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2012 National Turfgrass Evaluation Program Tall Fescue Test: 2017 Data

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Summary

Research efforts to improve cultivar quality include selecting for disease resistance and stress tolerance as well as finer leaf texture, a rich green color, and better sward density. Several cultivars included in the 2012 National Turfgrass Evaluation Program Tall Fescue Test performed well and showed good brown patch resistance in south central Kansas during the 2017 growing season.

Rationale

The National Turfgrass Evaluation Program (NTEP) locates studies nationwide to evaluate cultivars of a variety of turfgrass species under all types of environmental conditions. Wichita, KS, was selected for an ancillary trial of the 2012 National Tall Fescue Test, emphasizing brown patch resistance. Tall fescue is the best-adapted cool-season turfgrass for Kansas's transition zone because it is drought and heat tolerant and has few serious insect and disease problems. Efforts to improve cultivar quality include selecting for disease resistance and stress tolerance, as well as finer leaf texture, a rich green color, and better sward density.

Objective

The objective of this research was to evaluate tall fescue cultivars for brown patch resistance and general quality under south central Kansas growing conditions and submit data collected to the National Turfgrass Evaluation Program.

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Study Description

On September 11, 2012, we seeded 116 tall fescue cultivars and experimental lines at the John C. Pair Horticultural Center in Wichita, KS. The study was established in a randomized complete block design with three replications that comprised 348 individual plots measuring 5 × 5 feet. Before seeding, we incorporated nitrogen (N), phosphorus (P), and potassium (K) as a 13-13-13 fertilizer into the study plots at a rate of 1 lb of N-P-K/1,000 ft². During 2017, we fertilized the plots with urea on March 9 and October 2 at 1.0 lb of N/1,000 ft². We applied a Prodiamine and Pendimethalin tank mix pre-emergent herbicide on March 20 and Dylox insecticide for white grubs on July 20. We mowed weekly during the growing season at a mowing height of 3.0–3.5 inches and dropped clippings. We irrigated when necessary to prevent turf stress or dormancy.

We rated the study visually on a scale of 1 to 9 with 1 = poorest measure, 6 = acceptable, and 9 = optimum measure. We rated percent brown patch infestation visually on a scale of 0 to 100%. During 2017, we collected data on spring green up on March 31, leaf texture on June 6, percent brown patch infestation on August 23, and fall color retention on November 30. We rated overall quality on April 25, May 30, June 28, July 18, August 29, September 28, and October 25. Quality ratings were influenced by degree of cover, disease resistance, and weed infestation as well as turf color, texture, and density.

Results

We started the 2017 growing season by looking at spring green up when the overall study visually appeared to be about 50% green. The varieties that broke dormancy the earliest were MET 1, MET 6 SEL (Bloodhound), and PPG-TF-135 (Table 1). Throughout the growing season, which ran from March–October, we rated the turf monthly for quality. IS-TF 308 SEL and PPG-TF-152 (Titanium 2LS) were the average best performers for the year. At mid-August, we rated the plots for percent brown patch infestation. We found that LTP-FSD (Leonardo) and SRX-TPC (Rowdy) showed the greatest resistance to brown patch. We looked at turf texture and found that CCR2 (Amity), PPG-TF-150 (Black Tail), and W45 (Traverse 2 SRP) had the finest texture. At the end of the year, when the overall study visually appeared to still be about 50% green, we looked at turf color for fall color retention. We found that MET 1 and MET 6 SEL (Bloodhound) were the greenest.

Complete 2012 National Tall Fescue Test results and more information on NTEP can be found online at: *http://www.ntep.org/*.

Acknowledgment

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Table 1. 2017 performance of tall fescue cultivars at Wichita, KS[1,2]

