Introduction

Cool-season grasses such as tall fescue and orchardgrass are the primary pasture grasses in Kentucky. Other species such as perennial ryegrass, festulolium, and prairie brome can be used in pasture systems. Little is known about the effect of variety on the grazing tolerance of these cool-season grass species.

The purpose of this report is to summarize current research on the grazing tolerance of varieties of tall fescue, orchardgrass, perennial ryegrass, and other species when they are subjected to continuous, heavy grazing pressure by cattle within the grazing season. The main focus will be on plant stand survival. New for 2006, Tables 20, 21, and 22 show the summaries of all tall fescue, orchardgrass and perennial ryegrass varieties tested in Kentucky during the last 10 years. Go to the UK Forage Extension Web site at <www.uky.edu/Ag/Forage> to obtain electronic versions of all forage variety testing reports from Kentucky and surrounding states and from a large number of other forage publications.

Description of the Tests

Grass variety tests for grazing tolerance were established in Lexington in the fall of 2002, 2003, 2004, and 2005 and in Princeton in the fall of 2002 and 2003. The soils at Lexington (Maury) and Princeton (Zanesville) are well-drained silt loams and are well suited to tall fescue, orchardgrass, and ryegrass production.

Plots were 5 by 15 feet in a randomized complete block design, with each variety replicated six times. In each test, 20 pounds of seed per acre (8 pounds/acre for timothy) were planted into a prepared seedbed using a disk drill. Grazing began in April and was continuous until late September. Plots were grazed down to below 4 inches quickly by feeder steers and kept at that height or below for the remainder of the grazing season. Supplemental hay or soybean hulls were fed during periods of slowest growth. Animals were removed from plots after all fall growth had been removed and when little regrowth was expected. Visual ratings of percent stand were made in the fall and spring after each grazing season. Grass plots were fertilized with 60 pounds of actual N per acre in the spring and 30 to 40 pounds of actual N in the fall. Other fertilizers (lime, P, and K) were applied as needed.

Results and Discussion

Weather data for Lexington and Princeton are presented in Tables 1 and 2. Data on percent stand are presented in Tables 3 through 15. Statistical analyses were performed on all entries (including experimentals) to determine if the apparent differences are truly due to variety. Varieties not significantly different from the highest numerical value in a column are marked with one asterisk (*). To determine if two varieties are truly different, compare the difference between the two varieties to the Least Significant Difference (LSD) at the bottom of the column. If

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**Table 1. Temperature and rainfall at Lexington, Kentucky, in 2003, 2004, 2005, and 2006.**

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<th></th>
<th>2004</th>
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<td><strong>°F</strong></td>
<td><strong>DEP</strong></td>
<td><strong>IN</strong></td>
<td><strong>DEP</strong></td>
<td><strong>°F</strong></td>
<td><strong>DEP</strong></td>
<td><strong>IN</strong></td>
</tr>
<tr>
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<td>-1.90</td>
<td>30</td>
<td>-1</td>
<td>3.14</td>
<td>+0.28</td>
</tr>
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<td>+0.38</td>
<td>36</td>
<td>+1</td>
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<td>-1.89</td>
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</table>

DEP is departure from the long-term average.

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<th></th>
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<th>2004</th>
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<td>°F DEP</td>
<td>IN DEP</td>
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<td>IN DEP</td>
<td>°F DEP</td>
<td>IN DEP</td>
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</tbody>
</table>

DEP is departure from the long-term average.

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

Kentucky 31 tall fescue with the endophyte (KY31+) is considered to be the most grazing-tolerant variety and was the grazing-tolerant check entry in all tall fescue trials. The central questions in grazing tolerance among tall fescues are: 1) Can endophyte-free varieties persist as well as KY31+ and 2) Will the new novel, or “friendly,” endophyte materials persist as well as other tolerant varieties? After three and four seasons, several fescue varieties were comparable to KY31+ in regards to grazing tolerance (Tables 3 and 4). The extreme drought of 2005 may have contributed to greater stand loss in lines without grazing tolerance.

Table 17 (fescue, perennial ryegrass, festulolium, and prairie brome), Table 18 (orchardgrass, Kentucky bluegrass, and prairie brome), and Table 19 (perennial ryegrass, festulolium, and prairie brome) summarize information about distributors and persistence across locations and years for all varieties in these tests. Varieties are listed in alphabetical order, with experimental varieties listed at the bottom. 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 indicates the variety was in the test but plant survival was significantly less than the most persistent variety. A single asterisk (*) means that the variety was not significantly different from the most persistent variety in that study. It is best to choose a variety that has performed well over several years.

