## National Fineleaf Fescue Test Results

| Name | GAI | 1 GA2 | 2 \|lal | 1 IL 1 | 1112 | IL3 | KS1 | KYı | LAI | MA1 | 1 MDI |  | D2M11 | MOI | NE1 | NJI | OHI | OK1 | PAI | UB1 | VAI | WAI | WA3 | WA4 | WA5 | WII | W12 | Mean |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PST-44D (ch) | 4.5 | 3.4 | 6.6 |  | . 97.1 | 4.3 | 5.7 | 7.4 | 4.6 | 5.9 | 5.8 | 6.7 | 5.8 | 7.3 | 5.7 | 4.6 | 6.5 | 4.6 | 7.0 | 6.5 | 4.7 | 6.2 | 5.5 | 6.3 | 5.8 | 6.7 | 6.7 |  |
| * Brittany (ch) | 4.7 | 3.6 | 5.6 | 6.0 | . 0.5 | 5.2 | 5.8 | 7.8 | 4.9 | 5.8 | 5.7 | 6.5 | 6.0 | 6.9 | 5.5 | 5.2 | 6.3 | 4.5 | 5.3 | 6.3 | 4.7 | 6.0 | 5.3 | 5.0 | 5.0 | 6.5 | 6.8 | 5.7 |
| MB 64-93 (ch) | 4.0 | 3.7 | 5.9 |  | . 55.7 | 3.8 | 5.7 | 7.3 | 5.2 | 6.5 | 5.7 | 5.3 | 6.0 | 7.1 | 5.4 | 6.1 | 6.5 | 4.8 | 5.9 | 6.1 | 4.3 | 5.9 | 5.9 | 5.9 | 4.0 | 6.7 | 6.8 | 5.7 |
| PST-4VB Endo (sc) | 3.5 | 1.7 | 6.6 | 6.5 | . 55.7 | 3.3 | 6.3 | 8.0 | 5.0 | 6.3 | 5.9 | 5.6 | 6.7 | 7.1 | 5.2 | 6.7 | 7.0 | 4.3 | 5.4 | 6.6 | 4.3 | 5.3 | 5.2 | 5.3 | 5.0 | 7.1 | 7.3 | 5.7 |
| Discovery ( h ) | 3.9 | 2.6 | 5.6 |  | . 85.3 | 5.3 | 5.3 | 7.6 | 4.1 | 5.6 | 5.9 | 4.9 | 5.0 | 7.2 | 7.0 | 5.9 | 7.2 | 5.5 | 6.0 | 7.0 | 4.9 | 4.9 | 4.7 | 5.6 | 6.1 | 6.7 | 6.8 | 5.6 |
| NJ F-93 (ch) | 4.1 | 3.5 | 6.2 | 6.3 | . 35.7 | 5.6 | 5.5 | 7.2 | 4.7 | 5.8 | 5.8 | 5.6 | 5.4 | 7.2 | 5.0 | 7.0 | 6.2 | 4.1 | 5.9 | 5.7 | 4.5 | 5.9 | 5.2 | 5.4 | 4.7 | 6.9 | 6.8 | 5.6 |
| MB 63-93 (ch) | 4.5 | 3.7 | 5.9 |  | . 15.8 | 3.8 | 5.7 | 7.2 | 5.0 | 6.5 | 5.8 | 4.2 | 6.1 | 6.6 | 6.3 | 4.9 | 6.5 | 4.4 | 5.8 | 6.0 | 4.4 | 5.8 | 5.3 | 5.6 | 5.2 | 7.1 | 7.3 | 5.6 |
| MB 61-93 (ch) | 4.2 | 3.6 | 6.3 | 6.4 | . 46.3 | 4.5 | 5.7 | 7.3 | 4.5 | 6.0 | 5.4 | 5.6 | 5.7 | 6.9 | 5.6 | 4.8 | 6.2 | 4.6 | 5.7 | 6.3 | 4.5 | 5.6 | 5.3 | 5.8 | 5.0 | 6.6 | 6.9 | 5.6 |
| Pick 4-91W (ch) | 4.3 | 3.5 | 6.6 |  | . 26.5 | 3.9 | 5.5 | 7.5 | 4.7 | 5.5 | 5.9 | 6.8 | 5.7 | 7.1 | 5.5 | 6.4 | 6.3 | 4.0 | 6.2 | 5.8 | 4.9 | 5.7 | 4.8 | 5.1 | 4.4 | 6.3 | 6.1 | 5.6 |
