



# 2017 Orchardgrass Report

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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, bunch-type sod, making it 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 11 shows a summary of all orchardgrass varieties tested in Kentucky for the last 15 years. The UK Forage Extension website, at [www.uky.edu/Ag/Forage](http://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 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.

Table 1. Temperature and rainfall at Lexington, Kentucky, in 2015, 2016, and 2017.

	2015				2016				2017 <sup>2</sup>			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	32	+1	2.17	-0.69	32	+1	0.80	-2.06	40	+9	6.81	+3.95
FEB	26	-9	3.08	-0.13	38	+3	6.09	+2.88	47	+12	4.46	+1.25
MAR	45	+1	7.34	+2.94	52	+8	4.07	-0.33	48	+4	3.34	-1.06
APR	57	+2	13.19	+9.31	57	+2	3.97	+0.09	62	+7	4.17	+0.29
MAY	69	+5	3.02	-1.45	64	0	9.17	+4.70	66	+2	7.74	+3.27
JUN	75	+3	8.20	+4.54	76	+4	5.09	+1.43	73	+1	7.68	+4.02
JUL	77	+1	10.22	+5.22	79	+3	7.43	+2.43	76	0	4.49	-0.51
AUG	74	-1	3.49	-0.44	79	+4	4.37	+0.44	74	-1	6.66	+2.73
SEP	72	+4	3.49	+0.29	74	+6	2.18	-1.02	69	+1	4.72	+1.52
OCT	59	+2	2.78	+0.21	64	+7	0.37	-2.20	60	+3	6.06	+3.49
NOV	51	+6	3.72	+0.33	51	+6	1.94	-1.45				
DEC	49	+13	8.42	+4.44	37	+1	9.4	+5.42				
Total			69.12	+24.57			54.88	+10.33			56.13	+18.95

<sup>1</sup> DEP is departure from the long-term average.

<sup>2</sup> 2017 data is for ten months through October.

**Seed quality.** Buy premium-quality seed 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 it will be available when needed.

## Description of the Tests

Data from five studies are reported. Orchardgrass varieties were sown at Lexington (2014, 2015, and 2016), Princeton (2015), and Quicksand (2016). The soils at Lexington (Maury), Princeton (Crider), and Quicksand (Nolin) are well-drained silt loams and are well-suited to orchardgrass production. Seedlings were made at the rate of 20 pounds per acre into a prepared seedbed with a

Table 2. Temperature and rainfall at Princeton, Kentucky, in 2015, 2016, and 2017.

	2015				2016				2017 <sup>2</sup>			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	34	0	1.51	-2.29	35	+1	1.37	-2.43	43	+9	3.18	-0.62
FEB	28	-10	4.16	-0.27	40	+2	4.23	-0.20	49	+11	1.78	-2.65
MAR	46	-1	6.83	+1.89	53	+6	7.3	+2.36	50	+3	4.09	-0.85
APR	60	+1	7.38	+2.58	59	0	4.41	-0.39	63	+4	4.28	-0.52
MAY	68	+1	3.52	-1.44	64	-3	6.21	+1.25	67	0	4.43	-0.53
JUN	76	+1	2.85	-1.00	77	+2	2.18	-1.67	74	-1	5.39	+1.54
JUL	79	+1	8.83	+4.54	80	+2	12.72	+8.43	78	0	2.23	-2.06
AUG	73	-4	2.90	-1.11	78	+2	5.37	+1.36	75	-2	1.39	-2.62
SEP	71	0	0.82	-2.51	73	+2	1.33	-2.00	71	0	3.93	+0.60
OCT	60	+1	4.15	+1.10	65	+6	0.25	-2.80	61	+2	6.65	+3.60
NOV	53	+6	5.95	+1.32	52	+5	2.86	-1.77				
DEC	49	+10	6.37	+1.33	38	-1	6.51	+1.47				
Total			55.27	+4.14			54.74	+3.61			38.35	-4.11

<sup>1</sup> DEP is departure from the long-term average.

<sup>2</sup> 2017 data is for the ten months through October.

Table 3. Temperature and rainfall at Quicksand, Kentucky, in 2016 and 2017.

