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2022 Annual Grass Report Warm Season and Cool Season (Cereals)

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Introduction

Summer annual grasses provide an important forage crop option for producers in Kentucky. These grasses are mainly used as emergency or supplemental pasture, silage, or hay crops, but little information is available on their yield potential. The purpose of this publication is to summarize the University of Kentucky 2008-2021 forage yield trials with sudangrass, sorghum/sudangrass, forage sorghum, millets, teff, crabgrass, and cereal crops.

Sudangrass *(Sorghum bicolor* ssp. *drummondii)* is a rapidly growing annual grass in the sorghum family. It is medium yielding and well suited for grazing or hay because of its smaller stem size. Sudangrass regrows quickly after harvest and can be harvested several times during summer and early fall.

Sorghum x sudangrass hybrids are more vigorous and slightly higher yielding than sudangrass. A larger stem size makes these hybrids less useful for hay; therefore, they are commonly used for baleage and grazing.

Forage sorghum is used primarily as silage for livestock and is typically a one-cut crop. It grows 9 to 12 feet tall with the exception of the dwarf varieties, and is typically harvested when the seed is in the milk to soft dough stage.

Pearl millet (*Pennisetum glaucum*) is the most widely grown type of millet. It is well adapted to production systems characterized by drought, low soil fertility, and high temperature. It is higher yielding than foxtail millet and regrows rapidly after harvest if an 8- to 10-inch stubble height is left. Dwarf varieties, which are leafier and better suited for grazing, are available.

The brown midrib or BMR trait is an outward expression of a genetic mutation in forage sorghum, sorghum-sudangrass, sudangrass, and pearl millet. In most cases, plants possessing the BMR trait contain less or altered lignin, making the plant more digestible and more desirable for animal production. Therefore, it is beneficial to seed summer annuals that have the BMR trait in addition to other desirable characteristics like high yield. With BMR varieties, the midrib of the leaf appears brown or tannish in color.

Teff, also referred to as summer lovegrass (*Eragrostis tef*), is a warm-season annual grass native to Ethiopia which has been used as a grain crop for thousands of years. Recently, there has been considerable interest in teff as a forage crop. It is high quality, palatable, and fine-stemmed and therefore makes excellent hay.

Crabgrass (*Digitaria sanguinalis*) is a warm season annual that propagates by seed. It is adapted to many soil types. Crabgrass can be utilized by either grazing or haying and is one of the highest quality warm season forages at a vegetative stage.

Cool season annual grasses (specifically cereal crops) are also used as forage crops for hay, baleage, or grazing. The cereal crops used in this report are wheat (*Triticum aestivum*), rye (*Secale cereale*), oats (*Avena sativa*), and triticale (*Triticum secale*).

Contents

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

	2020				2021				2022[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	40	+9	3.72	+0.86	34	+3	4.51	+1.65	29	-2	4.93	+2.07
FEB	38	+3	5.14	+1.93	31	-4	4.60	+1.39	38	+3	7.69	+4.48
MAR	51	+7	3.79	-0.61	50	+6	5.12	+0.72	49	+5	4.27	-0.13
APR	52	-3	4.92	+1.04	54	-1	2.72	-1.16	55	0	3.71	-0.17
MAY	62	-2	5.69	+1.22	62	-2	4.34	-0.13	69	+5	3.84	-0.63
JUN	72	0	2.56	-1.10	73	+1	6.26	+2.60	76	+4	2.10	-1.56
JUL	79	+3	3.23	-1.77	75	-1	5.90	+0.90	80	+4	6.46	+1.46
AUG	75	0	3.41	-0.52	76	+1	6.16	+2.23	77	+2	4.27	+0.34
SEP	68	0	4.43	+0.83	69	+1	3.03	-0.17	70	+2	1.50	-1.70
OCT	57	0	4.98	+2.41	62	+5	4.64	+2.10	57	0	0.96	-1.61
NOV	49	+4	2.18	-1.21	43	-2	2.13	-1.26				
DEC	36	0	2.27	-1.71	47	+11	4.41	+0.43				
Total			45.92	+1.37			53.85	+9.30			39.73	+2.55

[1]DEP is departure from the long-term average.
[2]2022 data is for ten months through October.

