



In the middle of a hot summer, zoysiagrass provides an excellent stand of grass under difficult conditions.

USING ZOYSIAGRASS ON SAND BUNKER SLOPES

Using a niche grass to solve a growing problem.

by STAN ZONTEK

ZOYSIAGRASS has always been a very interesting and useful turfgrass on golf courses in regions of the country where it is adapted. Zoysiagrass fairways are considered to be some of the finest playing surfaces in the Transition Zone. However, the winter color of zoysiagrass and its intolerance to overseeding has limited its use as a principal fairway turfgrass. Nonetheless, where zoysiagrass has been used, it performs beautifully. The quality, playability, and low maintenance characteristics of zoysiagrass for fairways, however, are not the purpose of this article.

These comments on zoysiagrass will describe an increasingly common practice in the Mid-Atlantic Region of

the USGA Green Section. Specifically, zoysiagrass increasingly is used on sand bunker slopes. Why? For one thing, it makes sense. The grass is tolerant of sand accumulation and the heat generated on southern exposures that normally would kill or at least cause a decline of cool-season grasses. Zoysiagrass works well in solving this common problem on golf courses – the maintenance of the slopes of sand bunkers.

Thin and poorly turfed bunker surrounds do not look good or play well. Also, they detract from the general aesthetics of the putting green complex. The old adage is so very true: the best weed control is a thick turf. Thus, as these bunker slopes deteriorate, grassy

weeds like crabgrass and goosegrass tend to invade, detracting further from the appearance of these areas.

As turf density and sod strength are lost, bunker slopes and the margins (lips) between the sand and the grass can collapse. It is amazing how golfers tend to walk up bunker faces, which only adds to the deterioration and collapse of bunker slopes and lips. Obviously, something needs to be done.

Replacing the grass on bunker faces with the usual blend of grasses, including various combinations of Kentucky bluegrass, turf-type tall fescues, fine fescues, and perennial ryegrass, is one option. While these grasses have their strengths, they also have a number of weaknesses. For one, three out of four

of these grasses are bunch-type grasses, which inherently are slow to spread and are recognized as being poor sod formers. Only Kentucky bluegrass has good rhizome spread. Most blends of grasses include Kentucky bluegrass for its sod-forming ability. However, none of these grasses, being cool-season grasses, tolerate the heat and drought associated with sand accumulations on bunker slopes in general and on southern exposures in particular. In this situation, warm-season grasses can do a better job.

One final point. As sand thrown from bunkers accumulates, a wonderful environment is created for insects, particularly chinch bugs and billbugs. Most of the commonly used cool-season grasses are susceptible to these insect pests, especially on southern exposures. Unfortunately, turf managers can overlook this insect problem, which only accelerates the deterioration of cool-season grasses on bunker slopes. And, whereas most of the commonly used cool-season grasses are susceptible to these insect pests, warm-

season grasses tend to be more insect tolerant. In summary, all of these factors are scenarios for grass decline and failure in these very important play areas.

What's the Bottom Line?

On the grass areas surrounding bunkers, turf managers, golf course architects, and builders are increasingly ringing sand bunkers with zoysiagrass. If properly designed and executed, it is amazing how well zoysiagrass performs in these situations. For the purpose of this article, the zoysiagrass species discussed is the "Meyer" variety of *Zoysia japonica*. There are other varieties of zoysiagrass available, but Meyer zoysia is the grass most used in the Mid-Atlantic Region at this time. Other zoysiagrasses have different levels of winter hardiness, leaf texture, and density, etc. Meyer zoysia has a long track record, being released in the early 1950s. Times could change with a number of zoysiagrasses being released, but for now, Meyer zoysia is the grass of choice for this situation.