| *Tiffany (ch) | 4.2 | 3.1 | 5.3 |  | . 76.3 | 4.6 | 5.0 | 7.4 | 4.4 | 6.0 | 5.6 | 5.4 | 5.7 | 7.0 | 5.8 | 6.2 | 5.7 | 4.0 | 5.3 | 6.1 | 4.8 | 6.1 | 5.9 | 5.7 | 5.0 | 6.6 | 6.4 | 5.6 |
| SR 5100 (ch) | 4.3 | 4.2 | 6.5 |  | . 26.2 | 5.1 | 5.2 | 7.3 | 5.1 | 5.7 | 6.0 | 6.7 | 5.3 | 7.1 | 4.8 | 3.1 | 6.0 | 4.6 | 5.6 | 6.0 | 4.5 | 5.6 | 5.6 | 4.4 | 5.5 | 6.6 | 6.4 | 5.5 |
| *Bridgeport (ch) | 4.6 | 4.5 | 5.2 |  | . 65.7 | 3.6 | 5.6 | 7.3 | 5.2 | 5.7 | 5.4 | 6.5 | 5.7 | 7.2 | 5.3 | 4.6 | 6.3 | 4.6 | 6.1 | 5.5 | 4.4 | 5.7 | 5.3 | 5.4 | 4.4 | 6.6 | 6.3 | 5.5 |
| Pro 92/24 (h) | 4.0 | 2.9 | 5.5 |  | 66.3 | 3.2 | 5.3 | 7.5 | 4.0 | 5.7 | 5.7 | 5.8 | 4.3 | 7.2 | 6.8 | 6.1 | 6.2 | 3.8 | 6.3 | 6.6 | 4.9 | 5.3 | 5.1 | 5.1 | 5.4 | 6.9 | 6.9 | 5.5 |
| *Treazure (ch) | 4.3 | 3.6 | 5.9 |  | . 76.3 | 1.7 | 5.6 | 7.3 | 4.6 | 5.7 | 5.4 | 6.3 | 6.0 | 7.0 | 5.6 | 6.3 | 6.0 | 4.1 | 6.1 | 5.8 | 4.6 | 6.1 | 5.1 | 5.1 | 5.2 | 6.2 | 6.0 | 5.5 |
| *Shademaster II (s) | 3.1 | 1.6 | 6.3 |  | . 06.2 | 4.3 | 5.9 | 7.5 | 4.8 | 6.0 | 5.6 | 5.3 | 6.8 | 7.4 | 5.6 | 5.9 | 6.5 | 3.8 | 5.5 | 6.5 | 3.9 | 6.3 | 4.6 | 4.6 | 5.1 | 6.8 | 6.8 | 5.5 |
| *Seabreeze (slc) | 3.9 | 2.3 | 6.0 |  | . 65.9 | 3.5 | 5.7 | 6.8 | 4.5 | 5.9 | 5.6 | 3.6 | 6.7 | 7.6 | 5.9 | 6.7 | 6.7 | 3.3 | 6.1 | 5.7 | 4.3 | 5.7 | 4.8 | 5.1 | 5.4 | 6.4 | 7.1 | 5.5 |
| *Reliant II (h) | 3.3 | 3.1 | 5.5 |  | . 96.0 | 2.5 | 5.3 | 7.7 | 4.0 | 5.8 | 5.2 | 5.7 | 4.8 | 7.0 | 6.3 | 5.3 | 7.2 | 5.0 | 5.8 | 6.6 | 4.4 | 4.6 | 5.4 | 5.0 | 5.9 | 6.7 | 6.8 | 5.4 |
| MB 81-93 (h) | 3.8 | 2.8 | 4.6 |  | 5.65 .6 | 3.2 | 5.5 | 7.7 | 4.2 | 6.0 | 5.7 | 5.1 | 5.1 | 6.9 | 7.8 | 6.1 | 6.7 | 4.8 | 5.3 | 6.8 | 4.7 | 5.1 | 4.9 | 4.9 | 4.6 | 6.8 | 6.8 | 5.4 |
| PRO 92/20 (ch) | 4.4 | 3.8 | 6.1 |  | 6.76 .3 | 3.8 | 5.3 | 7.0 | 5.2 | 5.5 | 5.4 | 6.6 | 5.4 | 7.6 | 5.4 | 5.5 | 5.5 | 3.9 | 5.8 | 5.1 | 4.6 | 5.3 | 5.3 | 4.6 | 4.0 | 6.5 | 6.1 | 5.4 |