Table 2. Temperature and rainfall at Princeton, Kentucky in 2020, 2021 and 2022.

	2020				2021				2022[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	40	+6	4.27	+0.47	38	+4	5.02	+1.22	32	-2	5.04	+1.24
FEB	40	+2	6.80	+2.37	32	-6	3.64	-0.79	39	+1	7.44	+3.01
MAR	52	+5	6.63	+1.69	52	+5	5.35	+0.41	51	+4	4.85	-0.09
APR	54	-5	3.08	-1.72	56	-3	4.73	-0.07	56	-2	6.41	+1.61
MAY	64	-3	5.48	+0.52	64	-3	4.52	-0.64	67	+1	2.54	-2.42
JUN	74	-1	5.13	+1.28	75	0	6.89	+3.04	75	0	2.46	-1.39
JUL	79	+1	6.31	+2.02	77	-1	7.03	+2.74	80	+2	4.75	+0.46
AUG	75	-2	3.77	-0.24	77	0	3.08	-0.93	76	-1	5.85	+1.84
SEP	69	-2	4.93	+1.60	70	-1	2.59	-0.74	69	-2	0.32	-3.01
OCT	57	-2	7.45	+4.40	64	+5	2.34	-0.71	57	-2	1.19	-1.86
NOV	51	+4	2.36	-2.27	44	-3	1.86	-2.77				
DEC	39	0	2.84	-2.20	50	+11	4.67	-0.37				
Total			59.05	+7.92			51.52	+0.39			40.85	-0.61

[1]DEP is departure from the long-term average.
[2]2022 data is for the ten months through October.

Table 3. 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 seedlingsor 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 quantitywhen inflorescence hit on palm.
93	Endosperm hard and dry	Final stage of seed development; most seeds shed.

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

Considerations in Selecting a Summer Annual Variety

The major factor in selecting a variety of summer annual grass is yield, both total and seasonal. Growth after first cutting is strongly dependent on available moisture and nitrogen fertilization. Forage quality is also an important consideration. Tables 48-52 show preliminary quality analyses from the 2020 harvest year for warm season annual grasses in Lexington. Summer annual grasses generally have different characteristics and uses. Pearl millets vary considerably in height and can be used for both pasture and baleage. Pearl millet has the advantage of not producing prussic acid (HCN or cyanide). Forage sorghum, sorghum-sudangrass hybrids, and sudangrass are related grasses (in the sorghum family) and can produce prussic acid immediately after frost or when immature shoots are grazed during severe drought. Sudangrasses are considered to have the least potential for prussic acid poisoning. Sudangrass has smaller, finer stems than sorghum-sudangrass hybrids, which have finer stems than forage sorghums. Consequently, sudangrasses are more easily cured for hay. Pearl millets, sudangrass, sorghum-sudangrass, and teff are typically harvested multiple times during the growing season, but forage sorghum and foxtail millet are harvested only once. For more detailed management recommendations refer to *Warm Season Annual Grasses in Kentucky* (AGR-229) and related publications at http://forages.ca.uky/species.

Considerations in Selecting a Cool Season Cereal Variety

The major factors in selecting cool season cereal grass varieties are yield, winter survival, and regrowth. If cutting a cereal grass for silage or baleage, yield at the first harvest of the season is most important. For all cereals, winter survival is an important factor. Fortunately winter wheat and cereal rye rarely show winterkill in Kentucky regardless of the variety. Winter oats are a marginal crop in Kentucky because severe winterkill usually occurs one out of every two to three years. We have started testing spring planted spring oats and other cereals (tables 37, 38, and 39) to determine which species and which varieties have the best potential as short term cool season forage crops. Spring plantings of winter wheat are not recommended because the lack of vernalization temperatures prevent stem elongation and vigorous spring growth. Consequently, yields are very low with spring planted winter wheat.