	2016				2017 <sup>2</sup>			
	Temp		Rainfall		Temp		Rainfall	
	°F	DEP <sup>1</sup>	IN	DEP	°F	DEP	IN	DEP
JAN	32	+1	2.76	-0.53	43	+12	4.61	+1.32
FEB	40	+7	6.06	+2.46	46	+13	2.27	-1.33
MAR	51	+10	2.16	-2.18	48	+7	4.13	-0.21
APR	57	+4	3.53	-0.57	62	+9	4.23	+0.13
MAY	63	+1	8.04	+3.56	65	+3	6.33	+1.85
JUN	73	+3	5.51	+1.69	71	+1	5.82	+2.00
JUL	78	+4	6.52	+1.27	76	+2	5.76	+0.51
AUG	78	+5	5.59	+1.58	73	0	6.59	+2.58
SEP	72	+6	1.05	-2.47	68	+2	2.57	-0.95
OCT	62	+8	1.01	-1.90	59	+5	5.56	+2.65
NOV	49	+7	2.42	-1.46				
DEC	38	+5	5.62	+1.49				
Total			50.27	+2.93			47.87	+8.55

<sup>1</sup> DEP is departure from the long-term average.

<sup>2</sup> 2017 data is for the ten months through October.

**Table 4. Descriptive scheme for the stages of development in perennial forage grasses.**

Code	Description	Remarks
<b>Leaf development</b>		
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	
<b>Sheath elongation</b>		
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	
<b>Tillering (alternative to sheath elongation)</b>		
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	
<b>Stem elongation</b>		
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	
<b>Booting</b>		
45	Boot swollen	
<b>Inflorescence emergence</b>		
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	
<b>Anthesis</b>		
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.
<b>Seed ripening</b>		
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 quantity when 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.

**Table 5. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 4, 2014, at Lexington, Kentucky.**

Variety	Seedling Vigor <sup>1</sup> Oct 9, 2014	Maturity <sup>2</sup>					Percent Stand					Yield (tons/acre)					3-year Total			
		2015		2016		2017		2015		2016		2017		2015		2016		2017		
		May 11	May 12	May 11	May 12	May 10	May 10	May 10	May 10	May 10	May 10	May 10	May 10	May 10	May 10	May 10		May 10	May 10	May 10
<b>Commercial Varieties-Available for Farm Use</b>																				
Potomac	4.8	54.0	60.0	59.5	100	100	100	100	99	88	93	93	4.56	4.57	1.69	0.96	1.15	3.79	12.91*	
Prairie	3.5	55.5	57.5	58.0	100	100	100	100	98	95	95	95	3.95	4.17	1.90	1.10	0.79	3.80	11.93*	
Benchmark Plus	4.3	55.5	59.5	59.5	100	100	100	100	98	96	95	95	3.89	4.05	1.49	1.26	0.87	3.62	11.56*	
Persist	4.1	57.0	59.5	57.5	100	100	100	100	99	94	95	95	4.10	4.07	1.45	0.85	0.90	3.21	11.37*	
Profit	4.0	46.8	51.5	55.0	100	100	100	100	100	89	94	94	3.93	3.65	1.18	0.92	1.08	3.18	10.76*	
SS07080GDT	4.4	49.3	57.5	55.5	100	100	100	100	98	82	92	92	3.31	3.65	1.29	0.81	1.04	3.14	10.10	
Tekapo	3.3	51.8	53.5	55.0	100	97	98	94	89	81	74	74	2.24	4.05	0.69	0.94	0.95	2.58	8.87	
<b>Experimental Varieties</b>																				
B-14-0515	2.6	52.3	47.3	54.0	100	98	99	98	98	90	88	88	3.68	5.16	1.63	0.93	0.68	3.24	12.08*	
B-14-0519	3.3	54.5	47.5	53.5	98	99	99	98	96	85	91	91	4.00	4.15	1.30	1.24	1.15	3.68	11.83*	
B-14-0521	3.3	55.0	58.5	58.0	98	99	99	99	97	95	95	95	4.05	3.97	1.37	1.03	0.89	3.29	11.32*	
GO-OG131E	4.0	50.3	57.0	57.5	100	98	100	99	97	81	89	89	3.37	3.94	1.32	0.90	0.88	3.10	10.40	
GO-MOSO	3.8	51.5	53.5	52.5	98	98	99	98	96	91	92	92	3.15	3.82	1.03	1.13	1.01	3.17	10.14	
GO-BXCR	4.0	44.8	46.3	51.5	100	100	100	100	97	95	95	95	3.25	3.72	0.77	0.88	0.91	2.55	9.53	
BARDFGF47	3.0	43.5	45.0	56.0	100	95	97	97	93	83	79	79	3.17	3.71	0.41	0.98	1.06	2.46	9.33	
Mean	3.7	51.5	53.9	56.0	99	99	99	99	97	89	90	90	3.62	4.05	1.25	1.00	0.95	3.20	10.87	
CV%	13.5	7.1	3.5	3.7	1	2	1	2	3	10	7	7	16.66	19.20	27.27	33.34	27.06	15.12	14.44	
LSD <sub>0.05</sub>	0.7	5.2	2.7	3.4	2	3	2	3	5	12	10	10	0.86	1.11	0.49	0.47	0.37	0.69	2.24	

