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# **2011 Orchardgrass Report**

UNIVERSITY OF
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College of Agriculture

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#### Introduction

Orchardgrass (*Dactylus glomerata*) is a high-quality, productive, cool-season grass that is well adapted to Kentucky conditions. This grass is used for pasture, hay, green chop, and silage, but it requires better management than tall fescue for greater yields, higher quality, and longer stand life. It produces an open, bunchtype sod, making it very compatible with alfalfa or red clover as a pasture and hay crop or as habitat for wildlife.

This report provides current yield data on orchardgrass varieties included in yield trials in Kentucky as well as guidelines for selecting orchardgrass varieties. Table 10 shows a summary of all orchardgrass varieties tested in Kentucky for the last 10-plus years. The UK Forage Extension web site 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.

## **Important Selection Considerations**

Maturity. Orchardgrass varieties will range in maturity from early to late, based on the date of heading. In this report, early-maturing varieties will in general have higher first-cutting yields than later-maturing varieties because they are more mature at the date of first cutting. Orchardgrass typically matures earlier in the spring than red clover or alfalfa. Later-maturing varieties are preferred for use with red clover or alfalfa because they are at a more optimal stage of maturity when the legume is ready for cutting.

Local Adaptation and Seasonal Yield. Choose a variety that is adapted to Kentucky, as indicated by good performance across years and 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.

**Seed Quality.** Buy premium-quality seed that is high in germination and purity and free from weed seed. Buy certified seed or proprietary seed of an improved variety. An improved variety is one that has performed well in independent trials. Other information on the label will include the

test date (which must be within the past nine months), the level of germination, and the percentage of other crop and weed seed. Order seed well in advance of planting time to assure that it will be available when needed.

## **Description of the Tests**

Data from four studies are reported. Orchardgrass varieties were sown at Lexington (2009), Princeton (2008 and 2010), and Quicksand (2010). The soils at Lexington (Maury), Princeton (Crider), and Quicksand (Nolin) are well-drained silt

Table 1 and 20		erature	and rai	nfall at	Lexingt	on, Ker	tucky i	n 2010
		20	10			20	11 <sup>2</sup>	
	Ter	np.	Raiı	nfall	Tei	mp.	Rai	nfall
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP
JAN	29	-2	2.40	-0.46	29	-2	2.10	-0.76
FEB	29	-6	1.38	-1.83	39	+4	6.34	+3.13
MAR	47	+3	1.05	-3.35	47	+3	4.76	+0.36
APR	59	+4	2.74	-1.14	58	+3	12.36	+8.48
MAY	67	+3	7.84	+3.37	64	0	6.72	+2.25
JUN	76	+4	4.61	+0.95	74	+2	2.61	-1.05
JUL	78	+2	5.49	+0.49	80	+4	6.29	1.29
AUG	78	+3	1.54	-2.39	75	0	2.89	-1.04
SEP	71	+3	1.14	-2.06	66	-2	5.52	+2.32
OCT	59	+2	1.22	-1.35	55	-2	4.10	+1.53
NOV	47	+2	4.58	+1.19				
DEC	28	-8	2.15	-1.93				
Total			36 14	-8 41			53 69	+16 51

DEP is departure from the long-term average.
 2011 data is for the ten months through October

loams and are well suited to orchardgrass production. Seedings were made at the rate of 20 lb/A into a prepared seedbed with a disk drill. Plots were 5 by 20 feet in a randomized complete block design with four replications with a harvest plot area of 5 by 15 feet. Nitrogen was top-dressed at 60 lb/A of actual N in March, after the first cutting, and again in late summer, for a total of 180 lb/A per season. The tests were harvested using a sickle-type forage plot harvester to simulate a spring cut hay/summer grazing/fall stockpile management system. Fresh