Description of the Tests

This report summarizes seventeen warm season annual studies (2019-2021) and ten cool-season annual studies (2018-2021) in Lexington. It also summarizes seventeen warm-season annual studies (2019-2021) in Princeton. The soils at Lexington (Maury) and Princeton (Crider) are well drained silt loams well suited to annual grass production. Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested area of 5 feet by 15 feet. The wheat trial plots were 4 feet by 15 feet with a harvested area of 4 feet by 12 feet. All trials were sown into a prepared seedbed using a disk drill at the following rates (lb/acre): sudangrass (25), sorghum-sudangrass (30), forage sorghum (8), pearl millet (20), teff (5 for uncoated, 8 for coated), crabgrass (5 for uncoated and 8 for coated), wheat (120), rye (110), oats (80) and triticale (100). Plots were harvested with a sickle-type forage

Table 4. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sudangrass varieties sown May 27, 2020, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 25	Percent Stand Jun 25	Maturity[2]			Plant Height (in)			Yield (DM tons/acre)				
				Jul 8	Aug 5	Sep 4	Jul 8	Aug 5	Sep 4	Jul 8	Aug 5	Sep 4	Oct 7	Total
Commercial Varieties-Available for Farm Use														
AS9302 BMR[3] (Brachytic Dwarf)	Advanta Seed/ Ramer Seed	4.8	100	32.0	31.0	46.3	36	34	35	1.39	1.14	1.25	0.68	4.46*
TrudanHeadless	S&W Seed Company	4.8	99	32.3	33.3	37.3	38	38	36	1.22	1.27	1.29	0.49	4.27*
ProMax BMR	Ampac Seed	4.4	100	32.8	34.5	40.5	41	42	40	1.17	1.24	1.36	0.47	4.23*
SS130 BMR	Cal/West Seeds	4.5	99	35.5	34.8	34.0	44	40	35	1.14	1.31	0.83	0.41	3.69*
Piper	Public	4.6	98	36.0	39.0	33.8	45	44	32	1.10	1.16	0.71	0.35	3.32
Mean		4.6	99	33.7	34.5	38.4	41	39	36	1.21	1.22	1.09	0.48	3.99
CV,%		7.4	2	12.0	10.0	11.7	11	13	8	10.70	19.67	20.09	34.97	12.50
LSD,0.05		0.5	3	6.2	5.4	6.9	7	8	5	0.20	0.37	0.34	0.26	0.77

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 50 lb/A of actual nitrogen on May 29, 40 lb/a on July 9 and 60 lb/A on Aug 14 (Total of 150 lb of N/acre).

plot harvester. Cutting height was 4 inches for teff and 6 inches for millet, sudangrass, and sorghum-sudangrass. The cool season grasses were cut at a height of 3 inches. The forage sorghum was harvested and with a silage chopper. Fresh weight samples were taken at each harvest to calculate percent dry matter production. All tests were managed for establishment, fertility, pest control, and harvest according to University of Kentucky Cooperative Extension Service recommendations. See table footnotes for specific nitrogen rates used in each trial. Pests were controlled so that they would not limit yield. For example, for weed control in forage sorghum the herbicides atrazine and Dual were used. Forage sorghum seed was treated with Concep to prevent seedling injury from Dual (a pre-emergence herbicide for annual weeds).

Results and Discussion

Weather data for Lexington and Princeton are presented in tables 1 and 2. Ratings for maturity (see Table 3) and yield data (on a dry-matter basis) are reported in tables 4 through 46. Quality analyses from the 2020 harvest of warm season annual grasses from Lexington are reported in tables 47-51. Varieties are listed in order from highest to lowest total annual production. Yields are given by cutting and as a total for the year. Statistical analyses were performed on all yield data to determine if the apparent differences are truly due to variety or just due to chance. To determine if two varieties are truly different, compare the difference between the two varieties 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 a given location. The coefficient of variation (CV), 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.