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

<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 4 for complete scale.

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

disk drill. Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvest plot area of 5 feet by 15 feet. Nitrogen was top-dressed at 60 pounds per acre of actual nitrogen in March, after the first cutting, and again in late summer, for a total of 180 pounds per acre 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 weight samples were taken at each harvest to calculate percent dry matter production. Management practices for establishment, fertility (P, K, and lime based on regular soil tests), 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 per acre) are reported in tables 5 through 9. Yields are given by cutting date for 2017 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 10 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. Experimental varieties are not available for farm use; commercial varieties can be purchased through the distributors listed in tables 10 and 11.

In Table 10, an open block indicates that the variety was not in that particular test (labeled at the top of the column); an “x” in the block 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

Table 6. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 4, 2015, at Lexington, Kentucky.

Variety	Seedling Vigor <sup>1</sup> Oct 15, 2015	Maturity <sup>2</sup>		Percent Stand										2-year Total	
		May 11	May 10	2016		2017		2017		2017		2017			Total
				Mar 18	Oct 17	Mar 23	Oct 23	Total	May 10	Jun 23	Aug 18	Oct 20	Total		
<b>Commercial Varieties-Available for Farm Use</b>															
Persist	4.4	50.3	59.0	100	100	100	100	100	1.77	0.82	0.84	0.96	4.39	8.70*	
Olathe	4.4	52.0	55.5	100	100	100	100	100	4.27	0.78	0.64	1.02	4.23	8.50*	
SS-07080GDT	4.9	54.5	56.5	100	100	100	100	100	4.38	0.90	0.68	0.87	4.10	8.48*	
Prairie	4.5	53.5	56.5	100	100	100	100	100	4.07	0.89	0.65	0.69	3.99	8.06*	
Potomac	4.9	51.8	59.0	100	100	99	100	100	4.10	0.92	0.50	1.01	3.94	8.04*	
Inavale	4.4	47.5	49.8	100	100	95	97	100	4.14	0.80	0.73	0.67	3.61	7.75*	
Treposno	5.0	46.3	48.5	100	94	86	91	100	3.79	1.15	0.63	0.80	3.52	7.31*	
Lyra	4.9	45.0	49.3	100	100	97	97	100	3.97	0.84	0.55	0.82	3.19	7.16*	
Proft	4.8	45.0	55.3	100	100	98	98	100	3.74	0.90	0.57	0.78	3.19	6.94*	
<b>Experimental Varieties</b>															
OG-0707	4.9	48.0	56.5	100	100	100	100	100	4.17	1.18	0.58	0.67	4.47	8.64*	
RAD-ECF44	4.6	52.5	56.5	100	100	99	98	100	4.20	0.94	0.65	0.87	4.01	8.20*	
DLFPS-OG-79	4.6	45.0	49.3	100	100	100	100	100	4.40	0.79	0.62	0.72	3.48	7.89*	
DLFPS-OG-80	4.6	45.0	50.3	100	97	93	92	100	3.92	0.95	0.60	0.91	3.85	7.77*	
KYDG1001	4.1	48.8	56.0	100	100	99	99	100	4.07	1.01	0.46	0.62	3.45	7.52*	
PPG-OG-114	4.3	45.0	45.0	100	100	100	98	100	3.54	1.22	0.47	0.78	3.92	7.47*	
KYDG1002	4.4	46.8	52.0	100	99	94	93	100	3.04	1.03	0.63	0.84	3.80	6.85	
Dg&2Ro1	4.0	47.5	50.3	100	100	99	98	100	3.69	0.57	0.53	0.69	2.70	6.38	
Mean	4.6	48.5	53.2	100	99	97	98	100	3.99	1.42	0.92	0.81	3.76	7.74	
CV%	8.5	5.2	4.7	0	1	2	4	20.53	33.91	34.91	40.22	30.79	22.57	16.70	
LSD <sub>0.05</sub>	0.5	3.6	3.6	0	1	3	6	1.16	0.68	0.46	0.35	0.35	1.21	1.84	