| PST-4DT (sc) | 3.3 | 1.6 | 6.2 |  | .1 15.7 | 3.7 | 6.0 | 7.9 | 4.2 | 5.7 | 5.4 | 4.3 | 6.7 | 7.1 | 5.6 | 5.9 | 6.5 | 4.3 | 5.1 | 5.8 | 3.8 | 5.3 | 5.7 | 5.2 | 4.9 | 6.7 | 6.9 | 5.4 |
| *Victory (ch) | 4.4 | 3.7 | 5.4 |  | 6.76 .2 | 4.4 | 5.6 | 7.0 | 4.7 | 5.0 | 5.6 | 6.2 | 5.6 | 6.9 | 5.8 | 6.3 | 5.2 | 4.1 | 6.1 | 5.5 | 4.7 | 5.5 | 5.1 | 3.7 | 4.2 | 6.4 | 6.3 | 5.4 |
| MB 83-93 (h) | 3.9 | 3.3 | 4.5 |  | . 24.9 | 3.8 | 5.3 | 7.9 | 4.2 | 6.3 | 5.7 | 4.9 | 4.4 | 7.1 | 6.3 | 5.2 | 7.7 | 4.5 | 5.4 | 5.9 | 4.5 | 5.1 | 5.1 | 5.8 | 4.7 | 6.6 | 7.0 | 5.4 |
| WX3-FF54 (ch) | 4.5 | 3.6 | 6.2 |  | 6.56 .3 | 2.5 | 5.5 | 7.4 | 4.5 | 6.0 | 5.6 | 5.5 | 5.1 | 6.8 | 5.1 | 5.8 | 6.0 | 4.3 | 5.1 | 5.6 | 4.4 | 6.2 | 4.9 | 4.6 | 4.7 | 6.7 | 6.3 | 5.4 |
| PST-4ST (sc) | 4.1 | 1.6 | 6.1 |  | .9 6.2 | 4.7 | 4.9 | 7.7 | 4.9 | 5.9 | 5.6 | 5.0 | 6.4 | 7.0 | 5.8 | 3.0 | 6.7 | 4.0 | 4.6 | 6.5 | 4.1 | 6.1 | 5.0 | 4.4 | 4.9 | 6.8 | 6.8 | 5.4 |
| MB 65-93 (ch) | 3.9 | 3.5 | 5.8 |  | .0 6.1 | 3.6 | 5.8 | 7.2 | 4.3 |  | 5.4 | 5.3 | 6.0 | 7.1 | 5.8 | 2.0 | 6.2 | 4.2 | 5.5 | 5.6 | 4.2 | 6.3 | 5.5 | 4.6 | 4.3 | 7.1 | 7.0 | 5.4 |
| *Jasper (E) (sc) | 4.3 | 2.0 | 6.4 |  | 5.55 .5 | 2.7 | 5.8 | 7.5 | 4.1 | 5.8 | 5.4 | 5.3 | 6.0 | 7.3 | 6.3 | 7.0 | 6.5 | 4.2 | 4.7 | 6.0 | 4.1 | 5.1 | 5.4 | 4.9 | 4.8 | 6.4 | 6.4 | 5.4 |
| WX3-FFG6 (sc) | 4.2 | 3.4 | 6.3 |  | 5.75 .0 | 4.5 | 5.3 | 7.2 | 4.7 | 5.2 | 5.7 | 5.8 | 5.6 | 6.9 | 5.7 | 4.6 | 6.0 | 4.4 | 5.6 | 5.1 | 4.4 | 5.4 | 5.8 | 4.7 | 5.0 | 6.3 | ${ }^{6.3}$ | 5.4 |
| * Nordic (h) | 4.0 | 3.1 | 4.6 |  | 5. 25.3 | 1.9 | 5.5 | 6.9 | 4.3 | 5.6 | 5.6 | 5.2 | 4.9 | 7.1 | 7.0 | 6.4 | 7.3 | 4.0 | 5.3 | 6.9 | 4.8 | 4.5 | 4.8 | 5. | 4.5 | 6.7 | 7.0 | 5.4 |
| LSD Value | 0.9 | 0.6 | 1.0 |  | . 01.3 | 3.6 | 0.7 | 0.5 | 0.9 | 0.6 | 0.5 | 1.2 | 20.9 | 0.6 | 1.3 | 0.8 | 1.1 | 0.7 | 1.2 | 0.7 | 0.6 | 1.3 | 0.8 | 0.7 | 0.7 | 0.5 | 0.7 | 0.2 |