Table 2	2. Temp	erature	and rai	nfall at I	Princet	on, Ken	tucky ir	1 2009, 2	2010 an	d 2011		
		20	09			20	10			20	11 <sup>2</sup>	-
	Tei	mp.	Raiı	nfall	Ter	np.	Raiı	nfall	Ter	mp.	Rai	nfall
	°F	DEP <sup>1</sup>										
JAN	33	-1										
FEB	42	+4	3.28	-1.15	33	-5	1.54	-2.89	40	+2	5.71	+1.28
MAR	53	+6	2.89	-2.05	48	+1	3.24	-1.70	50	+3	5.54	+0.60
APR	58	-1	5.35	+0.55	62	3	3.3	-1.54	61	+2	16.15	+11.35
MAY	67	0	6.14	+1.18	69	+2	10.41	+5.45	66	-1	7.22	+2.26
JUN	77	+2	7.97	+4.12	79	4	4.82	0.97	77	+2	4.60	+0.75
JUL	74	-4	7.45	+3.16	80	2	2.73	-1.56	81	+3	2.98	-1.31
AUG	75	-2	2.44	-1.60	81	4	2.46	-1.55	77	0	3.95	-0.06
SEP	71	0	4.61	+1.28	72	1	0.94	-2.39	68	-3	3.86	+0.53
OCT	55	-4	9.08	+6.03	60	+1	0.97	-2.08	57	-2	1.35	-1.70
NOV	52	+5	1.50	-3.13	49	+2	3.98	-1.65				
DEC	36	-3	2.73	-2.31	32	-7	1.57	-3.47				
Total			54.31	+3.22			39.02	-12.11			53.71	+12.25
<sup>1</sup> DFP i	s depar	ture fron	n the lo	na-term	average	٠.						

<sup>2</sup> 2011 data is for the ten months through Octob



weight samples were taken at each harvest to calculate percent dry matter production. Management practices for establishment, fertility, weed control, and harvest timing were in accordance with University of Kentucky recommendations.

### **Results and Discussion**

Weather data for Lexington, Princeton and Quicksand are presented in Tables 1, 2 and 3.

Ratings for maturity (see Table 4 for maturity scale), stand persistence, and dry matter yields (tons/A) are reported in Tables 5 through 8. Yields are given by cutting date for 2011 and as total annual production. Stated yields are adjusted for percent weeds; therefore, tonnage given is for crop only. Varieties are listed by descending total yield. Experimental varieties, listed separately at the bottom of the tables, are not available commercially.

Statistical analyses were performed on all data (including experimentals) to determine if the apparent differences are truly due to varietal differences or just to chance. In the tables, the varieties not significantly different from the top variety in that column are marked with one asterisk (\*). To determine if two varieties are truly different, compare the difference between them 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 the given locations. 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.

Table 9 summarizes information about distributors and yield performance across locations for all varieties currently included in tests discussed in this publication. Varieties are listed in alphabetical order, with the experimental varieties at the bottom. Remember that experimental varieties are not available for farm use; commercial varieties can be purchased through distributors. In Table 9, an open block

Table 3. Temperature and rainfall at Quicksand, Kentucky in 2010 and 2011.

		20	10			20	11 <sup>2</sup>	
	Ter	np.	Raiı	nfall	Ter	np.	Raiı	nfall
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP
JAN	31	0	4.09	+0.80	32	+1	2.63	-0.66
FEB	32	-1	2.82	-0.77	42	+9	3.94	+0.34
MAR	47	+6	2.38	-1.96	48	+7	4.66	+0.32
APR	60	+7	2.64	-1.46	60	+7	11.65	+7.55
MAY	67	+5	6.00	+1.52	65	+3	6.49	+2.01
JUN	76	+6	4.26	+0.44	73	+3	3.73	-0.09
JUL	77	+3	3.06	-2.19	78	+4	4.92	-0.33
AUG	77	+4	3.77	-0.24	75	+2	4.09	+0.08
SEP	69	+3	0.63	-2.89	67	+1	3.52	0
OCT	57	+3	1.33	-1.58	55	+1	4.16	+1.25
NOV	47	+5	3.88	0				
DEC	29	-4	3.15	-0.99				
Total			38.02	-9.32			49.79	+10.47

DEP is departure from the long-term average.

