# 2022 Timothy and Kentucky Bluegrass Report



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## Introduction

Timothy (*Phleum pratense*) is the fourthmost 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 midto 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 11 and 12 show summaries of all timothy and Kentucky bluegrass varieties tested in Kentucky for the last 15 years. The UK Forage Extension website (<a href="https://forages.ca.uky.edu">https://forages.ca.uky.edu</a>) 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

Table 1. Temperature and rainfall at Lexington, Kentucky, in 2020, 2021, and 2022.

		20	20			20	21			20	22 <sup>2</sup>	
	Tei	mp	Raiı	nfall	Tei	mp	Raiı	nfall	Te	mp	Raiı	nfall
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	40	+9	3.72	+0.86	34	+3	4.51	+1.65	29	-2	4.93	+2.07
FEB	38	+3	5.14	+1.93	31	-4	4.60	+1.39	38	+3	7.69	+4.48
MAR	51	+7	3.79	-0.61	50	+6	5.12	+0.72	49	+5	4.27	-0.13
APR	52	-3	4.92	+1.04	54	-1	2.72	-1.16	55	0	3.71	-0.17
MAY	62	-2	5.69	+1.22	62	-2	4.34	-0.13	69	+5	3.84	-0.63
JUN	72	0	2.56	-1.10	73	+1	6.26	+2.60	76	+4	2.10	-1.56
JUL	79	+3	3.23	-1.77	75	-1	5.90	+0.90	80	+4	6.46	+1.46
AUG	75	0	3.41	-0.52	76	+1	6.16	+2.23	77	+2	4.27	+0.34
SEP	68	0	4.43	-+0.83	69	+1	3.03	-0.17	70	+2	1.50	-1.70
OCT	57	0	4.98	+2.41	62	+5	4.64	+2.10	57	0	0.96	-1.61
NOV	49	+4	2.18	-1.21	43	-2	2.13	-1.26				
DEC	36	0	2.27	-1.71	47	+11	4.41	+0.43				
Total			45.92	+1.37			53.85	+9.30			39.73	+2.55

<sup>1</sup>DEP is departure from the long-term average. <sup>2</sup>2022 data is for ten months through October.

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 2019, 2020, and 2021 as part of the 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, for a total of 180 pounds/acre/ year. The test was harvested using a sickletype 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.

## **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 2022 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 total yield 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 show information about proprietors/distributors 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.

## **How to Interpret Summary Tables**

Tables 11 and 12 are summaries of yield data of commercial varieties for Kentucky bluegrass (1996-2022) and timothy (2000-2022) 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 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 should be referenced.

# **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 Ken-

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

		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
13	3 leaves unfolded	(see text).
•	••••	
19	9 or more leaves unfolded	
	Sheath elongation	
20	No elongated sheath	Denotes first phase of new spring growth after
21	1 elongated sheath	overwintering. This character is used instead of tillering which is difficult to record in established stands.
22	2 elongated sheaths	The control of the co
23	3 elongated sheaths	
	••••	
29	9 or more elongated sheaths	
	Tillering (alternative to sheath e	elongation)
21	Main shoot only	Applicable to primary growth of seedlingsor to single
22	Main shoot and 1 tiller	tiller transplants.
23	Main shoot and 2 tillers	
24	Main shoot and 3 tillers	
•	••••	
29	Main shoot and 9 or more tillers	
27	Stem elongation	
31	First node palpable	More precisely an accumulation of nodes. Fertile and sterile
32	Second node palpable	tillers distinguishable.
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	I
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	<sup>3</sup> / <sub>4</sub> 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 inflorescence is 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 quantitywhen inflorescence hit on palm.
93	Endosperm hard and dry	Final stage of seed development; most seeds shed.

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

tucky bluegrass management. They are available from your county Extension office and are listed in the "Publications" section of the UK Forage website, www.forages.ca.uky.edu.

- 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)

### **About the Authors**

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Table 3. Dry matter yields, seedling vigor, maturity, and stand persistence of timothy varieties sown August 30, 2019, at Lexington, Kentucky.

