2009 Cool-Season Grass **Grazing Tolerance Report**

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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. Tables 15, 16, and 17 show the summaries of all tall fescue, orchardgrass and perennial ryegrass varieties tested in Kentucky during the past ten years. The UK Forage Extension website at www. uky.edu/Ag/Forage contains 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 2005, 2006, 2007 and 2008. The soil at Lexington (Maury) is a well-drained silt loam and is 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. Plots were seeded at the recommended seeding rate per acre and were sown 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 or heifers and kept at 2 to 4 inches 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 several weeks after the cattle were removed to check stand survival after the grazing season and in the spring prior to grazing to check on

winter survival and spring growth. Since trials were seeded in rows, persistence ratings were based on density within a row and not total ground cover. 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 according to the University of Kentucky soil test recommendations.

Table 7 shows orchardgrass varieties under rotational grazing. For this trial, the cattle were allowed to graze the grass quickly to about 4 inches and then the cattle were removed. The grass was then allowed to regrow for four to five weeks and then grazed to about 4 inches and the cattle removed. This procedure was repeated throughout the season.

Results and Discussion

Weather data for Lexington is presented in Table 1. Data on percent stand are presented in Tables 2 through 11. Statistical analyses were performed on all entries (including experimentals) to determine if the apparent differences

		20	06			20	07			20	08			20	09 ²	
	Tempe	erature	Rai	nfall	Tempe	erature	Rai	nfall	Tempe	erature	Rai	nfall	Tempe	erature	Rai	nfall
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	42	+11	4.77	+1.91	37	+6	2.93	+0.07	33	+2	4.60	+1.74	28	-3	2.45	-0.41
FEB	36	+1	2.13	-1.08	27	-8	1.83	-1.38	36	+1	5.37	+2.16	38	+3	2.86	-0.35
MAR	44	0	3.05	-1.35	52	+8	1.97	-2.43	45	+1	6.28	+1.88	48	+4	2.19	-2.21
APR	59	+4	3.52	-0.36	53	-2	3.87	-0.01	55	0	5.72	+1.84	55	0	4.48	+0.60
MAY	62	-2	2.99	-1.48	68	+4	1.45	-3.02	62	-2	4.88	+0.41	64	0	5.05	+0.58
JUN	70	-2	1.82	-1.84	74	+2	1.77	-1.89	74	+2	3.30	-0.36	74	+2	5.41	+1.75
JUL	76	0	5.13	+0.13	74	-2	6.90	+1.90	76	0	2.54	-2.46	71	-5	5.89	+0.89
AUG	76	+1	3.23	-0.70	80	+5	2.56	-1.37	75	0	1.08	-2.85	73	-2	5.38	+1.45
SEP	64	-4	9.27	+6.07	72	+4	1.15	-2.05	72	+4	1.21	-1.99	68	0	5.37	+2.17
OCT	54	-3	4.88	+2.31	63	+6	5.28	+2.71	57	0	1.35	-1.22	54	-3	4.83	+2.26
NOV	47	+2	1.78	-1.61	46	+1	2.86	-0.53	43	-2	2.28	-1.11	49	+4	0.94	-2.45
DEC	42	+6	2.45	-1.53	40	+4	5.29	+1.31	35	-1	4.76	+0.78				
Total			45.02	+0.47			37.86	-6.69			43.37	-1.18			44.85	+4.28

2009 data is for eleven months through Novembe





Table 2. Seedling vigo	r, grazing p	reference and stand persistence	ce of tall fescue and festulolium (FL) varieties sown September 8, 2005 in a cattle
grazing tolerance stud	ly at Lexing	ton, Kentucky (continuous gra	azing).
	a		

	Seedling Vigor ¹	Graz	ing Prefere	ence ²				Percen	t Stand			
	2005	2007	2008	2009	20	06	20	07	20	08	20	09
Variety	Nov 7	May 19	May 16	May 14	Apr 17	Oct 20	Mar 30	Oct 16	Apr 9	Oct 15	Apr 9	Oct 12
Commercial Varieties	—Available	for Farm U	lse			•		•				
KY31+ ³	3.5	3.0	3.2	1.2	96	96	98	97	96	94	96	96*
BarOptima PLUS E34	2.7	4.5	5.8	4.7	85	88	91	89	90	93	87	96*
Barolex	2.8	4.3	5.8	7.2	86	90	93	88	89	89	68	75
Barianne	1.3	5.2	6.0	7.2	57	68	73	74	79	83	66	72
Jesup MaxQ	2.3	2.3	2.3	3.0	87	91	95	91	93	92	46	65
Select	1.8	2.3	2.8	1.8	83	90	93	92	93	93	50	64
Duo (FL)	3.8	8.2	9.0	-	97	84	90	88	46	25	1	1
SpringGreen (FL)	3.7	8.7	9.0	-	96	91	94	93	88	66	1	0
Experimental Varietie	s	•				•		•				
AGRFA 144	2.8	2.2	2.5	2.2	89	92	95	93	93	93	76	84*
KYFA 9821/AR584	3.2	2.3	2.7	2.7	93	94	96	94	92	92	82	83*
KYFA 9821/AR542	3.2	2.7	3.0	2.8	94	95	97	96	96	94	75	83*
KYFA 9301/AR542	3.5	2.5	3.5	2.0	94	95	96	96	96	96	77	82*
TF 0101	2.5	2.0	3.5	3.7	92	92	93	92	89	88	74	82*
KYFA 9821EF	2.8	2.0	3.0	3.0	92	93	96	94	94	93	78	80*
KY31- ³	3.0	2.3	2.7	2.5	94	95	96	95	95	93	78	79
KYFA 9301/AR584	3.8	2.5	2.7	3.2	94	96	97	95	95	95	76	76
AGRFA 148	2.8	2.5	2.2	2.3	94	95	97	95	96	93	64	73
IS-FTF 25	2.5	2.0	2.3	1.2	84	92	94	92	91	92	69	72
TF 0203G	2.3	1.8	2.2	2.8	92	93	95	95	93	93	63	72
TF 9801	2.0	2.7	2.3	2.2	81	84	88	88	89	88	68	68
KYFA 9301 EF	2.7	1.8	4.3	4.7	88	93	94	94	92	92	66	62
IS-FTF 12	1.8	2.2	2.8	4.2	83	87	88	86	89	88	45	52
KYFA 9304 EF	2.7	2.5	4.5	4.2	87	89	91	89	88	84	41	43
UMTF	0.8	5.3	6.3	5.7	13	17	26	24	32	32	8	6
Mean	2.7	3.2	3.9	3.3	85.4	87.4	91.0	88.7	87.2	85.0	60.5	65.1
CV,%	26.0	25.0	22.7	48.2	8.2	8.2	6.7	6.0	7.2	7.5	23.5	22.2
LSD,0.05	0.8	0.9	1.0	2.1	8.0	8.2	6.9	6.1	7.2	7.3	15.2	16.6

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

² Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating: 2007-25 days, 2008-17 days, 2009-16 days. Stand thinning may have been greater for preferred varieties due to closer grazing. "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.

