



2019 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 10 shows a summary of all orchardgrass varieties tested in Kentucky for the last 15 years. The UK Forage Extension website, at forages.ca.uky.edu, 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. A recent publication provides a good overview of orchardgrass maturity over time and over years (See Table 3).

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 2017, 2018, and 2019.

	2017				2018				2019 ²			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	40	+9	6.81	+3.95	31	0	2.01	-0.85	33	+2	4.11	+1.25
FEB	47	+12	4.46	+1.25	45	+10	9.77	+6.56	42	+7	7.64	+4.43
MAR	48	+4	3.34	-1.06	42	-2	5.16	+0.76	43	-1	3.44	-0.91
APR	62	+7	4.17	+0.29	50	-5	5.52	+1.64	54	+4	4.76	+0.88
MAY	66	+2	7.74	+3.27	73	+9	8.39	+3.92	69	+5	4.49	+0.02
JUN	73	+1	7.68	+4.02	76	+4	6.42	+2.76	73	+1	6.13	+2.47
JUL	76	0	4.49	-0.51	77	+1	6.15	+1.15	79	+3	3.30	-1.70
AUG	74	-1	6.66	+2.73	77	+2	6.45	+2.52	77	+2	2.42	-1.51
SEP	69	+1	4.72	+1.52	74	+6	12.88	+9.68	77	+9	0.18	-3.02
OCT	60	+3	6.06	+3.49	59	+2	6.54	+3.97	61	+4	8.15	+5.58
NOV	47	+2	3.09	-0.30	42	-3	5.64	+2.25				
DEC	35	-1	2.66	-1.32	40	+4	7.35	+3.37				
Total			61.88	+17.33			82.28	+37.73			44.67	+7.49

¹ DEP is departure from the long-term average.

² 2019 data is for ten months through October.

Table 2. Temperature and rainfall at Quicksand, Kentucky, in 2017, 2018, and 2019.

	2017				2018				2019 ²			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP ¹	IN	DEP	°F	DEP ¹	IN	DEP	°F	DEP ¹	IN	DEP
JAN	43	+12	4.61	+1.32	31	0	1.71	-1.58	37	+6	4.93	+1.64
FEB	46	+13	2.27	-1.33	48	+15	7.56	+3.96	45	+12	8.15	+4.55
MAR	48	+7	4.13	-0.21	44	+3	5.90	+1.56	44	+3	2.15	-2.19
APR	62	+9	4.23	+0.13	52	-1	4.07	-0.03	58	+5	2.55	-1.55
MAY	65	+3	6.33	+1.85	71	+9	5.28	+0.80	68	+6	3.91	-0.57
JUN	71	+1	5.82	+2.00	75	+5	5.47	+1.65	72	+2	8.35	+4.53
JUL	76	+2	5.76	+0.51	76	+2	5.39	+0.14	77	+3	6.32	+1.07
AUG	73	0	6.59	+2.58	75	+2	3.23	-0.78	75	+2	1.57	-2.44
SEP	68	+2	2.57	-0.95	74	+8	8.70	+5.18	74	+8	0.04	-3.48
OCT	59	+5	5.56	+2.65	59	+5	4.54	+1.63	60	+6	6.80	+3.89
NOV	47	+5	1.33	-2.55	43	+1	5.03	+1.15				
DEC	37	+4	3.28	-0.86	41	+8	7.07	+2.93				
Total			52.48	+5.14			63.95	+16.61			44.77	+5.45

¹ DEP is departure from the long-term average.

² 2019 data is for the ten months through October.

Table 3. Regional orchardgrass maturity comparison (2011-2014).