Tables 20, 21, and 22 are summaries of stand persistence data from 1996-2006 of commercial tall fescue, orchardgrass, and perennial ryegrass varieties that have been entered in the Kentucky trials. In Table 20 the data is listed as a percentage of KY31+. In other words, in the tall fescue trials KY31+ is 100% - varieties with percentages over 100 persisted better than KY31+ and varieties with percentages less than 100 persisted less than KY31+. In Tables 21 and 22 the data is listed as a percentage of

Table 3. Percent stand and seedling vigor of tall fescue, Kentucky bluegrass (BG), and perennial ryegrass (PRG) varieties sown Sept. 19, 2002, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th></th>
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<td>Mar 30</td>
<td>Nov 8</td>
<td>Mar 30</td>
<td>Oct 31</td>
<td>Apr 4</td>
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<td></td>
<td></td>
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<td></td>
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<td>95</td>
<td>82</td>
<td>88</td>
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<td>93</td>
<td>87</td>
<td>88</td>
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<tr>
<td>Common(BG)</td>
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<td>90</td>
<td>74</td>
<td>93</td>
<td>50</td>
<td>68</td>
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<td>KY31+2</td>
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<td>95</td>
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<td>88</td>
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<tr>
<td>Select</td>
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<td>83</td>
<td>95</td>
<td>85</td>
<td>90</td>
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<tr>
<td>Kenblue(BG)</td>
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<td>Orygun</td>
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<td>2</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

*Not significantly different from the highest value in the column, based on the 0.05 LSD.  
1 Vigor rating based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.  
2 ** Indicates variety is endophyte infected; ** indicates variety is endophyte-free.
the mean of the commercial varieties entered in each specific trial. In other words, the mean for each trial is 100% - varieties with percentages over 100 persisted better than average and varieties with percentages less than 100 persisted less than average. Direct, statistical comparisons of varieties cannot be made using the summary Tables 20, 21, and 22, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better then average over many years have very stable performance, while others may have performed very well in wet years or on particular soil types. These details may influence variety choice and the information can be found in the yearly reports. See footnote in Tables 20, 21, and 22 to determine which yearly report to refer to.

Summary

These studies indicate that there are varieties of cool-season grasses that can tolerate overgrazing for multiple seasons and still maintain reasonable stands. Some varieties of endophyte-free as well as novel, or “friendly,” endophyte tall fescue have been able to maintain equivalent stands to endophyte-infected KY31. There is no “KY31+” equivalent in orchardgrass; that is, no variety has historically been proven to be tolerant of overgrazing. However, some varieties have exhibited good tolerance to grazing abuse even after three and four seasons.

This information should be used along with yield and other information (for example, relative maturity in spring) in selecting the best grass variety for each individual use. It is not recommended that tall fescue or orchardgrass be continuously overgrazed, as was done in these trials. While several varieties expressed tolerance to the level of grazing pressure used in these trials, overgrazing greatly reduces yield and therefore profitability of these varieties. This information should be an indication of those varieties that will better withstand the occasional overgrazing that sometimes becomes necessary in livestock operations.

Good management for maximum life from any grass would be to allow it to become completely established before grazing and to avoid overgrazing it during times of extreme stress, such as drought.