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

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 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 regard to grazing tolerance (Tables 2 and 3).

Table 12 (fescue and festulolium), Table 13 (orchardgrass), and Table 14 (perennial ryegrass and festulolium) 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); an "x" in the block indi-

cates 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 based on the 0.05 LSD.. It is best to choose a variety that has performed well over several years.

Tables 15, 16, and 17 are summaries of stand persistence data from 1996 to 2009 of commercial tall fescue, orchardgrass, and perennial ryegrass varieties that have been entered in the Kentucky trials. In Table 15 the data is listed as a percentage of KY31+. In other words, in the tall fescue trials KY31+ is 100 percent. Varieties with percentages over 100 persisted better than KY31+, and varieties with percentages less than 100 persisted less than KY31+. In Tables 16 and 17 the data is listed as a percentage of the mean of the commercial varieties entered in each specific trial. In other words, the mean for

	Seedling Vigor ¹	Graz	zing Prefere	nce ²			Р	ercent Star	d		
	2006	2007	2008	2009	2006	20	07	20	008	20	09
variety	Oct 25	May 19	May 16	May 14	Oct 25	Mar 30	Oct 15	Apr 9	Oct 17	Apr 8	Oct 12
Commercial Varieti	es—Availabl	e for Farm l	Jse								
KY31+ ³	3.8	5.3	4.3	1.3	100	100	100	100	100	100	100*
Jesup MaxQ	2.7	3.2	2.0	2.0	99	100	100	100	100	96	99*
Tuscany II	2.8	4.8	3.3	3.3	99	100	100	100	100	96	99*
Select	3.3	2.7	2.7	3.7	100	100	100	100	100	91	96*
Verdant	3.2	6.0	3.5	4.2	99	99	98	97	98	88	90*
Advance MaxQ	3.2	7.8	4.3	5.2	99	98	98	98	99	87	88
Barolex	3.3	6.5	6.8	4.7	100	100	100	100	100	98	69
Bariane	2.5	8.5	8.3	8.4	96	100	99	100	99	42	40
Experimental Varie	ties			•							
AGRFA 148	3.7	2.2	1.8	1.3	100	100	100	100	100	100	100*
KYFA 9301/AR542	4.2	4.3	2.8	1.7	100	100	100	100	100	100	100*
KYFA 9301/AR584	4.2	4.0	2.2	1.0	100	100	100	100	100	100	100*
KYFA 9821/AR584	4.0	2.8	2.7	1.5	100	100	100	100	100	100	100*
AGRFA 140	3.8	2.5	1.0	1.2	100	100	100	100	100	98	100*
AGRFA 144	3.7	1.3	1.3	1.0	100	100	85	100	100	98	100*
AGRFA 121	3.5	3.8	1.3	1.2	100	100	100	100	100	97	99*
KY31- ³	4.2	4.0	2.5	2.3	100	100	100	100	100	98	99*
TF 0202	3.2	6.2	5.3	4.5	99	100	100	100	100	98	99*
AGRFA 120	3.7	3.5	1.3	1.3	100	100	100	100	99	95	99*
AGRFA 155	3.3	4.7	2.0	1.2	99	98	99	99	99	98	99*
FA 2864	3.2	6.2	4.3	3.0	99	99	99	99	99	97	99*
KYFA 9301EF	3.7	4.0	3.3	2.0	99	100	100	100	100	98	99*
KYFA 9304	3.8	5.2	4.0	4.3	100	100	100	100	100	93	99*
K6560QII542	3.0	8.0	2.0	1.5	100	99	98	99	98	98	99*
AGRFA 156	3.2	4.7	2.0	2.2	100	100	99	100	100	89	98*
K5666VII	2.7	7.0	4.8	6.3	99	100	99	99	99	93	96*
FA2865	3.7	6.0	3.7	3.3	99	100	98	98	99	95	96*
FA2863	3.3	5.2	3.7	5.7	99	100	100	99	99	91	96*
KFa402V542	3.0	6.2	2.7	4.8	99	100	100	100	100	93	95*
K4508Q542	3.3	5.7	1.0	1.3	99	100	100	100	99	90	94*
FA 2862	2.7	4.0	2.8	3.3	99	100	100	100	99	94	94*
K4508Q	2.5	6.8	1.5	2.2	98	100	99	100	99	94	94*
Mean	3.4	4.9	3.1	2.9	99.3	99.7	99.1	99.6	99.5	93.6	94.6
CV,%	20.4	28.6	29.9	52.2	1.3	0.9	6.7	1.3	1.3	8.5	10.9
LSD.0.05	0.8	1.6	1.1	1.7	1.5	1.0	7.6	1.5	1.5	9.0	11.7

Table 2. Coodling winey, graning professore and stand powistores of tall feature revisities come Contamber 0 2006 in a cattle supering talenance

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

² Préference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating; 2007-25 days, 2008-17 days, 2009-16 days. Stand thinning may have been greater for preferred varieties due to closer grazing

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

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

each trial is 100 percent. 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 15, 16, and 17, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better than average over many years have very stable performance; 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 15, 16, and 17 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. Although 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.

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Table 4. Seedling vigor, grazing preference and stand persistence of tall fescue varieties sown September 5, 2007 in a cattle grazing tolerance study at Lexington, Kentucky (continuous grazing).