Leaf development  First leaf unfolded  First leaf unfolded  Jacob 2 leaves unfolded  Sheath elongation  No elongated sheath  leading a leaves unfolded  Sheath elongation  No elongated sheath  leading a leaves unfolded  Sheath elongation  No elongated sheath  leading a leaves unfolded  Sheath elongation  No elongated sheath  leading a leaves unfolded  Sheath elongation  No elongated sheath  leading a leaves unfolded  Sheath elongation  Intering (alternative to sheath elongation)  Adding shoot and 1 tiller  Main shoot and 1 tiller  Main shoot and 2 tillers  Main shoot and 3 tillers  Main shoot and 3 tillers  Main shoot and 9 or more tillers  Stem elongation  First node palpable  Second node palpable  First node palpable  Fifth node palp	Applicable to regrowth of established (plants) and to orimary growth of seedlings. Further subdivision by means of leaf development index see text).  Denotes first phase of lew spring growth after overwintering. This characte is used instead of tillering which is difficult to record in established stands.  On)  Applicable to primary growth of seedlingsor to single tiller ransplants.  More precisely an accumulation of nodes. Fertile and sterile tillers distinguishable.
First leaf unfolded  2 leaves unfolded  3 aleaves unfolded  • • • • • • • • • • • • • • • • • • •	perstablished (plants) and to primary growth of seedlings. Further subdivision by means of leaf development index see text).  Denotes first phase of new spring growth after poerwintering. This characte is used instead of tillering which is difficult to record in established stands.  On)  Applicable to primary growth of seedlingsor to single tiller ransplants.  More precisely an accumulation of nodes. Fertile and sterile tillers
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13 3 leaves unfolded  19 9 or more leaves unfolded  Sheath elongation  20 No elongated sheath 21 1 elongated sheaths 22 2 elongated sheaths 23 3 elongated sheaths 29 9 or more elongated sheaths  Tillering (alternative to sheath elongative)  20 Main shoot only 21 Main shoot and 1 tiller 22 Main shoot and 2 tillers  23 Main shoot and 3 tillers  4 Main shoot and 9 or more tillers  25 Stem elongation  31 First node palpable 32 Second node palpable 33 Third node palpable 34 Fourth node palpable 35 Fifth node palpable 36 Fourth node palpable 37 Flag leaf just visible 38 Booting  45 Boot swollen  Inflorescence emerged 54 ½ of inflorescence emerged 55 ¼ of inflorescence emerged 56 ¾ of inflorescence emerged 57 Preanthesis  Inflorescence emerged 58 Base of inflorescence just visible  Anthesis  Inflorescence emerged	of leaf development index see text).  Denotes first phase of new spring growth after overwintering. This characte is used instead of tillering which is difficult to record in established stands.  On)  Applicable to primary growth of seedlingsor to single tiller ransplants.  More precisely an accumulation of nodes. Fertile and sterile tillers
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58 Base of inflorescence just visible Anthesis 60 Preanthesis II ii	
Anthesis  60 Preanthesis II iii	
60 Preanthesis II	
ii a	
	nflorescence-bearing nternode is visible. No inthers are visible.
62 Beginning of anthesis F	irst anthers appear.
64 Maximum anthesis	Maximum pollen shedding.
66 End of anthesis	lo more pollen shedding.
Seed ripening	
75 Endosperm milky II	nflorescence green
85 Endosperm soft doughy N	lo seeds loosening when nflorescence is hit on palm.
. c	nflorescence losing hlorophyll; a few seeds oosening when inflorescenc iit on palm
i s c	nflorescence-bearing nternode losing chlorophyll eeds loosening in
93 Endosperm hard and dry C	quantitywhen inflorescence nit on palm.