| Table 4. Percent stand of tall fescue, perennial ryegrass (PRG) and Kentucky bluegrass (BG) varieties sown Sept. 25, 2002, in a cattle grazing tolerance study at Princeton, Kentucky. |
|--------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Commercial Varieties—Available for Farm Use  |                  |                  |                  |                  |                  |
| Jesup MaxQ                                      | 90              | 79              | 83              | 77              | 73              | 82              | 83              | 86*             |
| KY31+1                                        | 90              | 78              | 78              | 75              | 72              | 81              | 80              | 82*             |
| Select                                         | 90              | 78              | 77              | 78              | 68              | 83              | 78              | 80*             |
| Festival                                       | 90              | 76              | 75              | 80              | 72              | 78              | 72              | 73              |
| Certified Kenblue (BG)                        | 90              | 23              | 25              | 25              | 33              | 33              | 33              | 36              |
| Calibra (PRG)                                  | 90              | 85              | 79              | 67              | 72              | 37              | 27              | 27              |
| Experimental Varieties                        |                  |                  |                  |                  |                  |                  |                  |                  |
| AGRFA 106                                      | 90              | 77              | 78              | 75              | 78              | 82              | 83              | 86*             |
| FA 2845                                        | 90              | 80              | 84              | 80              | 78              | 87              | 82              | 86*             |
| KY31-1                                        | 90              | 81              | 79              | 78              | 72              | 81              | 78              | 86*             |
| FA 2458                                        | 90              | 75              | 77              | 77              | 73              | 78              | 83              | 84*             |
| AGRFA 104                                      | 90              | 78              | 80              | 77              | 77              | 82              | 82              | 83*             |
| AGRFA 114                                      | 90              | 78              | 78              | 85              | 73              | 82              | 75              | 81*             |
| KYFA 9301                                     | 90              | 79              | 78              | 80              | 77              | 83              | 78              | 80*             |
| FA 2720                                        | 90              | 78              | 80              | 80              | 73              | 77              | 68              | 79*             |
| FA 2651                                        | 90              | 77              | 76              | 75              | 72              | 78              | 77              | 78*             |
| HM11                                          | 90              | 75              | 70              | 80              | 77              | 72              | 77              | 78*             |
| KYFA 9304                                     | 90              | 79              | 78              | 80              | 78              | 83              | 73              | 71              |
| FABE 9301A                                    | 90              | 78              | 78              | 75              | 72              | 77              | 72              | 68*             |
| AGRFA 111                                     | 90              | 70              | 73              | 67              | 68              | 62              | 65              | 67              |
| PBR                                           | 86              | 78              | 66              | 70              | 60              | 67              | 67              | 65              |
| KYP 9901 (BG)                                  | 86              | 12              | 26              | 28              | 33              | 40              | 33              | 32*             |
| EC411 (PRG)                                   | 90              | 83              | 84              | 77              | 70              | 53              | 38              | 29              |
| HB96 (BG)                                     | 6               | 13              | 5               | 10              | 18              | 22              | 16              | 26              |
| HB95 (BG)                                     | 5               | 10              | 13              | 15              | 18              | 17              | 13              | 13              |
| Mean                                          | 83              | 68              | 67              | 67              | 65              | 68              | 64              | 66              |
| CV, %                                          | 2               | 11              | 12              | 12              | 15              | 15              | 17              | 18              |
| LSD,0.05                                      | 2               | 9               | 9               | 9               | 11              | 11              | 12              | 13              |
| *Not significantly different from the highest numerical value in the column, based on the 0.05 LSD. 1 - + indicates variety is endophyte infected; – indicates variety is endophyte-free. |

Authors

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• G.D. Lacefield, Extension Professor, Forages, UK Department of Plant and Soil Sciences
• E. Vanzant, Associate Professor, Beef Cattle Nutrition, UK Department of Animal and Food Sciences
Table 5. Percent stand, seedling vigor, and grazing preference of tall fescue and festulolium (FL) varieties sown Sept. 19, 2003, in a cattle grazing tolerance study at Lexington, Kentucky.

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<th>Variety</th>
<th>Grazing Preference&lt;sup&gt;1&lt;/sup&gt; May 31, 2005</th>
<th>Seedling Vigor&lt;sup&gt;2&lt;/sup&gt; Oct 31, 2003</th>
<th>Percent Stand</th>
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<td>Nov 8</td>
<td>Oct 30</td>
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<td>Commercial Varieties—Available for Farm Use</td>
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<td>KY31&lt;sup&gt;3&lt;/sup&gt;</td>
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<tr>
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<td>AGFAA 120</td>
<td>19</td>
<td>4.4</td>
<td>98</td>
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<tr>
<td>AGFAA 2861</td>
<td>22</td>
<td>4.4</td>
<td>100</td>
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<tr>
<td>AGFAA 111</td>
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<td>4.6</td>
<td>97</td>
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<tr>
<td>KYFA 9819 (FL)</td>
<td>97</td>
<td>4.8</td>
<td>97</td>
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</table>

Mean: 41, CV: 31, LSD: 15

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

<sup>1</sup>Vigor rating based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

<sup>2</sup>“+” indicates variety is endophyte infected; “-” indicates variety is endophyte-free.


<table>
<thead>
<tr>
<th>Variety</th>
<th>Percent Stand</th>
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<tbody>
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<td>Commercial Varieties—Available for Farm Use</td>
<td></td>
</tr>
<tr>
<td>Jesup EF</td>
<td>95</td>
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<tr>
<td>Jesup MaxQ</td>
<td>93</td>
</tr>
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<td>Experimental Varieties</td>
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<td>93</td>
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<td>AGFAA 2847</td>
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<td>AGFAA 2845</td>
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<td>AGFAA 2849</td>
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Mean: 94, CV: 4, LSD: 4