How to Interpret the Summary Tables

Summaries of yield data from 2008 to 2022 of commercial varieties are presented in tables 52 through 58. The value for each variety in these tables is listed as a percentage of the mean of the commercial varieties entered in each specific trial. 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 tables 52 through 58, but the data can help identify varieties for further consideration. Varieties that have performed better than average over many years and at several locations have very stable performance in comparison to varieties that have only been tested at one location or for one year.

Summary

Warm and cool season annual grasses can be an important supplemental source of pasture, hay, and silage in Kentucky. Varieties should be selected for their seasonal and total yield characteristics and for their suitability for the method of harvest to be employed (pasture, hay, or silage). Make sure seed of the chosen variety is properly labeled and will be available when needed.

For more information, consult the following University of Kentucky Cooperative Extension publications related to annual grass management. These resources are available from your county Extension office may be accessed in the Publications section of the UK Forage website at http://forages.ca.uky.edu.

- Lime and Fertilizer Recommendations (AGR-1)
- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Establishing Forage Crops (AGR-64)
- Warm Season Annual Grasses in Kentucky. (AGR-229)
- Sudangrass and Sorghum-sudangrass Hybrids (AGR-234)
- Pearl Millet (AGR-231)
- Forage Sorghum (AGR-230)
- Crabgrass (AGR-232)
- Extending Grazing and Reducing Stored Feed Needs (AGR-199)
- Managing Small Grains for Livestock Forage (AGR-160)
- Growing Wheat for Forage (AGR-263)

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Table 5. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sudangrass varieties sown May 19, 2021, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 9	Percent Stand Jun 9	Maturity[2]					Plant Height (in)					Yield (DM tons/acre)						
				Jun 25	Jul 9	Jul 29	Aug 23	Oct 1	Jun 25	Jul 9	Jul 29	Aug 23	Oct 1	Jun 25	Jul 9	Jul 29	Aug 23	Oct 1	Nov 1	Total
Commercial Varieties-Available for Farm Use																				
TrudanHeadless	S&W Seed Company	4.1	100	31.3	31.5	31.3	28.0	35.8	34	31	40	37	37	1.19	1.38	1.52	1.39	1.22	0.50	7.21*
ProMax BMR[3]	Cisco Seeds	4.1	99	32.0	31.3	31.8	30.5	48.8	38	33	47	47	42	1.19	1.17	1.62	1.62	1.07	0.45	7.12*
SS130 BMR	Cal/West Seeds	4.1	100	32.0	31.5	31.8	32.0	35.8	38	35	44	41	31	1.36	1.32	1.78	1.37	0.59	0.26	6.68*
AS9302 BMR (Brachytic Dwarf)	Advanta Seeds/ Ramer Seed	3.6	100	31.0	31.5	31.0	30.5	49.8	31	33	36	35	35	0.99	1.09	1.41	1.29	1.19	0.63	6.60*
SP7106 BMR	Sorghum Partners	4.4	100	31.0	31.5	31.0	28.3	34.0	29	34	34	33	29	1.22	1.20	1.20	1.16	0.95	0.41	6.14
Piper	Public	4.3	100	32.0	31.5	32.0	32.3	35.8	39	38	47	44	32	1.30	1.14	1.61	1.18	0.64	0.26	6.12
Mean		4.1	100	31.5	31.5	31.5	30.3	40	35	34	41	40	34	1.21	1.22	1.52	1.34	0.94	0.42	6.64
CV,%		20.8	1	0.6	1.9	1.2	6.9	10.6	14	15	6	6	9	34.57	22.16	19.91	14.19	18.23	15.31	9.13
LSD,0.05		1.3	1	0.3	0.9	0.6	3.1	6.4	7	8	3	4	5	0.63	0.41	0.46	0.29	0.26	0.10	0.91

1Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
2Maturity 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 3 for complete scale.
3 BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 23 and June 30 (Total of 120 lb of N/acre).