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

<sup>&</sup>lt;sup>2</sup> 2011 data is for the ten months through October

Table 5. Dry Kentucky.	/ matter yi	elds, se	edling v	/igor, m	aturity	and sta	and per	sistence	e of orc	hardgr	ass vari	eties so	wn Sep	tembe	r 29, 20	08 at Pi	rinceto	n,
	Seedling	٨	/laturity	<b>/</b> 2			Per	cent Sta	and					Yiel	d (tons	acre)		
	Vigor <sup>1</sup>	2009	2010	2011	2008	20	09	20	10	20	11				20	11		
Variety	Oct 30, 2008	May 11	May 18	May 10	Oct 30	Apr 17	Nov 4	Mar 18	Nov 19	Apr 8	Oct 25	2009 Total	2010 Total	May 10	Jun 14	Aug 16	Total	3-year Total
Commercia	l Varieties-	Availab	le for F	arm Us	e													
Potomac	3.8	57.0	63.0	58.0	97	100	99	96	87	84	33	4.16	2.12	1.12	0.46	0.24	1.82	8.33*
Megabite	3.8	55.5	63.0	56.0	97	97	98	98	84	89	72	3.82	2.12	1.26	0.53	0.26	2.05	8.19*
Crown	3.3	55.5	63.3	56.7	95	99	98	95	80	78	43	4.41	2.10	0.97	0.54	0.18	1.68	8.11*
Benchmark Plus	3.8	56.5	63.3	58.0	96	99	98	95	88	88	58	4.01	2.12	1.12	0.40	0.27	1.79	8.07*
Prairie	3.8	51.8	62.8	58.0	98	99	97	97	81	74	40	4.31	1.56	1.06	0.55	0.25	1.86	8.02*
Prodigy	2.8	57.5	62.5	56.7	95	93	94	93	63	53	32	4.25	2.19	0.80	0.40	0.21	1.40	8.01*
Profit	3.5	50.3	62.3	56.0	96	97	96	95	82	78	35	4.14	1.98	0.98	0.49	0.27	1.75	7.97*
Tucker	3.8	50.3	62.3	56.7	97	98	97	93	78	73	32	4.21	2.06	0.89	0.51	0.23	1.63	7.88*
Elsie	2.8	52.8	62.5	57.3	95	97	96	97	83	83	40	4.05	1.88	1.03	0.49	0.24	1.76	7.56
Lazuly	4.5	38.3	61.8	56.0	96	81	80	84	40	23	8	4.62	1.82	0.34	0.27	0.09	0.70	7.49
Shawnee	2.0	34.8	52.0	37.0	93	84	89	88	57	18	7	3.71	1.95	0.24	0.28	0.16	0.68	6.65
Tekapo	2.8	48.3	63.8	56.0	95	68	83	86	72	51	35	3.34	1.89	0.53	0.45	0.26	1.24	6.63
Experiment	tal Varietie	s																
ADG 1002	3.5	50.3	62.0	54.0	96	99	100	97	85	80	40	4.31	2.21	1.02	0.59	0.23	1.85	8.64*
8SS	3.0	55.5	63.3	57.3	95	95	93	93	76	68	32	4.18	2.03	0.90	0.42	0.21	1.53	7.94*
B-8.0707	2.8	57.0	63.0	56.0	97	98	97	93	75	50	27	4.06	2.22	0.73	0.35	0.23	1.31	7.86*
ADG 1001	3.3	49.3	62.8	56.0	97	94	96	93	68	57	42	4.00	2.22	0.85	0.37	0.20	1.41	7.71*
					0.50													
Mean	3.3	51.3	62.1	55.7	95.8	93.4	94.3	93.2	75.2	65.6	36.0	4.10	2.03	0.86	0.44	0.22	1.53	7.82
CV,%	19.1	11.5	1.2	2.2	2.1	9.8	6.4	4.9	15.1	23.9	32.3	9.06	15.58	21.40	22.17	34.87	18.62	7.86
LSD,0.05	0.9	8.4	1.0	2.1	2.8	13.0	8.5	6.5	18.6	26.1	19.4	0.53	0.45	0.31	0.16	0.13	0.47	1.02

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

indicates that the variety was not in that particular test (labeled at the top of the column); 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 top-yielding variety in that study, based on the 0.05 LSD. It is best to choose a variety that has performed well over several years and locations. Remember to consider the distribution of yield across the growing season when evaluating productivity of orchardgrass varieties (Tables 5 through 8).

Table 10 is a summary of yield data from 1998 to 2011 of commercial varieties that have been entered in the

