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2014 Timothy and Kentucky Bluegrass Report

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Introduction

Timothy (*Phleum pratense*) is the fourth most widely sown cool-season perennial grass used in Kentucky for forage—after tall fescue, orchardgrass, and Kentucky bluegrass. It is a late-maturing bunchgrass that is primarily harvested as hay, particularly for horses. It also can be used for grazing or wildlife habitat.

Management is similar to that for other cool-season grasses. Harvesting at the mid- to late-boot stage is needed to assure good yields and high forage quality. The quality of timothy declines more rapidly after heading than other cool-season grasses. In Kentucky, timothy behaves like a short-lived perennial, with stands usually lasting two to three years.

Kentucky bluegrass (*Poa pratensis*) is a high-quality, highly palatable, long-lived pasture plant with limited use for hay. It tolerates close, frequent grazing better than most grasses. It has low yields and low summer production and becomes dormant and brown during hot, dry summers. Kentucky bluegrass is slow to establish.

This report provides maturity and yield data on timothy and Kentucky bluegrass varieties included in yield trials in Kentucky. Tables 10 and 11 show summaries of all timothy and Kentucky bluegrass varieties tested in Kentucky for the last 15 years. The UK Forage Extension Web site, at www.uky.edu/Ag/Forage, contains forage variety testing reports from Kentucky and surrounding states and a large number of other forage publications.

Considerations in Selection

Local adaptation and seasonal yield. Choose a variety that is adapted to Kentucky, as indicated by good performance across locations in replicated yield trials, such as those presented in this publication. Also, look for varieties that are productive in the desired season of use, whether for hay or grazing. Later-maturing varieties are desirable when timothy is grown in pure stands for hay; early maturing varieties provide a better fit when timothy is grown in mixtures with legumes.

Seed quality. Buy premium-quality seed that is high in germination and purity and free from weed seed. Buy certified seed or proprietary varieties of seed of an improved variety. An improved variety is one that has performed well in independent trials such as those reported in this publication.

Description of the Test

Data from six studies are reported. Timothy varieties and Kentucky bluegrass varieties were sown at Lexington in 2011, 2012, and 2013 as part of the University of Kentucky Forage Variety Testing Program. The soil at Lexington (Maury) is a well-drained silt loam and is well-suited for timothy and bluegrass production. Seedings were made at the rate of 8 pounds per acre for timothy and 15 pounds per acre for Kentucky bluegrass into a prepared seedbed with a disk drill. Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 feet by 15 feet. Nitrogen was applied at 60 pounds per acre of actual nitrogen in March, May, and August. The test was harvested using a sickle-type forage plot harvester leaving a 3-inch stubble to simulate a hay management system. The first cutting was harvested when spring growth of most varieties had reached the mid- to late-boot stage. Subsequent harvests were taken when forage growth was adequate for harvest. Fresh weight samples were taken at each harvest to calculate dry-matter production. Establishment, fertility (P, K, and lime based on regular soil tests), weed control, and harvest were managed according to University of Kentucky Cooperative Extension Service recommendations.

Table 1. Temperature and rainfall at Lexington, Kentucky in 2011, 2012, 2013, and 2014.

	2011				2012				2013				2014[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	29	-2	2.10	-0.76	38	+7	4.80	+1.94	38	+7	4.50	+1.64	25	-6	2.28	-.58
FEB	39	+4	6.34	+3.13	40	+5	5.39	+2.18	36	+1	1.78	-1.43	30	-5	5.47	+2.26
MAR	47	+3	4.76	+0.36	56	+12	5.64	+1.24	39	-5	5.47	+1.07	39	-5	3.08	-1.32
APR	58	+3	12.36	+8.48	56	+1	3.26	-0.62	55	0	4.46	+0.58	58	+3	5.27	-1.89
MAY	64	0	6.72	+2.25	69	+5	4.02	-0.45	65	+1	5.23	+.076	66	+2	5.72	+1.25
JUN	74	+2	2.61	-1.05	73	+1	2.42	-1.24	72	0	7.32	+3.66	75	+3	2.93	-0.73
JUL	80	+4	6.29	1.29	81	+5	2.50	-2.50	72	-4	9.33	+4.33	74	-2	3.18	-1.82
AUG	75	0	2.89	-1.04	75	0	1.68	-2.25	72	-3	3.68	-0.25	76	+1	6.53	+2.60
SEP	66	-2	5.52	+2.32	67	-1	6.40	+3.20	67	-1	2.21	-0.99	69	+1	3.63	+.43
OCT	55	-2	4.10	+1.53	55	-2	2.00	-0.57	55	-2	7.02	+4.45	57	0	5.55	+2.98
NOV	50	+5	9.53	+6.14	43	-2	1.81	-0.65	41	-4	3.06	-0.33				
DEC	41	+5	5.58	+1.60	42	+6	9.57	+4.94	36	0	4.19	+0.21				
Total			68.80	+24.25			49.49	+4.94			58.25	+13.70			44.14	+6.96