Table 6. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sudangrass varieties sown May 31, 2022 at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 22	Percent Stand Jun 22	Maturity[2]			Plant Height (in)			Yield (tons/acre)				
				Jul 11	Aug 2	Sep 6	Jul 11	Aug 2	Sep 6	Jul 11	Aug 2	Sep 6	Oct 4	Total
Commercial Varieties-Available for Farm Use														
ProMax BMR[3]	Cisco Seeds	4.1	98	31.8	41.8	48.0	38	39	45	0.98	1.44	1.50	0.66	4.58*
TrudanHeadless	S&W Seed Company	4.4	100	29.0	31.0	31.5	31	32	29	1.05	1.58	1.20	0.58	4.42*
Piper	Public	4.3	100	30.3	33.3	46.3	36	38	43	0.99	1.46	1.39	0.52	4.35*
SS130BMR	Cal/West Seeds	4.3	100	31.0	31.3	35.0	38	35	32	1.09	1.39	1.17	0.46	4.10
AS9302BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed	4.4	100	29.0	38.0	52.5	29	30	31	0.97	1.36	1.14	0.61	4.07
SP7106BMR	Sorghum Partners	3.5	100	29.0	31.0	31.0	26	32	22	0.99	1.58	0.95	0.50	4.03
Mean		4.1	100	30.0	34.4	40.7	33	34	34	1.01	1.47	1.22	0.56	4.26
CV,%		12.5	1	2.5	13.1	8.3	6	7	9	7.57	5.42	11.45	10.79	4.69
LSD,0.05		0.8	1	1.1	6.8	5.1	3	3	4	0.12	0.12	0.21	0.09	0.30

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 19 (Total of 120 lb of N/acre).

Table 7. Dry matter yields, maturity, and plant height of sudangrass varieties sown June 2, 2020, at Princeton, Kentucky.

Variety	Proprietor/Distibutor	Maturity[1] Jul 10	Plant Height (in)		Yield (DM tons/acre)			
			Jul 10	Aug 6	Jul 10	Aug 6	Sep 11	Total
Commercial Varieties-Available for Farm Use								
Trudan Headless	S&W Seed Company	31.8	47	40	1.75	1.44	1.47	4.59*
AS9302 BMR[2] (Brachytic Dwarf)	Advanta Seed/ Ramer Seed	31.8	41	38	1.62	1.28	1.21	4.11*
SS130 BMR	Cal/West Seeds	33.0	51	47	1.22	1.55	0.94	3.61
ProMax BMR	Ampac Seed	32.8	56	49	1.16	1.27	0.69	3.13
Piper	Public	32.8	55	46	1.32	1.06	0.58	2.96
Mean		32.4	50	44	1.41	1.32	0.98	3.63
CV,%		1.8	4	7	17.90	20.27	17.58	10.86
LSD,0.05		0.9	3	5	0.39	0.44	0.28	0.66

[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. See Table 3 for complete scale.
[2]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/acre of actual nitrogen on June 1, July 23, and August 13 (Total of 180 lb of N/acre).

Table 8. Dry matter yields, stand rating, maturity, and plant height of sudangrass varieties sown May 25, 2021, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Percent Stand Jun 28	Maturity[1] Jul 21	Plant Height (in)			Yield (DM tons/acre)				
				Jun 29	Jul21	Aug 19	Jun 29	Jul 21	Aug 19	Sep 30	Total
Commercial Varieties-Available for Farm Use											
TrudanHeadless	S&W Seed Company	100	36.3	33	39	49	1.17	1.47	1.76	0.72	5.13
ProMax BMR[2]	Cisco Seeds	100	40.0	36	49	56	1.09	1.40	1.32	1.16	4.97
AS9302 BMR (Brachytic Dwarf)	Advanta Seeds/ Ramer Seed	100	35.0	29	32	42	1.08	1.15	1.45	1.18	4.87
Piper	Public	100	40.0	37	49	52	1.07	1.31	1.29	0.88	4.56
SS130 BMR	Cal/West Seeds	100	38.8	35	47	47	1.04	1.34	1.02	0.95	4.35
SP7106 BMR	Sorghum Partners	100	36.8	25	36	39	0.84	1.19	1.31	0.84	4.18
Mean		100	37.8	33	42	47	1.05	1.31	1.36	0.96	4.67
CV,%		0	4.9	4	7	6	8.88	7.69	13.65	22.84	7.46
LSD,0.05		0	2.8	2	4	4	0.14	0.15	0.28	0.33	0.53