Table 6. Dry ma Kentucky.	tter yields,	seedling	g vigor, r	naturity	and stan	d persist	ence of c	rchardg	rass vari	eties sov	vn Septe	mber 4, 2	2009 at L	exingtor	١,
•	Seedling	Matu	ırity <sup>2</sup>		Pe	rcent Sta	nd				Yiel	d (tons/a	icre)		
	Vigor <sup>1</sup>				20	10	20	11				2011			_
Variety	Oct 13, 2009	2010 May 6	2011 May 5	2009 Oct 13	Apr 13	Oct 18	Mar 20	Oct 27	2010 Total	May 5	Jun 17	Aug 11	Oct 21	Total	2-year Total
<b>Commercial Var</b>	ieties-Avai	lable for	Farm Us	e									,		
Prairie	4.0	56.0	55.5	100	100	98	97	99	3.19	1.44	0.98	0.64	1.18	4.25	7.43*
Persist	3.5	57.5	53.8	99	100	99	98	98	3.00	1.59	0.91	0.65	1.10	4.26	7.26*
Benchmark Plus	3.8	57.0	54.5	100	100	98	75	99	3.04	1.42	0.96	0.60	0.96	3.94	6.98*
Potomac	3.9	57.5	52.3	99	100	77	98	97	3.12	1.32	0.89	0.57	1.05	3.83	6.95*
Prodigy	1.6	57.0	55.0	88	95	95	96	96	2.75	1.53	0.99	0.64	0.95	4.11	6.86*
Crown	2.6	56.0	54.5	98	99	97	97	99	2.78	1.38	0.91	0.53	0.97	3.79	6.57
Profit	3.0	53.0	51.8	95	98	97	98	98	2.61	1.21	0.93	0.58	0.99	3.71	6.32
Tekapo	2.1	51.0	51.3	89	90	97	97	98	2.09	1.02	0.82	0.56	0.72	3.12	5.21
<b>Experimental Va</b>	rieties												,		
IS-OG51	3.8	56.5	49.5	98	100	99	97	97	2.69	1.30	1.01	0.67	1.02	4.00	6.68*
B-9-NIC4	2.8	57.0	51.3	95	98	96	96	97	2.57	1.42	0.92	0.62	0.97	3.93	6.50
Mean	3.1	55.9	52.9	96.1	97.8	95.4	94.8	97.8	2.78	1.36	0.93	0.61	0.99	3.89	6.68
CV,%	30.7	2.2	8.2	6.3	3.3	14.7	14.9	2.3	8.98	15.40	9.98	13.89	14.87	10.26	8.12
LSD,0.05	1.4	1.8	6.3	8.7	4.6	20.4	20.5	3.3	0.36	0.30	0.14	0.12	0.21	0.58	0.79

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

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

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 4 for complete scale.

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

Kentucky trials. 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 each trial is 100 percent—varieties with percentages over 100 yielded better than average, and varieties with percentages less than 100 yielded lower than average. Direct, statistical comparisons of varieties cannot be made using the summary Table 10, 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 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 Table 10 to determine which yearly report to refer to.

Table 7. Dry mar September 16, 2				d stand p	oersisten	ce of orc	hardgras	ss varieti	es sown
•	Seedling	Per	rcent Sta	nd		Yiel	d (tons/a	cre)	
	Vigor <sup>1</sup>	2040	20	11			2011		
Variety	Nov 19, 2010	2010 Nov 19	Apr 8	Oct 24	May 10	Jun 14	Aug 16	Oct 24	Total
<b>Commercial Vari</b>	ieties-Availa	able for F	arm Use						
Tucker	3.9	99	100	100	0.57	0.80	0.89	0.65	2.91*
Profit	3.6	99	100	100	0.63	0.79	0.77	0.71	2.91*
Potomac	3.6	99	100	100	0.59	0.66	0.92	0.74	2.90*
Extend	4.8	100	100	100	0.78	0.64	0.74	0.71	2.87*
RAD-LCF25	3.6	99	98	76	0.55	0.74	0.87	0.67	2.83*
Persist	2.0	94	94	99	0.36	0.62	1.07	0.75	2.81*
Benchmark Plus	3.9	99	99	99	0.50	0.62	0.95	0.72	2.78*
Tekapo	4.0	99	98	100	0.44	0.71	0.74	0.72	2.62*
Prairie	3.6	99	99	100	0.54	0.58	0.85	0.63	2.60*
<b>Experimental Va</b>	rieties								
OG 0404	4.6	99	100	77	0.69	0.65	0.92	0.67	2.93*
Dg83R01	3.3	98	95	98	0.47	0.68	0.94	0.57	2.66*
IS-OG53	1.0	5	8	79	0.20	0.67	1.03	0.68	2.59*
Dg12R01	4.8	100	100	78	0.57	0.72	0.70	0.58	2.57*
B-9.1476	2.6	97	91	95	0.33	0.63	0.98	0.54	2.48
Mean	3.6	91.7	91.4	92.7	0.51	0.68	0.88	0.67	2.75
CV,%	23.5	3.1	2.5	22.4	17.98	13.34	14.92	13.02	9.82
LSD,0.05	1.3	4.0	3.3	29.8	0.13	0.13	0.19	0.12	0.39
<sup>1</sup> Vigor score base	ed on scale	of 1 to 5 w	ith 5 bei	ng the m	ost vigoro	ous seedl	ing grow	th	