	Seedling Vigor ¹		zing rence ²		Pe	ercent Sta	nd	
	2007	2008	2009	2007	20	08	20	09
Variety	Nov 7	May 16	May 14	Nov 7	Apr 9	Oct 17	Apr 8	Oct 12
Commercial Variet	ties—Availa	ble for Fa	rm Use					
BarElite	3.3	6.0	3.3	97	97	98	98	99*
BarOptima PLUS E34	3.5	5.8	2.0	98	98	99	98	99*
KY31+ ³	3.2	6.0	1.0	96	96	97	98	98*
Nanryo	3.2	1.8	1.0	98	98	79	97	98*
Select	2.1	3.7	1.0	92	93	94	94	96*
Jesup MaxQ	1.5	5.7	1.0	94	92	92	93	94*
Barolex	2.3	6.8	3.2	91	89	91	91	90*
Bariane	1.7	6.5	7.2	84	89	87	86	89
Experimental Vari	eties	·						·
KRC 6581	4.2	5.0	1.5	99	100	100	100	100*
KYFA 9301/AR584	3.2	4.8	1.0	98	98	99	99	100*
AGRFA 140	2.8	2.3	1.0	95	97	97	99	99*
KYFA 9821	3.3	2.8	1.0	96	96	98	99	99*
KY31- ³	4.2	3.5	1.0	99	99	99	98	99*
KYFA 9821/AR584	3.7	3.7	1.0	99	99	99	99	99*
BARFA MT9301	3.0	5.8	2.2	95	96	97	98	98*
FA 2866	4.3	2.5	1.3	99	98	97	96	97*
AGRFA 144	1.7	7.2	1.0	98	97	96	96	96*
AGRGT 159	2.7	4.0	1.0	96	96	95	96	96*
AGRGT 160	2.7	4.3	1.2	97	97	96	96	95*
KYFA 9301	3.2	4.3	1.2	97	94	96	95	95*
KYFA 9611	3.3	7.8	4.2	95	95	96	92	94*
KRC 6582	3.0	7.2	4.8	97	96	95	95	92*
AGRFA 111	3.2	7.0	2.7	97	96	90	85	85
KRC 6580	1.0	8.3	1.3	59	47	65	68	70
AGRFA 156	1.8	7.8	1.5	91	78	75	62	62
Mean	2.9	5.2	1.9	94.3	93.1	93.1	93.0	93.4
CV,%	20.4	21.9	32.2	7.6	5.8	10.0	9.1	9.4
LSD,0.05	0.7	1.3	0.7	8.4	6.3	10.9	9.9	10.3
¹ Vigor score based	l on a scale o	f 1 to 5 wi	th 5 being	the most	vigorous s	seedling gi	rowth.	

Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating: 2008-17 days, 2009-16 days. Stand thinning may have been greater for preferred varieties due to closed grazing.
 "+" indicates variety is endophyte infected; "-" indicates variety is endophyte free.
 * Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

	Seedling Vigor ¹	Grazing Preference ²		Percent Stand	
	2008	2009	2008	20	09
Variety	Oct 13	May 14	Oct 13	Apr 8	Oct 12
Commercial Variet	ties—Availab	le for Farm Use	•		
HyMark	3.8	2.8	99	100	100*
KY31+ ³	2.5	6.8	98	100	100*
Select	3.3	2.2	98	100	100*
JesupMaxQ	2.3	8.8	98	87	89
Experimental Vari	eties				
KYFA9301/AR584	4.7	2.7	100	100	100*
KYFA9821/AR584	3.5	3.7	100	100	100*
TF0201	2.5	6.2	100	99	100*
KY31- ³	2.5	4.3	98	99	100*
AGRFA144	2.5	3.7	98	98	99*
NFTF1070	2.8	4.5	99	99	98*
GA-186	3.7	6.0	100	96	97*
GA-593R	3.3	4.2	100	96	97*
Mean	3.1	4.7	99.0	97.8	98.4
CV,%	24.9	41.0	2.4	5.2	4.2
LSD,0.05	0.9	2.2	2.7	5.9	4.7

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

 2
 Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed.

 Grazing time before rating-16 days.
 3

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

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

Table 6. Seedling vigor, grazing preference and stand persistence of orchardgrass varieties sown September 8, 2005 in a cattle grazing tolerance study at Lexington, Kentucky (continuous grazing).

	Seedling Vigor ¹		ing Prefere					Percen	t Stand			
	2005	2007	2008	2009	20	06	20	07		08	20	09
Variety	Nov 7	May 25	May 16	May 8	Apr 17	Oct 20	Mar 30	Oct 16	Apr 8	Oct 15	Apr 9	Oct 12
Commercial Var	ieties—Avai	lable for Fa	arm Use			•						
BenchmarkPlus	3.7	3.5	4.5	4.3	96	96	98	93	95	93	86	86*
Persist	2.8	3.5	4.2	4.0	95	95	99	96	98	97	87	78*
Athos	2.5	6.8	7.8	7.2	93	97	95	95	91	91	39	34
Tekapo	3.0	7.3	7.8	8.3	94	97	80	88	86	83	29	28
Experimental Va	rieties				·		·			·		
IS-OG28	3.5	4.7	6.0	5.5	96	95	98	97	97	95	88	88*
AGRDG101	3.3	8.8	8.2	6.0	75	81	33	29	18	17	4	1
Mean	3.1	5.8	6.4	5.6	91.4	93.3	83.8	92.9	80.8	79.4	55.5	52.3
CV,%	18.4	17.0	8.0	18.3	4.7	5.6	9.5	9.8	5.0	5.0	21.0	22.6
LSD,0.05	0.7	1.2	0.6	1.8	5.2	6.2	9.4	9.7	40.8	4.7	13.9	14.1
1 Vigor cooro bac		of 1 to E u	ith E haing	the most y	igorous co	dling grou	th					

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 ² Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating: 2007-25 days, 2008-17 days, 2009-16 days. Stand thinning may have been greater for preferred varieties due to closer grazing.
 * Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Seedling vigor, grazing preference and stand persistence of orchardgrass varieties sown September 22, 2005 in a cattle grazing tolerance study at Lexington, Kentucky (rotational grazing).