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

Table 7. Percent stand and seedling vigor rating of tall fescue varieties sown Sept. 14, 2004, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; Nov 8, 2004</th>
<th>Percent Stand</th>
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</thead>
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<td></td>
<td>Apr 8</td>
<td>Oct 31</td>
</tr>
<tr>
<td>Commercial Varieties—Available for Farm Use</td>
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<td></td>
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<tr>
<td>Stockman</td>
<td>3.5</td>
<td>97</td>
</tr>
<tr>
<td>KY31+&lt;sup&gt;2&lt;/sup&gt;</td>
<td>2.3</td>
<td>87</td>
</tr>
<tr>
<td>Experimental Varieties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KYFA 9304</td>
<td>3.7</td>
<td>88</td>
</tr>
<tr>
<td>KYFA 9811</td>
<td>3.8</td>
<td>95</td>
</tr>
<tr>
<td>TF0203G</td>
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<td>97</td>
</tr>
<tr>
<td>PST-SNF</td>
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<td>90</td>
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</table>

Mean: 3.5, CV: 21.0, LSD: 0.9

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

<sup>1</sup>Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

<sup>2</sup>“+” indicates variety is endophyte infected; “-” indicates variety is endophyte free.
Table 8. Percent stand and seedling vigor of tall fescue and festulolium (FL) varieties sown Sept. 8, 2005, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor(^1) Nov 7, 2005</th>
<th>Apr 17, 2006</th>
<th>Oct 20, 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>KY31+*</td>
<td>3.5</td>
<td>96</td>
<td>96*</td>
</tr>
<tr>
<td>Jesup MaxQ</td>
<td>2.3</td>
<td>87</td>
<td>91*</td>
</tr>
<tr>
<td>Spring Green (FL)</td>
<td>3.7</td>
<td>96</td>
<td>91*</td>
</tr>
<tr>
<td>Barolex</td>
<td>2.8</td>
<td>86</td>
<td>90*</td>
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<tr>
<td>Select</td>
<td>1.8</td>
<td>83</td>
<td>90*</td>
</tr>
<tr>
<td>Duo (FL)</td>
<td>3.8</td>
<td>97</td>
<td>84</td>
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<tr>
<td>Barianne</td>
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<td>57</td>
<td>68</td>
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<table>
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<th>Experimental Varieties</th>
<th>Seedling Vigor(^1)</th>
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<th>Oct 20, 2006</th>
</tr>
</thead>
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<td>KYFA9301/AR584</td>
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<td>94</td>
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<tr>
<td>AGRFA148</td>
<td>2.8</td>
<td>94</td>
<td>95*</td>
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<tr>
<td>KY31</td>
<td>3.0</td>
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<td>95*</td>
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<tr>
<td>KYFA9301/AR542</td>
<td>3.5</td>
<td>94</td>
<td>95*</td>
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<tr>
<td>KYFA9821/AR542</td>
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<td>94</td>
<td>95*</td>
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<tr>
<td>KYFA9821/AR542</td>
<td>3.2</td>
<td>93</td>
<td>94*</td>
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<tr>
<td>KYFA9821EF</td>
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<td>93*</td>
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<td>KYFA9301EF</td>
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<td>84</td>
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<td>TF0101</td>
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<td>92*</td>
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<td>KYFA9304EF</td>
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<td>UMTF</td>
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<td>17</td>
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</table>

| Mean                  | 2.7                 | 85          | 87          |
| CV,%                  | 26.0                | 8           | 8           |
| LSD,0.05              | 0.8                 | 8           | 8           |

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

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

2 “+” indicates variety is endophyte infected; “-” indicates variety is endophyte-free.

Table 9. Percent stand and seedling vigor of orchardgrass and Kentucky bluegrass (BG) varieties sown Sept. 19, 2002, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor(^1) Oct 31, 2002</th>
<th>Percent Stand</th>
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<tr>
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<td>LSD,0.05</td>
<td>0.4</td>
</tr>
</tbody>
</table>

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

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


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<tr>
<th>Variety</th>
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<td>Apr 3</td>
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<table>
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<th>Commercial Varieties—Available for Farm Use</th>
<th>Varieties</th>
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<tr>
<td>CV,%</td>
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<tr>
<td>LSD,0.05</td>
<td>1.6</td>
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</tbody>
</table>

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Table 11. Percent stand and seedling vigor of orchardgrass varieties sown Sept. 17, 2003, in a cattle grazing tolerance study at Lexington, Kentucky.