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

	Seedling	Maturity <sup>2</sup>	Pe	rcent Sta	nd		Yiel	d (tons/a	cre)	
	Vigor <sup>1</sup>	2011	2010	20	11			2011		
Variety	Nov 11, 2010	May 11	Nov 11	Mar 29	Nov 8	May 11	Jun 9	Jul 28	Oct 7	Total
<b>Commercial Vari</b>	eties-Available	for Farm Us	e							
Profit	3.5	50.3	100	100	100	1.61	0.98	1.31	1.01	4.91*
Prairie	3.3	57.5	98	100	99	1.38	1.00	1.33	1.16	4.87*
Extend	3.8	51.5	100	100	100	1.65	0.93	1.00	0.88	4.46*
RAD-LCF25	2.6	40.3	99	98	96	1.18	0.83	0.99	1.17	4.17*
Potomac	4.3	49.8	100	100	100	1.15	0.72	1.05	0.81	3.73
Benchmark Plus	2.5	59.5	99	100	100	1.17	0.78	0.85	0.86	3.67
Persist	1.3	59.5	91	93	96	0.94	0.72	1.05	0.96	3.67
Tucker	2.4	39.0	99	99	98	1.07	0.83	0.88	0.77	3.56
Tekapo	2.6	51.0	98	98	96	1.00	0.72	0.81	0.71	3.24
<b>Experimental Va</b>	rieties									
OG 0404	4.5	57.5	100	100	100	1.60	1.06	1.28	0.93	4.88*
Dg83R01	2.3	37.0	100	98	86	1.33	0.86	1.05	0.96	4.20*
IS-OG51	3.0	52.8	100	100	100	1.15	0.78	1.14	0.81	3.88
B-9.1476	2.0	37.0	96	97	86	1.01	0.68	1.10	0.92	3.71
B-9-NIC4	2.5	55.5	100	100	100	1.13	0.81	0.89	0.87	3.70
Dg12R01	4.4	39.0	99	100	100	1.29	0.80	0.86	0.58	3.53
IS-OG53	0.5	37.0	43	28	58	0.64	0.59	1.25	0.76	3.24
Mean	2.8	48.4	95.0	94.3	94.5	1.21	0.82	1.05	0.88	3.96
CV,%	22.4	8.3	3.6	3.2	9.5	19.03	16.53	19.01	26.55	13.11
LSD,0.05	0.9	5.7	4.8	4.3	12.8	0.33	0.19	0.29	0.33	0.74

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

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 4 for complete scale.

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

## **Summary**

Selecting a good orchardgrass 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 orchardgrass management. They are available from your county Extension office and are listed in the "Publications" section of the UK Forage website, www.uky.edu/Ag/Forage:

- Lime and Fertilizer Recommendations
- · Grain and Forage Crop Guide for Kentucky (AGR-18)
- Renovating Hay and Pasture Fields (AGR-26)
- Orchardgrass (AGR-58)
- *Establishing Forage Crops* (AGR-64)
- Forage Identification and Use Guide (AGR-175)
- Rotational Grazing (ID-143)

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			Princ	eton		Lexir	ngton	Quicksand
			2008 <sup>1</sup>		2010	20	09	2010
Variety	Proprietor/KY Distibutor	09 <sup>2</sup>	10	11	11	10	11	11
Commercial Vari	ieties-Available for Farm Use							
Benchmark Plus	FFR/Southern States	x <sup>3</sup>	*	*	*	*	*	x
Crown	Donley Seed	*	*	*		Х	*	
Elsie	Rose-AgriSeed	х	*	*				
Extend	Farm Service Genetics/Allied				*			*
Lazuly	ProSeeds Marketing	*	*	Х				
Megabite	Rose-AgriSeed	х	*	*				
Persist	Smith Seed Services				*	*	*	х
Potomac	Public	*	*	*	*	*	*	x
Prairie	Turner Seed Company	*	Х	*	*	*	*	*
Prodigy	Caudill Seed	*	*	х		Х	*	
Profit	Ampac Seed Company	*	*	*	*	Х	*	*
RAD-LXCF25	Radix Research				*			*
Shawnee	Rose-AgriSeed	х	*	х				
Tekapo	Ampac Seed Company	х	*	Х	*	Х	Х	х
Tucker	Oregro Seeds, Inc.	*	*	*	*			х
Experimental Va								
8SS	Rose-AgriSeed	*	*	Х				
ADG 1001	ProSeeds Marketing	х	*	Х				
ADG 1002	ProSeeds Marketing	*	*	*				
B-8.0707	Blue Moon Farms	х	*	Х				
B-9.1476	Blue Moon Farms				х			х
B-9-NIC4	Blue Moon Farms					Х	*	х
Dg12R01	Barenbrug				*			Х
DG83R01	Barenbrug				*			*
IS-OG51	DLF International Seeds					х	*	х
IS-OG53	DLF International Seeds				*			х
OG 0404	FFR/Southern States			ĺ	*			*