Cultivar/ experimental number	Spring green up 3/31	Leaf texture 6/6	% Brown patch 8/23	Fall color retention 11/30	Quality average
IS-TF 308 SEL	5.0	6.7	20.0	4.7	5.9
*PPG-TF-152 (Titanium 2LS)[3]	5.7	6.0	25.0	4.3	5.7
*PPG-TF-137 (Paramount)	6.0	6.7	18.3	4.7	5.6
PPG-TF-135	6.3	6.0	21.7	4.7	5.6
MET 1	6.7	7.0	23.3	5.7	5.6
PSG-PO1	5.3	7.0	25.0	5.0	5.6
*DB1 (Kingdom)	4.0	5.7	25.0	5.0	5.6
*LTP-FSD (Leonardo)	5.7	5.7	16.7	5.0	5.6
*DZ1 (Temple)	5.0	6.7	18.3	5.0	5.6
*LTP-F5DPDR (Michelangelo)	5.3	5.7	18.3	4.7	5.6
*Pick-W43 (Rebounder)	5.7	6.7	20.0	4.7	5.6
*Burl TF-2 (GTO)	5.3	6.0	21.7	4.7	5.6
*ZW 44 (Raptor III)	6.0	6.7	21.7	4.3	5.6
PPG-TF-139 (Xtender)	6.0	6.0	23.3	4.7	5.6
*T31 (Maestro)	6.0	6.0	25.0	4.7	5.6
*U45 (Reflection)	6.0	6.7	26.7	5.3	5.6
*LTP-TWUU (Rockwell)	5.7	6.7	18.3	5.0	5.5
*W45 (Traverse 2 SRP)	5.7	7.3	21.7	4.0	5.5
JS 916	5.3	6.3	23.3	4.7	5.5
*IS-TF 307 SEL (Houndog8)	5.7	6.3	23.3	4.7	5.5
*PPG-TF-150 (Black Tail)	6.0	7.3	25.0	4.7	5.5
BIZEM	5.7	6.7	25.0	4.3	5.5
Regenerate	5.7	6.7	26.7	5.0	5.5
K12-05	5.0	6.3	20.0	3.0	5.4
PPG-TF-169	5.7	6.0	21.7	5.3	5.4
F711	6.0	6.3	23.3	4.7	5.4
*IS-TF 291 (Fayette)	4.7	6.3	26.7	4.3	5.4
*MET 6 SEL (Bloodhound)	6.3	6.3	26.7	5.7	5.4
*Firebird 2	6.0	5.7	26.7	4.3	5.4
*Grande 3	5.3	6.0	20.0	5.3	5.3
*Burl TF-136 (Hot Rod)	5.7	7.0	21.7	5.3	5.3
*PPG-TF-172 (Valkyrie LS)	6.0	7.0	23.3	4.3	5.3
IS-TF 311	5.3	6.0	25.0	4.3	5.3

Table 1. 2017 performance of tall fescue cultivars at Wichita, KS[1,2]

Cultivar/ experimental number	Spring green up 3/31	Leaf texture 6/6	% Brown patch 8/23	Fall color retention 11/30	Quality average
*IS-TF 305 SEL (Rhizing Moon)	4.3	6.0	25.0	4.3	5.3
*PSG-WE1 (Firewall)	6.0	7.0	25.0	4.3	5.3
IS-TF 276 M2	5.0	5.3	25.0	5.0	5.3
PPG-TF-115	4.7	5.3	25.0	5.0	5.3
ATF 1754	6.0	6.3	26.7	5.3	5.3
*SRX-TPC (Rowdy)	5.7	5.7	16.7	5.0	5.3
*Falcon V	4.7	5.7	21.7	5.3	5.3
TF-287	4.7	5.7	21.7	4.0	5.3
*Hemi	4.7	6.3	23.3	5.0	5.3
*RZ2 (Technique)	5.7	6.7	26.7	5.0	5.3
*PPG-TF-170 (Supersonic)	6.0	6.0	28.3	5.0	5.3
ATF 1612	5.7	6.7	31.7	4.0	5.3
PST-5MVD	5.3	5.7	18.3	4.7	5.2
*Burl TF-69 (Hover)	5.0	6.3	21.7	4.7	5.2
*IS-TF 310 SEL (Crossfire 4)	4.7	7.0	23.3	4.7	5.2
*PPG-TF-156 (Avenger II)	6.0	6.0	28.3	4.3	5.2
ATF 1704	5.7	5.7	28.3	5.3	5.2
PPG-TF-138	5.0	5.7	28.3	4.3	5.2
*PST-5RO5 (Swagger)	4.7	6.0	18.3	4.7	5.2
*PPG-TF-145 (Dynamite LS)	4.7	5.7	18.3	4.0	5.2
*PPG-TF-147 (Screamer LS)	5.7	7.0	23.3	4.7	5.2
Terrano	5.7	5.7	23.3	4.3	5.2
W41	5.7	6.7	23.3	5.3	5.2
PST-5BPO	5.7	5.7	25.0	4.0	5.2
*PPG-TF-157 (Thor)	5.7	6.0	26.7	5.3	5.2
*TD1 (Thunderstruck)	5.3	6.0	33.3	4.3	5.2
*Catalyst	5.7	6.3	33.3	4.3	5.2
*IS-TF 285 (Nightcrawler)	4.7	6.0	35.0	4.3	5.2
*PPG-TF-105 (Firecracker SLS)	6.0	5.7	20.0	4.7	5.1
*IS-TF 284 M2 (Foxhound)	4.0	6.7	25.0	4.7	5.1
*Faith	6.0	5.7	25.0	4.7	5.1
RAD-TF-89	5.3	6.0	26.7	4.7	5.1
*LSD (Rhambler 2 SRP)	4.3	6.3	28.3	4.7	5.1