		Matu	ırity <sup>2</sup>				Per	cent Sta	and					Yie	ld (tons	/acre)		
	20	20	2021	2022	2019	20	20	20	21	20	22	2020	2021		20	22		3-year
Oct 23, 2019	May 14	Jun 17	May 18	May 17	Oct 23	Mar 17	Oct 27	Mar 24	Oct 22	Mar 22	Nov 2	Total	Total	May 17	Jun 24	Oct 17	Total	Total
/arieties-Avail	able for	Farm U	lse															
5.0	50.0	61.5	55.0	56.0	99	99	99	99	98	98	95	3.78	4.38	2.07	0.25	0.51	2.83	11.00*
3.8	50.5	62.0	55.5	56.0	91	94	95	96	96	96	92	3.81	4.04	2.10	0.26	0.52	2.88	10.72*
4.0	45.0	37.3	54.0	56.5	99	100	100	100	100	100	95	3.68	4.21	2.11	0.17	0.40	2.68	10.57*
3.8	47.5	53.8	50.3	54.0	98	99	99	99	99	99	95	3.67	4.08	1.92	0.27	0.53	2.72	10.47*
2.3	48.8	62.0	56.0	58.0	70	73	95	95	94	93	90	3.08	3.99	1.88	0.26	0.51	2.65	9.72
5.0	45.0	62.0	48.5	55.0	100	99	99	99	99	97	94	3.08	3.85	1.65	0.54	0.54	2.74	9.67
5.0	45.0	45.0	45.0	46.3	99	100	100	100	100	98	88	2.95	3.54	1.47	0.59	0.54	2.61	9.09
4.0	40.5	29.0	37.0	45.0	96	98	98	97	98	96	97	3.13	3.26	1.10	1.10	0.43	2.63	9.02
5.0	45.0	61.5	37.5	45.0	100	99	99	99	99	98	94	2.76	3.10	1.20	0.83	0.44	2.47	8.33
Varieties																		
4.5	45.0	34.3	41.0	45.0	99	100	99	99	99	99	95	3.31	3.44	1.60	0.52	0.46	2.58	9.34
4.2	46.2	50.8	48.0	51.7	95	96	98	98	98	97	95	3.33	3.79	1.71	0.48	0.49	2.68	9.79
7.9	3.3	20.2	4.9	2.3	10	7	1	1	1	2	5	9.81	12.47	12.53	27.01	25.47	11.12	8.03
0.5	2.2	14.9	3.4	1.7	13	10	2	2	2	3	7	0.47	0.69	0.31	0.19	0.18	0.43	1.14
	5.0 3.8 4.0 3.8 2.3 5.0 5.0 4.0 5.0 <b>Varieties</b> 4.5 4.2 7.9	Vigor1 Dot 23, 2019         20 May 14           arieties-Available for 5.0         50.0           3.8         50.5           4.0         45.0           3.8         47.5           2.3         48.8           5.0         45.0           5.0         45.0           4.0         40.5           5.0         45.0           Varieties         4.5           4.2         46.2           7.9         3.3	Seedling Vigor 1 Oct 23, 2019         2020           May 14         Jun 17           arieties-Available for Farm U         5.0         61.5           3.8         50.5         62.0           4.0         45.0         37.3           3.8         47.5         53.8           2.3         48.8         62.0           5.0         45.0         45.0           4.0         40.5         29.0           5.0         45.0         61.5           Varieties           4.5         45.0         34.3           4.2         46.2         50.8           7.9         3.3         20.2           0.5         2.2         14.9	Seedling Vigor¹ Dot 23, 2019         2020         2021           May 17         Jun 18         May 18           sarieties-Available for Farm Use           5.0         50.0         61.5         55.0           3.8         50.5         62.0         55.5           4.0         45.0         37.3         54.0           3.8         47.5         53.8         50.3           2.3         48.8         62.0         56.0           5.0         45.0         62.0         48.5           5.0         45.0         45.0         45.0           4.0         40.5         29.0         37.0           5.0         45.0         61.5         37.5           Varieties           4.5         45.0         34.3         41.0           4.2         46.2         50.8         48.0           7.9         3.3         20.2         4.9           0.5         2.2         14.9         3.4	Seedling Vigor¹ Dot 23, 2019         2020         2021         2021         2021         2021         2021         2022           May Jun 18         May 17           arieties-Available for Farm Use           5.0         50.0         61.5         55.0         56.0           3.8         50.5         62.0         55.5         56.0           4.0         45.0         37.3         54.0         56.5           3.8         47.5         53.8         50.3         54.0           2.3         48.8         62.0         56.0         58.0           5.0         45.0         62.0         48.5         55.0           5.0         45.0         45.0         45.0         46.3           4.0         40.5         29.0         37.0         45.0           5.0         45.0         61.5         37.5         45.0           Varieties         4.5         45.0         34.3         41.0         45.0           4.2         46.2         50.8         48.0         51.7           7.9         3.3         20.2         4.9         2.3	Seedling Vigor¹ Doct 23, 2019         2020         2021         2022         2019           May Jun 17         May 18         17         2021         2022         2019           May 14         May 18         May 17         23           arieties-Available for Farm Use           5.0         50.0         61.5         55.0         56.0         99           3.8         50.5         62.0         55.5         56.0         91           4.0         45.0         37.3         54.0         56.5         99           3.8         47.5         53.8         50.3         54.0         98           2.3         48.8         62.0         56.0         58.0         70           5.0         45.0         62.0         48.5         55.0         100           5.0         45.0         45.0         46.3         99           4.0         40.5         29.0         37.0         45.0         96           5.0         45.0         61.5         37.5         45.0         100           Varieties	Seedling Vigor1   Oct 23, 2019   May 14   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   18   17   23   17   17   17   18   17   23   17   17   17   17   18   17   23   17   17   17   18   17   23   17   17   18   17   23   17   17   18   17   18   17   18   17   18   17   18   17   18   17   18   17   18   17   18   17   18   17   18   17   18   10   18   17   18   10   18   17   18   10   10   10   10   10   10   10	Seedling Vigor1   Oct 23, 2019   All   A	Seedling Vigor1   Oct 23, 2019   May 14   17   18   17   23   17   27   24   24   27   27	Seedling Vigor1   Oct 23, 2019   August   Augu	Seedling Vigor1   Oct 23, 2019   All   A	Seedling Vigor   Oct 23, 2019   2021   2022   2019   2020   2021   2022   2020   2021   2022   2020   2021   2022   2020   202	Seedling Vigor¹ Oct 23, 2019         2021         2022         2019         2020         2021         2020         201         2021         2022         2019         2020         2021         2021         2020         2020         2021         2020         2020         2021         2020         2020         2021         2020         2021         2020         2021         2021         2020         2021         2020         2021         2020         2021         2020         2021         2020         2021         2021         2021         2021         2021         2021         2021         2021         2021         2021         2021         2021         2021         2020         2021         <	Seedling Vigor1   Det 23,2019   2021   2022   2019   2021   2021   2022   2021   2021   2022   2022   202	Seedling Vigor1	Seedling Vigor1 of Cot 23, 2019   2021   2022   2019   2020   2021   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2020   2021   2	Seedling Vigor1 of 12   Seedling Vigor1 of 14   Seedling Vigor1 of 15   Seedling Vigor1 of 16   Seedling Vigor1 of 17   Seedling Vigor1 of 18   Seedling Vigor1 of 17   Seedling Vigor1 of 18   Seed	Seedling   Seedling