<sup>&</sup>lt;sup>1</sup> Establishment year.

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

 $<sup>^{3}</sup>$  x in the box indicates the variety was in the test but yielded significantly less than the top ranked variety in the test. Open box indicates the variety was not in the test.

\* Not significantly different from the highest yielding variety in the test.

VarietyProprietor2.AbertopPennington2.AlbertUniv. of Wis.AmbaAmbaDLF International SeedsAmerican Grass SeedAmbrosiaAmerican Grass SeedProd.AthosDLF International Seeds1BenchmarkFFR/Sou. St.1Benchmark PlusFFR/Sou. St.1BoonePublic6BroncGrassland West1BountyAllied Seed1CenturySeed Research of Oregon1CheckmateSeed Research of Oregon1ChristossProseeds Marketing1CrownSeed Research of Oregon1CrownDonley Seed1Crown RoyaleDonley Seed1Crown Royale PlusDonley Seed1Crown Royale PlusDonley Seed1EstendAmpac Seed1ExtendAmpac Seed1ExtendAllied Seed1HarvestarColumbia Seeds1HaymasterFFR/Sou. St.1	2-yr4		Lexington	5											7		
Proprietor  Dennington  Univ. of Wis.  Univ. of Wis.  DLF International Seeds  ador  DLF International Seeds  Prod.  Allied Seed Research of Oregon  Nor Seed Research of Oregon  Seed Research of Oregon  Seed Research of Oregon  Nor Seed Research of Oregon  Seed Research of Oregon  Nor Seed Research of Oregon  Seed Research of Oregon  Allied Seed  Ampac Seed  Rose-AgriSeed  Orle Nore-AgriSeed  Ampac Seed  Rose-AgriSeed  Allied Seed			•	5					FIII	Princeton				Quicksand	ksand		
Proprietor  Dennington  Univ. of Wis.  Univ. of Wis.  DLF International Seeds sid American Grass Seed Prod.  DLF International Seeds Allied Seed Allied Seed Proseeds Marketing Donley Seed Donley Seed Bonley Seed Donley Seed Ampac Seed Rose-AgriSeed Donley Seed Ampac Seed Rose-AgriSeed DLF International Seeds Allied Seed Allied Seed Ampac Seed Rose-AgriSeed Ampac Seed Ampac Seed Ampac Seed Rose-AgriSeed Allied Seed	2-yr <sup>4</sup>	2001	2003	2006	2002	2009	1998	2000	2002	2004	2006	2008	1999	2001	2003	2005	Mean <sup>3</sup>
Pennington  Univ. of Wis.  Univ. of Wis.  DLF International Seeds  ador DLF International Seeds  Prod. DLF International Seeds  Prod. DLF International Seeds  Prod. DLF International Seeds  Prod. DLF International Seeds  International Seeds  Allied Seed Research of Oregon  Seed Research of Oregon  Allied Seed Research of Oregon  Allied Seed  Oonley Seed  Oonley Seed  Oonley Seed  Oonley Seed  Ampac Seed  Rose-AgriSeed  Ood  Rose-AgriSeed  Allied Seed  Rese-AgriSeed  Rese-AgriSeed  Allied Seed  Rese-AgriSeed  Rese-AgriSeed  Allied Seed  Rese-AgriSeed		2-yr	3-yr	4-yr	3-yr	2-yr	2-yr	2-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	3-yr	4-yr	(#trials)
Univ. of Wis.  DLF International Seeds ador DLF International Seeds and American Grass Seed Prod. DLF International Seeds Prod. DLF International Seeds Prod. DLF International Seeds Prod. St. Allied Seed Research of Oregon ate Seed Research of Oregon Allied Seed Allied Seed Donley Seed Boyale Donley Seed Donley Seed Soyale Donley Seed Boyale Donley Seed Ampac Seed Boyale Donley Seed Ampac Seed Allied Seed									71								ı
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Grassland West  Allied Seed  y Seed Research of Oregon  nate Seed Research of Oregon  ssed Research of Oregon  ssed Research of Oregon  Proseeds Marketing  and Seed Research of Oregon  Donley Seed  Royale Dunley Seed  Royale Dunley Seed  Rose-AgriSeed  Ince DLF International Seeds  I Allied Seed  Irk James VanLeeuwen  star Columbia Seeds  rist FFR/Sou. St.							103	104									104(2)
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vood Ampac Seed Rose-AgriSeed rance DLF International ad Allied Seed ark James VanLeeuwe estar Columbia Seeds naster FFR/Sou. St.									108						6		103(2)
rance DLF International nd Allied Seed nark James VanLeeuwe estar Columbia Seeds naster FFR/Sou. St.		98												98			86(2)
DLF International Allied Seed James VanLeeuwe Columbia Seeds FFR/Sou. St.												86					ı
											104						ı
										100							ı
		102	102						103	86				101	96		100(6)
				91	97						106					100	99(4)
				94												6	96(2)
Haymate FFR/Sou. St. 1	106						93	100	106				108	104	103		103(7)
Icon Seed Research of Oregon				105												86	102(2)
Intensiv Barenbrug			102														ı
Lazuly Proseeds Marketing												97					ı