	Seedling Vigor ¹	Grazi	ing Prefer	ence ²				Percen	t Stand			
	2005	2007	20	09	20	06	20	07	20	08	20	09
Variety	Nov 7	May 25	May 8	Jun 12	Apr 17	Oct 20	Mar 30	Oct 16	Apr 9	Oct 15	Apr 9	Oct 12
Commercial Var	ieties—Ava	ailable for	Farm Use									
Athos	3.0	5.7	7.3	7.0	94	98	94	94	93	92	91	92*
BenchmarkPlus	3.3	2.8	3.7	4.2	95	97	96	88	93	93	95	89*
Persist	3.0	2.5	3.8	4.0	96	98	98	91	95	93	93	89*
Tekapo	3.0	5.3	5.5	5.0	92	95	86	87	87	87	87	86*
Experimental Va	rieties											
IS-OG28	2.7	3.0	5.7	5.3	94	97	98	93	93	94	95	94*
AGRDG101	3.3	8.5	7.8	6.2	67	85	28	38	25	23	22	24
Mean	3.1	4.6	5.6	5.3	89.6	94.7	83.2	81.8	80.9	80.1	80.4	79.0
CV,%	21.2	23.1	13.3	31.0	8.6	4.0	11.6	12.9	9.3	7.8	5.3	8.1
LSD,0.05	0.8	1.3	0.9	1.9	9.2	4.5	11.4	12.5	9.0	7.5	5.1	8.4

 ¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 ² Preference score based on a scale of 1 to 9 with 9 indicating all forage grazed. Grazing time before rating: 2007-2 days, First 2009-5 days, Second 2009-one half day.

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

	Grazing Preference ¹		Percen	t Stand	
	2009	20	08	20	09
Variety	May 14	Jul 17	Oct 17	Apr 8	Oct 12
Commercial Vari	eties—Availal	ole for Far	m Use		
Persist	3.0	99	98	97	97*
Benchmark Plus	2.8	98	96	96	95*
Ambrosia	8.2	97	96	93	94*
Seco	6.5	96	95	95	93*
Harvestar	8.3	98	97	94	92*
Tekapo	6.7	98	96	84	90
Experimental Va	rieties				·
OG0203G	4.8	97	97	94	96*
Mean	5.8	97.6	96.2	94.1	94.0
CV,%	20.3	3.2	2.8	7.5	6.4
LSD,0.05	1.4	3.8	3.4	8.4	7.2
 ¹ Preference scor was grazed. Gra * Not significantly column, based 	zing time befor y different from	re rating-10 the highe	5 days.	0	5

	Seedling Vigor ¹		zing rence ²			Pe	ercent Star	nd		
	2005	2007	2008	20	06	20	07	20	008	2009
Variety	Nov 7	May 25	May 16	Apr 17	Oct 20	Mar 30	Oct 16	Apr 9	Nov 20	Apr 9
Commercial Va	rieties—Ava	ailable for	Farm Use							
BG34	3.2	6.0	8.0	96	97	97	93	89	81*	0 ³
Quartet	4.7	9.0	8.8	93	94	63	58	28	29	0
Tonga	3.5	8.0	8.8	97	96	97	91	40	28	0
Experimental \	/arieties									
SWER3508FRI	2.8	8.0	8.8	94	97	98	94	81	72*	0
SWER3575	3.3	8.0	7.8	95	96	97	94	78	66*	0
SWER3579	3.7	8.0	8.5	97	96	97	93	76	58	0
Mean	3.5	7.8	8.5	95.4	95.9	91.7	87.3	65.1	55.6	
CV,%	14.3	0.0	7.5	2.1	2.5	6.4	4.4	22.0	28.4	
LSD,0.05	0.6	0.0	0.8	2.4	2.8	7.0	4.5	17.0	18.8	

² Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating: 2007-25 days, 2008-17 days.
 ³ Due to winterkill there was not enough ryegrass greenup to get a stand rating.
 * Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Seedling vigor, grazing preference and stand persistence of perennial ryegrass and festulolium (FL) varieties sown September 5, 2007 in a cattle grazing tolerance study at Lexington, Kentucky (continuous grazing).

	Seedling Vigor ¹		zing rence ²		P	ercent Star	nd	
	2007	2008	2009	2007	20	08	20	09
Variety	Nov 7	May 16	May 14	Nov 7	Apr 9	Oct 17	Apr 8	Oct 12
Commercial Var	ieties-Avai	able for Fa	arm Use					
BG34	2.3	9.0	7.8	98	98	96	88	88*
Power	2.3	8.3	8.0	98	98	95	86	87*
Granddaddy	2.3	8.8	6.3	98	96	92	80	80
Quartet	4.5	8.8	8.0	98	88	81	16	14
Experimental V	arieties							
KRC 6554	2.7	8.8	7.0	100	100	100	98	99*
KRC 6575	2.8	9.0	7.2	99	100	99	94	97*
KRC 6577	3.7	9.0	7.2	100	100	99	95	95*
KRC 6578	3.5	9.0	7.7	99	99	99	93	94*
KRC 6579	3.4	9.0	8.2	99	99	99	86	91*
GO-ABS	3.2	8.5	7.2	100	100	98	73	88*
GO-ABZ	3.7	8.5	8.0	99	100	100	74	84
KLp401	3.5	9.0	8.0	99	99	97	79	83
KRC 6576	2.3	9.0	7.7	99	98	96	85	82
KYF A0236 (FL)	4.5	7.3	8.5	99	100	98	82	81
GO-ABM	2.3	8.5	7.5	96	94	94	73	75
KLp507	4.4	9.0	8.5	100	100	99	69	63
KYFA 9819 (FL)	1.8	8.8	7.2	96	83	83	63	44
Mean	3.1	8.7	7.6	98.5	97.2	95.6	78.4	79.1
CV,%	19.7	5.7	14.4	1.6	4.4	4.7	17.7	14.7
LSD,0.05	0.7	0.6	1.3	1.8	4.9	5.1	16.0	13.4

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 ² Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before rating: 2008-17 days, 2009-16 days.
 * Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

	Seedling Vigor ¹	Grazing Preference ²		Percent Stand	
	2008	2009	2008	20	09
Variety	Oct 13	May 14	Oct 13	Apr 8	Oct 12
Commercial Variet	ies—Available f	or Farm Use			
Boost	3.8	7.3	99	100	100*
Granddaddy	3.2	7.5	82	100	100*
Linn	3.5	5.8	98	100	100*
SpringGreen (FL)	3.7	7.7	98	100	100*
Duo (FL)	5.0	6.0	99	97	95
Experimental Varie	eties				
AGRFA 174 (TF)	1.8	5.2	96	97	99*
Mean	3.5	6.6	95.3	99.1	99.1
CV,%	11.9	16.0	15.3	1.5	1.6
LSD,0.05	0.5	1.3	17.3	1.9	2.0