Here are the locations of the field tests, followed by soil texture, soil pH , pounds of nitrogen applied per 1,000 square feet, mowing height in inches and
6.0, 3.1-4.0, 1.1-1.5, no irrigation. GA2: Griffin (low pH), sandy clay
3.1-4.0, 1.1-1.5, no irrigation
3.1-4.0, 1.1-1.5, no irrigation
|A1: Ames, lowa, |A 1: sandy clay loam, 7.1-7.5, 2.1-3.0, 2.6-3.0, to prevent stress.
IL1: Urbana, III., silt loam and silt,
2.1-2.5, only during severe stress, $\mathrm{N} / \mathrm{A}, 0.0-1.0$, 2.1-2.5, only during severe stress.
IL2: Carbondale, III. (low mowing), silty clay loam, $6.1-6.5,3.1-4.0,2.1-2.5$, to prevent dor-

IL3: Carbondale, III. (high mowing), silty clay N/A, 1.6-2.0, to prevent stress. oam, 6.1-6.5, 1.1-2.0, 2.1-2.5, no irrigation. KSI: Manhattan, Kan., silt loam and silt, 6.6-7.0, -4.0, 3.1-3.5, to prevent stress.
KY1: Lexington, Ky., silt loam and silt, 6.1-6.5 , 2.1-2.5, only during severe stress. LA1: Baton Rouge, La., sandy loam, 5.6-6. 2.0, 2.1-2.5, only during severe stress. MAI: Amherst, Mass., silt loam and silt, 5.6-6.0, 2.1-3.0, 1.6-2.0, to prevent stress.

MD1: Silver Spring, Md., silt loam and silt, 6.1 $6.5,1.1-2.0,2.6-3.0$, only during severe stress. MD2: Sharpsburg, Md., silt loam and silt, 5.66.0, 0.0-1.0, 2.6-3.0, no irrigation. MO1: Columbia, Mo., silt toam o
2.1-3.0, 2.1-2.5, to prevent stress. 8.5, 1.1-2.0, 2.1-2.5, to prevent stress.

OK 1: Stillwater, Okla., silty clay loam

1-3.0,2.1-2.5 to prevent stress. silt, 6.1-6.5, 1.1-2.0, 2.1-2.5, only during severe stress NE1: Lincoln, Neb., silty clay loam, 6.6-7.0, 1.1-6.0, 2.1-3.0, 1.6-2.0, to prevent stress NE1: Lincoln, Neb., silty clay loam, 6.6-7.0, 1.1-6.0, 2.1-3.0, 1.6-2.0, to prevent stress. 2.0, 2.6-3.0, to prevent stress.
NJI: North Brunswick, N. . sandy loam, 5.6-5.6-6.0. Puyallup, Wash., ( $100 \%$ ET), sandy WA4: Puyallup, Wash., ( $30 \% \mathrm{ET}$ ), sandy OHI: Columbus, Ohio, silty loam and silt, 7.6-5.6-6.0, 2.1-3.0,1.1-1.5, only during savere stress.
O.

## s.

 WAS: Puyallup, Wash., $60 \%$ ET, sandy loaOKI: Stillwater, Okla., silty clay loam, 6.6-7.0, $5.6-6.0,2.1-3.0,1.1-1.5$, to prevent dormancy
WI1: Madison, Wis., (high mowing), silt lo
PA1: University Park, Pa., silt loam and silt, 6.1. and silt, $6.6-7.0,1.1-2.0,2.6-3.0$, to prevent stress. PA1: University Park, Pa., silt loam and silt, 6.1-and silt, Madison, Wis., (high mowing), silt loam $6.5,1.1-2.0,1.6-2.0$, to prevent dormancy. WI 2 . Madison, Wis. (low mowingl, UB1: Beltsvill Md, WI2: Madison, Wis., (low mowing), sand, 4.6 UB1: Beltsville, Md., silt loam and silt, 6.1-6.5, 5.5, 2.1-3.0, 0.6-1.0, to prevent stress.

