

NTEP lists leading zoysiagrasses in test categories

The latest data in the National Turfgrass Evaluation Program trials reveals not only where each zoysiagrass cultivar stands in "mean quality ratings," but in a number of other categories as well. And the leading varieties in the overall tests are sometimes overshadowed by others when it comes to such judgments as spring greenup, drought tolerance and fall density.

The leaders in each rating are:

- **Genetic color:** DALZ 8516, 6.6; Emerald, 6.5; DALZ 8508, 6.3; Belair, Royal and Cavalier, 6.2.
- **Spring greenup:** Sunburst and TC 5018, 6.2; CD 259-13 and Korean Common, 6.0; and JZ-1, 5.9.
- **Leaf texture:** Cavalier, 7.6; DALZ 8508 and Diamond, 7.5; Emerald and Royal, 7.4; Omni and QT 2004, 7.1.
- **Spring density:** Emerald, 7.3; Cavalier, 7.0; Marquis, DALZ 8508 and Royal, 6.9.
- **Summer density:** Cavalier, Royal and Diamond, 7.5; Emerald and DALZ 8508, 7.4; DALZ 8516, 7.3.
- **Fall density:** Diamond, 7.2; Marquis, 7.1; Cavalier and Emerald, 7.0; DALZ

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8516, 6.9; Royal, 6.8; DALZ 8501 and DALZ 8508, 6.7.

- **Percent living ground cover (spring):** CD 259-13, 82.0; Crowne, 81.6; DALZ 8516, 10.6; Meyer and QT 2004, 80.5; Sunburst, 79.8; Korean Common, 79.7; JZ-1, 78.9; TC 5018, Marquis and TGS-W10, 78.2.

- **Percent living ground cover (summer):** Sunburst, 91.2; CD 259-13, 90.0; QT 2047 and TC 5018, 87.6.

- **Percent living ground cover (fall):** All were within range except lowest three — DALZ 8501, Diamond and DALZ 8701.

- **Frost tolerance:** Crowne, DALZ 8516, El Toro, Omni, QT 2004 and Marquis, 9.0; Cavalier and Palisades, 8.7; DALZ 8701 and Emerald, 8.3; DALZ 8508, Royal, Diamond and Sunburst, 8.0; CD 259-13 and JZ-1, 7.7.

- **Winter color:** Diamond, 6.8; DALZ 8501, 5.8.

- **Drought tolerance (wilting):** Crowne, 8.3; Palisades, 7.3; DALZ 8701

and El Toro, 7.0; JZ-1, 6.7.

- **Drought tolerance (dormancy):** Emerald, 5.8; Cavalier, 5.4; DALZ 8508, 5.1; DALZ 8516 and Diamond, 5.0; DALZ 8501 and Royal, 4.9.

- **Fall color (September):** DALZ 8516, 7.7; Belair, DALZ 8701 and Palisades, 7.3; Meyer, 7.0; JZ-1, Omni, QT 2004, Marquis and TGS-W10, 6.7.

- **Fall color (Dec.):** DALZ 8516, 6.8; Diamond, 6.6; Cavalier, 6.2; Palisades, 5.9.

- **White patch:** DALZ 8501 and Crowne, 8.7; Belair, 8.0; DALZ 8516 and Marquis, 7.3; CD 259-13, Cavalier, DALZ 8508, Diamond, JZ-1, Korean Common, Meyer, Omni, QT 2004, Sunburst and TC 5018, 7.0; DALZ 8701, Palisades, TGS-B10 and TGS-W10, 6.7.

Quicker is cheaper

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we will see two crops in a year, or three crops in two years, even here in the Dallas area."

Yet, quicker production is not universal. Jacklin Golf, whose fields are in Georgia, has found difficulty speeding up seedhead production.

"We thought it [three crops in two years] was possible the first year or two because they [zoysias] do put out good seedheads," Jacklin Golf associate plant breeder Susan Samudio said. "But if your location gets a freeze, that fall crop is not worth the harvest because the germination is so low and you still have the expenses. We just keep the fall crop mowed. Further south you might be able to do it."

Zoysia prophecies hit gold

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Using the zoysiagrass standard-bearer, Meyer, Van Arendonk figured annual savings of:

- 20 to 50 percent in water use;
- \$21,000 for fungicides, not having to spray ryegrass fairways;
- \$6,000 in herbicide savings in the future by not needing to eliminate poa annua, which can't compete with zoysia;
- \$5,000 to \$10,000 for mowing because zoysia is a slower grower and in Wichita they will start mowing six weeks later and stop six weeks earlier than with ryegrass;
- \$7,000 to \$8,000 for overseeding fairways because they will not need to buy 300 pounds per acre;
- \$2,500 for fertilizer since zoysia requires only about 1-1/2 pounds a year compared to ryegrass's need of 3-1/2 pounds.

"The only disadvantage we see is from an aesthetic point of view — off-season color," Van Arendonk said. "But we're also killing off 20 to 25 acres of rough around all the fairways and reseeding to fescue. That will give us good definition."

"We have a mind set we have to shift," Engelke said. "We have the genetics now to move these grasses into different environments than where they were before. It's an awareness and education issue. As we start working with architects and superintendents, we will see how far we can stretch these [new varieties]."

Zoysiagrass is an option from Kansas City-St. Louis south.

"Alabama and Georgia are all very adaptable to it, and we've had wonderful results in Texas," Engelke said. "We can take them into Florida, where we're doing more testing because the national trials have never been there before."

A lot of superintendents in the Maryland area are investigating zoysias because of difficulty in growing perennial ryegrass in the area, said Kevin Morris, national director of the U.S. Department of Agriculture's National Turfgrass Evaluation Program.

"My guess is, down the road we will find more problems with the bentgrasses, too," he said. "With them, you have to have good irrigation and cultivation. If you can do that, you can grow good-quality bent fairways here. But there is more interest in zoysias because of the pest issue and because they survive summer and have an advantage in winter over hybrid Bermudagrasses."

Meanwhile, whereas the standard-bearer, Meyer, was "never used outside the Midwest," Morris said, that has changed. The reason: a faster production cycle. "It has always had plenty of winter-hardiness ... but it never was used further south because Bermudagrasses, with their better production cycle, were a better choice."

Some of the newer varieties of zoysia produce two crops in a year, or sometimes three crops in two years, "even here in the Dallas area," Engelke said.

Zoysia's best fit is from the Mississippi eastward, said Morris. "It doesn't dry out as quickly in that region. Also, zoysia will tolerate low pH soil well, and that is more common in the Eastern states. Most zoysias have a problem in West, where the pH is often 8 and above."

Most everywhere superintendents are using zoysia, they are solid-sodding it.

"We have our limits," Engelke said, "but we've [zoysia breeders] come a long way collectively in attaining the goals set down for us 12 years ago in our USGA [U.S. Golf Association] proposals: that we develop grass with a lower water requirement, lower fertility, easier maintenance, more competitiveness against weeds, and generally easier to manage... We also can work with poor-quality water because salt tolerance is very good in these grasses."

And while zoysias have problems in compacted soils, "a different aeration program will fix that," Engelke said, suggesting shatter-tine aeration and Verti-draining. "You just need to fracture the soil profile so that you keep the bulk density down."

Although admitting the choices for greens are still predominantly bentgrass and Bermudagrass, Engelke added: "but I predicted in 1986 we could go tee to green in zoysiagrass and today, finally, we have the data to support that. Maybe someday we'll find someone who can afford it."

"We have the green types, the tee types, the fairway and rough types, and certain parts of the country in which they will work."

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