

2005 Tall Fescue Report

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Introduction

Tall fescue (*Festuca arundinacea*) is a productive, well-adapted, persistent, soil-conserving, cool-season grass that is grown on approximately 5.5 million acres in Kentucky. This grass, used for both hay and pasture, is the forage base of most of Kentucky's livestock enterprises, particularly beef cattle.

Much of the tall fescue in Kentucky is infected with an internal fungus (endophyte) that results in decreased weight gains in growing ruminants and lower pregnancy rates in breeding stock, especially in hot weather. Varieties are now available that are free of this fungal endophyte or infected with a non-toxic endophyte. Varieties in the latter group are also referred to as "novel" or "friendly" endophyte varieties.

This report provides current yield data on tall fescue varieties and similar grass species in trials in Kentucky as well as guidelines for selecting tall fescue varieties. Go to the UK Forage Extension Web site at www.uky.edu/AG/FORAGE to obtain electronic versions of all forage variety testing reports as well as other forage publications.

Important Selection Considerations

Local Adaptation and Seasonal Yield. Before purchasing tall fescue seed, make sure that the variety is adapted to Kentucky, as indicated by good performance across years and locations in replicated yield trials such as those presented in this publication. Choose high-yielding persistent varieties and varieties that are productive during the desired season of use.

Tall fescues are often classified as either "Mediterranean" or "European" types according to the area from which the parental material for the variety came. In general, the Mediterranean types (Cajun and Fawn, for example) are more productive in the fall and winter than the European types, such as Kentucky 31. Although they mature earlier in the spring, the Mediterranean types become very dormant and nonproductive during the summer in Kentucky and are more susceptible than European varieties to leaf diseases such as helminthosporium and rhizoctonia. Therefore, Mediterranean varieties are less preferred for use in Kentucky than European types. Because Mediterranean varieties mature earlier in the spring, first-cutting yields are generally higher when the two types are harvested at the same time. However, the European types produce more in the summer, allowing for extended grazing.

Endophyte Level. Seed with infection levels of less than 5% is regarded as being endophyte free. A statement to that effect will be displayed prominently on a green tag attached to the seed bag. If no tag is present, assume the seed is infected with the endophyte. Several varieties, both with and without

the endophyte, are adapted for use in Kentucky. With the new "novel endophyte" tall fescues, the seed tag should specify the infection level. Also, seed of these varieties should be handled carefully to preserve this infection, which means keeping seed cool and planting as soon as possible.

Seed Quality. Buy high-quality seed that is high in germination and purity levels and free from weed seed. Buy certified seed of improved varieties. An improved variety is one that has performed well in independent trials. The label also includes the test date (which must be within the previous nine months), the level of germination, and other crop and weed seed. Order seed well in advance of planting time to assure that it will be available when needed.

Description of the Tests

Data from four studies is reported. Tall fescue varieties were sown at Lexington (2003), Quicksand (2003), and Princeton (2002 and 2004). The soils at Lexington (Maury), Quicksand (Pope), and Princeton (Crider) are well-drained silt loams. All are well suited for tall fescue production.

Seedings were made at the rate of 20 lb/A into a prepared seedbed with a disk drill. Plots were 5 by 15 feet in a randomized complete block design, with four replications. Nitrogen was topdressed at 60 lb/A of actual N in March, after the first cutting, and again in late summer, for a total of 180 lb/A over the season. The tests were harvested using a sickle-type forage plot harvester to simulate a spring cut hay/summer grazing/fall stockpile management system. The first cutting was harvested at each location when all tall fescue varieties had reached at least the boot stage. Fresh weight samples were taken at each harvest to calculate dry matter production. Management practices for these tests regarding establishment, fertility, weed control, and harvest timing were in accordance with University of Kentucky recommendations.

Results and Discussion

Weather data for Lexington, Quicksand, and Princeton are presented in Tables 1 through 3.