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

<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 4 for complete scale.

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

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. It is important to consider the distribution of yield across the growing season when evaluating productivity of orchardgrass varieties (tables 5 through 9).

**Table 7. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 7, 2016, at Lexington, Kentucky.**

Variety	Seedling Vigor <sup>1</sup> Oct 5, 2016	Maturity <sup>2</sup> 2017 May 10	Percent Stand			Yield (tons/acre)				
			2016		2017	2017				
			Oct 5	Mar 14	Oct 23	May 10	Jun 22	Aug 16	Oct 20	Total
<b>Commercial Varieties-Available for Farm Use</b>										
Alpine II	3.6	46.3	100	100	100	2.57	1.71	1.06	0.99	6.33*
Prairie	3.3	56.5	100	100	100	2.34	1.69	0.91	1.08	6.02*
Echelon	2.9	45.0	100	100	100	2.26	1.85	1.04	0.82	5.98*
Rushmore II	3.5	54.5	100	100	100	2.33	1.54	0.96	1.01	5.84*
Devour	3.8	49.3	100	100	100	2.20	1.77	1.02	0.83	5.81*
Endurance	3.3	55.5	99	100	100	2.25	1.34	1.16	1.03	5.78*
Prodigy	4.3	55.0	100	100	100	2.18	1.67	1.02	0.87	5.74*
Olathe	2.8	56.0	100	100	100	2.47	1.44	0.80	1.03	5.73*
Albert	3.0	53.5	100	100	100	2.23	1.40	1.10	0.98	5.71*
Persist	3.3	58.0	100	100	100	2.07	1.40	1.22	0.99	5.67*
Inavale	3.1	46.3	100	100	100	2.38	1.58	0.99	0.66	5.61*
SS0708OGDT	4.8	56.5	100	100	100	2.35	1.49	0.85	0.90	5.59*
Potomac	4.3	57.0	100	100	100	2.11	1.30	1.07	0.89	5.37*
<b>Experimental Varieties</b>										
RAD-ECF44	3.3	57.5	100	100	100	2.59	1.30	1.32	1.13	6.34*
GADG1305	3.8	62.0	100	100	100	2.42	1.25	1.22	1.12	6.01*
PPG-OG102	4.0	52.0	100	100	100	2.35	1.59	1.26	0.76	5.95*
GADG1303	3.1	62.0	100	100	100	2.76	1.22	1.06	0.89	5.93*
GADG1314	3.5	62.0	99	100	100	2.47	1.37	1.02	0.88	5.74*
IS-OG62	3.3	53.5	100	100	100	2.21	1.16	1.46	0.88	5.71*
KYDG1002	3.6	55.5	100	100	100	2.13	1.32	1.19	1.01	5.66*
RAD-ECF39	3.4	56.0	100	100	100	2.26	1.32	0.97	1.00	5.56*
GADG1313	3.4	62.0	100	100	100	2.26	1.02	0.97	1.14	5.40*
GADG1304	3.4	62.0	100	100	100	2.24	1.12	1.00	0.95	5.31*
GADG1315	3.5	62.0	100	100	100	1.99	1.33	0.96	0.84	5.12
KYDG1001	3.1	52.5	100	100	100	2.13	1.18	0.72	0.93	4.97
GADG1401	2.9	62.0	100	100	100	1.38	0.76	0.80	1.03	3.97
Mean	3.5	55.8	100	100	100	2.27	1.39	1.04	0.95	5.65
CV,%	12.3	4.0	1	0	0	24.59	17.05	34.83	28.73	15.14
LSD,0.05	0.6	3.2	1	0	0	0.78	0.33	0.51	0.38	1.20

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

<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 4 for complete scale.