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

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

Table 12. Percent stand and seedling vigor of orchardgrass and prairie brome (PB) [<i>Bromus wildenovii</i>] varieties sown Sept. 14, 2004, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
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<th>Variety</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; (Nov 8, 2004)</th>
<th>Percent Stand (2005)</th>
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<td>Haymate</td>
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<td>92</td>
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<td>Command</td>
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</tbody>
</table>
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

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

Table 13. Percent stand and seedling vigor of orchardgrass varieties sown Sept. 8, 2005, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; (Nov 7, 2005)</th>
<th>Percent Stand (Apr 17, 2006)</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Oct 20, 2006</td>
<td>Apr 17, 2006</td>
<td></td>
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<tr>
<td>Commercial</td>
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<tr>
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<td>2.5</td>
<td>93</td>
<td>97*</td>
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<td>94</td>
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<td>Varieties</td>
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<td>96*</td>
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</table>
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

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

Table 14. Percent stand and seedling vigor of orchardgrass varieties sown Sept. 8, 2005, in a cattle rotational grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; (Nov 7, 2005)</th>
<th>Percent Stand (Apr 17, 2006)</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<td>Apr 17, 2006</td>
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<td>94</td>
<td>98*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Persist</td>
<td>3.0</td>
<td>96</td>
<td>98*</td>
<td></td>
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<td>95</td>
<td>97*</td>
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<td>95*</td>
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<td></td>
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<tr>
<td>IS-OG28</td>
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<td>97*</td>
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</tbody>
</table>
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

1 Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
### Table 15. Percent stand and seedling vigor of perennial ryegrass, Italian ryegrass, and prairie brome (Bromus wildenovii) varieties sown Sept. 17, 2003, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Species</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; Oct 31, 2003</th>
<th>2004 Percent Stand</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mar 26</td>
<td>Nov 8</td>
<td>Mar 30</td>
<td>Oct 31</td>
</tr>
<tr>
<td><strong>Commercial Varieties—Available for Farm Use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remington</td>
<td>perennial ryegrass</td>
<td>3.5</td>
<td>100</td>
<td>90</td>
<td>87</td>
</tr>
<tr>
<td>AGRLP 103</td>
<td>perennial ryegrass</td>
<td>4.5</td>
<td>33</td>
<td>63</td>
<td>23</td>
</tr>
<tr>
<td>Linn</td>
<td>perennial ryegrass</td>
<td>4.3</td>
<td>99</td>
<td>90</td>
<td>34</td>
</tr>
<tr>
<td>AGRBW 101</td>
<td>prairie brome</td>
<td>4.8</td>
<td>58</td>
<td>67</td>
<td>37</td>
</tr>
<tr>
<td>Grasslands Matua</td>
<td>prairie brome</td>
<td>4.5</td>
<td>33</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td><strong>Experimental Varieties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARLP 108</td>
<td>perennial ryegrass</td>
<td>4.5</td>
<td>63</td>
<td>85</td>
<td>22</td>
</tr>
<tr>
<td>ARLP 116</td>
<td>perennial ryegrass</td>
<td>4.3</td>
<td>52</td>
<td>90</td>
<td>28</td>
</tr>
<tr>
<td>ARLP 113</td>
<td>perennial ryegrass</td>
<td>4.5</td>
<td>36</td>
<td>82</td>
<td>16</td>
</tr>
<tr>
<td>AGRBP 101</td>
<td>prairie brome</td>
<td>2.5</td>
<td>48</td>
<td>45</td>
<td>32</td>
</tr>
<tr>
<td>AGRLM 108</td>
<td>Italian ryegrass</td>
<td>5.0</td>
<td>37</td>
<td>75</td>
<td>11</td>
</tr>
<tr>
<td>AGRLM 109</td>
<td>Italian ryegrass</td>
<td>5.0</td>
<td>61</td>
<td>85</td>
<td>8</td>
</tr>
<tr>
<td>AGRBW 102</td>
<td>prairie brome</td>
<td>5.0</td>
<td>13</td>
<td>18</td>
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<tr>
<td>Mean</td>
<td></td>
<td>4.4</td>
<td>53</td>
<td>70</td>
<td>27</td>
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<tr>
<td>CV, %</td>
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<td>9.8</td>
<td>47</td>
<td>23</td>
<td>54</td>
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<td>LSD, 0.05</td>
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<td>0.5</td>
<td>29</td>
<td>19</td>
<td>17</td>
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</tbody>
</table>

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

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

### Table 16. Percent stand and seedling vigor of perennial ryegrass varieties sown Sept. 8, 2005, in a cattle grazing tolerance study at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seedling Vigor&lt;sup&gt;1&lt;/sup&gt; Nov 7, 2005</th>
<th>Percent Stand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Apr 17, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct 20, 2006</td>
</tr>
<tr>
<td><strong>Commercial Varieties—Available for Farm Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG34</td>
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<td>96</td>
</tr>
<tr>
<td>Tonga</td>
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<td>97</td>
</tr>
<tr>
<td>Quartet</td>
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<td>93</td>
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<td><strong>Experimental Varieties</strong></td>
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</tr>
<tr>
<td>SW ER3508FRI</td>
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<td>94</td>
</tr>
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<td>SW ER3579</td>
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<td>97</td>
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<td>SW ER3575</td>
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<td>95</td>
</tr>
<tr>
<td>Mean</td>
<td>3.5</td>
<td>95</td>
</tr>
<tr>
<td>CCV, %</td>
<td>14.3</td>
<td>2</td>
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<tr>
<td>LSD, 0.05</td>
<td>0.6</td>
<td>2</td>
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</table>

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

1 Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
# Table 17a. Summary of persistence of tall fescue, perennial ryegrass (PRG), festulolium (FL), and Kentucky bluegrass (BG) varieties under heavy grazing pressure across years at Lexington, Kentucky.

