

2018 COOL-SEASON ANNUAL GRASS VARIETY TRIAL

The forage cultivar evaluation program is a partnership between University of Tennessee Extension and UT AgResearch to aid producers in the selection of the best cultivars for their farm. The crop was grown using management practices considered to be the best for the crop, including fertilization according to soil test results. This study was conducted using a randomized complete block design with four replications. Least significant difference (LSD) values at the 5 percent level are shown at the bottom of each table with the coefficient of variation (CV). Within any table, yield of any two varieties being compared must differ by at least this amount to be considered different.

Table 1: Yield of cool-season annual ryegrass varieties at the Plateau AgResearch and Education Center in Crossville, TN.

| Variety | Species | Supplier | Commercially Available | Yield (ton DM/acre) | | | | |
|--|----------|-------------------------------|------------------------|---------------------|-----------------|--------|-------|------|
| | | | | Apr 10 | May 2 | May 29 | Total | |
| Angusta | Ryegrass | DLF Pickseed USA Inc. | Yes | 1.72 | 1.26* | 1.25 | 4.24* | |
| Credence | Ryegrass | DLF Pickseed USA Inc. | Yes | 1.56 | 1.30* | 1.10 | 3.97 | |
| Fria | Ryegrass | Tennessee Farmers Cooperative | Yes | 2.17 | 1.50* | 1.16 | 4.83* | |
| FrostProof | Ryegrass | Smith Seed Services | Yes | 1.59 | 1.46* | 1.30 | 4.35* | |
| GRAZER | Ryegrass | University of Georgia | Yes | 1.67 | 1.37* | 0.93 | 3.97 | |
| Jackson | Ryegrass | The Wax Company, LLC | Yes | 2.22 | 1.20 | 1.11 | 4.53* | |
| Jumbo | Ryegrass | Barenbrug USA | Yes | 1.73 | 1.38* | 1.27 | 4.38* | |
| Kodiak | Ryegrass | DLF Pickseed USA Inc. | Yes | 1.55 | 1.24 | 1.45 | 4.23* | |
| Koga | Ryegrass | Smith Seed Services | Yes | 1.88 | 1.07 | 1.77* | 4.72* | |
| Maximus | Ryegrass | Barenbrug USA | Yes | 1.67 | 0.73 | 1.03 | 3.42 | |
| Nelson Tetraploid | Ryegrass | The Wax Company, LLC | Yes | 2.53 | 1.11 | 1.27 | 4.91* | |
| Passerel Plus | Ryegrass | Pennington Seed | Yes | 1.47 | 1.50* | 1.22 | 4.19* | |
| Ribeye | Ryegrass | Barenbrug USA | Yes | 1.76 | 1.48* | 1.36 | 4.59* | |
| Wax Marshall | Ryegrass | The Wax Company, LLC | Yes | 1.79 | 1.72* | 1.33 | 4.84* | |
| Winterhawk | Ryegrass | Oregro Seeds, Inc. | Yes | 1.54 | 1.77* | 1.41 | 4.73* | |
| <i>Experimental Varieties</i> | | | | | | | | |
| BAR LM 17477 | Ryegrass | Barenbrug USA | No | 1.85 | 1.16 | 1.14 | 4.14* | |
| BAR LM 17490-3 | Ryegrass | Barenbrug USA | No | 1.87 | 1.14 | 1.27 | 4.28* | |
| BAR LM 17490-4 | Ryegrass | Barenbrug USA | No | 1.31 | 1.33* | 1.33 | 3.98 | |
| BAR LM 17514 | Ryegrass | Barenbrug USA | No | 1.96 | 1.31* | 1.12 | 4.39* | |
| BAR LM 17531 | Ryegrass | Barenbrug USA | No | 1.68 | 0.77 | 1.29 | 3.75 | |
| BAR LM 17532 | Ryegrass | Barenbrug USA | No | 1.64 | 1.41* | 1.30 | 4.36* | |
| BAR LM 17534 | Ryegrass | Barenbrug USA | No | 1.84 | 1.74* | 1.25 | 4.83* | |
| BAR LM 17538 | Ryegrass | Barenbrug USA | No | 1.56 | 1.10 | 1.00 | 3.66 | |
| BAR LM17533 | Ryegrass | Barenbrug USA | No | 1.38 | 1.26* | 1.27 | 3.91 | |
| GA101M | Ryegrass | University of Georgia | No | 1.71 | 1.16 | 1.01 | 3.88 | |
| GA102A | Ryegrass | University of Georgia | No | 2.36 | 1.27* | 1.24 | 4.87* | |
| GA103F | Ryegrass | University of Georgia | No | 2.09 | 1.62* | 1.02 | 4.73* | |
| GALM1401 | Ryegrass | University of Georgia | No | 1.81 | 1.59* | 1.04 | 4.45* | |
| GALM1402 | Ryegrass | University of Georgia | No | 1.37 | 0.94 | 1.19 | 3.51 | |
| GALM1403 | Ryegrass | University of Georgia | No | 1.18 | 1.18 | 1.06 | 3.42 | |
| GALM1501 | Ryegrass | University of Georgia | No | 1.85 | 1.54* | 1.08 | 4.47* | |
| GALM1502 | Ryegrass | University of Georgia | No | 2.09 | 1.18 | 1.15 | 4.42* | |
| GALM1503 | Ryegrass | University of Georgia | No | 1.60 | 1.26* | 1.14 | 4.01 | |
| GALM1513 | Ryegrass | University of Georgia | No | 1.74 | 1.50* | 1.21 | 4.45* | |
| GALM1514 | Ryegrass | University of Georgia | No | 1.27 | 1.43* | 1.14 | 3.84 | |
| GALM1515 | Ryegrass | University of Georgia | No | 2.54 | 1.49* | 0.95 | 4.98* | |
| ME4 | Ryegrass | The Wax Company, LLC | No | 1.87 | 1.75* | 1.50* | 5.13* | |
| ME94 | Ryegrass | The Wax Company, LLC | No | 1.29 | 1.69* | 1.31 | 4.29* | |
| MZCVS | Ryegrass | The Wax Company, LLC | No | 1.76 | 1.38* | 1.35 | 4.49* | |
| O7-WW | Ryegrass | Oregro Seeds, Inc. | No | 1.68 | 1.44* | 1.31 | 4.43* | |
| ORBR17 | Ryegrass | Oregro Seeds, Inc. | No | 1.76 | 0.66 | 1.01 | 3.42 | |
| PS12 | Ryegrass | Pennington Seed | No | 1.69 | 0.92 | 1.07 | 3.69 | |
| PS15 | Ryegrass | Pennington Seed | No | 1.58 | 1.52* | 1.20 | 4.30* | |
| WMWL | Ryegrass | The Wax Company, LLC | No | 1.96 | 1.69* | 1.22 | 4.88* | |
| | | | | CV | 31 | 28 | 19 | 16 |
| | | | | LSD (P<0.05) | ns ¹ | 0.52 | 0.31 | 1.04 |
| * yielded statistically the same as the top-yielding variety | | | | | | | | |
| ¹ non-significant at the 0.05 level | | | | | | | | |
| Nitrogen application: 45 lb/acre at planting, 60 lb/acre at green-up, 30 lb/acre after first harvest | | | | | | | | |
| Planted September 26, 2017 | | | | | | | | |