² Preference score based on a scale of 1 to 9 with 9 indicating all forage was grazed. Grazing time before * Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

	y of persistence of tall fescue				200					3.44		20		55 yee	u l			07	acity.		008
	Proprietor/	Apr	Oct	Mar			Oct	Apr	Oct	Mar	Oct			Apr	Oct	Apr		Apr	Oct		
Variety	KY Distributor		063	20		20			09	20		20		20			08		09		009
Commercial Variet	ies—Available for Farm Use																				
Advance MaxQ	Pennington Seed									x ⁵	*	х	х	х	х						
BarElite	Barenbrug USA															*	*	*	*		
Bariane	Barenbrug USA	х	х	х	х	х	х	х	х	*	*	*	*	х	х	х	х	х	х		
Barolex	Barenbrug USA	х	*	*	х	*	*	х	х	*	*	*	*	*	х	х	*	*	*		
BarOptima PLUS E34	Barenbrug USA	х	*	*	х	*	*	*	*							*	*	*	*		
Duo (FL)	Ampac Seed Company	*	х	х	х	х	х	х	х												
HyMark	Fraser Seeds																			*	*
Jesup Max Q	Pennington Seed	х	*	*	х	*	*	х	х	*	*	*	*	*	*	х	*	*	*	х	х
KY 31+ ⁴	KY Agric. Exp. Station	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Nanryo	Japanese Grassland Forage Seed/ USDA-ARS,ElReno, OK															*	x	*	*		
Select	FFR/Southern States	х	*	*	*	*	*	х	х	*	*	*	*	*	*	х	*	*	*	*	*
Spring Green (FL)	Rose Agri-Seed	*	*	*	*	х	х	х	х												
Tuscany II	Seed Research of Oregon									*	*	*	*	*	*						
Verdant	Amer. Grass Seed Prod.									*	*	х	х	х	*						
Experimental Vari																					
AGRFA 111	AgResearch (USA)															*	*	х	х		
AGRFA 120	AgResearch (USA)				L	L				*	*	*	*	*	*						<u> </u>
AGRFA 121	AgResearch (USA)									*	*	*	*	*	*					ļ	-
AGRFA 140	AgResearch (USA)									*	*	*	*	*	*	*	*	*	*		<u> </u>
AGRFA 144	Noble Foundation/ AgResearch (USA)	*	*	*	*	*	*	x	*	*	x	*	*	*	*	*	*	*	*	*	*
AGRFA 148	Noble Foundation/ AgResearch (USA)	*	*	*	*	*	*	x	x	*	*	*	*	*	*						
AGRFA 155	AgResearch (USA)									х	*	х	*	*	*						
AGRFA 156	AgResearch (USA)									*	*	*	*	х	*	х	х	х	х		
AGRGT 159	AgResearch (USA)															*	*	*	*		
AGRGT 160	AgResearch (USA)															*	*	*	*		
BARFAMT 9301	Barenbrug USA															*	*	*	*		
FA 2862	AgResearch (USA)									*	*	*	*	*	*						
FA 2863	AgResearch (USA)									*	*	x	*	*	*						\vdash
FA 2864	AgResearch (USA)									*	*	Х	*	*	*						<u> </u>
FA 2865 FA 2866	AgResearch (USA) AgResearch (USA)									*	*	X	*	*	*	*	*	*	*		-
GA-186	Univ. of Georgia																			*	*
GA-593R	Univ. of Georgia																			*	*
IS-FTF12	DLF International Seeds	x	x	х	х	*	х	x	x												<u> </u>
IS-FTF25	DLF International Seeds	x	*	*	*	*	*	x	x												
K4508Q	AgResearch (USA)									*	*	*	*	*	*						
K4508Q542	AgResearch (USA)									*	*	*	*	х	*						
K5666VII	AgResearch (USA)									*	*	х	*	*	*						
K6560QII542	AgResearch (USA)									*	*	х	х	*	*						
KFa402V542	AgResearch (USA)									*	*	*	*	*	*						
KY 31- ⁴	KY Agric. Exp. Station	*	*	*	*	*	*	х	х	*	*	*	*	*	*	*	*	*	*	*	*
KYFA 9301	KY Agric. Exp. Station	x	*	*	*	*	*	x	x	*	*	*	*	*	*	*	*	*	*		\vdash
KYFA 9301/AR542	KY Agric. Exp. Station	*	*	*	*	*	*	х	*	*	*	*	*	*	*						_
KYFA 9301/AR584	KY Agric. Exp. Station	*	*	*	*	*	*	x	x	*	*	*	*	*	*	*	*	*	*	*	*
KYFA 9304	KY Agric. Exp. Station	x	*	*	х	х	х	x	x	*	*	*	*	*	*						⊢
KYFA 9611	KY Agric. Exp. Station			~	~	~	بر									*	*	*	*		
KYFA 9821	KY Agric. Exp. Station	*	*	*	*	*	*	X	X *							*	*	*	*		+
KYFA 9821/AR542 KYFA 9821/AR584	KY Agric. Exp. Station KY Agric. Exp. Station	*	*	*	*	*	*	X *	*	*	*	*	*	*	*	*	*	*	*	*	*
		*		*	*	*	*			~		~		*	*					*	+
KRC 6580 KRC 6581	AgResearch (USA) AgResearch (USA)															X *	X *	X *	X *		+
KRC 6581 KRC 6582	AgResearch (USA)															*	*	*	*		├
NFTF 1070	Noble Foundation															-	-			*	*
TF0101	FFR/Southern States	*	*	*	*	*	х	x	*												+ ^
TF0201	Winfield Solutions LLC				-	-	*	×												*	*
	Allied Seed									*	*	*	*	*	*						<u> </u>
TE0202	L'ined Seed	*	*	*	*	*	*	x	x												+
TF0202 TE0203G	FFR/Southern States	*																			1
TF0202 TF0203G TF9801	FFR/Southern States FFR/Southern States	×	x	x	х	*	*	x	x												

² Establishment year.
 ³ Date of rating of percent stand.
 ⁴ "+" indicates variety is endophyte infected, "-" indicates variety is endophyte free.
 ⁵ X in the block indicates the variety was in the test but plant survival was significantly less than the most persistent variety. An open block indicates the variety was not in the test,
 * Not significantly different from the most persistent variety in the test.