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>Lexington</th>
<th>2002&lt;sup&gt;2&lt;/sup&gt;</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Oct&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Mar&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Nov&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Mar&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Apr&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Commercial Varieties—Available for Farm Use</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Barianne</td>
<td>Barenbrug USA</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Barolex</td>
<td>Barenbrug USA</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Duo (FL)</td>
<td>Ampac Seed Company</td>
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<tr>
<td>Festival</td>
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<td>AgrResearch (USA)</td>
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<td>Jesup Max Q</td>
<td>Pennington Seed</td>
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<tr>
<td>KenBlue (BG)</td>
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<td>x</td>
<td></td>
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<td>x</td>
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<tr>
<td>KY 31&lt;sup&gt;1&lt;/sup&gt;</td>
<td>KY Agric. Exp. Station</td>
<td>*</td>
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</tr>
<tr>
<td>Orygun</td>
<td>FFR/Southern States</td>
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<tr>
<td>Spring Green (FL)</td>
<td>Turf-Seed, Inc.</td>
<td>*</td>
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<tr>
<td>Stockman</td>
<td>Seed Research of Oregon</td>
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<td>Experimental Varieties</td>
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<tr>
<td>AGRFA 111</td>
<td>AgrResearch (USA)</td>
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<td>AGRFA 117</td>
<td>AgrResearch (USA)</td>
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<td>AGRFA 121</td>
<td>AgrResearch (USA)</td>
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<td>AGRFA 144</td>
<td>Noble Foundation, Inc.</td>
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<tr>
<td>AGRFA 148</td>
<td>Noble Foundation, Inc.</td>
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<tr>
<td>AGRFA 2860</td>
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<td>HM 11</td>
<td>FFR/Southern States</td>
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<td>KY 31&lt;sup&gt;1&lt;/sup&gt;</td>
<td>KY Agric. Exp. Station</td>
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<tr>
<td>KYFA 0006</td>
<td>KY Agric. Exp. Station</td>
<td>*</td>
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<tr>
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<td>KY Agric. Exp. Station</td>
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<tr>
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<tr>
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<td>KY Agric. Exp. Station</td>
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<tr>
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<td>KY Agric. Exp. Station</td>
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<tr>
<td>KYFA 9811</td>
<td>KY Agric. Exp. Station</td>
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<tr>
<td>KYFA 9819 (FL)</td>
<td>KY Agric. Exp. Station</td>
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<tr>
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<tr>
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<td>KY Agric. Exp. Station</td>
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<td>KYTF 2</td>
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<tr>
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<td>Turf-Seed, Inc.</td>
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<td>Pickseed Canada</td>
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<td></td>
</tr>
</tbody>
</table>

---

<sup>1</sup> Establishment year.

<sup>2</sup> Date of rating of percent stand.

<sup>3</sup> Not significantly different from the most persistent variety in the test. An open block indicates the variety was in the test but plant survival was significantly less than the most persistent variety.

<sup>4</sup> * indicates variety is endophyte infected. * indicates variety is endophyte-free.

<sup>5</sup> For detailed stand ratings over years, see individual trial tables.
Table 17b. Summary of persistence of tall fescue, perennial ryegrass (PRG), festulolium (FL), and Kentucky bluegrass (BG) varieties under heavy grazing pressure across years at Princeton, Kentucky\(^1\).

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>Princeton</th>
<th>2002(^2)</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dec 03</td>
<td>Apr 04</td>
<td>Dec 04</td>
</tr>
<tr>
<td>Calibra (PRG)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Duo (FL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festival</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Jesup EF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jesup Max Q</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenblue (BG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common (BG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KY 31+</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Orygun</td>
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<td>Select</td>
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<tr>
<td>Commercial Varieties—Available for Farm Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibra (PRG)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Donley Seed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duo (FL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ampac Seed Company</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festival</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pickseed West, Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jesup EF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennington Seed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jesup Max Q</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky bluegrass (BG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenblue (BG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td></td>
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<td>KYFA 9301</td>
<td></td>
<td></td>
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<tr>
<td>KYFA 9304</td>
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<tr>
<td>PBR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\)Not significantly different from the most persistent variety in the test. An open block indicates the variety was not in the test, while an "x" in the block indicates the variety was in the test but plant survival was significantly less than the most persistent variety.