Advantages of Using Zoysiagrass on Bunker Slopes

- Winter hardiness. Meyer zoysia is extremely winter hardy. It can be grown successfully north of the Transition Zone.
- Disease resistance. Zoysiagrass has only one principal disease, zoysiapatch, which can be controlled if it develops.
- Insect resistance. Zoysiagrass has a high degree of tolerance to chewing and sucking insects. Grub problems can occur.
- Drought tolerance. Zoysiagrass is recognized as being highly drought tolerant, especially compared to cool-season grasses, which is why it performs well in sand accumulation areas.
- Heat tolerance. Zoysiagrass is a warm-season grass, so the hotter it gets, the better it performs. This is why zoysiagrass grows well on southern exposures.
- Low nitrogen requirement. Zoysiagrass performs well at 2 lb. of nitrogen per 1,000 sq. ft. per year or less.
- Tolerance to herbicides, both selective and non-selective. This makes



During the off-season, cool-season grasses maintain their green color, in contrast to the straw-colored zoysiagrass. The zoysia provides an excellent alternative on sand bunker slopes.



Many people find the color contrast of zoysiagrass to other cool-season grasses attractive. To others, the tan winter color is an ugly alternative.

weed control in zoysiagrass easier to accomplish.

- Excellent sod strength. Zoysiagrass is a tough grass. It tolerates golfers and workers walking on bunker slopes.

- Playability. Zoysiagrass looks and plays differently from most cool-season grasses on bunker faces. Balls can come to rest on zoysiagrass bunker slopes that would otherwise have rolled into the sand after hitting cool-season grasses. Some golfers like it, others do not.

- Zoysiagrass is a low-maintenance grass. Zoysiagrass spreads slowly, especially when compared to bermudagrass, another warm-season grass. It requires far less edging than bermudagrass used on bunker slopes. Also, its growth pattern matches the availability of labor on most golf courses. What exactly does this mean? Think of this. What is one operation on a golf course that requires a huge amount of hand labor? It is hand trimming in general and trimming around bunkers in particular. Being a warm-season grass, zoysiagrass growth naturally slows and should not, in fact, be cut as it enters dormancy in the early fall. This is when most golf courses begin to lose their labor. Thus, this can save many hours of hand work at a time when labor is becoming short. In the spring, zoysiagrass does not need to be cut until late April or mid-May. This is when more

labor is becoming available. Thus, the normal growth pattern of this grass closely matches the labor distribution on most golf courses in the transition zone.

While zoysiagrass has many strengths, it does have some disadvantages. These include:

- Winter color. To some, the color contrast is attractive. To others, the tan-brown winter color is ugly. To use a cliché, “beauty is in the eye of the beholder.”

- Winter weed control. A long list of winter weeds can become established in dormant zoysiagrass. Thus, the superintendent must learn winter weed control techniques for zoysiagrass.

- Cost of establishment. Most zoysiagrass used for this purpose is established from sod. Zoysiagrass sod is significantly more expensive in comparison to other cool-season grasses. However, the fact that cool-season grasses may have to be replaced more frequently negates, to some extent, the initial cost of zoysiagrass versus other cool-season grass blends.

- Shade tolerance. Few warm-season grasses perform well in shade. Zoysiagrass has reasonable shade tolerance, especially when cut longer as on the slopes surrounding sand bunkers. Nonetheless, using this grass on shaded bunker slopes may be a problem.

- Northern exposures. Zoysiagrass is a warm-season grass. Thus, it grows best on southern exposures. Conversely, on cooler and more shaded absolute northern exposures, zoysiagrass is not at its best. This could result in some bunkers, or portions of bunkers, being grassed with cool-season grasses and other bunkers with better sunlight exposure being grassed with zoysiagrass.

- Playability. Again, some golfers prefer to play from cool-season grasses.

In conclusion, if you compare the strengths and weaknesses of zoysiagrass on bunker surrounds, it is easy to see why more zoysiagrass is being used on golf courses in the transition zone. Can zoysiagrass be used farther north, outside the transition zone? You bet. This is especially true on those southern exposures where sand accumulates. In this situation, for all practical purposes, it is like growing grass hundreds of miles farther south. It may be worth a try. Maintaining grass on the slopes surrounding sand bunkers is a unique challenge that perhaps requires a unique grass to solve a growing problem.

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