Ratings for maturity, stand, and dry matter yields (tons/acre) are reported in Tables 4 through 7. Yields are given by cutting date and as total annual production. Varieties are listed by total yield in descending order. Experimental varieties are listed separately at the bottom of the tables.

Statistical analyses were performed on all data to determine if the apparent differences are truly due to varietal differences or just to chance. In the tables, varieties that are not significantly different from the top variety in the column for that characteristic are marked with one asterisk (*). To determine if two varieties are truly different, compare

the difference between them and the LSD (Least Significant Difference) at the bottom of the column. If the difference is equal to or greater than the LSD, the varieties are truly different when grown under the conditions at the given locations. The Coefficient of Variation (CV) is a measure of the variability of the data and is included for each column of means. Low variability is desirable, and increased variability within a study results in higher CVs and larger LSDs.

Table 8 summarizes information about distributors, endophyte infection, and yield performance across locations for all varieties currently included in tests discussed in this report. Varieties are listed in alphabetical order by species, with the experimental varieties at the bottom. Remember that experimental varieties are not available for farm use, while commercial varieties can be purchased from agricultural distributors. In Table 8, an open block indicates that the variety was not in that particular test (labeled at the top of the column), while an (x) in the block means that the variety was in the test but yielded significantly less than the top-yielding variety. A single asterisk (*) means that the variety was not significantly different from the top variety. It is best to choose a variety that has performed well over several years and locations. Remember to consider the relative spring maturity and the distribution of yield across the growing season when evaluating productivity of tall fescue varieties (Tables 4 through 7).

Summary

Selecting a good variety of tall fescue is an important first step in establishing a productive stand of grass. Proper management, beginning with seedbed preparation and continuing throughout the life of the stand, is necessary for even the highest-yielding variety to produce to its genetic potential.

The following is a list of University of Kentucky Cooperative Extension publications related to tall fescue management available from your county Extension office:

- AGR-1 Lime and Fertilizer Recommendations
- AGR-18 Grain and Forage Crop Guide for Kentucky
- AGR-59 Tall Fescue
- AGR-64 Establishing Forage Crops
- AGR-108 Tall Fescue in Kentucky

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Table 1. Temperature and rainfall at Princeton, Kentucky in 2003, 2004 and 2005.

| | 2003 | | | | 2004 | | | | 2005 | | | |
|-------|-------------|-----|----------|-------|-------------|-----|----------|-------|-------------|-----|----------|-------|
| | Temperature | | Rainfall | | Temperature | | Rainfall | | Temperature | | Rainfall | |
| | °F | DEP | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP |
| JAN | 31 | -3 | 2.19 | -1.61 | 36 | +2 | 4.12 | +0.32 | 41 | +7 | 5.30 | +1.50 |
| FEB | 35 | -3 | 7.45 | +3.02 | 39 | +1 | 2.44 | -1.99 | 43 | +5 | 2.30 | -2.13 |
| MAR | 50 | +3 | 2.46 | -2.48 | 53 | +6 | 4.28 | -0.66 | 47 | 0 | 4.11 | -0.83 |
| APR | 60 | +1 | 6.99 | +2.19 | 59 | 0 | 5.32 | +0.52 | 60 | +1 | 4.61 | -0.19 |
| MAY | 67 | 0 | 4.81 | -0.15 | 72 | +5 | 7.34 | +2.38 | 65 | -2 | 1.54 | -3.42 |
| JUN | 71 | -4 | 5.05 | +1.20 | 74 | -1 | 3.40 | -0.45 | 76 | +1 | 3.09 | -0.76 |
| JUL | 79 | +1 | 4.75 | +0.46 | 75 | -3 | 4.87 | +0.58 | 79 | +1 | 2.39 | -1.90 |
| AUG | 79 | +2 | 2.05 | -1.96 | 73 | -4 | 3.02 | -0.99 | 80 | +3 | 11.54 | +7.53 |
| SEP | 69 | -2 | 6.17 | +2.84 | 71 | 0 | 0.20 | -3.13 | 74 | +2 | 2.17 | -1.16 |
| OCT | 60 | +1 | 3.73 | +0.68 | 64 | +5 | 4.03 | +0.98 | 60 | +1 | 0.19 | -2.86 |
| NOV | 53 | +6 | 5.85 | +1.22 | 53 | +6 | 6.94 | +2.31 | 50 | +3 | 2.48 | -2.15 |
| DEC | 40 | +1 | 2.39 | -2.65 | 37 | -1 | 4.29 | -0.75 | | | | |
| Total | | . | 53.89 | +2.76 | | | 50.25 | -0.88 | | | 39.72 | -6.37 |