\(^2\)For detailed stand ratings over years, see individual trial tables.

\(^3\)Establishment year.

\(^4\)Date of rating of percent stand.

\(^5\)"+" indicates variety is endophyte infected, "-" indicates variety is endophyte-free.
Table 18. Summary of persistence of orchardgrass, Kentucky bluegrass (BG), and Prairie brome (PB) \textit{(Bromus wildenovii)} varieties under heavy grazing pressure across years and locations.

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct 03</td>
<td>Mar 04</td>
<td>Nov 05</td>
<td>Mar 05</td>
<td>Oct 06</td>
</tr>
<tr>
<td>Abertop Pennington Seed, Inc.</td>
<td>x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGRBW101 (PB) AG Research USA</td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athos DLF-Jenks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benchmark FFR/Southern States</td>
<td>x x * x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benchmark Plus FFR/Southern States</td>
<td>* * * x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command Seed Research of Oregon</td>
<td>x x * x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common (BG) Public</td>
<td>x * x * * x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crown Royale Plus Donley Seed Co.</td>
<td>x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grasslands Matua (PB) AG Research USA</td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallmark James VanLeuwen</td>
<td>x x x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haymate FFR/Southern States</td>
<td>* * * x x x x * * x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensiv Barenbrug USA</td>
<td>* * x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niva DLF-Jenks</td>
<td>x x * x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persist Smith Seed Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potomac certified Public</td>
<td>x * x * x x x x</td>
<td>* * * x x x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potomac uncertified Public</td>
<td>x * x * x x x x</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Prairie Turner Seed Company</td>
<td>x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Takena Smith Seed Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tekapo Ampac Seed Co.</td>
<td>x x x x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Experimental Varieties**

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
<tr>
<td></td>
<td>IS-OG28</td>
<td>CIS-OG28</td>
<td>CIS-OG29</td>
<td>Dg9911</td>
<td>Dg9930b</td>
</tr>
</tbody>
</table>

*Not significantly different from the most persistent variety. Open blocks indicate the variety was not in the test, while an “x” in the block indicate the variety was in the test but stand survival was significantly less than the most persistent variety.

1 Establishment year.
2 Date of visual rating of percent stand.
Table 19. Summary of persistence of perennial ryegrass, and prairie brome (PB) [Bromus wildenovii] varieties under heavy grazing pressure across years at Lexington.

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>20031</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mar04</td>
<td>Nov04</td>
</tr>
<tr>
<td>Commercial Varieties—Available for Farm Use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGRBW 101 (PB) AgResearch USA</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>AGRLP 103 AgResearch USA</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>BG34 Barenbrug USA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Grasslands Matua (PB) AgResearch USA</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Linn Public</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Quartet Ampac Seed Co.</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Remington Barenbrug USA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Tonga</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Experimental Varieties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGRBP 101 (PB) AgResearch USA</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>AGRBW 102 (PB) AgResearch USA</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>AGRLM 108 AgResearch USA</td>
<td>*</td>
<td>*</td>
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<tr>
<td>AGRLP 108 AgResearch USA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>AGRLP 113 AgResearch USA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>AGRP116 AgResearch USA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>SW ER3508FRI SW Seed Ltd.</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td>SW ER3575 SW Seed Ltd.</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>SW ER3579 SW Seed Ltd.</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

*Not significantly different from the most persistent variety. An open block indicates the variety was not in the test, while an “x” in the block indicates the variety was in the test but plant survival was significantly less than the most persistent variety.
1 Establishment year.
2 Date of visual rating of percent stand.

Table 20. Summary of Kentucky Tall Fescue Grazing Trials, 1996-2006 (stand persistence shown as a percent of the stand rating for KY 31+).