Table 2: Yield of cool-season annual small grain varieties at the Plateau AgResearch and Education Center in Crossville, TN.

| Variety | Species | Supplier | Commercially Available | Yield (ton DM/acre) | | | |
|--|------------|--------------------------|------------------------|---------------------|-----------------|-----------------|-----------------|
| | | | | Apr 10 | May 2 | May 29 | Total |
| Bates RS4 | Rye | Noble Research Institute | Yes | 1.73 | 0.95 | 0.47 | 3.14 |
| Byron's Fall Triticale | Triticale | Byron Seeds, LLC | Yes | 1.95 | 1.22 | 0.25 | 3.42 |
| Cosaque | Winter Oat | Byron Seeds, LLC | Yes | 2.01 | 1.70 | 0.59 | 4.31 |
| Elbon | Rye | Noble Research Institute | Yes | 1.45 | 1.74 | 0.72 | 3.90 |
| <i>Experimental Varieties</i> | | | | | | | |
| NF95319B | Rye | Noble Research Institute | No | 2.08 | 0.72 | 0.44 | 3.24 |
| NF97325 | Rye | Noble Research Institute | No | 1.85 | 1.22 | 0.41 | 3.47 |
| NF99362 | Rye | Noble Research Institute | No | 1.74 | 1.20 | 0.52 | 3.46 |
| Penn Oat | Winter Oat | Pennington Seed | No | 1.13 | 1.52 | 0.56 | 3.20 |
| | | | | CV | 27 | 44 | 43 |
| | | | | LSD (P<0.05) | ns ¹ | ns ¹ | ns ¹ |
| * yielded statistically the same as the top-yielding variety | | | | | | | |
| ¹ non-significant at the 0.05 level | | | | | | | |
| Nitrogen application: 45 lb/acre at planting, 60 lb/acre at green-up, 30 lb/acre after first harvest | | | | | | | |
| Planted September 26, 2017 | | | | | | | |

Table 3: Mean forage nutritive values by harvest.

| Species | Constituents ¹ (%) | Harvest Date | | |
|------------|-------------------------------|--------------|-------|--------|
| | | Apr 10 | May 2 | May 29 |
| Ryegrass | CP | 16.5 | 12.6 | 11.9 |
| | ADF | 30.2 | 30.9 | 34.4 |
| | NDF | 56.5 | 49.1 | 53.1 |
| | TDN | 67.3 | 66.6 | 63.1 |
| Rye | CP | 11.7 | 11.7 | 4.6 |
| | ADF | 33.7 | 34.6 | 46.7 |
| | NDF | 53.4 | 59.8 | 58.2 |
| | TDN | 63.8 | 62.9 | 50.9 |
| Triticale | CP | 16.9 | 12.6 | 14.1 |
| | ADF | 29.6 | 31.2 | 32.7 |
| | NDF | 57.6 | 53.4 | 58.0 |
| | TDN | 67.9 | 66.4 | 64.8 |
| Winter Oat | CP | 15.0 | 12.6 | 10.0 |
| | ADF | 30.7 | 31.0 | 40.5 |
| | NDF | 56.2 | 51.6 | 72.4 |
| | TDN | 66.8 | 66.5 | 56.2 |

¹ Nutritive values represented at 100% DM Basis for CP, crude protein; ADF, acid detergent fiber; NDF, neutral detergent fiber; TDN, total digestible nutrients; (Analysis performed using Near Infrared Spectrometer [NIRS] Technology) Target stage of growth for harvest was late boot. Grass Hay Equation (NIRS Consortium, 2017).

This and other useful information can be found at your local Extension office, or on our website.