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

Table 11 is a summary of yield data from 2002 to 2017 of commercial varieties that have been entered in the 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 11, 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 the footnote in Table 11 to determine the yearly report that should be referenced.

## 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](http://www.uky.edu/Ag/Forage):

- Lime and Fertilizer Recommendations (AGR-1)
- 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)
- Rating Scale for Brown Stripe of Orchardgrass (PPFS-AG-F-07)

## About the Authors

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**Table 8. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown August 25, 2015, at Princeton, Kentucky.**

Variety	Seedling Vigor <sup>1</sup> Oct 23, 2015	Maturity <sup>2</sup>		Percent Stand					Yield (tons/acre)					2-year Total
		2016	2017	2015	2016		2017		2016	2017				
		May 4	May 9	Oct 23	Mar 22	Nov 2	Mar 16	Oct 25	Total	May 9	Jun 12	Oct 25	Total	
<b>Commercial Varieties-Available for Farm Use</b>														
Olathe	1.3	55.0	57.5	84	92	86	87	87	5.75	2.11	1.33	0.73	4.17	9.92*
Potomac	3.1	55.5	58.5	99	99	88	90	90	5.33	2.15	0.96	0.53	3.65	8.98*
Persist	3.0	55.5	59.0	100	100	93	94	91	5.13	2.11	1.11	0.59	3.81	8.93*
SS0708OGDT	2.4	55.5	57.0	98	99	91	93	93	5.11	2.12	0.99	0.64	3.75	8.86*
Treposno	3.3	48.0	55.3	99	97	40	40	45	5.75	1.42	0.99	0.55	2.96	8.71*
Lyra	3.1	45.0	51.5	99	98	84	77	83	5.23	1.65	1.20	0.50	3.35	8.59*
Inavale	1.9	51.0	53.5	95	95	84	84	84	4.89	1.65	1.26	0.75	3.66	8.55*
Prairie	2.8	55.5	58.0	96	98	84	86	88	4.95	1.88	0.99	0.70	3.56	8.52*
Profit	2.8	51.3	55.0	99	98	86	86	88	4.75	1.79	1.25	0.65	3.70	8.45*
<b>Experimental Varieties</b>														
RAD-ECF44	2.4	56.5	58.5	98	97	88	88	86	5.53	2.18	0.91	0.81	3.91	9.44*
KYDG1001	3.0	52.8	58.0	99	99	69	80	85	5.68	2.14	0.98	0.48	3.59	9.27*
OG0707	3.1	52.3	56.5	99	100	95	93	93	5.84	2.03	0.86	0.54	3.43	9.27*
DLFPS-OG-79	2.0	46.3	51.5	91	94	90	92	93	5.19	2.00	1.24	0.78	4.02	9.21*
DLFPS-OG-80	2.3	47.3	53.0	93	88	79	82	80	4.91	1.82	1.13	0.54	3.49	8.40*
KYDG1002	2.8	51.8	57.0	99	99	82	82	86	5.01	1.83	0.82	0.67	3.33	8.34*
Dg82Ro1	1.1	50.8	53.0	84	84	78	81	80	4.66	1.72	0.93	0.47	3.11	7.77*
Mean	2.5	51.9	55.8	98	96	82	83	84	4.23	1.91	1.06	0.62	3.59	8.26
CV,%	36.6	6.7	3.6	5	4	11	10	8	21.14	21.64	28.27	53.65	17.88	18.15
LSD,0.05	1.3	4.9	2.9	7	6	13	11	10	1.58	0.59	0.43	0.47	0.91	2.28

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

<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 4 for complete scale.

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

**Table 9. Dry matter yields, seedling vigor, and stand persistence of orchardgrass varieties sown September 2, 2016, at Quicksand, Kentucky.**