DEP is departure from the long-term average.

Table 2. Temperature and rainfall at Lexington, Kentucky in 2004 and 2005.

| | 2004 | | | | 2005 | | | |
|-------|-------------|-----|----------|-------|-------------|-----|----------|--------|
| | Temperature | | Rainfall | | Temperature | | Rainfall | |
| | °F | DEP | IN | DEP | °F | DEP | IN | DEP |
| JAN | 30 | -1 | 3.14 | +0.28 | 37 | +6 | 4.35 | +1.49 |
| FEB | 36 | +1 | 1.32 | -1.89 | 39 | +4 | 1.68 | -1.53 |
| MAR | 47 | +3 | 3.43 | -0.97 | 41 | -3 | 2.79 | -1.61 |
| APR | 55 | 0 | 3.06 | -0.82 | 56 | +1 | 3.30 | -0.58 |
| MAY | 68 | +4 | 9.79 | +5.32 | 61 | -3 | 1.78 | -2.69 |
| JUN | 72 | 0 | 3.13 | -0.53 | 75 | +3 | 1.33 | -2.33 |
| JUL | 73 | -3 | 7.65 | +2.65 | 77 | +1 | 3.30 | -1.70 |
| AUG | 71 | -4 | 2.91 | -1.02 | 78 | +3 | 3.34 | -0.59 |
| SEP | 68 | 0 | 2.61 | -0.59 | 72 | +4 | 0.59 | -2.21 |
| OCT | 58 | +1 | 5.65 | +3.08 | 58 | +1 | 0.92 | -1.65 |
| NOV | 49 | +4 | 6.29 | +2.90 | 47 | +2 | 1.54 | -1.85 |
| DEC | 36 | 0 | 3.20 | -0.78 | | | | |
| Total | | | 52.18 | +7.63 | | | 25.32 | -15.25 |

DEP is departure from the long-term average.

Table 3. Temperature and rainfall at Quicksand, Kentucky in 2004 and 2005.

| | 2004 | | | | 2005 | | | |
|-------|-------------|-----|----------|-------|-------------|-----|----------|--------|
| | Temperature | | Rainfall | | Temperature | | Rainfall | |
| | °F | DEP | IN | DEP | °F | DEP | IN | DEP |
| JAN | 34 | +3 | 4.48 | +1.19 | 40 | +9 | 4.45 | +1.16 |
| FEB | 39 | +6 | 3.45 | -0.15 | 42 | +9 | 3.01 | -0.59 |
| MAR | 49 | +8 | 3.84 | -0.5 | 44 | +3 | 2.86 | -1.48 |
| APR | 51 | +4 | 4.84 | +0.74 | 58 | +5 | 6.63 | +2.53 |
| MAY | 68 | +6 | 11.22 | +6.74 | 63 | +1 | 2.05 | -2.43 |
| JUN | 71 | +1 | 6.19 | +2.37 | 75 | +5 | 2.39 | -1.43 |
| JUL | 75 | +1 | 2.3 | -2.95 | 78 | +4 | 2.58 | -2.67 |
| AUG | 72 | -1 | 1.37 | -2.64 | 79 | +6 | 3.51 | -0.50 |
| SEP | 69 | +3 | 6.8 | +3.28 | 72 | +6 | 0.27 | -3.25 |
| OCT | 61 | +7 | 4.19 | +1.29 | 59 | +5 | 0.68 | -2.23 |
| NOV | 51 | +9 | 3.56 | -0.32 | 49 | +7 | 1.30 | -2.58 |
| DEC | 37 | +4 | 3.59 | -0.55 | | | | |
| Total | | | 55.83 | +8.49 | | | 29.73 | -13.47 |