[1] DEP is departure from the long-term average.
[2] 2014 data is for the ten months through October.

Results and Discussion

Weather data for Lexington are presented in Table 1.

Maturity ratings (see Table 2 for maturity scale) and dry-matter yields are reported in tables 3 through 8. Yields are given by harvest date for 2014 and as total annual production. Stated yields are adjusted for percent weeds; therefore, value listed is for crop only. Varieties are listed by descending total production. Experimental varieties, listed separately at the bottom of the tables, are not available commercially.

Statistical analyses were performed on all data to determine if the apparent differences are truly due to varietal differences. Varieties not significantly different from the top variety in the column are marked with one asterisk (*). To determine if two varieties are significantly different, compare the difference between them to the Least Significant Difference (LSD) at the bottom of that column. If the difference is equal to or greater than the LSD, the varieties are significantly different when grown under those conditions. The Coefficient of Variation (CV) is a measure of the variability of the data and is included for each column of means. Low variability is desirable, and increased variability within a study results in higher CVs and larger LSDs.

Tables 9 and 10 summarize information about distributors and yield performance for Kentucky bluegrass and timothy varieties included in tests in this report. Varieties are listed in alphabetical order, with the experimental varieties at the bottom. Remember that experimental varieties are not available for farm use. In tables 9 and 10, an open block indicates the variety was not in that particular test (labeled at the top of the column); an "x" in the block means the variety was in the test but yielded significantly less than the top-yielding variety. A single asterisk (*) means the variety was not significantly different from the highest-yielding variety, based on the 0.05 LSD. It is best to choose a variety that has performed well over several years and locations.

Tables 11 and 12 are summaries of yield data of commercial varieties for Kentucky bluegrass (1996-2014) and timothy (2000-2014) that have been entered in the Kentucky trials. The data are listed as a percentage of the mean of the commercial varieties entered in each specific trial. In other words, the mean for each trial is 100 percent—varieties with percentages over 100 yielded higher than average and varieties with percentages less than 100 yielded lower than average. Direct, statistical comparisons of varieties cannot be made using the summary tables 11 and 12, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better than average over many years and at several locations have stable

Table 2. Descriptive scheme for the stages of development in perennial forage grasses.

Code	Description	Remarks
	Leaf development	
11	First leaf unfolded	Applicable to regrowth of established (plants) and to primary growth of seedlings.
12	2 leaves unfolded	Further subdivision by means of leaf development index (see text).
13	3 leaves unfolded	
•	• • • • •	
19	9 or more leaves unfolded	
	Sheath elongation	
20	No elongated sheath	Denotes first phase of new spring growth after overwintering. This character is used instead of tillering, which is difficult to record in established stands.
21	1 elongated sheath	
22	2 elongated sheaths	
23	3 elongated sheaths	
•	• • • • •	
29	9 or more elongated sheaths	
	Tillering *(alternative to sheath elongation)*	
21	Main shoot only	Applicable to primary growth of seedlings or to single tiller transplants.
22	Main shoot and 1 tiller	
23	Main shoot and 2 tillers	
24	Main shoot and 3 tillers	
•	• • • • •	
29	Main shoot and 9 or more tillers	
	Stem elongation	
31	First node palpable	More precisely an accumulation of nodes. Fertile and sterile tillers distinguishable.
32	Second node palpable	
33	Third node palpable	
34	Fourth node palpable	
35	Fifth node palpable	
37	Flag leaf just visible	
39	Flag leaf ligule/collar just visible	
	Booting	
45	Boot swollen	
	Inflorescence emergence	
50	Upper 1 to 2 cm of inflorescence visible	
52	¼ of inflorescence emerged	
54	½ of inflorescence emerged	
56	¾ of inflorescence emerged	
58	Base of inflorescence just visible	
	Anthesis	
60	Preanthesis	Inflorescence-bearing internode is visible. No anthers are visible.
62	Beginning of anthesis	First anthers appear.
64	Maximum anthesis	Maximum pollen shedding.
66	End of anthesis	No more pollen shedding.
	Seed ripening	
75	Endosperm milky	Inflorescence green.
85	Endosperm soft doughy	No seeds loosening when inflorescenceis hit on palm.
87	Endosperm hard doughy	Inflorescence losing chlorophyll; a few seeds loosening when inflorescence hit on palm.
91	Endosperm hard	Inflorescence-bearing internode losing chlorophyll; seeds loosening in quantity when inflorescence hit on palm.
93	Endosperm hard and dry	Final stage of seed development; most seeds shed.