[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. See Table 3 for complete scale.
[2]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/A of actual nitrogen on May 27, June 29 and July 30 (Total of 180 lb of N/acre).

Table 9. Dry matter yields and plant height of sudangrass varieties sown June 1, 2022, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Plant Height (in)				Yield (DM tons/acre)				
		Jul 6	Jul 25	Aug 15	Sep 26	Jul 6	Jul 25	Aig 15	Sep 26	Total
Commercial Varieties-Available for Farm Use										
TrudanHeadless	S&W Seed Company	33	32	41	35	1.23	1.45	1.35	1.22	5.26*
Piper	Public	40	39	45	48	1.15	1.46	1.26	1.29	5.16*
ProMax BMR[1]	Cisco Seeds	38	45	49	52	0.83	1.57	1.27	1.48	5.15*
AS9302 BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed	30	27	38	31	1.31	1.20	1.32	1.28	5.10*
SP7106 BMR	Sorghum Partners	27	33	32	32	0.98	1.58	1.02	1.27	4.85*
Mean		34	35	41	39	1.10	1.45	1.24	1.31	5.11
CV,%		10	13	8	9	22.03	14.26	14.17	15.09	5.91
LSD,0.05		5	7	5	5	0.37	0.32	0.27	0.30	0.46

[1]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 27 (Total of 120 lb of N/acre).

Table 10. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sorghum-sudangrass varieties sown May 27, 2020, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 25	Percent Stand Jun 25	Maturity[2]			Plant Height (in)			Yield (DM tons/acre)				
				Jul 8	Aug 5	Sep 4	Jul 8	Aug 5	Sep 4	Jul 8	Aug 5	Sep 4	Oct 7	Total
Commercial Varieties-Available for Farm Use														
Sordan 79	S&W Seed Company	4.8	100	32.0	39.0	43.5	41	47	46	1.17	1.53	1.84	0.59	5.14*
SugarGraze II	Coffey Seed	4.8	99	32.3	36.0	43.5	42	44	41	1.22	1.64	1.70	0.54	5.10*
HyGain	Turner Seed	5.0	98	32.5	37.0	43.5	44	47	45	1.14	1.60	1.79	0.55	5.08*
Sordan Headless	S&W Seed Company	4.6	100	30.8	33.8	34.5	33	41	38	1.07	1.56	1.70	0.60	4.92*
FirstGraze	Dyna-Gro Seeds	4.9	100	32.8	39.0	45.0	44	45	44	1.18	1.48	1.67	0.57	4.89*
AS6401 BMR[3]	Advanta Seed/Ramer Seed	4.9	99	30.8	35.3	39.0	34	40	39	1.05	1.63	1.75	0.40	4.82*
Super Sweet 10	Dyna-Gro Seeds	4.9	100	31.5	33.5	45.0	40	41	40	1.04	1.39	1.66	0.65	4.74*
FullGraze II	Dyna-Gro Seeds	4.6	100	32.0	33.5	39.0	40	39	42	1.18	1.36	1.66	0.49	4.70*
NutraKing BMR	Public	4.8	99	31.8	36.0	42.0	40	40	36	1.31	1.43	1.49	0.41	4.64*
F75FS13	Dyna-Gro Seeds	4.9	100	30.8	36.8	45.0	35	38	37	1.27	1.25	1.40	0.55	4.47
DynaGraze II	Dyna-Gro Seeds	4.6	94	32.3	36.0	40.5	40	44	43	0.96	1.40	1.51	0.53	4.40
Danny Boy II BMR	Dyna-Gro Seeds	4.0	97	32.0	35.3	36.0	32	44	35	0.73	1.63	1.36	0.53	4.25
AS6402 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	4.8	97	30.0	31.0	37.3	32	33	33	1.00	1.30	1.38	0.55	4.24
SP 4105 BMR	Sorghum Partners	4.5	100	29.5	27.8	32.5	26	35	32	0.80	1.44	1.43	0.42	4.09
FullGraze II BMR	Dyna-Gro Seeds	4.5	98	30.0	33.8	39.0	35	38	38	0.83	1.29	1.47	0.45	4.03
SP 7106 BMR	Sorghum Partners	4.6	100	29.0	31.0	35.8	26	32	32	0.85	1.14	1.38	0.66	4.02
Xtragraze BMR	Coffey Seed	4.6	98	31.5	31.0	43.5	38	35	37	1.14	0.94	1.23	0.35	3.66
Surpass BMR	Turner Seed	4.3	97	30.8	33.3	45.0	32	35	35	0.89	0.91	1.26	0.55	3.62
Mean		4.7	99	31.2	34.4	40.5	36	40	39	1.05	1.38	1.54	0.52	4.49
CV,%		8.7	2	4.1	9.7	7.2	8	5	8	20.49	11.70	13.96	35.15	9.96
LSD,0.05		0.6	3	1.8	4.8	4.2	4	3	4	0.30	0.23	0.30	0.26	0.64