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

Table 4. Dry matter yields, seedling vigor, maturity, and stand persistence of timothy varieties sown August 28, 2020, at Lexington, Kentucky.

	Seedling	Matu	ırity <sup>2</sup>		Р	ercent Stan	ıd			Yie	d (tons/acre	e)	
Variety	Vigor <sup>1</sup>	2021	2022	2020	20	21	20	22	2021		2022		2-year
	Sep 24, 2020	May 18	May 17	Sep 24	Mar 24	Oct 22	Mar 22	Oct 18	Total	May 17	Oct 18	Total	Total
Commercia	l Varieties-Availa												
Zenyatta	3.4	54.5	56.0	100	100	100	100	98	5.70	2.24	0.59	2.83	8.53*
Dawn	4.3	54.0	55.5	100	100	100	100	98	5.34	2.24	0.61	2.85	8.18*
Carson	4.0	49.0	54.0	100	100	100	100	100	5.44	1.96	0.68	2.64	8.08*
KY Early	4.5	56.0	58.0	100	100	100	100	99	5.56	2.09	0.42	2.50	8.07*
Derby	4.5	52.3	56.0	100	100	100	100	100	5.13	2.05	0.60	2.66	7.79*
Barfleo	4.3	44.8	45.0	100	100	100	100	98	5.20	1.67	0.41	2.08	7.28
Climax	4.1	40.5	45.0	100	100	100	100	99	4.54	1.63	0.85	2.49	7.03
Clair	4.0	53.0	55.5	100	100	100	100	100	4.65	1.67	0.58	2.24	6.89
Barpenta	3.4	39.0	45.0	100	100	100	100	100	4.35	1.22	0.99	2.21	6.56
Baronaise	4.6	40.0	45.0	100	100	100	100	99	4.14	1.53	0.52	2.04	6.18
Mean	4.1	48.3	51.5	100	100	100	100	99	5.10	1.83	0.62	2.45	7.50
CV,%	10.2	6.4	2.7	0	0	0	0	3	12.41	13.21	24.73	12.20	11.15
LSD,0.05	0.6	4.5	2.0	0	0	0	0	4	0.90	0.35	0.22	0.43	1.21

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

<sup>&</sup>lt;sup>2</sup>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.