					20	05 ¹					20	08 ²	
		Apr	Oct	Mar	Oct	Apr	Oct	Apr	Oct	Jul	Oct	Apr	Oct
Variety	Proprietor/KY Distributor	20	06 ³	20	07	20	08	20	09	20	08	20	09
Commercial Vari	eties—Available for Farm Use												
Ambrosia	Amer. Grass Seed Producers									*	*	*	*
Athos	DLF-Jenks	*	*	*	*	x4	х	х	х				
Benchmark Plus	FFR/Southern States	*	*	*	*	*	*	*	*	*	*	*	*
Harvestar	Columbia seeds									*	*	*	*
Persist	Smith Seed Services	*	*	*	*	*	*	*	*	*	*	*	*
Seco	FFR/Southern States									*	*	*	*
Tekapo	Ampac Seed Co.	*	*	х	*	х	х	х	х	*	*	х	x
Experimental Va	rieties	·											
AGRDG101	AG Research USA	x	x	х	х	x	x	x	x				
IS-OG28	DLF International	*	*	*	*	*	*	*	*				
OG0203G	FFR/Southern States									*	*	*	*

¹ Establishment year.
 ² This trial was replanted in April 2008 due to poor establishment in the fall of 2007.
 ³ Date of visual rating of percent stand.
 ⁴ X in the block indicate the variety was in the test but stand survival was significantly less than the most persistent variety. Open blocks indicate the variety was not in the test.
 * Not significantly different from the most persistent variety.

				20)5 ¹				20	07	
	Proprietor/KY	Apr	Oct	Mar	Oct	Apr	Nov	Apr	Oct	Apr	Oct
Variety	Distributor	06 ²	06	07	07	08	08	20	08	20	09
Commercial Va	rieties—Available for	Farm Us	e								
BG34	Barenbrug USA	*	*	*	*	*	*	*	*	*	*
Boost	Allied Seed										
Duo (FL)	Ampac Seed Co.										
Granddaddy	Smith Seed							*	x ³	x	x
Linn	Public										
Power	Ampac Seed Co.							*	*	*	*
Quartet	Ampac Seed Co.	х	x	x	х	x	x	x	x	x	x
SpringGreen (FL)	Rose Agri-Seed										
Tonga	Kings AgriSeeds	*	*	*	*	х	x				
Experimental V	/arieties										
GO-ABM	Grassland Oregon							x	x	x	x
GO-ABS	Grassland Oregon							*	*	x	*
GO-ABZ	Grassland Oregon							*	*	x	x
KRC 6554	AgResearch (USA)							*	*	*	*
KRC 6575	AgResearch (USA)							*	*	*	*
KRC-6576	AgResearch (USA)							*	*	*	x
KRC 6577	AgResearch (USA)							*	*	*	*
KRC 6578	AgResearch (USA)							*	*	*	*
KRC 6579	AgResearch (USA)							*	*	*	*
KLp401	AgResearch (USA)							*	*	x	x
KLp507	AgResearch (USA)							*	*	x	x
KYFA 0236 (FL)	KY Agric.Exp. Station							*	*	*	x
KYFA 9819 (FL)	KY Agric.Exp. Station							x	x	x	x
SW ER3508FRI	SW Seed Ltd.	х	*	*	*	*	*				
SW ER3575	SW Seed Ltd.	*	*	*	*	*	*				1
SW ER3579	SW Seed Ltd.	*	*	*	*	*	x				1

¹ Establishment year.
 ² Date of visual rating of percent stand.
 ³ X in the block indicates the variety was in the test but plant survival was significantly less than the most persistent variety. An open block indicates the variety was not in the test.
 * Not significantly different from the most persistent variety.