DEP is departure from the long-term average for that location.

Table 4. Dry matter yields (tons/acre) and maturity rating of tall fescue varieties sown September 25, 2002 at Princeton, Kentucky.

| Variety | Maturity ¹ May 10, 2005 | 2005 Percent Stand | | Yield (tons/acre) | | | | | | | |
|--|---------------------------------------|-----------------------|-------|-------------------|-------|--------|--------|--------|-------|-------|---------------|
| | | Apr 15 | Nov 3 | 2003 | 2004 | 2005 | | | | | 3-yr Total |
| | | | | Total | Total | May 10 | Jun 13 | Jul 29 | Oct 6 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | |
| KY31+ ² | 54.0 | 83 | 95 | 5.03 | 3.76 | 1.42 | 0.66 | 0.25 | 1.23 | 3.57 | 12.36* |
| Bull | 57.5 | 88 | 95 | 4.86 | 3.92 | 1.29 | 0.70 | 0.28 | 1.13 | 3.39 | 12.16* |
| Jesup MaxQ | 55.5 | 79 | 95 | 4.70 | 3.18 | 1.42 | 0.76 | 0.28 | 1.30 | 3.76 | 11.64* |
| Select | 55.0 | 88 | 95 | 4.56 | 3.58 | 1.04 | 0.48 | 0.35 | 1.21 | 3.09 | 11.22* |
| Experimental Varieties | | | | | | | | | | | |
| RAD-MA216 | 56.5 | 85 | 70 | 4.88 | 3.96 | 1.29 | 0.66 | 0.29 | 1.18 | 3.41 | 12.25* |
| FABE9301a | 46.3 | 84 | 90 | 4.45 | 4.03 | 1.48 | 0.40 | 0.31 | 1.15 | 3.33 | 11.82* |
| KY31- ² | 56.0 | 86 | 95 | 4.72 | 3.85 | 0.96 | 0.51 | 0.30 | 1.36 | 3.13 | 11.70* |
| KYFA9301 | 56.0 | 83 | 95 | 4.91 | 3.04 | 1.61 | 0.62 | 0.28 | 1.20 | 3.71 | 11.66* |
| KYFA9304 | 54.5 | 79 | 95 | 4.69 | 3.43 | 0.97 | 0.54 | 0.30 | 1.07 | 2.87 | 11.00* |
| PBR | 55.0 | 43 | 40 | 3.35 | 3.64 | 0.42 | 0.50 | 0.24 | 0.82 | 1.99 | 8.97 |
| EC409 | 56.0 | 16 | 18 | 3.34 | 3.39 | 0.73 | 0.54 | 0.23 | 0.72 | 2.23 | 8.95 |
| Mean | 54.9 | 74.4 | 81.5 | 4.52 | 3.63 | 1.15 | 0.58 | 0.29 | 1.13 | 3.15 | 11.30 |
| CV,% | 2.5 | 9.3 | 16.9 | 9.14 | 17.93 | 38.99 | 35.04 | 30.33 | 19.54 | 19.52 | 9.84 |
| LSD,0.05 | 1.9 | 10.0 | 19.8 | 0.59 | 0.94 | 0.65 | 0.29 | 0.13 | 0.32 | 0.89 | 1.60 |

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

¹ Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shedding.

² "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.

