rod	409/543-0121
Triangle Turf Inc.	TX	Buzzy Romine	800/753-5182
Trinity Turf Nursery	TX	Doug O'Connor	800/290-8873
Wharton Turfgrass	TX	Charles Davis	409/532-4340
Wittig Grass Farm	TX	Allan Wittig	409/657-4496

"Palisades"

Gardner Turfgrass	TX	Sam Peterson	888/221-0422
Horizon Turfgrass	TX	Willy Gavronovic	409/532-8599
Rod Farms	TX	Glenn Rod	409/543-0121
Trinity Turf Nursery	TX	Doug O'Connor	800/290-8873
Wharton Turfgrass	TX	Charles Davis	409/532-4340
Wittig Grass Farm	TX	Allan Wittig	409/657-4496

"Crowne"

Gardner Turfgrass	TX	Sam Peterson	888/221-0422
Horizon Turfgrass	TX	Willy Gavronovic	409/532-8599
Triangle Turf Inc.	TX	Buzzy Romine	800/753-5182
Wharton Turfgrass	TX	Charles Davis	409/532-4340
Wittig Grass Farm	TX	Allan Wittig	409/657-4496

TABLE 2 NEW ZOYSIA VARIETIES' CHARACTERISTICS

	Crowne	Cavalier	Diamond	Palisades
Agronomics	coarse textured stolons/rhizomes excellent establishment rapid regrowth highly competitive against weeds low nutritional needs traffic tolerant	fine leaf texture high shoot density long slender leaves spreads by stolons recovery from injury resistant to pythium blight resistant to tropical sod webworm, fall armyworm, tawny mole cricket	fine leaf texture high shoot density high rhizome production rapid recovery excellent sod strength early green-up good genetic color good fall color retention	medium-coarse texture uniform density stolons/rhizomes excellent establishment rapid regrowth few seed heads low thatch tendency tolerates close (1/2-in.) mowing vertical growth — less trimming
Environmental	low water use shade tolerant cold hardy heat tolerant salt tolerant	cold hardy good shade tolerance good salt tolerance moderate/low water use	excellent shade tolerance excellent salt tolerance low water requirements	low water use shade tolerant cold hardy heat tolerant salt tolerant
Limitations	Rhizoctonia susceptible tends to scalp flowers produces seed heads	tends to thatch under high fertility, moderately susceptible to brown patch, susceptible to zoysiagrass mite	limited winter hardiness, thatch/scalp tendency, susceptible to tropical sod webworm, susceptible to zoysiagrass mite	susceptible to fall armyworm
Mowing	1 to 2.5-in. with rotary mower	1.5 to 2.0-in. with rotary mower	from 1/8-in. up	from 0.5 to 2.5-in.
Uses	industrial parks home lawns low maintenance areas	golf tee boxes fairways home lawns	putting greens tee boxes high-maintenance turf areas	fairways — especially dry areas sports fields industrial parks and highway medians

expensive to start over with a completely new lawn," says Engelke. "A totally new lawn using zoysia sod would cost three to four times more than common bermuda and twice that of hybrid bermudagrass (Tifway) or St. Augustine. However, the savings in maintenance afterward in reduced water and fertilizer would soon balance out the difference."

He expects these zoysia grasses to become a viable alternative to St. Augustine grass, noting, "They have good shade tolerance, lower water demands and are cold hardy." Engelke has introduced four varieties of zoysia that have patents pending.

Pressure to perform

"In urban areas, pleasing landscapes are considered a necessity by homeowners and businesses alike," Engelke explained. He noted that as cities grow, the demand on water resources and the need to monitor water supplies as a result of widespread use of chemicals has encouraged researchers to look for solutions in the genetics of plants.

Engelke's research based in Dallas is aimed at finding hardy turfgrasses, especially for southern climates, that demand less fertilizer, pesticides and water.

The development of improved turf

More than 2,000 acres of zoysia grasses will be under cultivation in Texas by the end of this year.

products like the new zoysia varieties are well suited to thrive in the hot Texas sun, in heavy shade, in humid conditions and in arid surroundings, "without the high main-

tenance we're used to for common bermudas," said Engelke.

The Cavalier variety of zoysia was rated number one overall in national

field trials and the coarser-textured varieties, Crowne and Palisades, ranked number one and three, respectively, in their class.

Practical applications

"Golf courses, with their high maintenance costs, are anxious to find better turfgrasses. And the volume they manage gives us a great look at how these varieties perform in practical applications," Engelke noted.

"It will be especially useful on golf tees and shaded areas on golf courses where you can't grow bermuda," according to Scott Parker, superintendent of the Dallas Country Club.

"I definitely see it being used for home lawns because it doesn't require a lot of mowing — it spreads more than it grows vertically. And for golf courses, it recovers quickly from wear. We can take people off for a short time and it bounces back," he said.

Doug O'Connor of Trinity Turf, one of the licensed growers in Pilot Point, TX, added, "We've had a lot of inquiries from golf courses, cemeteries and parks. Our initial results have shown it's a fast grower. It won't completely replace St. Augustine, but it offers a good alternative, especially in cities where St. Augustine has been banned because of drought."

Commercial release

Texas A&M released four zoysias to commercial sod producers in 1996 and 1997. The Texas Sod Producers Association (TSPA) signed licenses on Crowne, Palisades and Cavalier in April 1997.

They, in turn, have sublicensed 10 growers for production across the state. Their license permits them to produce the grasses in Texas under the Texas Department of Agriculture sod certification program. This requires them to protect the genetic integrity of the specific variety, maintain genetic purity and provide the highest quality control possible. That protects it from contamination.

Crowne or Cavalier zoysia have exhibited distinct and stable properties, said Engelke. "For example, some varieties have special drought-resistant properties we don't want to lose, or resistance to certain diseases or insects. That's what the breeding process is all about — breeding good properties in and bad ones out," he noted. He conducted field trials on the zoysia grasses across the Midwest. "(The zoysias) should be hardy about as far north as Kansas City."

It will be especially useful on golf tees and shaded areas on golf courses where you can grow bermuda — Parker

All of these varieties are propagated vegetatively, not from seed, so sod producers will not have seed for sale. Engelke predicts more than 2,000 acres of zoysia grasses will be under cultivation in Texas by the end of this year.

— *The author is a communications specialist at Texas A&M University in Dallas.*