Machine	Table 15. Summary of 1996-2009		Tall Fesc	ue Grazi	ng Tolera	ance Tria	ls (stand	persiste	nce show	'n as a po	ercent of	the stan	id rating	Kentucky Tall Fescue Grazing Tolerance Trials (stand persistence shown as a percent of the stand rating of KY 31+)	
Max() Proprietor Barenbrag USA 1996 i.1 1997 i. 1997 i. 1997 i. 1997 i. 1996 i. 1997 i. 4yr <								exingtor						Princeton	
Max() Perimitation seed 3yrt 4yr 3yr 4yr			1996 ^{1,2}	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2002	Mean ³
MaxQ Remining USA 92 1	Variety	Proprietor	3yr ⁴	4yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	(#trials)
Barenbrug USA 92 1 1 89 73 40 73 Barenbrug USA 92 1 75 69 73 40 73 Barenbrug USA 92 1 75 73 69 73 40 73 Barenbrug USA 37 39 70 93 91 100 73 69 O Ampos Seed 37 39 70 93 90 73 99 74 99 73 99 70 80 70 90 <td< td=""><td>Advance MaxQ</td><td>Pennington Seed</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>88</td><td></td><td>I</td></td<>	Advance MaxQ	Pennington Seed											88		I
Barenbrig USA 92 1	Bariane	Barenbrug USA								89		75	40		68(3)
Barenbrug USA Image En TS TS En TS	Barcel	Barenbrug USA	92												I
matrix:5:34 Barenbrug USA Image 100 Barenbrug USA 100 <t< td=""><td>Barolex</td><td>Barenbrug USA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>78</td><td>69</td><td></td><td>74(2)</td></t<>	Barolex	Barenbrug USA										78	69		74(2)
PO Brenchurg USA 17 75 17	BarOptima PLUS E34	Barenbrug USA										100			I
Impac Seed 39 39 9 70 93 91 1 <th1< th=""> 1 1</th1<>	BAR9TMPO	Barenbrug USA				75									I
ub Green Seed 37 98 70 93 91 1 1 1 Rose Agri-Seed 10 10 10 101 10 101 10 10 Rose Agri-Seed 92 1 1 10 101 10 10 10 10 Rose Agri-Seed 88 57 10 101 10 10 10 10 Rose Agri-Seed 63 114 79 88 103 97 68 99 105 Rose Agri-Seed 63 107 92 103 97 68 99 105 Rose Agri-Epsta. 100 100 100 100 100 100 100 100 Rose Agri-Epsta. 94 91 93 98 100 99 105 105 Rose Agri-Epsta. 101 100 100 100 100 100 100 100 100 100 105	Bronson	Ampac Seed			39										ı
DF-Jenks DF-Jenks P	Cattle Club	Green Seed		37	98	70	93	91							78(2)
Rose Agri-Seed Image Barefly UA 92 Image 100 101 <td>Carmine</td> <td>DLF-Jenks</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>90</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>I</td>	Carmine	DLF-Jenks						90							I
Barenbrug USA 92 1 100 101 1 1 89 a Advanta Seeds 98 86 57 100 101 101 10 10 m DLF-Jends 98 86 57 10 109 10 10 m DLF-Jends 63 91 7 88 97 68 99 105 m Pennington Seed 63 114 79 93 99 100	Cowgirl	Rose Agri-Seed									66				1
Pickseed West Image 100 101 101 101 89 a Advanta Seeds 98 86 57 91 91 91 91 91 m DLF-Jenks 27 88 7 6 99 105 m DLF-Jenks 114 79 92 103 97 68 99 105 ax0 Pennington Seed 65 107 100 100 100 100 100 100 100 100 105 <	Dovey	Barenbrug USA	92												I
a Advanta Seeds 98 86 57 1 <th1< th=""> <th1< th=""> 1</th1<></th1<>	Festival	Pickseed West						100	101					89	97(3)
Advanta Seeds27278811111nDiF-Jenks000000000Roman Seed631147988103976899105axQPennington Seed63107100100100100100100Roseds651070100100100100100100100Roseds9303981039810399105105Roseds59116849999106100100100100Roseds59101849999105105105105Roseds595910101100100100100100100105Roseds595910101100100100100105105105Roseds595950595950595699105105Roseds505950505050505050505656Roseds5050505050505050505656Roseds5050505050505050505656Roseds50505050505050	Festorina	Advanta Seeds	86	86		57									80(3)
m DLF-Jenks i	Fuego	Advanta Seeds			27										I
C Pennington Seed 63 91 7 99 7 68 99 105 ax(0) Pennington Seed 65 114 79 92 103 97 68 99 105 ne KY Agni. Exp Sta. 100 105	Hoedown	DLF-Jenks					88								I
axQ Pennington Seed 114 79 103 97 68 99 105 ne Proseeds 05 107 100 <	Jesup EF	Pennington Seed		63	91					66					84(3)
ne Proseeds 65 107 100<	Jesup MaxQ	Pennington Seed			114	79			103	97		68	66	105	95(7)
KY Agri. Exp Sta. 100	Johnstone	Proseeds		65	107			92							88(3)
KY Agri. Exp Sta 94 90 102 84 98 103 98 100 82 99 105 Public Intemational Seeds 59 116 43 43 103 81 100 82 99 105 1 e Rose Agri-Seed 59 10 10 99 99 10 100 100 67 96 98 105 105 105 e Rose Agri-Seed 10 100 100 100 100 100 100 67 96 98 105 105 105 e Ampac Seed 25 86 89 100 100 100 100 100 100 102 105 105 f FR/Sou. St. 90 25 86 89 99 100 100 100 100 102 105 105 105 f Cross FFR/Sou. St. 90 20 66	KY31+	KY Agri. Exp Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100(12)
Public 116 110<	KY31-	KY Agri. Exp Sta.	94	90	102	84		98	103	98	100	82	66	105	96(11)
e Ampac Seed 59 43 43 6 9 9 6 10 <	Kenhy	Public			116										I
International Seeds 59 99 99 99 99 90 <td>Kokanee</td> <td>Ampac Seed</td> <td></td> <td></td> <td></td> <td></td> <td>43</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>I</td>	Kokanee	Ampac Seed					43								I
e Rose Agri-Seed 99	Martin II	International Seeds		59											I
Production Production <td>Maximize</td> <td>Rose Agri-Seed</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>66</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>I</td>	Maximize	Rose Agri-Seed						66							I
Presson Ampac Seed Image Seed	Orygun								99						I
t FFR/Sou. St. 109 69 107 101 100 100 67 96 98 renr Cross FFR/Sou. St. 90 25 15 86 89 107 101 100 100 67 96 98 10 razer FFR/Sou. St. 90 25 86 89 102 102 10 99 10 man Barenbrug USA 34 34 109 102 99 10 10 90 10 10 10 90 10<	Resolute	Ampac Seed						23							I
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Tuscany II Seed Res. of OR Image: Construction of the second of the	TF33	Barenbrug USA			34										I
Verdant Am.Grass Seed 109 109 - Vulcan International Seeds 109 109 - <t< td=""><td>Tuscany II</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>66</td><td></td><td>I</td></t<>	Tuscany II												66		I
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grazed 4 years so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at <www.uky.edu ag="" forage="">. ³ Mean only presented when respective variety was included in two or more trials. ⁴ Number of varies of data:</www.uky.edu>	varieties. To find actu	al persistence ratings, l	ook in the	yearly re	sport for	the final y	/ear of ea	ch specif	c trial. Fo	r exampl	e, the Ley	kington ti	rial plante	ed in in 199	⁷ was
	3 Mean only presed	mhal report would be " when respective varie	ZUUI COO	I-season	Lwo or m	azıng Iole ore trials	erance Ke	port" arcl	t ni bəvir	ле КҮ Foi	age web	site at <v< td=""><td>vww.uky.</td><td>edu/Ag/For</td><td>age>.</td></v<>	vww.uky.	edu/Ag/For	age>.
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Material Position 1996/13 1997 1996 1997							Lexington	igton					Prine	Princeton
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Univ consin Initial construction Initial constructi	Abertop	Pennington Seed							38					I