Table 5. Dry matter yields (tons/acre), seedling vigor, maturity and stand rating of tall fescue, festulolium (FL) and Kentucky bluegrass (BG) sown September 16, 2003 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ Oct. 31 2003 | Maturity ² May 13, 2005 | 2005 Percent Stand | | Yield (tons/acre) | | | | | | 2-yr Total |
|--|---|--|-----------------------|--------|-------------------|--------|--------|--------|--------|-------|---------------|
| | | | Apr 8 | Oct 31 | 2004 Total | 2005 | | | | | |
| | | | | | | May 13 | Jun 24 | Aug 18 | Oct 26 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | |
| KY31+ ³ | 4.8 | 54.0 | 98 | 94 | 7.04 | 2.95 | 1.23 | 0.42 | 0.59 | 5.19 | 12.23* |
| Stockman | 4.0 | 56.0 | 98 | 93 | 7.66 | 2.69 | 1.02 | 0.10 | 0.26 | 4.07 | 11.73* |
| Bull | 4.3 | 58.0 | 100 | 94 | 6.28 | 2.76 | 0.91 | 0.30 | 0.41 | 4.37 | 10.66 |
| Hykor (FL) ⁴ | 4.3 | 56.5 | 100 | 81 | 6.90 | 2.36 | 1.06 | 0.13 | 0.19 | 3.73 | 10.64 |
| Select | 3.3 | 55.5 | 96 | 78 | 6.35 | 2.77 | 0.63 | 0.15 | 0.29 | 3.84 | 10.18 |
| Barianne | 3.8 | 45.0 | 99 | 94 | 5.57 | 2.17 | 1.00 | 0.30 | 0.38 | 3.84 | 9.41 |
| Slezanka (BG) ⁴ | 2.3 | 55.5 | 95 | 95 | 3.03 | 1.97 | 0.62 | 0.19 | 0.47 | 3.25 | 6.27 |
| Ginger (BG) ⁴ | 2.0 | 66.0 | 83 | 48 | 3.20 | 1.40 | 0.16 | 0.08 | 0.15 | 1.78 | 4.98 |
| Experimental Varieties | | | | | | | | | | | |
| CIS-FTF25 | 4.5 | 56.5 | 98 | 95 | 6.95 | 2.57 | 1.14 | 0.28 | 0.42 | 4.41 | 11.36* |
| KYFA0006 | 4.3 | 50.5 | 98 | 91 | 6.89 | 2.86 | 1.07 | 0.18 | 0.27 | 4.38 | 11.27* |
| KYTF2 | 4.0 | 51.5 | 98 | 75 | 7.18 | 2.61 | 0.86 | 0.14 | 0.24 | 3.85 | 11.02* |
| KYFA9304 | 4.0 | 54.0 | 98 | 95 | 6.85 | 2.69 | 0.94 | 0.18 | 0.29 | 4.10 | 10.95* |
| KY31- ³ | 4.5 | 55.5 | 100 | 96 | 6.94 | 2.52 | 1.03 | 0.11 | 0.30 | 3.96 | 10.90* |
| ERF38 | 4.0 | 56.5 | 99 | 90 | 6.20 | 2.68 | 0.84 | 0.20 | 0.30 | 4.01 | 10.21 |
| CIS-FTF24 | 4.5 | 58.0 | 100 | 91 | 5.57 | 2.74 | 0.88 | 0.44 | 0.46 | 4.52 | 10.09 |
| MRF42 | 4.0 | 54.5 | 98 | 95 | 6.36 | 2.30 | 0.75 | 0.18 | 0.26 | 3.49 | 9.85 |
| KYFA9611 | 3.0 | 46.3 | 95 | 74 | 6.74 | 1.77 | 0.83 | 0.12 | 0.17 | 2.88 | 9.62 |
| KYFA9602 | 3.3 | 52.5 | 95 | 63 | 6.08 | 2.30 | 0.74 | 0.10 | 0.21 | 3.35 | 9.43 |
| KYFA9819 (FL) ⁴ | 5.0 | 46.3 | 88 | 86 | 5.26 | 2.20 | 0.64 | 0.05 | 0.02 | 3.05 | 8.31 |
| KYPP9901 (BG) ⁴ | 2.5 | 64.5 | 99 | 100 | 2.26 | 2.56 | 0.38 | 0.07 | 0.32 | 3.33 | 5.58 |
| HB95 (BG) ⁴ | 1.0 | 61.0 | 15 | 34 | 0.04 | 0.31 | 0.25 | 0.17 | 0.16 | 0.89 | 0.93 |
| HB96 (BG) ⁴ | 1.0 | 66.0 | 0 | 20 | 0.08 | 0.17 | 0.13 | 0.07 | 0.12 | 0.48 | 0.56 |
| Mean | 3.6 | 52.3 | 88.9 | 81.6 | 5.49 | 2.27 | 0.78 | 0.18 | 0.30 | 3.52 | 9.01 |
| CV,% | 11.2 | 2.9 | 9.4 | 20.9 | 12.89 | 19.52 | 27.97 | 63.01 | 36.84 | 17.85 | 11.86 |
| LSD,0.05 | 0.6 | 2.4 | 11.8 | 24.0 | 1.00 | 0.62 | 0.31 | 0.16 | 0.15 | 0.89 | 1.51 |