Source: Smith, J. Allan, and Virgil W. Hayes. 1981. p. 416-418. 14th International Grasslands Conference Proc. 1981. June 14-24, 1981, Lexington, Kentucky.

performance; others may have performed 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 footnotes in tables 11 and 12 to determine to which yearly report to refer.

Summary

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

The following is a list of University of Kentucky Cooperative Extension publications related to timothy and Kentucky bluegrass management. They are available from your county Extension office and are listed in the "Publications" section of the UK Forage Web site, www.uky.edu/Ag/Forage.

- Lime and Fertilizer Recommendations (AGR-1)
- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Establishing Forage Crops (AGR-64)
- Timothy (AGR-84)
- Kentucky Bluegrass as a Forage Crop (AGR-134)
- Forage Identification and Use Guide (AGR-175)
- Establishing Horse Pastures (ID-147)

Authors

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Table 3. Dry matter yields, seedling vigor, maturity, and stand persistence of Kentucky bluegrass varieties sown September 14, 2011, at Lexington, Kentucky.

		Maturity[2]				Percent Stand							Yield *(tons/acre)*						
	Seedling Vigor[1]	2012	2013	2014		2011	2012		2013		2014		2012	2013	2014				3-year
Variety	Oct 11, 2011	Apr 25	May 9	May 6	Jun 16	Oct 11	Mar 21	Oct 23	Mar 22	Oct 21	Apr 11	Oct 24	Total	Total	May 6	Jun 16	Oct 24	Total	Total
Commercial Varieties—Available for Farm Use																			
Ginger	4.3	61.3	58.5	58.0	29.0	100	100	100	100	98	98	87	0.88	3.91	1.04	0.39	0.76	2.19	7.38*
Barderby	5.0	58.5	56.5	57.5	29.0	100	100	100	100	100	100	100	1.03	3.16	0.88	0.41	1.24	2.53	6.72*
Kenblue	3.3	62.0	58.0	57.5	29.0	100	100	100	100	100	100	100	0.85	3.23	0.88	0.38	1.18	2.44	6.52*
Experimental Varieties																			
RAD-1450	3.8	29.0	50.3	29.0	60.0	100	100	100	100	100	100	98	0.81	2.57	0.49	0.40	1.04	1.93	5.32
RAD-KCC4L	4.8	58.5	57.0	52.5	29.0	100	100	100	100	100	100	100	0.33	2.76	0.58	0.35	0.91	1.85	4.94
Mean	4.2	53.5	56.4	50.9	35.2	100	100	100	100	100	100	97	0.77	3.13	0.77	0.39	1.03	2.19	6.11
CV,%	12.3	1.2	4.9	1.5	0.0	0	0	0	0	1	1	8	17.96	15.16	12.57	26.18	20.47	11.91	11.22
LSD,0.05	0.8	1.0	4.4	1.2	0.0	0	0	0	0	2	2	12	0.22	0.73	0.15	0.16	0.32	0.40	1.10

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 4. Dry matter yields, seedling vigor, maturity, and stand persistence of Kentucky bluegrass varieties sown September 12, 2012, at Lexington, Kentucky.

