

2004 Timothy Report

G.L. Olson., T.D. Phillips, and S.R. Smith

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 can be used for grazing or wildlife habitat. Timothy is primarily harvested as hay, particularly for horses.

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 lasting five to seven years.

This report provides current maturity and yield data on timothy varieties included in yield trials in Kentucky, as well as guidelines for selecting timothy varieties.

Considerations in Selecting a Timothy Variety

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 maturity is desirable when timothy alone is to be grown for hay, while early maturity would help timothy grown in mixtures with legumes.

Seed Quality. Buy high-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 are reported in this publication or others like it.

Description of the Test

Data from two studies are reported. Timothy varieties were sown at Lexington (2001 and 2002) 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 production. Cultivars were sown at the rate of 6 lb/A into a prepared seedbed with a disk drill. Plots were 5 by 15 feet arranged in a randomized complete block design with four replications. Nitrogen was topdressed at 60 lb/A of actual

N in March, May, and August. The test was harvested using a sickle-type forage plot harvester leaving a 2-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, weed control, and harvest were managed according to University of Kentucky Cooperative Extension Service recommendations.

Results and Discussion

Weather data for Lexington is presented in Table 1.

Maturity ratings and dry matter yields are reported in Tables 2 and 3. Yields are given by harvest date and as total annual production. 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 LSD (Least Significant Difference) 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.

Table 4 summarizes information about distributors and yield performance across locations for all varieties currently included in tests discussed 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 Table 4, an open block indicates that the variety was not in that particular test (labeled at the top of the column), while an (x) in the block means that the variety was in the test but yielded significantly less than the top yielding variety.. A single asterisk (*) means that the variety was not significantly different from the highest yielding variety. It is best to choose a variety that has performed well over several years and locations.

Summary

Selecting a good timothy 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.

Authors

- G.L. Olson, Research Specialist, Forages, UK Department of Plant and Soil Sciences
- T.D. Phillips, Associate Professor, Tall Fescue Breeding, UK Department of Plant and Soil Sciences
- S.R. Smith, Extension Associate Professor, Forages, UK Department of Plant and Soil Sciences

	Temperature		Rainfall	
	°F	DEP	IN	DEP
JAN	30	-1	3.14	+0.28
FEB	36	+1	1.32	-1.89
MAR	47	+3	3.43	-0.97
APR	55	0	3.06	-0.82
MAY	68	+4	9.79	+5.32
JUN	72	0	3.13	-0.53
JUL	73	-3	7.65	+2.65
AUG	71	-4	2.91	-1.02
SEP	68	0	2.61	-0.59
OCT	58	+1	5.65	+3.08
NOV	49	+4	6.29	+2.90
Total			48.98	+8.41

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

Variety	Maturity ¹ May 13, 2004	Yield (tons/acre)					
		2002 Total	2003 Total	2004 Yields			3-yr Total
				May 17	Jul 27	Total	
Commercial Varieties—Available for Farm Use							
Clair	53.5	2.86	3.85	2.33	0.81	3.14	9.85*
Common	45.0	2.91	3.07	1.89	0.83	2.73	8.71
Tuukka	45.0	2.81	3.16	1.93	0.69	2.62	8.59
Experimental Varieties							
TM 9702	53.5	3.18	3.95	2.44	0.93	3.37	10.50*
TM 9501	54.5	3.24	3.85	2.00	0.69	2.69	9.78*
KY Early	59.5	3.36	3.48	1.95	0.67	2.62	9.46*
TM 9703	51.0	3.15	3.46	1.99	0.74	2.74	9.35*
KYPP 9301	59.0	3.14	3.80	1.49	0.54	2.03	8.97
Mean	52.6	3.08	3.58	2.40	0.74	2.74	9.40
CV, %	3.5	8.60	10.88	17.40	29.91	19.28	9.92
LSD, 0.05	2.7	0.39	0.57	0.51	0.33	0.78	1.37

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

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

Table 3. Dry matter yields(tons/acre) and maturity rating of timothy varieties sown September 18, 2002 at Lexington, Kentucky.							
Variety	Maturity ¹ May 13, 2004	Yield(tons/acre)					
		2003 Total	2004 Yields				2-yr Total
			May 13	Jul 27	Oct 6	Total	
Commercial Varieties—Available for Farm Use							
Clair	57.5	4.23	2.43	0.80	0.74	3.98	8.20*
Summit	56.8	4.20	2.46	0.72	0.55	3.73	7.93*
Colt	51.3	3.93	2.27	0.86	0.57	3.70	7.63*
Dolina	46.3	3.80	2.21	0.60	0.41	3.22	7.02
Classic	47.8	3.52	2.00	0.54	0.49	3.03	6.54
Express	55.0	3.65	1.90	0.61	0.37	2.88	6.53
Tuukka	52.3	3.66	1.63	0.41	0.40	2.44	6.10
Experimental Varieties							
KYPP 9301	59.5	4.27	2.41	0.86	0.66	3.93	8.20*
KY Early	59.0	4.40	2.18	0.75	0.68	3.62	8.02*
Mean	54.2	3.98	2.20	0.69	0.54	3.43	7.41
CV, %	6.7	9.78	14.07	29.42	16.09	13.21	9.32
LSD, 0.05	5.1	0.55	0.43	0.29	0.12	0.64	0.97
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.							
¹ Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50= beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shed.							

Table 4. Performance of timothy varieties at Lexington.						
Variety	Proprietor/KY Distributor	2001 ¹			2002	
		02 ²	03	04	03	04
Commercial Varieties—Available for Farm Use						
Clair	Ky Agric. Exp. Station	*	*	*	*	*
Classic	Cebeco International Seeds				X	X
Colt	FFR Cooperative				*	*
Common	Public	*	X	X		
Dolina	DLF-Trifolium				X	X
Express	Seed Research of Oregon				X	X
Summit	Allied Seed, L.L.C.				*	*
Tuukka	Ampac Seed Company	*	X	X	X	
Experimental Varieties						
KYPP 9301	Ky Agric. Exp. Station	*	*	X	*	*
KY Early	Ky Agric. Exp. Station	*	*	*	*	*
TM 9501	Allied Seed, L.L.C.	*	*	*		
TM 9702	Forage Genetics International	*	*	*		
TM 9703	Forage Genetics International	*	*	*		
¹ Establishment year						
² Harvest year						
* Not significantly different from the highest yielding variety in the test.						
An open block indicates the variety was not in the test.						
An "x" in the block indicates the variety was in the test but yielded significantly less than the top yielding variety in the test.						



Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement and does not imply approval to the exclusion of other suitable products or firms.