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Cultivar/ experimental number	Spring green up 3/31	Leaf texture 6/6	% Brown patch 8/23	Fall color retention 11/30	Quality average
*Bullseye	5.0	6.0	30.0	4.7	5.1
PST-5BRK	5.3	5.7	25.0	4.3	5.1
*U43 (4th Millennium SRP)	5.3	6.7	25.0	4.7	5.1
*CCR2 (Amity)	5.7	7.3	26.7	5.3	5.1
MET-3	5.3	6.0	26.7	4.7	5.1
PST-5DZP	4.0	5.7	30.0	4.3	5.1
*PST-5SALT (Saltillo)	5.7	5.7	31.7	4.0	5.1
PST-5EV2 (Embrace)	5.3	6.7	25.0	4.3	5.0
*IS-TF 282 M2 (Turfway)	4.7	6.0	25.0	5.0	5.0
*PPG-TF-142 (Ares)	4.3	5.7	30.0	4.0	5.0
ATF 1736	5.0	5.3	23.3	4.0	5.0
PSG-GSD	5.0	6.0	25.0	4.3	5.0
PST-5GRB (Meridan)	4.7	7.0	25.0	4.3	5.0
IS-TF 269 SEL	5.0	6.7	26.7	5.0	5.0
*IS-TF 289 (Unitus)	4.3	6.3	30.0	4.7	5.0
*PPG-TF-151 (Wichita)	5.7	5.7	30.0	5.0	5.0
*S-TF 330 (Diablo)	4.7	5.3	30.0	4.3	5.0
JS 818	4.3	6.0	31.7	3.7	5.0
B23	5.7	6.3	31.7	4.0	5.0
*PST-R5NW (Inspiration)	4.3	4.7	21.7	4.3	4.9
BAR Fa 121089	4.7	5.0	26.7	4.3	4.9
K12-MCD	5.0	6.3	26.7	4.3	4.9
JS 819	4.7	5.3	33.3	4.3	4.9
*OR-21 (Temptation)	4.0	5.0	26.7	4.7	4.9
RAD-TF-92	5.7	6.0	30.0	4.7	4.9
*Exp TF-09 (Frontline)	5.3	5.7	41.7	3.7	4.9
K12-13	4.0	6.0	23.3	3.7	4.8
BAR Fa 121091	4.3	5.3	25.0	4.0	4.8
*Falcon IV	4.3	5.0	31.7	4.3	4.8
RAD-TF-83	5.0	5.7	33.3	4.7	4.8
*RAD-TF-88 (Olympus)	5.0	6.3	36.7	5.0	4.8
BAR Fa 121095	4.3	6.0	28.3	3.7	4.8
Fesnova	5.0	6.0	31.7	5.0	4.8
JS 825	4.3	5.3	35.0	4.0	4.8

continued

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Cultivar/ experimental number	Spring green up 3/31	Leaf texture 6/6	% Brown patch 8/23	Fall color retention 11/30	Quality average
PST-5EX2	6.0	4.7	18.3	4.0	4.7
*PST-5SDT (Rain Dance)	4.7	4.3	28.3	4.3	4.7
JS 809	3.7	5.7	30.0	3.3	4.7
*GO-DFR (Memphis)	4.3	5.3	33.3	4.7	4.6
*TY 10 (Caesar)	4.7	5.7	33.3	4.3	4.6
PSG-TT4	4.0	6.0	36.7	4.3	4.6
204 Res. Blk4	5.3	6.7	41.7	4.0	4.6
*Aquaduct	4.0	4.3	28.3	4.3	4.5
IS-TF 272	4.0	6.3	30.0	4.3	4.5
PSG-8BP2	4.3	6.0	43.3	3.3	4.5
*Marauder	4.0	6.3	40.0	3.0	4.3
Comp. Res. SST	4.7	6.0	41.7	3.7	4.3
BAR Fa 120878	4.0	4.0	23.3	4.3	4.2
*Warhawk	3.7	6.0	36.7	4.7	4.2
*Annihilator	4.0	6.0	48.3	3.3	4.0
*Ky-31	5.0	3.0	25.0	3.7	3.0
LSD [4]	1.7	1.0	18.2	1.4	0.5

[1]Visual ratings based on a scale of 1 to 9 (1 = poorest, 6 = acceptable, and 9 = optimum measure).
[2]Percent brown patch infestation was rated visually on a scale of 0 to 100%.
[3]Cultivars marked with "*" were commercially available in 2017.
[4]To determine statistical differences among entries, subtract one entry's mean from another's. If the result is larger than the corresponding least significant difference (LSD) value, the two are statistically different.

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