		Maturity[2]		Percent Stand					Yield *(tons/acre)*					
	Seedling Vigor[1]	2013	2014	2012	2013		2014		2013	2014				2-year
Variety	Oct 16, 2012	May 21	May 6	Oct 16	Mar 20	Oct 22	Apr 9	Oct 27	Total	May 6	Jun 16	Oct 27	Total	Total
Commercial Varieties—Available for Farm Use														
Kenblue	2.9	62.0	58.0	98	100	100	100	100	3.27	1.22	0.55	1.25	3.02	6.29*
Ginger	3.5	62.0	58.0	98	98	98	99	100	3.11	1.35	0.55	0.94	2.85	5.95*
BigBlue	3.0	59.5	53.0	100	100	100	100	100	2.31	0.86	0.48	1.16	2.50	4.81
Barderby	3.6	61.5	57.0	100	100	100	100	100	2.82	0.81	0.39	0.65	1.85	4.67
Park	5.0	60.5	53.0	78	100	100	100	100	2.56	0.93	0.46	0.59	1.97	4.53
Experimental Varieties														
RAD-2018	1.3	60.5	58.0	97	97	99	100	100	3.00	1.59	0.59	0.85	3.03	6.03*
RAD-1448	3.4	54.5	29.0	100	100	100	100	100	2.98	1.07	0.68	0.90	2.65	5.63*
RAD-1458	3.5	45.0	29.0	100	100	100	100	100	2.97	0.89	0.57	0.92	2.39	5.36
RAD-1445	2.6	47.8	54.0	97	98	99	100	99	2.21	0.71	0.48	0.55	1.74	3.94
Mean	3.2	57.0	50.0	96	99	99	100	100	2.80	1.05	0.53	0.87	2.44	5.25
CV,%	26.0	3.8	1.7	16	2	2	1	0	8.08	14.24	27.02	27.14	16.19	10.05
LSD,0.05	1.2	3.2	1.3	22	3	3	1	1	0.33	0.22	0.21	0.34	0.58	0.77

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 5. Dry matter yields, seedling vigor, maturity, and stand persistence of Kentucky bluegrass varieties sown September 5, 2013, at Lexington, Kentucky.

Variety	Seedling Vigor[1] Oct 14, 2013	Maturity[2] 2014 May 13	Percent Stand 2013 Oct 14	Percent Stand 2014 Apr 2	Percent Stand 2014 Oct 27	Yield *(tons/acre)* 2014 May 13	Yield 2014 Jun 16	Yield 2014 Oct 29	Yield 2014 Total
Commercial Varieties—Available for Farm Use									
Barderby	4.4	60.0	98	96	99	0.52	0.34	0.94	1.79*
Ginger	4.3	58.0	96	92	96	0.41	0.31	0.64	1.36
Park	5.0	56.0	100	100	100	0.47	0.26	0.59	1.33
Kenblue	2.8	59.0	55	75	96	0.29	0.24	0.65	1.18
Experimental Varieties									
RAD-1446	3.0	51.5	80	94	98	0.55	0.51	0.91	1.97*
RAD-1443	3.9	53.0	94	94	98	0.51	0.43	0.74	1.68*
RAD-2040	3.3	59.0	92	91	97	0.39	0.31	0.63	1.33
RAD-2371	3.0	60.5	91	92	96	0.44	0.29	0.53	1.26
Mean	3.7	57.1	88.0	92	97	0.45	0.34	0.70	1.49
CV,%	23.3	2.3	16.0	9	3	18.06	30.32	21.20	13.62
LSD,0.05	1.2	2.0	20.0	12	5	0.12	0.15	0.22	0.30

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 6. Dry matter yields, seedling vigor, maturity, and stand persistence of timothy varieties sown September 14, 2011, at Lexington, Kentucky.