Table 10. Summa	Table 10. Summary of Kentucky Orchardgrass Yield Trials 1999-2011 (yield shown as a percentage of the mean of the commercial varieties in the trial).	ss Yield Ti	rials 199	9-2011	rield sho	wn as a p	ercentag	e of the r	nean of	the com	nercial v	arieties	in the tri	al).				
				Lexington	gton					Princeton	ton				Quicksand	sand		
		19991,2	2001	2003	2006	2002	2009	1998	2000	2002	2004	2006	2008	1999	2001	2003	2002	Mean <sup>3</sup>
Variety	Proprietor	2-yr <sup>4</sup>	2-yr	3-yr	4-yr	3-yr	2-yr	2-yr	2-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	3-yr	4-yr	(#trials)
LG-31	DLF International Seeds										95							ı
Mammoth	DLF International Seeds		102												104			103(2)
Megabite	Turf-Seed	94	105										106	101				102(4)
Niva	DLF International Seeds									81								1
Paiute	DLF International Seeds					108												1
Persist	Smith Seed			123	105	106	108				101					108	101	107(7)
Potomac	Public	104					104			86			108	66				103(5)
Prairie	Turner Seed		101		107	101	111		95	104		100	104		102	105	107	103(11)
Prodigy	Caudill Seed						102						103					103(2)
Profit	Ampac Seed					107	94						103					101(3)
Renegade	Grassland West								95									1
Shawnee	Rose-AgriSeed												86					1
Shiloh	Proseeds Marketing							109										1
Shiloh II	Proseeds Marketing										117							1
Spanish Pink	DLF International Seeds							82										1
Spanish Red	DLF International Seeds	101												94				98(2)
Takena	Smith Seed		107							100					108			105(3)
Tekena II	Smith Seed			110	102						109					106	104	106(5)
Tekapo	Ampac Seed	88			91	81	78					86	98	94	92	105	91	90(10)
Tucker	Oregro Seeds											96	102					99(2)
Udder	Improved Forages			100	107				102	102						106	66	103(6)
Vailliant	Proseeds Marketing					96												1
Vision	Cropmark Seeds			63												29		65(2)
1 //	1 - 1 - 1 - 1 - 1																	

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 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 1999 was harvested 2 years, so the final report would be "2001 Orchardgrass Report" archived in the KY
 Forage website at a cwww.uky.edu/Ag/Forage>.
 Report for the final year of when respective variety was included in two or more trials.
 Number of years of data.



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