Variety	Maturity Rating ¹				
	KY	PA	UT	VA	WI
BAR DGL 1GRL	3.3	3.0	3.3	3.6	2.3
Barlegro	1.0	1.5	1.7	1.0	2.2
Benchmark Plus	3.1	2.7	2.7	3.2	2.4
Crown Royale	2.9	2.6	3.1	1.5	2.2
Dascada	1.6	2.3	2.3	1.1	2.6
Excellate SA	1.7	2.1	1.8	1.1	2.0
Harvestar	2.1	2.1	2.2	1.2	2.1
Pennlate	3.0	2.6	2.6	1.2	2.2
Persist	3.3	2.9	3.2	2.2	2.7
Potomac	2.4	3.2	2.7	1.2	2.6
Prairie	3.0	2.6	3.1	1.7	2.6
Profit	2.9	2.5	3.0	1.3	2.3
Quickdraw	3.1	3.1	2.7	2.6	2.4
LSD2	0.4	0.4	0.5	0.9	0.3

¹ Rating of 1 to 4: 1 = very late; 4 = very early.

² Varieties significantly differ based on LSD.

For complete article: Hay and Forage Grower, March 2018.

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

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

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 (2016, 2017, and 2018) and Quicksand (2016 and 2018). The soils at Lexington (Maury) 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 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 and Quicksand are presented in tables 1 and 2.

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 2019 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 shows information about proprietors/distributors for all varieties included in the tests discussed in this report. 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 from dealerships. It is best to choose a variety that has performed well over several years and lo-

Table 5. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 7, 2016, at Lexington, Kentucky.

Variety	Seedling Vigor ¹ 2016 Oct 5	Maturity ²			Percent Stand								Yield (tons/acre)					3-year Total
		2017	2018	2019	2016	2017		2018		2019		2017	2018	2019				
		May 10	May 17	May 13	Oct 5	Mar 14	Oct 23	Mar 20	Oct 19	Mar 22	Oct 23	Total	Total	May 13	Jun 26	Total		
Commercial Varieties-Available for Farm Use																		
Prairie	3.3	56.5	58.0	57.5	100	100	100	100	98	98	50	6.02	2.97	1.06	0.90	1.96	10.94*	
Alpine II	3.6	46.3	48.5	47.5	100	100	100	86	96	97	45	6.33	2.36	0.85	0.90	1.76	10.45*	
Olathe	2.8	56.0	54.5	56.0	100	100	100	96	98	95	60	5.73	2.84	0.72	1.02	1.74	10.31*	
Endurance	3.3	55.5	54.3	56.0	99	100	100	99	99	99	63	5.78	2.42	0.96	0.89	1.85	10.05*	
SS0708OGDT	4.8	56.5	58.0	57.5	100	100	100	98	98	98	59	5.59	2.52	0.91	0.97	1.88	9.99*	
Echelon	2.9	45.0	45.0	47.5	100	100	100	93	95	95	34	5.98	1.88	0.95	0.99	1.94	9.79*	
Albert	3.0	53.5	55.0	51.5	100	100	100	100	99	99	60	5.71	2.36	0.80	0.88	1.68	9.75*	
Rushmore II	3.5	54.5	58.5	56.5	100	100	100	99	99	97	49	5.84	2.17	0.95	0.77	1.72	9.73*	
Persist	3.3	58.0	60.0	58.0	100	100	100	100	96	95	46	5.67	2.34	0.84	0.84	1.68	9.68*	
Devour	3.8	49.3	48.8	50.3	100	100	100	81	96	96	50	5.81	2.01	0.81	1.02	1.83	9.65*	
Prodigy	4.3	55.0	57.0	56.5	100	100	100	99	98	96	51	5.74	2.16	0.87	0.86	1.73	9.63*	
Inavale	3.1	46.3	48.5	50.0	100	100	100	91	96	95	50	5.61	1.97	0.76	0.96	1.72	9.30	
Potomac	4.3	57.0	43.2	58.0	100	100	100	100	99	97	54	5.37	2.12	0.81	0.96	1.76	9.25	
Experimental Varieties																		
GADG1303	3.1	62.0	59.0	58.0	100	100	100	100	100	100	63	5.93	2.60	1.37	0.90	2.27	10.80*	
RAD-ECF44	3.3	57.5	58.5	58.0	100	100	100	92	96	96	61	6.34	2.50	1.05	0.87	1.92	10.76*	
GADG1305	3.8	62.0	60.5	58.0	100	100	100	98	98	97	63	6.01	2.56	1.16	0.81	1.97	10.54*	
GADG1314	3.5	62.0	61.0	58.0	99	100	100	100	100	100	56	5.74	2.42	1.13	0.74	1.87	10.04*	
KYDG1002	3.6	55.5	56.5	56.0	100	100	100	98	92	91	45	5.66	2.42	0.96	0.97	1.93	10.00*	
IS-OG62	3.3	53.5	56.5	54.0	100	100	100	96	97	95	60	5.71	2.61	0.75	0.92	1.67	9.98*	
PPG-OG-102	4.0	52.0	52.3	52.0	100	100	100	96	95	95	55	5.95	2.14	0.81	0.92	1.73	9.82*	
KYDG1001	3.1	52.5	56.0	56.0	100	100	100	99	99	97	56	4.97	2.66	1.07	1.12	2.19	9.82*	
GADG1304	3.4	62.0	60.5	58.0	100	100	100	100	100	100	68	5.31	2.56	0.94	0.84	1.78	9.65*	
RAD-ECF39	3.4	56.0	56.5	57.5	100	100	100	96	95	87	39	5.56	2.13	0.92	0.80	1.72	9.41	
GADG1313	3.4	62.0	60.0	58.0	100	100	100	98	97	97	48	5.40	2.26	0.92	0.78	1.70	9.36	
GADG1401	2.9	62.0	59.5	58.0	100	100	100	100	99	98	35	5.09	2.28	1.02	0.67	1.69	9.05	
GADG1315	3.5	62.0	60.5	58.0	100	100	100	100	99	98	45	5.12	2.11	1.08	0.68	1.76	8.99	
Mean	3.5	55.8	55.6	55.5	100	100	100	97	97	96	52	5.69	2.36	0.94	0.88	1.82	9.88	
CV,%	12.3	4.0	11.4	2.5	1	0	0	6	4	4	28	12.13	16.77	24.32	19.69	17.22	9.79	
LSD,0.05	0.6	3.2	8.9	1.9	1	0	0	8	5	6	21	0.97	0.56	0.32	0.25	0.44	1.36	