Variety	Seedling Vigor[1] Oct 11, 2011	Maturity[2] 2012 May 4	Maturity 2013 May 24	Maturity 2014 May 13	Maturity 2014 Jun 17	Percent Stand 2011 Oct 11	Percent Stand 2012 Mar 21	Percent Stand 2012 Oct 23	Percent Stand 2013 Mar 22	Percent Stand 2013 Oct 22	Percent Stand 2014 Apr 11	Percent Stand 2014 Oct 24	Yield *(tons/acre)* 2012 Total	Yield 2013 Total	Yield 2014 May 13	Yield 2014 Jun 17	Yield 2014 Oct 24	Yield 2014 Total	3-year Total
Commercial Varieties—Available for Farm Use																			
Clair	2.0	53.5	56.0	53.5	29.0	100	100	100	100	100	100	100	2.85	6.11	1.86	0.38	1.14	3.38	12.35*
Derby	4.8	54.0	57.5	52.5	29.0	100	100	100	100	100	100	100	3.18	5.67	1.74	0.36	1.36	3.47	12.32*
Talon	4.8	47.3	56.0	48.5	29.0	100	100	100	100	100	99	100	2.82	5.35	1.64	0.40	1.44	3.48	11.65*
Climax	4.8	50.3	57.5	52.5	29.0	100	100	100	100	100	100	99	2.52	5.74	1.71	0.43	0.88	3.02	11.28*
Treasure	4.8	50.5	53.3	46.3	29.0	100	100	100	100	100	97	98	2.92	5.14	1.46	0.44	1.13	3.04	11.10*
Express	4.5	42.0	56.5	46.3	62.0	100	100	100	100	100	95	94	2.21	5.35	1.19	0.63	1.05	2.86	10.42
Barfleo	4.8	43.5	50.0	43.0	61.0	100	100	100	100	100	98	97	2.30	4.89	1.06	0.99	0.79	2.84	10.03
Barpenta	4.3	39.0	45.0	36.5	29.0	100	100	100	98	98	93	95	2.13	4.11	0.73	0.97	1.07	2.77	9.01
Mean	4.3	47.5	54.0	47.4	37.1	100	100	100	100	100	98	98	2.62	5.29	1.42	0.58	1.11	3.11	11.02
CV,%	13.3	5.3	5.5	6.0	1.1	0	0	1	1	1	2	1	9.41	8.73	16.36	20.30	28.67	13.78	8.78
LSD,0.05	0.8	3.7	4.4	4.2	0.6	0	0	1	2	2	2	2	0.36	0.68	0.34	0.17	0.47	0.63	1.42

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Dry matter yields, seedling vigor, maturity, and stand persistence of timothy varieties sown September 7, 2012, at Lexington, Kentucky.

Variety	Seedling Vigor[1] Oct 16, 2012	Maturity[2] 2013 May 20	Maturity 2014 May 12	Maturity 2014 Jun16	Percent Stand 2012 Oct 16	Percent Stand 2013 Mar 20	Percent Stand 2013 Oct 22	Percent Stand 2014 Apr 9	Percent Stand 2014 Oct 27	Yield *(tons/acre)* 2013 Total	Yield 2014 May 12	Yield 2014 Jun 16	Yield 2014 Oct 27	Yield 2014 Total	2-year Total
Commercial Varieties—Available for Farm Use															
Treasure	4.8	56.0	46.8	29.0	100	100	100	98	99	5.37	1.65	0.32	0.94	2.91	8.28*
Derby	3.8	57.5	52.0	29.0	95	95	95	97	97	5.04	1.91	0.23	0.89	3.03	8.07*
Talon	4.3	56.5	48.5	29.0	100	99	100	99	99	5.09	1.61	0.44	0.83	2.89	7.98*
Barfleo	4.1	43.0	35.8	60.0	99	99	100	100	100	4.75	1.32	0.89	0.82	3.02	7.77*
Climax	3.8	56.5	42.3	29.0	96	96	95	96	98	4.59	1.51	0.46	0.78	2.75	7.34*
Clair	1.8	56.5	49.8	29.0	77	81	89	92	95	4.23	1.53	0.34	1.04	2.92	7.15*
Comtral	4.3	37.0	33.3	60.0	97	97	98	99	100	4.00	0.97	1.18	0.89	3.04	7.04*
Barpenta	3.6	39.0	32.0	29.0	98	98	98	98	98	3.66	0.64	1.12	0.85	2.61	6.27
Experimental Varieties															
TM 0802	3.4	53.5	43.0	60.5	94	94	96	96	97	4.90	1.50	0.39	1.00	2.90	7.80*
TM 0804	3.8	51.8	41.0	60.5	96	97	98	97	98	4.61	1.44	0.58	1.07	3.08	7.69*
TM 0801	2.9	57.5	52.5	29.0	88	93	93	93	95	4.76	1.59	0.28	0.81	2.68	7.44*
Mean	3.7	51.3	43.3	40.4	94	95	96	97	98	4.63	1.43	0.57	0.90	2.89	7.53
CV,%	21.2	4.6	8.5	1.0	10	9	5	4	2	16.04	21.10	27.43	35.81	20.26	16.48
LSD,0.05	1.1	3.4	5.3	0.6	13	12	7	6	3	1.07	0.43	0.22	0.47	0.85	1.79

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 8. Dry matter yields, seedling vigor, maturity, and stand persistence of timothy varieties sown September 5, 2013, at Lexington, Kentucky.