Interface Interface <t< td=""><td>Albert</td><td>Univ. of Wisconsin</td><td></td><td></td><td></td><td></td><td></td><td>115</td><td></td><td></td><td></td><td></td><td></td><td>I</td></t<>	Albert	Univ. of Wisconsin						115						I
air Demination Seed 90 i 93 i	Amba	DLF-Jenks						71						I
Interface Interface <thinterface< th=""> Interface <thinterface< th=""> Interface Interface</thinterface<></thinterface<>	Ambrosia	Pennington Seed		90										ı
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ark Plus. FrerSou. States i	Benchmark	FFR/Sou. States	100	105	115	94	118	123	114				133	113(8)
Public Public 131 102 102 103 113 103 1	Benchmark Plus	FFR/Sou. States							120			152	133	135(3)
ne Western Prod.Inc. 94 1 94 1	Boone	Public			131		102							117(2)
Ind Seed Research of OR Ind Seed Research of OR Ind R1 R2 R1 R1 R2 R1 R2 R1 R2 R2 <td>Cheyenne</td> <td>Western Prod. Inc.</td> <td></td> <td></td> <td>94</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>I</td>	Cheyenne	Western Prod. Inc.			94									I
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topale Donley Seed Image 100 124 100 124 123 123 toyale Plus Donley Seed 101 104 103 115 100 113 103 83 toyale Plus Donley Seed 101 104 103 115 100 113 103 83 e FFR/Sou States 93 71 102 96 53 115 100 118 83 th DLF-Jenks 101 102 96 53 115 100 118 83 th DLF-Jenks 101 102 102 102 115 100 118 83 th DLF-Jenks 115 100 118 115 117 117 117 te DLF-Jenks 115 116 116 113 117 118 83 117 te DLF-Jenks 116 116 116 116 117 <t< td=""><td>Crown</td><td>Donley Seed</td><td></td><td>86</td><td>96</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>91(2)</td></t<>	Crown	Donley Seed		86	96									91(2)
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image: matrix index	Haymate	FFR/Sou. States	93	71	102	96	53	115	100	118			83	92(9)
oth DLF-Jenks Inf5 Inf Inf5 Inf	Intensiv	Barenbrug USA								51				Ι
te Turf Seed T 77 76 138 83 DLF-Jenks Smith Seed 63 137 83 99 83 99 99 99 90 9	Mammoth	DLF-Jenks						115						I
DLF-Jenks DLF-Jenks DLF-Jenks BI 76 76 83 83 Smith Seed Advanta Seeds 63 127 116 119 138 8 c Public 98 117 116 119 117 8 c Funcer Seed 98 111 127 121 116 119 8 c Funcer Seed 98 111 116 116 8 8 c Scott Seed 98 166 92 104 55 74 118 50 100 s Smith Seed 81 94 9 9 9 9 9 9 9 9 100	Megabite	Turf Seed						77						I
Smith Seed 63	Niva	DLF-Jenks							76				83	80(2)
Advanta Seeds 63	Persist	Smith Seed										138		I
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Scott Seed 98 116 116 16 10 s Scott Seed 111 50 100 55 74 118 50 100 Smith Seed 93 166 92 104 55 74 118 50 100 Mestern Prod. Inc. 93 81 94 99 74 118 50 100 ial was established. ial was established. 94 99 74 118 50 100 is summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between est. 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 graz so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at <www.uky.edu ag="" forage="">. only presented when respective variety was included in two or more trials. 70 197 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 7</www.uky.edu>	Prairie	Turner Seed					127	121					83	110(3)
Progress Scott Seed 111 111 110 55 74 118 50 100 Tekeno Ampac Seed 93 166 92 104 55 74 118 50 100 Takeno Smith Seed 93 81 94 99 74 118 50 100 WP300 Western Prod. Inc. 94 99 99 118 50 100 Vent trial was established. 1 94 99 99 116 97 99 100 100 118 50 100 100 100 100 100 100 100 11 188 100	Profile	Scott Seed	98						116					107(2)
Tekapo Ampac Seed 93 166 92 104 55 74 118 50 100 Takena Smith Seed 81 94 99 14 18 50 100 WP300 Western Prod. Inc. 81 94 99 16 1 1 Vera trial was established. 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 graz years so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at 1997 was graz Yean only presented when respective variety was included in two or more trials. 3 Mean only presented when respective variety was included in two or more trials. 4 Number of years of data.	Progress	Scott Seed	111											Ι
Takena Smith Seed 81 94 99 90 90 90 90 90 90 90 90 90 90 90 90 10	Tekapo	Ampac Seed	93	166	92	104		55	74	118		50	100	94(9)
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 Year trial was established. 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 graz years so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at Wmmber of years of data. Mmmber of years of data. Stand thinning may have been greater for preferred varieties due to closer grazing. See individual trial tables for preference ratings. 	WP300	Western Prod. Inc.			94									I
 ³ Mean only presented when respective variety was included in two or more trials. ⁴ Number of years of data. ⁵ Stand thinning may have been greater for preferred variety was included in two or more trials. 	¹ Year trial was esta ² Use this summary varieties To find a	blished. table as a guide in mal ctual persistence ratinc	king variety solook in th	decisions, de vearly re	but refer to	specific ye final vear	arly report of each sne	s to detern	nine statisti or example	ical differer	nces in star	nd persister Janted in 1	ice betwee 997 was dr	n azed 4
 Mean only presented when respective variety was included in two or more trais. A number of parts of data. Estand thinning may have been greater for preferred varieties due to closer grazing. See individual trial tables for preference ratings. 	years so the final r	eport would be "2001 (Cool-Seasor	n Grass Gra	zing Tolera	nce Report	" archived i	n the KY Fo	orage webs	ite at <ww< td=""><td>w.uky.edu/</td><td>/Ag/Forage</td><td></td><td></td></ww<>	w.uky.edu/	/Ag/Forage		
	⁴ Number of years c	if data.	וווכרא אמס וו											
	Stand thinning may		preferred va	arieties due	e to closer c	Irazing. See	individual	trial tables	for prefere	ence rating	s.			

		2000 ^{1,2}	2001	2003	2005	Mean ³
Variety	Proprietor	4yr ⁴	3yr	4yr	3-yr	(#trials)
AGRLP103	AgResearch USA	133		86		110(2)
Aries	Ampac Seed		139			-
BG 34	Barenbrug USA				176 ⁵	-
Citadel	Donley Seed	112				-
Granddaddy	Smith Seed Services		121			-
Lasso	DLF-Jenks		130			-
Linn	Public	117	129	63		103(3)
Maverick	Ampac Seed		36			-
Polly II	FFR/Southern States	37	68			53(2)
Quartet	Ampac Seed		77		63	70(2)
Remington	Barenbrug USA			1515		-
Tonga	Kings AgriSeeds				61	-

Year trial was established.

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 4 years so the final report would be "2004 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at www.uky.edu/do/forage

2004 Cool-Season Grass Grazing Tolerance Report archived in the KT Polage website 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.
 5 Grazing tolerance values for these entries may have been elevated due to the low survival of the other commercial varieties in the trials for these years.



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