<sup>\*</sup>Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

<sup>&</sup>lt;sup>2</sup>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.

<sup>\*</sup>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 timothy varieties sown September 10, 2021, at Lexington, Kentucky.

	Seedling	Maturity <sup>2</sup>		Percent Stand			Yield (tons/acre)	
Variety	Vigor <sup>1</sup>	2022	2021	20	)22		2022	
	Oct 4, 2021	May 17	Oct 4	Mar 22	Oct 19	May 17	Oct 19	Total
<b>Commercial Varie</b>	ties-Available for I	Farm Use			•			
Clair	4.4	55.5	99	98	98	3.90	1.19	5.09*
Zenyatta	3.8	56.5	98	98	98	3.72	1.23	4.96*
Carson	3.3	56.0	97	96	98	3.58	1.20	4.78*
Conquest	3.8	57.5	100	100	100	3.51	1.26	4.77*
Valor	3.4	56.0	100	99	99	3.61	1.10	4.71*
KY Early	2.1	58.0	69	87	92	3.32	1.20	4.52
Express II	3.5	47.5	94	97	97	2.85	1.08	3.94
Climax	4.1	45.0	99	99	99	3.02	0.69	3.70
<b>Experimental Var</b>	ieties							
NC Graze	3.9	46.8	100	100	100	3.66	1.29	4.96*
NC Nelson	4.6	52.0	100	100	100	3.52	1.31	4.83*
Mean	3.8	53.1	95	97	98	3.47	1.16	4.62
CV,%	14.8	3.3	8	3	3	7.05	16.01	6.87
LSD,0.05	0.8	2.5	12	4	5	0.36	0.27	0.47

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

Table 6. Dry matter yields, seedling vigor, maturity, and stand persistence of Kentucky bluegrass varieties sown August 30, 2019, at Lexington, Kentucky.

			/laturity	2			Per	cent Sta	and						Yield (to	ns/acre	)		
Variety	Seedling Vigor <sup>1</sup>		21	2022	2019	20		20		20	22	2020	2021		(00	2022	<u>,                                     </u>		2
variety	Nov 6, 2019	Apr	Jun	May	Nov	Mar	Oct	Mar	Oct	Mar	Oct	Total	Total	May	Jun	Aug	Oct	Total	3-year Total
		28	14	5	6	17	27	24	22	22	18	Total	.otu.	5	16	17	17	.o.u.	
Commercia	al Varieties-Av	<u>ailable</u>	<u>for Farm</u>	ı Use															
Barderby	4.0	57.5	29.0	58.0	100	100	100	100	100	100	100	0.77	2.89	0.88	0.56	0.48	0.44	2.36	6.02*
Park	4.3	58.5	29.0	58.0	100	100	100	100	100	100	100	0.61	2.77	0.68	0.55	0.42	0.29	1.94	5.31*
Ginger	3.3	60.0	29.0	58.0	100	100	100	100	100	100	98	0.59	2.52	0.85	0.59	0.50	0.19	2.14	5.25*
<b>Experimen</b>	tal Varieties																		
B-18.2822	3.8	45.0	66.0	53.5	100	100	100	100	100	100	100	0.49	3.06	0.40	0.60	0.32	0.46	1.77	5.32*
Mean	3.8	55.3	38.3	56.9	100	100	100	100	100	100	99	0.61	2.81	0.70	0.58	0.43	0.34	2.05	5.48
CV,%	19.7	2.7	0.0	0.9	0	0	0	0	0	0	1	20.49	12.33	27.45	19.10	13.72	24.20	16.95	9.07
LSD,0.05	1.2	2.4	0.0	0.8	0	0	0	0	0	0	2	0.20	0.55	0.31	0.18	0.09	0.13	0.56	0.79

\*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 Kentucky bluegrass varieties sown August 28, 2020, at Lexington, Kentucky.