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

¹ Vigor score based on scale of 1 to 5 with 5 being the most vigorous seedling growth.

² Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shedding.

³ "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.

⁴ FL=festulolium; BG=Kentucky bluegrass

Table 6. Dry matter yields (tons/acre), maturity and stand rating of tall fescue and festulolium varieties sown October 9, 2003 at Quicksand, Kentucky.

| Variety | Maturity ¹ May 11, 2005 | 2005 Percent Stand | | Yield (tons/acre) | | | | | 2-yr Total |
|--|--|-----------------------|--------|-------------------|--------|--------|--------|-------|---------------|
| | | Apr 14 | Nov 28 | 2004 Total | 2005 | | | | |
| | | | | | May 11 | Jun 29 | Aug 22 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | |
| Stockman | 62 | 88 | 85 | 7.10 | 2.84 | 1.19 | 0.99 | 5.02 | 12.13* |
| Select | 62 | 93 | 91 | 6.54 | 2.69 | 1.44 | 1.09 | 5.22 | 11.75* |
| Jesup MaxQ | 62 | 93 | 93 | 6.83 | 2.62 | 1.09 | 1.01 | 4.72 | 11.55* |
| Hykor (FL) | 62 | 90 | 80 | 6.08 | 2.92 | 1.42 | 0.95 | 5.29 | 11.37* |
| KY 31+ | 62 | 90 | 89 | 6.88 | 2.14 | 1.31 | 1.03 | 4.47 | 11.35* |
| Bull | 62 | 95 | 91 | 6.38 | 2.85 | 1.08 | 0.93 | 4.85 | 11.23 |
| Experimental Varieties | | | | | | | | | |
| KYTF 2 | 62 | 86 | 76 | 7.18 | 2.88 | 1.48 | 0.91 | 5.27 | 12.46* |
| KYFA 9304 | 62 | 90 | 89 | 6.83 | 2.54 | 1.50 | 1.11 | 5.15 | 11.98* |
| KYFA 9602 | 62 | 85 | 84 | 7.44 | 2.42 | 1.20 | 0.91 | 4.54 | 11.98* |
| Mean | 62 | 89.9 | 86.6 | 6.81 | 2.64 | 1.28 | 0.98 | 4.91 | 11.72 |
| CV,% | 0 | 5.5 | 8.4 | 7.78 | 18.10 | 17.19 | 20.23 | 12.36 | 6.62 |
| LSD,0.05 | 0 | 7.1 | 10.6 | 0.77 | 0.69 | 0.32 | 0.29 | 0.88 | 1.13 |

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
¹ Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shed.