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

² Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shed. See Table 4 for complete scale.

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

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

Table 11 is a summary of yield data from 2002 to 2019 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

Table 6. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 8, 2017, at Lexington, Kentucky.

Variety	Seedling Vigor ¹ 2017 May 10	Maturity ²			Percent Stand					Yield (tons/acre)				2-year Total
		2018	2019	2017	2018		2019		2018	2019				
		May 8	May 13	Oct 12	Mar 14	Oct 19	Mar 22	Oct 21	Total	May 13	Jun 14	Total		
Commercial Varieties-Available for Farm Use														
Prairie	3.3	49.8	57.5	100	100	100	100	100	96	4.14	1.33	0.63	1.97	6.11*
Rushmore II	3.9	46.3	57.0	100	100	100	100	100	97	4.25	1.09	0.64	1.73	5.99*
Persist	2.9	48.8	58.0	100	99	100	99	97	4.14	1.46	0.38	1.84	5.98*	
SS0708OGDT	3.0	50.5	58.0	99	99	100	99	96	3.94	1.28	0.58	1.86	5.80*	
Aldebaran	2.9	45.0	53.0	100	100	100	98	89	4.14	1.00	0.57	1.57	5.72*	
Potomac	3.1	50.3	58.0	100	100	100	100	97	3.55	1.35	0.59	1.93	5.48*	
Treposno	5.0	45.0	56.0	100	100	100	99	92	3.70	1.18	0.58	1.76	5.46*	
Berta	2.6	45.0	52.0	100	98	100	94	89	3.48	0.91	0.50	1.41	4.89*	
Lyra	2.9	45.0	52.8	100	95	100	94	89	3.11	0.88	0.45	1.32	4.43	
Experimental Varieties														
SOG-1614	3.1	46.3	51.5	100	97	100	98	92	3.81	0.99	0.72	1.71	5.52*	
Mean	3.3	47.2	55.4	100	99	100	98	93	3.83	1.15	0.56	1.71	5.54	
CV,%	16.7	4.5	4.8	1	2	0	3	7	19.07	29.25	31.96	25.27	17.61	
LSD,0.05	0.8	3.1	3.9	1	3	0	4	10	1.06	0.49	0.26	0.63	1.42	

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

² Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shed. See Table 4 for complete scale.