Variety	Seedling Vigor[1] Oct 14, 2013	Maturity[2] 2014 May 12	Maturity[2] 2014 Jun16	Percent Stand 2013 Oct 14	Percent Stand 2014 Apr 2	Percent Stand 2014 Oct 27	Yield *(tons/acre)* 2014 May 12	Yield 2014 Jun 16	Yield 2014 Oct 29	Yield 2014 Total
Commercial Varieties—Available for Farm Use										
Derby	3.8	51.5	29.0	98	98	99	2.24	0.51	1.20	3.95*
Zenyatta	4.4	51.0	29.0	96	98	99	2.10	0.45	1.11	3.66*
Clair	2.4	52.0	29.0	73	82	93	1.73	0.53	1.06	3.32*
Comtal	4.3	37.0	59.5	98	97	97	1.46	1.05	0.75	3.25
Summergraze	5.0	37.0	58.5	99	99	99	1.67	0.61	0.95	3.22
Climax	4.0	39.0	59.0	96	94	97	1.04	1.36	0.70	3.10
Experimental Varieties										
KY Early	3.4	54.0	29.0	93	95	96	2.01	0.57	1.11	3.69*
PHP6C	3.1	51.5	29.0	84	87	94	1.90	0.56	0.91	3.37*
Mean	3.8	46.6	40.3	92	93	97	1.77	0.70	0.97	3.45
CV,%	23.4	3.5	1.6	10	8	4	17.48	17.07	19.31	12.55
LSD,0.05	1.3	2.4	0.9	14	10	5	0.45	0.18	0.28	0.64

[1] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2] Maturity rating scale: 37 = flag leaf emergence, 45 = boot swollen, 50 = beginning of inflorescence emergence, 58 = complete emergence of inflorescence, 62 = beginning of pollen shed. See Table 2 for complete scale.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 9. Performance of Kentucky bluegrass varieties at Lexington.

Variety	Proprietor/KY Distributor	2011[1] 12[2]	2011 13	2011 14	2012 13	2012 14	2013 14
Commercial Varieties—Available for Farm Use							
Barderby	Barenbrug USA	*	x[3]	*	x	x	*
BigBlue	Pure Seed				x	*	
Ginger	ProSeeds Marketing	*	*	*	*	*	x
Kenblue	Public	*	*	*	*	*	x
Park	Public				x	x	x
Experimental Varieties							
RAD-1443	Radix Research/Seeds Inc						*
RAD-1445	Radix Research				x	x	
RAD-1446	Radix Research/Seeds Inc						*
RAD-1448	Radix Research				*	*	
RAD-1450	Radix Research	*	x	x			
RAD-1458	Radix Research				*	x	
RAD-2018	Radix Research				*	*	
RAD-2040	Radix Research						x
RAD-2371	Radix Research						x
RAD-KCC4L	Radix Research	x	x	x			

[1] Establishment year.
[2] Harvest year.
[3] "x" in the block indicates the variety was in the test but yielded significantly less than the top yielding variety in the test. Open boxes indicate the variety was not in the test.
* Not significantly different from the highest yielding variety in the test.

Table 10. Performance of timothy varieties at Lexington.

Variety	Proprietor/KY Distributor	2011[1] 12[2]	2011 13	2011 14	2012 13	2012 14	2013 14
Commercial Varieties—Available for Farm Use							
Barfleo	Barenbrug USA	x[3]	x	x	*	*	
Barpenta	Barenbrug USA	x	x	x	x	*	
Clair	Ky Agric. Exp. Station	*	*	*	x	*	*
Climax	Canada Agr. Res. Station	x	*	*	*	*	x
Comtral	Caudill Seed				x	*	x
Derby	FFR Cooperative	*	*	*	*	*	*
Express	Seed Research of Oregon	x	x	*			
Summergraze	Brett Young						x
Talon	Seed Research of Oregon	*	x	*	*	*	
Treasure	Seed Research of Oregon	*	x	*	*	*	
Zenyatta	DLF International						*
Experimental Varieties							
KY Early	Ky Agric. Exp. Station						*
PHP6C	DLF International						*
TM 0801	FFR Cooperative				*	*	
TM 0802	FFR Cooperative				*	*	
TM 0804	FFR Cooperative				*	*	