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 50 lb/A of actual nitrogen on May 29, 40 lb/A onJuly 9 and 60 lb/A on Aug 14 (Total of 150 lb of N/acre).

Table 11. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sorghum sudangrass varieties sown May 19, 2021, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 9	Percent Stand Jun 9	Maturity[2]				Plant Height (in)				Yield (DM tons/acre)					
				Jun 30	Jul 16	Aug 17	Sep 24	Jun 30	Jul 16	Aug 17	Sep 24	Jun 30	Jul 16	Aug 17	Sep 24	Nov 1	Total
Commercial Varieties-Available for Farm Use																	
Super Sweet 10	Dyna-Gro Seeds	3.9	100	29.0	30.0	41.8	47.5	31	33	44	37	0.91	1.41	2.65	1.66	0.56	7.18*
SP4555BMR	Sorghum Partners	4.8	100	29.5	29.0	45.0	45.0	37	29	45	38	1.28	1.34	2.53	1.43	0.56	7.16*
SugarGraze II	Coffey Seed	3.5	98	29.0	31.5	45.0	46.3	30	41	47	47	0.69	1.77	2.20	1.92	0.57	7.15*
Sordan 79	S&W Seed Company	4.4	100	29.5	30.5	46.3	41.8	37	34	52	41	1.14	1.35	2.33	1.62	0.70	7.14*
HyGain	Turner Seed	2.9	93	29.0	31.5	45.0	45.0	29	42	50	45	0.57	1.59	2.26	1.80	0.66	6.89*
NutraKing BMR[3]	Public	4.0	99	29.0	30.5	45.0	43.0	30	38	42	38	0.98	1.57	2.08	1.59	0.52	6.76*
AS6401BMR	Advanta Seed/Ramer Seed	3.0	96	29.0	31.0	38.0	35.0	29	38	41	41	0.79	1.60	2.37	1.44	0.38	6.58*
DynaGraze II	Dyna-Gro Seed	3.6	100	29.0	31.3	45.0	46.3	32	38	46	41	0.70	1.68	2.05	1.53	0.44	6.39
SordanHeadless	S&W Seed Company	4.4	100	29.0	29.8	30.5	31.3	34	30	42	35	1.15	1.33	1.88	1.47	0.48	6.32
FirstGraze	Dyna-Gro Seed	4.0	100	29.5	29.5	45.0	41.5	35	32	45	38	0.98	1.36	2.06	1.38	0.45	6.23
FullGraze II	Dyna-Gro Seed	4.0	99	29.0	31.0	33.5	35.0	33	38	41	38	1.02	1.45	1.72	1.49	0.50	6.17
SWSU0029	S&W Seed Company	4.1	100	29.5	30.0	45.0	45.0	35	32	47	38	1.07	1.02	1.98	1.38	0.56	6.01
Sweet Six BMR (Dry Stalk)	Gayland Ward Seed	3.8	99	29.0	30.0	47.5	47.5	33	32	44	35	0.89	1.30	2.06	1.31	0.44	6.01
FullGraze II BMR	Dyna-Gro Seed	4.1	100	29.0	30.0	40.0	35.3	29	35	38	38	0.71	1.43	1.68	1.56	0.51	5.89