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

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, forages.ca.uky.edu:

- 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 7. Dry matter yields, seedling vigor, maturity, and stand persistence of orchardgrass varieties sown September 4, 2018, at Lexington, Kentucky.

Variety	Seedling Vigor ¹ 2018 Sept 28	Maturity ²	Percent Stand			Yield (tons/acre)		
		2019	2018	2019		2019		
		May 13	Sep 28	Mar 22	Oct 18	May 13	Jun 14	Total
Commercial Varieties-Available for Farm Use								
Albert	5.0	55.5	100	100	99	1.63	1.16	2.79*
SS0708OGDT	5.0	58.0	100	100	100	1.56	0.99	2.55*
Potomac	4.8	57.0	100	100	100	1.48	1.04	2.52*
Prairie	4.8	56.5	100	100	100	1.31	1.21	2.52*
Persist	3.6	58.0	100	100	100	1.26	1.07	2.33
Barlegro	3.5	52.5	100	100	94	1.13	1.10	2.23
Intensiv	3.8	46.8	100	100	96	1.10	1.09	2.20
Tucker	4.9	53.3	100	100	99	1.25	0.80	2.05
Swante	3.1	52.3	100	98	89	1.03	0.99	2.02
Experimental Varieties								
OG88	5.0	54.0	100	100	99	1.60	1.16	2.76*
RADLCF54	4.4	46.3	100	100	98	1.35	1.07	2.41*
DGLF48	3.9	56.0	100	100	100	1.25	1.01	2.26
18-DgLF92	3.6	50.8	100	100	94	0.97	1.03	2.01
18-DgLF93	3.6	54.5	100	100	93	0.98	1.01	1.99
Mean	4.2	53.7	100	100	97	1.28	1.05	2.33
CV,%	7.4	6.1	0	1	3	15.29	15.65	12.13
LSD,0.05	0.4	4.6	0	1	4	0.28	0.24	0.40

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

² Maturity rating scale: 37=flag leaf emergence, 45=boot swollen, 50=beginning of inflorescence emergence, 58=complete emergence of inflorescence, 62=beginning of pollen shed. See Table 4 for complete scale.

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

Table 8. Dry matter yields, seedling vigor, and stand persistence of orchardgrass varieties sown September 2, 2016, at Quicksand, Kentucky.

Variety	Seedling Vigor ¹ 2016 Nov 3	Percent Stand							Yield (tons/acre)						
		2016		2017		2018		2019		2017	2018	2019			3-year Total
		Nov 3	Mar 24	Nov 18	Apr 4	Oct 5	Mar 15	Oct 22	Total	Total	Apr 30	Jun 27	Total		
Commercial Varieties-Available for Farm Use															
Eschelon	2.6	97	81	83	83	83	83	31	5.04	2.10	0.44	1.47	1.91	9.05*	
Persist	4.4	99	100	100	100	100	100	45	4.65	2.27	0.76	0.92	1.68	8.60*	
Inavale	4.0	96	92	96	96	97	97	39	5.19	1.76	0.55	0.98	1.53	8.48*	
Prairie	3.0	95	82	95	95	95	97	30	4.77	1.91	0.81	0.91	1.72	8.40*	
Rushmore II	3.6	98	94	97	97	97	97	33	4.59	1.94	0.73	0.89	1.62	8.15*	
SS0705OGDT	4.3	98	98	98	98	98	98	43	4.81	1.80	0.52	0.84	1.36	7.97*	
Potomac	3.4	95	94	96	96	96	96	36	4.64	1.78	0.71	0.79	1.50	7.93*	
Albert	3.3	93	76	83	85	84	84	20	4.66	1.68	0.58	0.95	1.53	7.86*	
Olathe	2.8	91	83	89	89	89	93	21	4.20	1.59	0.48	0.83	1.31	7.10	
Endurance	2.8	87	82	89	92	90	90	38	3.83	1.65	0.42	0.70	1.11	6.60	
Experimental Varieties															
KYDG1002	4.5	100	99	100	99	99	98	41	4.96	1.92	0.70	0.96	1.67	8.55*	
KYDG1001	3.1	95	86	95	93	95	94	25	4.89	1.70	0.65	0.94	1.60	8.18*	