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>Lexington</th>
<th>Princeton</th>
<th>Mean3 (# trials)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3yr4</td>
<td>4yr</td>
<td>3yr</td>
</tr>
<tr>
<td>Bariane</td>
<td>Barenbrug USA</td>
<td>97</td>
<td>–</td>
</tr>
<tr>
<td>Barcel</td>
<td>Barenbrug USA</td>
<td>92</td>
<td>–</td>
</tr>
<tr>
<td>BAR9TMPO</td>
<td>Barenbrug USA</td>
<td>75</td>
<td>–</td>
</tr>
<tr>
<td>Bronson</td>
<td>Ampac Seed</td>
<td>39</td>
<td>–</td>
</tr>
<tr>
<td>Cattle Club</td>
<td>Green Seed</td>
<td>37</td>
<td>98</td>
</tr>
<tr>
<td>Carmine</td>
<td>DLF-Jenks</td>
<td>90</td>
<td>–</td>
</tr>
<tr>
<td>Dovey</td>
<td>Barenbrug USA</td>
<td>92</td>
<td>–</td>
</tr>
<tr>
<td>Festival</td>
<td>Pickseed West</td>
<td>100</td>
<td>101</td>
</tr>
<tr>
<td>Festorina</td>
<td>Advanta Seeds</td>
<td>98</td>
<td>86</td>
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<tr>
<td>Fuego</td>
<td>Advanta Seeds</td>
<td>27</td>
<td>–</td>
</tr>
<tr>
<td>Hoedown</td>
<td>DLF-Jenks</td>
<td>88</td>
<td>–</td>
</tr>
<tr>
<td>Jesup EF</td>
<td>Pennington Seed</td>
<td>63</td>
<td>91</td>
</tr>
<tr>
<td>Jesup MaxQ</td>
<td>Pennington Seed</td>
<td>114</td>
<td>79</td>
</tr>
<tr>
<td>Johnstone</td>
<td>Proseeds</td>
<td>65</td>
<td>107</td>
</tr>
<tr>
<td>KY31+</td>
<td>KY Agri. Exp Sta.</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>KY31-</td>
<td>KY Agri. Exp Sta.</td>
<td>94</td>
<td>90</td>
</tr>
<tr>
<td>Kenhy</td>
<td>Public</td>
<td>116</td>
<td>–</td>
</tr>
<tr>
<td>Kokanee</td>
<td>Ampac Seed</td>
<td>43</td>
<td>–</td>
</tr>
<tr>
<td>Martin II</td>
<td>International Seeds</td>
<td>59</td>
<td>–</td>
</tr>
<tr>
<td>Maximize</td>
<td>Turf Seed</td>
<td>99</td>
<td>–</td>
</tr>
<tr>
<td>Orygun</td>
<td>–</td>
<td>99</td>
<td>–</td>
</tr>
<tr>
<td>Resolute</td>
<td>Ampac Seed</td>
<td>23</td>
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</tr>
<tr>
<td>Select</td>
<td>FFR/Sou. St.</td>
<td>109</td>
<td>69</td>
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<td>Southern Cross</td>
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<tr>
<td>Stargrazer</td>
<td>FFR/Sou. St.</td>
<td>90</td>
<td>52</td>
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<td>TF33</td>
<td>Barenbrug USA</td>
<td>34</td>
<td>–</td>
</tr>
<tr>
<td>Vulcan</td>
<td>International Seeds</td>
<td>109</td>
<td>–</td>
</tr>
</tbody>
</table>

1 Year trial was established.
2 Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 1997 was grazed four years so the final report would be “2001 Cool-Season Grass Grazing Tolerance Report” archived in the Kentucky Forage Extension Web site at <www.uky.edu/Ag/Forage>.
3 Mean only presented when respective variety was included in two or more trials.
4 Number of years of data.
Table 22. Summary of Kentucky Perennial Ryegrass Grazing Trials, 2000-2006 (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

<table>
<thead>
<tr>
<th>Variety/Proprietor</th>
<th>2000¹,²</th>
<th>2001</th>
<th>2003</th>
<th>Mean³ (# trials)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3yr⁴</td>
<td>3yr⁴</td>
<td>3yr⁴</td>
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</tr>
<tr>
<td>AGRLP103</td>
<td>133</td>
<td>81</td>
<td>107(2)</td>
<td></td>
</tr>
<tr>
<td>Aries</td>
<td>139</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Citadel</td>
<td>112</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Granddaddy</td>
<td>121</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Lasso</td>
<td>130</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Linn</td>
<td>117</td>
<td>129</td>
<td>79</td>
<td>108(3)</td>
</tr>
<tr>
<td>Maverick</td>
<td>Ampac Seed</td>
<td>36</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Polly II</td>
<td>FFR/Southern States</td>
<td>37</td>
<td>68</td>
<td>53(2)</td>
</tr>
<tr>
<td>Quartet</td>
<td>Ampac Seed</td>
<td>77</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Remington</td>
<td>Barenbrug USA</td>
<td>140</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

¹ Year trial was established.
² Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2000 was grazed four years so the final report would be “2004 Cool-Season Grass Grazing Tolerance Report” archived in the Kentucky Forage Extension Web site at <www.uky.edu/Ag/Forage>.
³ Mean only presented when respective variety was included in two or more trials.
⁴ Number of years of data.