Table 7. Dry matter yields (tons/acre), seedling vigor, maturity and stand rating of tall fescue varieties sown September 1, 2004 at Princeton, Kentucky.

| Variety | Seedling Vigor ¹ Dec 21, 2004 | Maturity ² May 10, 2005 | 2005 Percent Stand | | 2005 Yield (tons/acre) | | | | |
|--|--|--|-----------------------|-------|------------------------|--------|--------|-------|-------|
| | | | Apr 15 | Nov 3 | May 10 | Jun 13 | Jul 29 | Oct 5 | Total |
| Commercial Varieties—Available for Farm Use | | | | | | | | | |
| Select | 3.8 | 55.5 | 100 | 96 | 3.51 | 0.75 | 0.75 | 1.56 | 6.57* |
| Enhance | 2.5 | 51.5 | 98 | 96 | 1.86 | 1.18 | 0.95 | 1.91 | 5.89* |
| KY31+ ³ | 3.0 | 52.0 | 98 | 98 | 2.55 | 0.77 | 0.87 | 1.49 | 5.68* |
| Stockman | 3.3 | 55.5 | 94 | 96 | 1.92 | 0.95 | 1.00 | 1.70 | 5.58* |
| Festival | 3.5 | 53.5 | 93 | 98 | 1.86 | 0.98 | 0.98 | 1.50 | 5.32 |
| KENHY | 4.0 | 53.0 | 100 | 99 | 2.42 | 0.67 | 0.86 | 1.21 | 5.16 |
| Seine | 2.8 | 53.5 | 96 | 99 | 1.76 | 0.84 | 0.86 | 1.48 | 4.94 |
| Experimental Varieties | | | | | | | | | |
| KYFA9304 | 4.0 | 55.5 | 98 | 100 | 3.03 | 1.06 | 0.86 | 1.53 | 6.47* |
| KYFA9905 | 5.0 | 51.0 | 100 | 100 | 2.66 | 1.08 | 0.81 | 1.49 | 6.05* |
| KYFA9611 | 3.3 | 46.3 | 96 | 98 | 2.35 | 0.99 | 1.04 | 1.67 | 6.04* |
| KYTF-2 | 3.0 | 52.8 | 96 | 100 | 2.19 | 1.08 | 0.94 | 1.70 | 5.91* |
| KYFA9811 | 5.0 | 52.0 | 99 | 100 | 2.39 | 1.03 | 0.77 | 1.55 | 5.75* |
| PST-5NF | 3.3 | 54.5 | 76 | 100 | 2.13 | 0.99 | 0.99 | 1.60 | 5.71* |
| KYFA9901 | 4.3 | 49.8 | 98 | 99 | 1.62 | 1.18 | 0.92 | 1.58 | 5.30 |
| KYFA9602 | 3.5 | 49.3 | 84 | 80 | 3.15 | 1.13 | 0.09 | 0.90 | 5.27 |
| ARGL | 4.5 | 56.0 | 99 | 98 | 1.68 | 1.07 | 0.85 | 1.64 | 5.23 |
| CSN2G | 3.5 | 53.8 | 98 | 99 | 2.01 | 0.84 | 0.79 | 1.58 | 5.22 |
| KY31- ³ | 3.3 | 51.0 | 98 | 94 | 1.76 | 0.99 | 0.83 | 1.63 | 5.20 |
| KYFA9917 | 3.5 | 49.3 | 98 | 99 | 1.08 | 0.90 | 0.95 | 1.43 | 4.35 |
| Mean | 3.6 | 52.4 | 95.5 | 97.2 | 2.71 | 0.97 | 0.85 | 1.53 | 5.56 |
| CV,% | 16.9 | 5.7 | 11.3 | 5.9 | 31.20 | 20.42 | 12.21 | 15.16 | 13.77 |
| LSD,0.05 | 0.9 | 4.2 | 15.3 | 8.2 | 0.98 | 0.28 | 0.15 | 0.33 | 1.09 |