¹ 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 9. Dry matter yields, seedling vigor, and stand persistence of orchardgrass varieties sown September 7, 2018, at Quicksand, Kentucky.

Variety	Seedling Vigor ¹ 2018 Oct 5	Percent Stand			Yield (tons/acre)			
		2018		2019	2019			
		Oct 5	Mar 15	Oct 22	May 1	Jun 26	Sep 5	Total
Commercial Varieties-Available for Farm Use								
Persist	4.0	100	100	100	1.09	1.45	0.96	3.50*
Prairie	5.0	100	100	97	1.00	1.26	0.90	3.16*
SS0708OGDT	5.0	100	100	100	1.10	1.21	0.66	2.97*
Tucker	5.0	100	100	99	1.02	1.16	0.72	2.90*
Intensiv	4.5	100	100	93	0.66	1.42	0.63	2.72
Barlegro	4.1	100	100	92	0.69	1.33	0.54	2.56
Swante	2.8	96	95	71	0.50	1.08	0.64	2.22
Experimental Varieties								
18-DgLF92	3.4	99	99	93	0.68	1.29	0.95	2.92*
OG88	4.8	100	100	100	1.01	1.13	0.70	2.83*
DGLF48	3.5	99	98	97	0.76	1.05	0.90	2.70
18-DgLF93	2.3	67	85	84	0.48	1.12	0.90	2.50
RADLCF54	4.4	100	100	95	0.65	1.06	0.74	2.45
Mean	4.1	97	98	93	0.80	1.21	0.77	2.79
CV,%	11.7	7	5	10	27.20	13.20	36.12	17.47
LSD,0.05	0.7	10	8	14	0.31	0.23	0.40	0.70

¹ 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. Proprietors of orchardgrass varieties in current trials.

Variety	Proprietor/KY Distributor
Commercial Varieties-Available for Farm Use	
Albert	Oregro Seeds
Aldebaran	DLF Pickseed
Alpine II	Mountain View Seeds
Barlegro	Barenbrug USA
Berta	Mountain View Seeds
Echelon	DLF Pickseed
Endurance	DLF Pickseed
Devour	Mountain View Seeds
Inavale	DLF Pickseed
Intensiv	Barenbrug USA
Lyra	Hood River Seed
Olathe	DLF Pickseed
Persist	Smith Seed Services
Potomac	Public
Prairie	Turner Seed Company
Prodigy	Caudill Seed
Rushmore II	Mountain View Seeds
SS-0708OGDT	Southern States
Swante	Smith Seed Services
Treposno	Hood River Seed
Tucker	Oregro Seeds
Experimental Varieties¹	
DGLF48	Barenbrug USA
GADG1303	Univ. of Georgia
GADG1304	Univ. of Georgia
GADG1305	Univ. of Georgia
GADG1313	Univ. of Georgia
GADG1314	Univ. of Georgia
GADG1315	Univ. of Georgia
GADG1401	Univ. of Georgia
IS-OG62	DLF Pickseed
KYDG1001	Ky. Agri. Exp. Sta.
KYDG1002	Ky. Agri. Exp. Sta.
OG88	DLF Pickseed
PPG-OG-102	Mountain View Seeds
RAD-ECF39	Radix Research
RAD-ECF44	Radix Research
RADLCF54	Radix Research
SOG-1614	Smith Seed Services
18-DgLF92	Barenbrug USA
18-DgLF93	Barenbrug USA

¹ Experimental varieties are not available commercially, but provide an indication of the progress being made by forage breeding companies.