				-	-			-		_			-		
	Seedling	Matu	ırity <sup>2</sup>		Pe	rcent Sta	nd				Yiel	d (tons/ac	re)		
Variety	Vigor <sup>1</sup>	2021	2022	2020	20	21	20	22	2021			2022			2-year
	Sep 24, 2020	Apr 28	May 5	Sep 24	Mar 24	Oct 22	Mar 22	Oct 18	Total	May 5	Jun 16	Aug 18	Oct 19	Total	Total
Commercial V	Varieties-Availa	ble for Far	m Use												
Barderby	4.5	57.0	58.0	100	100	100	100	100	2.50	0.78	0.48	0.33	0.26	1.86	4.36*
Ginger	4.1	56.0	58.0	100	100	100	100	100	1.79	1.07	0.47	0.29	0.18	2.01	3.80*
Park	5.0	52.3	55.5	100	100	100	100	100	2.43	0.29	0.60	0.22	0.21	1.32	3.75*
Isabel	4.3	45.0	54.0	100	100	100	100	100	1.79	0.21	0.36	0.14	0.07	0.78	2.57
Mean	4.5	52.6	56.4	100	100	100	100	100	2.13	0.59	0.48	0.25	0.18	1.49	3.62
CV,%	6.0	4.6	0.9	0	0	0	0	0	22.27	21.58	15.48	17.49	20.87	14.44	14.91
LSD,0.05	0.4	3.8	0.8	0	0 0		0	0	0.76	0.20	0.12	0.07	0.06	0.34	0.86

Table 8. Dry matter yields, seedling yigor, maturity, and stand persistence of Kentucky bluegrass varieties sown September 10, 2021, at Lexington, Kentucky,

	Seedling	Maturity <sup>2</sup>		Percent Stand			Yield (to	ns/acre)	
Variety	Vigor <sup>1</sup>	2022	2021	20	)22		20	22	
	Oct 4, 2021	May 5	Oct 4	Mar 22	Oct 19	May 5	Jun 16	Aug 18	Total
Commercial Va	rieties-Availab	le for Farm Use		,					
Ginger	4.3	58.0	100	100	100	0.85	0.45	0.42	1.72*
Park	5.0	55.5	100	100	100	0.60	0.50	0.39	1.50*
Isabel	4.1	52.0	100	100	100	0.26	0.57	0.20	1.02
Experimental <b>V</b>	arieties								
RAD-4496	4.0	57.5	100	100	100	0.56	0.38	0.27	1.21
Mean	4.3	100.0	100	100	100	0.57	0.47	0.32	1.36
CV,%	7.2	1.0	0	0	0	36.50	23.17	47.35	19.72
LSD.0.05	0.5	1.0	0	0	0	0.33	0.18	0.24	0.43

<sup>&</sup>lt;sup>2</sup>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.

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.

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

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

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Table 9. Proprietors of timothy varieties in current trials.

Variety	Proprietor/KY Distributor
	rieties-Available for Farm Use
Barfleo	Barenbrug USA
Baronaise	Barenbrug USA
Barpenta	Barenbrug USA
Carson	Mountain View Seeds
Clair	Ky Agric. Exp. Station
Climax	Canada Agr. Res. Station
Conquest	Allied Seed
Dawn	Hood River Seed
Derby	Southern States
Express II	Allied Seed
KYEarly	Smith Seed Services
Valor	DLF Pickseed
Zenyatta	DLF Pickseed
<b>Experimental</b>	Varieties <sup>1</sup>
NC Graze	Green Consulting Services
NC Nelson	Green Consulting Services
11PHL4808	Barenbrug USA

<sup>&</sup>lt;sup>1</sup>Experimental varieties are not available commercially, but provide an indication of the progress being made by forage breeding companies.

Table 10. Proprietors of Kentucky bluegrass varieties in current trials.

Variety	Proprietor/KY Distributor
<b>Commercial Va</b>	arieties-Available for Farm Use
Barderby	Barenbrug USA
Ginger	ProSeeds Marketing
Park (certified)	Public
Isabel	Smith Seed Services
<b>Experimental</b>	Varieties <sup>1</sup>
B-18.2822	Blue Moon Farms
RAD-4496	Radix Research

<sup>&</sup>lt;sup>1</sup>Experimental varieties are not available commercially, but provide an indication of the progress being made by forage breeding companies.