Variety	Seedling Vigor <sup>1</sup> Nov 3, 2016	Percent Stand			Yield (tons/acre)				
		2016	2017		2017				
		Nov 3	Mar 24	Nov 8	May 4	Jun 23	Sep 8	Oct 31	Total
<b>Commercial Varieties-Available for Farm Use</b>									
Inavale	4.0	96	92	96	1.44	1.65	1.20	0.90	5.19*
Eschelon	2.6	97	81	83	0.74	1.73	1.55	1.02	5.04*
SS0705OGDT	4.3	98	98	98	1.87	0.93	1.15	0.86	4.81*
Prairie	3.0	95	82	95	1.05	1.71	1.28	0.73	4.77*
Albert	3.3	93	76	83	0.88	1.46	1.48	0.84	4.66*
Persist	4.4	99	100	100	1.31	1.26	1.33	0.75	4.65*
Potomac	3.4	95	94	96	1.42	1.26	1.24	0.73	4.64*
Rushmore II	3.6	98	94	97	1.30	1.43	1.18	0.68	4.59*
Olathe	2.8	91	83	89	1.03	1.45	0.92	0.81	4.20*
Endurance	2.8	87	82	89	1.02	1.07	1.17	0.57	3.83
<b>Experimental Varieties</b>									
KYDG1002	4.5	100	99	100	1.78	1.40	1.07	0.72	4.96*
KYDG1001	3.1	95	86	95	1.17	1.75	1.28	0.69	4.89*
Mean	3.5	95	89	93	1.25	1.42	1.24	0.77	4.69
CV,%	29.5	8	16	11	28.05	30.58	29.70	34.31	17.07
LSD,0.05	1.5	10	21	14	0.50	0.63	0.53	0.38	1.15

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

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



**Table 10. Performance of orchardgrass varieties across years and locations in Kentucky.**

Variety	Proprietor/KY Distributor	Lexington					Princeton		Quicksand	
		2014 <sup>1</sup>		2015		2016	2015		2016	
		15 <sup>2</sup>	16	17	16	17	17	16	17	17
<b>Commercial Varieties-Available for Farm Use</b>										
Albert	Oregro Seeds						*			*
Alpine II	Mountain View Seeds						*			
Benchmark Plus	Southern States	*	*	*						
Echelon	DLF Pickseed USA						*			*
Endurance	DLF Pickseed USA						*			x <sup>3</sup>
Devour	Mountain View Seeds						*			
Inavale	DLF Pickseed USA				*	*	*	*	*	*
Lyra	Hood River Seed				*	X		*	*	
Olathe	DLF International				*	*	*	*	*	*
Persist	Smith Seed Services	*	*	*	*	*	*	*	*	*
Potomac	Public	*	*	*	*	*	*	*	*	*
Prairie	Turner Seed Company	*	*	*	*	*	*	*	*	*
Prodigy	Caudill Seed						*			
Profit	Ampac Seed Company	*	X	*	*	X		*	*	
Rushmore II	Mountain View Seeds						*			*
SS-0708OGDT	Southern States	X	X	*	*	*	*	*	*	*
Tekapo	Ampac Seed Company	X	*	X						
Treposno	Hood River Seed				*	*		*	*	
<b>Experimental Varieties</b>										
B-14.0515	Blue Moon Farms	X	*	*						
B-14.0519	Blue Moon Farms	*	*	*						
B-14.0521	Blue Moon Farms	*	X	*						
BAR DGLF47	Barenbrug	X	X	X						
Dg82Ro1	Barenbrug				*	X		*	X	
DLFPS-OG-79	DLF International				*	*		*	*	
DLFPS-OG-80	DLF International				*	*		*	*	
GADG1303	Univ. of Georgia						*			
GADG1304	Univ. of Georgia						*			
GADG1305	Univ. of Georgia						*			
GADG1313	Univ. of Georgia						*			
GADG1314	Univ. of Georgia						*			
GADG1315	Univ. of Georgia						X			
GADG1401	Univ. of Georgia						X			
GO-BXCR	Grassland Oregon	X	X	X						
GO-MOSO	Grassland Oregon	X	X	*						
GO-OG131E	Grassland Oregon	X	X	X						
IS-OG62	DLF Pickseed USA						*			
KYDG1001	Ky. Agri. Exp. Sta.				*	*	X	*	*	*
KYDG1002	Ky. Agri. Exp. Sta.				X	*	*	*	*	*
OG-0707	Allied Seed				*	*		*	*	
PPG-OG-102	Mountain View Seeds						*			
PPG-OG-114	Smith Seed Services				*	*				
RAD-ECF39	Radix Research						*			
RAD-ECF44	Radix Research				*	*	*	*	*	

<sup>1</sup> Establishment year.

<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.



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