Table 11. Summary of Kentucky orchardgrass yield trials 2002-2019 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington															Princeton								Quicksand						Mean ³ (#trials)
		2003 ^{1,2}	2006	2007	2009	2011	2012	2013	2014	2015	2016	2017	2002	2004	2006	2008	2010	2012	2015	2003	2005	2010	2013	2016							
		3-yr ⁴	4-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	3-yr	4-yr	3-yr	3-yr	3-yr							
Albert	Oregro Seeds																							98	99(2)						
Aldebaran	DLF Pickseed																									-					
Alpine II	Mountain View Seeds																									-					
Ambassador	DLF Pickseed																									-					
Ambrosia	American Grass Seed Prod.																									-					
Benchmark	Southern States																									-					
Benchmark Plus	Southern States		100	108	105	106	97	109	104																	104(16)					
Berta	Mountain View Seeds																									-					
Bounty	Allied Seed		101																							100(2)					
Century	Seed Research of Oregon		98																							101(2)					
Checkmate	Seed Research of Oregon			102			117																			108(3)					
Christoss	Proseeds Marketing			92																						-					
Command	Seed Research of Oregon																									-					
Crown	Donley Seed				97																					101(3)					
Crown Royale Plus	Donley Seed																									103(2)					
Devour	Mountain View Seeds																									-					
Echelon	DLF Pickseed																									113 106(2)					
Elise	Rose-AgriSeed						86																			94(3)					
Endurance	DLF Pickseed																									82 96(3)					
Extend	Allied Seed					107																				105(4)					
Hallmark	James VanLeeuwen	102																								100(4)					
Harvestar	Columbia Seeds		91	97				94																		100(6)					
Haymaster	Southern States		94			102																				98(3)					
Haymate	Southern States																									105(2)					
Icon	Seed Research of Oregon		105																							102(2)					
Inavale	DLF Pickseed																									106 99(4)					
Intensiv	Barenbrug	102																								-					
Lazuly	Proseeds Marketing																									-					
LG-31	DLF Pickseed																									-					
Lyra	Hood River Seed																									89(3)					
Megabite	Turf-Seed																									-					
Olathe	DLF Pickseed																									89 104(4)					
Paiute	DLF Pickseed				108																					-					
Persist	Smith Seed	123	105	106	107	112	106	100	103	111	98	108		101												105(20)					
Potomac	Public				103	96	97	103	116	100	94	99	98													101(16)					
Prairie	Turner Seed		107	101	109	106	113	123	108	103	111	110	104		100	104	99	104	96	105	107	120	102	105	107(21)						
Prodigy	Caudill Seed				101	99	97																			95 99(7)					
Profit	Ampac Seed			107	96	98	103	96	97	89																100(13)					
RAD-LCF 25	Radix Research																									101(2)					
Rushmore II	Mountain View seeds																									102 103(3)					
Shawnee	Rose-AgriSeed																									-					
Shiloh II	Proseeds Marketing																									-					
SS0708OGDT	Southern States																									99 102(6)					
Takena	Smith Seed																									-					
Tekena II	Smith Seed	110	102																							106(5)					
Tekapo	Ampac Seed		91	81	82	78	82	76	80																	86(15)					
Treposno	Hood River Seed																									97(3)					
Tucker	Oregro Seeds					96																				95(5)					
Udder	Improved Forages	100	107																							103(5)					
Vailliant	Proseeds Marketing				96																					-					

¹ Year trial was established.

² Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2012 was harvested three years, so the final report would be "2015 Orchardgrass Report" archived in the UK Forage website at forages.ca.uky.edu.

³ Mean only presented when respective variety was included in two or more trials.

⁴ Number of years of data.



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