Table 11. Summary of Kentucky Timothy Yield Trials 2000-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

								Le	exing	ton								Qui	cksand	Prin	ceton	
Variety	Proprietor/KY Distributor	001,2	01	02	06	07	08			12	13	14	15	16	17	19	20	99	01	00	04	Mean <sup>3</sup>
		2yr <sup>4</sup>	3yr	4yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	2yr	2yr	2yr	3yr	2yr	(#trials)
Alma	Newfield Seeds Co/Caudill Seed Co.																				81	-
Anjo	Hood River Seed													81								_
Aurora	General Feed and Grain	100																98				99(2)
Barfleo	Barenbrug USA							95	91	101		108	80	97	94	92	97					95(9)
Baronaise	Barenbrug USA																82					
Barpenta	Barenbrug USA					74			82	82					94	92	87					85(6)
Carson	Mountain View Seeds														113	106	108					109(3)
Clair	Ky Agric. Exp. Station		104	113	107	95	107	104	112	99	97	111	107	88	88	85	92		106		122	102(17)
Classic	Cebeco International Seeds	100		86														86				91(3)
Climax	Canada Agr. Res. Station				79	102	104	98	102	100	82	96	90	102	92	98	94					95(13)
Colt	FS Growmark	105		100	90													112			99	101(5)
Common	Public		95																			-
Comtral	Caudill Seed									92	92											92(2)
Dawn	Hood River Seed														103	107	109					106(3)
Derby	Southern States				112	111		106	112	108	112	119	123	112		112	104				124	113(12)
Dolina	DLF Pickseed	99		90																		95(2)
Express	Seed Research of Oregon			95		91		97	95													95(4)
Hokuei	Snow Brand Seed	103																				-
Hokusei	Snow Brand Seed	96																99				98(2)
Joliette	Newfield Seeds Co/Caudill Seed Co.						86	89													90	88(3)
Jonaton	Newfield Seeds Co/Caudill Seed Co.																				84	-
KY Early	Smith Seed/Central Farm Supply	102	103	115			102				119				115	99	108	104	103			107(10)
Outlaw	Grassland West Company																			107		-
Richmond	Pickseed Canada Inc.	100																103				102(2)
Summergraze	Brett Young										96											_
Summit	Allied Seed, L.L.C.			112																		_
Talon	Seed Research of Oregon				110	112		108	106	109												109(5)
Tenho	Barenbrug USA											84										-
Treasure	Seed Research of Oregon				103	115		103	101	108												106(5)
Tundra	DLF Pickseed	95																				
Tuukka	Ampac Seed Company		94	88															91	93		92(4)
Varis	Mountain View Seeds											83										
Zenyatta	DLF Pickseed										103			119		109	114					111(4)
Voar trial was o	. 1.16.1 1																					

<sup>&</sup>lt;sup>1</sup> Year trial was established.

<sup>&</sup>lt;sup>2</sup>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 the fall of 2017 was harvested 3 years, so the final report would be "2020 Timothy and Kentucky Bluegrass Report" archived in the UK Forage website (https://forages.ca.uky.edu).

<sup>&</sup>lt;sup>3</sup>Mean only presented when respective variety was included in two or more trials. <sup>4</sup>Number of years of data.

Table 12. Summary of Kentucky Bluegrass Yield Trials at Lexington 2004-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variatio	Dropriotor/// Distributor	041,2	06	07	08	09	10	11	12	13	14	16	17	18	19	20	Mean <sup>3</sup>
Variety	Proprietor/KY Distributor	3yr <sup>4</sup>	4yr	3yr	2yr	3yr	2-yr	(#trials)									
Adam 1	Radix Research	98															_
Balin	Pure Seed												91	80			86(2)
Barderby	Barenbrug USA			94		101	91	98	87	103	101	103	128	120	109	120	105(12)
Big Blue	Rose-AgriSeed					82			95								89(2)
Common	Public		71	66	68												68(3)
Ginger	ProSeeds Marketing		118	119	114	118	112	107	110	107	95	101	119	98	95	105	108(14)
Isabel	Smith Seed Services															71	-
Kenblue	Public	102	133				96	95	118	95	100						106(7)
Lato	Turf Seed Inc.			122													-
Park (certified)	Public								90	95	104	117	88	102	96	104	100(8)
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												-
Tirem	DLF Pickseed											79	74				77(2)



<sup>&</sup>lt;sup>1</sup>Year trial was established.
<sup>2</sup>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 the fall of 2017 was harvested 3 years, so the final report would be "2020 Timothy and Kentucky Bluegrass Report" archived in the UK Forage website (https://forages.ca.uky.edu).

<sup>3</sup>Mean only presented when respective variety was included in two or more trials.

<sup>&</sup>lt;sup>4</sup>Number of years of data.