[1] Establishment year.
[2] Harvest year.
[3] "x" in the block indicates the variety was in the test but yielded significantly less than the top yielding variety in the test. Open boxes indicate the variety was not in the test.
* Not significantly different from the highest yielding variety in the test.

Table 11. Summary of Kentucky Bluegrass Yield Trials at Lexington 1996-2014 *(yield shown as a percentage of the mean of the commercial varieties in the trial).*

Variety	Proprietor/KY Distributor	96[1,2] 3yr[4]	03 2yr	04 3yr	06 4yr	07 3yr	08 3yr	09 3yr	10 3yr	11 3yr	12 2yr	Mean[3] (#trials)
Adam 1	Radix Research			98								–
Barderby	Barenbrug USA					94		101	91	98	89	95(5)
Big Blue	Rose-AgriSeed							82			92	87(2)
Common	Public				71	66	68					68(3)
Ginger	ProSeeds Marketing		89		118	119	114	118	112	107	113	111(8)
Kenblue	Public	90		102	133				96	95	120	106(6)
Lato	Turf Seed Inc.	110				122						116(2)
Park	Public										86	–
RAD-5	Radix Research				103							–
RAD-339	Radix Research				101							–
RAD-643	Radix Research				94							–
RAD-731zx	Radix Research				87							–
RAD-762	Radix Research				94							–
RAD-1039	Radix Research						118					–
Slezanka	DLF International Seeds		111									–

[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 forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2004 was harvested three years, so the final report would be "2007 Timothy and Kentucky Bluegrass Report" archived in the KY Forage website at <www.uky.edu/Ag/Forage>. The '96 and '03 Lexington results are in the appropriate Tall Fescue Reports.
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.

Table 12. Summary of Kentucky Timothy Yield Trials 2000-2014 *(yield shown as a percentage of the mean of the commercial varieties in the trial).*

		Lexington									Quicksand		Princeton		
Variety	Proprietor/KY Distributor	00[1,2] 2yr[4]	01 3yr	02 4yr	06 3yr	07 3yr	08 3yr	09 3yr	11 3yr	12 2yr	99 2yr	01 2yr	00 3yr	04 2yr	Mean[3] (#trials)
Alma	Newfield Seeds Co/Caudill Seed Co.													81	–
Auroro	General Feed and Grain	100									98				99(2)
Barfleo	Barenbrug USA							95	91	104					97(3)
Barpenta	Barenbrug USA					74			82	84					80(3)
Clair	Ky Agric. Exp. Station		109	115	107	95	108	104	112	95		108		122	108(10)
Classic	Cebeco International Seeds	100		88							87				92(3)
Climax	Canada Agr. Res. Station				79	102	105	98	102	98					97(6)
Colt	FFR Cooperative	105		101	90						112			99	101(5)
Common	Public		96												–
Comtral	Caudill Seed									94					–
Derby	FFR Cooperative				112	111		106	112	108				124	112(6)
Dolina	DLF-Trifolium	100		91											96(2)
Express	Seed Research of Oregon			97		91		97	95						95(4)
Hokuei	Snow Brand Seed	103													–
Hokusei	Snow Brand Seed	97									99				98(2)
Joliette	Newfield Seeds Co/Caudill Seed Co.						87	89						90	89(3)
Jonaton	Newfield Seeds Co/Caudill Seed Co.													84	–
Outlaw	Grassland West Company												107		–
Richmond	Pickseed Canada Inc.	100									103				102(2)
Summit	Allied Seed, L.L.C.			114											–
Talon	Seed Research of Oregon				110	112		108	106	107					109(5)
Treasure	Seed Research of Oregon				103	115		103	101	111					107(5)
Tundra	DLF-Trifolium	95													–
Tuukka	Ampac Seed Company		95	90								92	93		93(4)

[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 forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2000 was harvested two years, so the final report would be "2002 Timothy 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 years of data.

11-2014