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
¹ Vigor score based on scale of 1 to 5 with 5 being the most vigorous seedling growth
² Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shedding.
³ "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.

| Table 8. Performance of tall fescue and festulolium (FL) varieties across years and location. | | | | | | | | | |
|---|-------------------------------|--------------------------------|----|-------------------|----|-----------|----|----|------|
| Variety | Proprietor/KY Distributor | Lexington 2003 ¹ | | Quicksand 2003 | | Princeton | | | |
| | | 04 ² | 05 | 04 | 05 | 2002 | | | 2004 |
| | | | | | | 03 | 04 | 05 | 05 |
| Commercial Varieties—Available for Farm Use | | | | | | | | | |
| Barianne | Barenbrug USA | x | x | | | | | | |
| Bull | Improved Forages | x | * | x | x | * | * | * | |
| Enhance | Allied Seed | | | | | | | | * |
| Festival | Pickseed West, Inc. | | | | | | | | x |
| Hykor (FL) | DLF International Seed | * | x | x | * | | | | |
| KENHY | | | | | | | | | x |
| KY31+ ³ | Ky Agric. Exp. Station/Public | * | * | * | * | * | * | * | * |
| Jesup MaxQ | Pennington Seed | | | * | * | * | * | * | |
| Seine | Seed Research of Oregon | | | | | | | | x |
| Select | FFR/Southern States | x | x | * | * | * | * | | * |
| Stockman | Seed Research of Oregon | * | x | * | * | | | | * |
| Experimental Varieties | | | | | | | | | |
| ARGL | | | | | | | | | x |
| CIS-FTF24 | Cebeco International Seeds | x | * | | | | | | |
| CIS-FTF25 | Cebeco International Seeds | * | * | | | | | | |
| CSN 2G | Radix Research, Inc. | | | | | | | | x |
| EC409 | Emerald Commodities, Inc | | | | | x | * | x | |
| ERF38 | Radix Research, Inc. | x | x | | | | | | |
| FABE9301a | Barenbrug USA | | | | | * | * | * | |
| KY31- ³ | KY Agric. Exp. Station | * | x | | | * | * | * | x |
| KYFA0006 | KY Agric. Exp. Station | * | * | | | | | | |
| KYFA9301 | KY Agric. Exp. Station | | | | | * | x | * | |
| KYFA9304 | KY Agric. Exp. Station | * | x | * | * | * | * | * | * |
| KYFA9602 | KY Agric. Exp. Station | x | x | * | * | | | | x |
| KYFA9611 | KY Agric. Exp. Station | * | x | | | | | | * |
| KYFA9811 | KY Agric. Exp. Station | | | | | | | | * |
| KYFA9819 (FL) | KY Agric. Exp. Station | x | x | * | | | | | |
| KYFA9901 | KY Agric. Exp. Station | | | | | | | | x |
| KYFA9905 | KY Agric. Exp. Station | | | | | | | | * |
| KYFA9917 | KY Agric. Exp. Station | | | | | | | | x |
| KYTF2 | KY Agric. Exp. Station | * | x | * | * | | | | * |
| MRF42 | Radix Research, Inc. | x | x | | | | | | |
| PBR | Barenbrug USA | | | | | x | * | x | |
| PST-5NF | Turf- Seed, Inc. | | | | | | | | * |
| RAD-MA216 | Lewis Seed Co. | | | | | * | * | * | |
| <p>*Not significantly different from the highest yielding variety in the test. Open boxes indicate the variety was not in the test. x in the box indicates the variety was in the test but yielded significantly less than the top yielding variety in the test. ¹ Establishment year ² Harvest year. ³ "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.</p> | | | | | | | | | |



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