## Fine fescues: Natural but not too wild ... lower-maintained ... striking

Continued from page

## leaf spot and rust.

"I think we will always have room to improve work on leaf spot and dollar spot," said Mike McCarthy, plant breeder and director of research for E.F. Burlingham \& Sons. "We have made advancements in that area. That's why some from the previous trials rank as low as they do." "One of the big factors [in the
improvement] is that we were specing for a reduced plant height and also high endophyte levels," said Crystal Fricker, plant breeder at Pure Seed Testing, a sister company of Turf Seed, Inc.
Pure Seed and Turf Seed have four of the top 10 varieties in the test, while Burlingham has three, LESCO one Pickseed West one, and Rutgers University one.
"The interest [in fine fescues]

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has increased quite a bit," said Kevin Morris, national director of NTEP. "People are looking at using them in low-maintenance areas and in mixes with bentgrasses... We need to start looking at mixtures - more and more blending them with Kentucky bluegrasses and fescues." Fricker agreed much more work has been done on fine fescues the last 10 years. "The market isn't that great, but it's an interesting species to work with," she said. "And when you're collecting in old turf areas you always find new some fine fescues. So in our new collection we are coming up with a lot of new germplasm to evaluate and we are able to see a lot of differences and to select for a certain type of plant. That leads to a lot of improvement."

Fine fescues are becoming more popular among golf course superintendents as well, Fricker said. "You have the hard fescue look and letting it grow up edging bunkers. Fescues in some golf courses even in Southern California are just gorgeous. They are lower maintained but also something that's striking and different. It's a natural but not too wild a look.
"I think its use will grow as more people see and hear about them. Hard fescues are an un-der-used species at this time. The creeper is used by many because of its low price. But it's a gangly, tall grass. These fine fescues are beautiful, and give a Scottish links look.'

McCarthy added: "We're getting a lot more discriminating buyers than we ever have had. It's a slow building process from research to ultimate user, the most informed being in the golf industry."
The future of fine fescues looks even brighter.
"We're looking for new sources of endophyte, and we're trying to incorporate new germplasm from new collections around the world," Fricker said. "The past varieties from our collection are mostly from around the United States. But we are collecting around the world on a wide scale, and are looking to incorporate some very different germplasm from high altitude to growing in rocky areas with no water, to actually surviving in wooded areas - some very extreme conditions. We want to find germplasm that naturally has characteristics we have to get into our varieties to make them the best."
McCarthy stressed improvement in density and taking advantage of fine fescues' ability to survive well in shade.
"Obviously, the strength of fine fescues is their shade component compared to ryegrasses and bluegrasses," he said. "They strengthen turf in those shady areas."

McCarthy added: "The leafblade of the fine fescue is naturally fairly slender, so that isn't as big a factor as in tall fescue and ryegrasses. But the density you can maintain in the turf, without having a lot of disease prob-

The Top 10

A brief look at the top 10 varieties of fine fescue in the 1993 national test shows only two holdovers from the 199093 test. Turf Seed, Inc.'s Discovery and Tiffany cultivars finished 3rd and 6th, respec tively, in the old test and 5 th and 10 th this time around. TurfSeed's sister company, Pure Seed Testing, also boasts the number-one variety - PST-44D, developed from material from Rutgers University Prof. Reed Funk - and No. 4 PST-4VD Endo. The rest of the top 10 : 2) LESCO's Brittany. 3) Burlingham's MB 64-93. 6) Rutgers' NJ F-93. 7) E.F. Burlingham's MB 63-93.
8) Burlingham's MB 61-93. 9) Pickseed West's PICK 4 91W
lems that go along with it, is a very important factor for us to maintain."

Many of the top new varieties are not expected to be in the marketplace this year. But superintendents can expect them to be available in 1996.
Burlingham's MB series, for instance, is "just going into production right now," McCarthy said. "I would imagine it would be a year from this harvest before an appreciable amount would come out. After that, it will be readily available.