AS6504 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	2.9	97	29.0	30.8	31.3	31.8	29	39	38	37	0.63	1.34	2.05	1.44	0.39	5.85
F75FS13	Dyna-Gro Seed	3.6	100	29.0	30.3	46.3	48.8	31	37	33	39	0.89	1.68	1.28	1.52	0.34	5.71
DannyBoy II BMR	Dyna-Gro Seed	3.5	98	29.0	31.3	31.5	35.0	29	38	36	36	0.69	1.50	1.75	1.42	0.35	5.70
SWSB8801	S&W Seed Company	4.6	100	29.5	29.0	47.5	44.3	34	29	41	32	1.22	1.18	1.81	0.97	0.34	5.52
SP 4105 BMR	Sorghum Partners	4.8	100	29.0	30.0	29.0	31.3	29	32	34	32	0.91	1.41	1.65	1.20	0.27	5.43
Surpass BMR	Turner Seed	3.6	97	29.0	29.5	49.8	47.5	26	32	32	39	0.58	1.44	1.50	1.23	0.38	5.13
XtraGraze BMR	Coffey Seed	3.5	97	29.0	31.3	33.5	46.3	27	36	32	44	0.60	1.50	1.26	1.29	0.38	5.03
AS6402 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	3.0	92	29.0	29.5	48.8	38.0	25	33	34	32	0.58	1.26	1.41	1.20	0.42	4.87
Mean		3.8	98	29.1	30.3	41.4	41.3	31	35	41	38	0.86	1.43	1.93	1.45	0.46	6.14
CV,%		11.5	1	1.7	3.0	9.5	12.0	11	17	9	13	27.55	18.17	16.21	9.85	21.88	8.69
LSD,0.05		0.6	2	0.7	1.3	5.6	7.0	5	5	5	7	0.34	0.37	0.44	0.20	0.14	0.75

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 21 and June 30 (Total of 120 lb of N/acre).

Table 12. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of sorghum sudangrass varieties sown May 31, 2022, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 22	Percent Stand Jun 22	Maturity[2]			Plant Height (in)			Yield (DM tons/acre)				
				Jul 11	Aug 2	Sep 6	Jul 11	Aug 2	Sep 6	Jul 11	Aug 2	Sep 6	Oct 4	Total
Commercial Varieties-Available for Farm Use														
Sordan 79	S&W Seed Company	4.8	100	30.5	31.0	41.8	43	36	44	1.63	1.51	1.98	0.49	5.60*
FullGraze II BMR[3]	Dyna-Gro Seed	3.9	95	29.5	31.0	32.0	35	32	38	1.35	1.50	1.92	0.52	5.28*
NutraKing BMR	Public	4.9	100	30.2	31.0	48.4	39	33	38	1.70	1.47	1.57	0.54	5.27*
SugarGraze II	Coffey Seed	4.3	100	30.5	31.3	43.0	40	37	39	1.38	1.52	1.64	0.57	5.10
SP4555BMR	Sorghum Partners	4.8	99	30.0	31.0	45.0	37	33	35	1.49	1.51	1.60	0.50	5.09
Super Sweet 10	Dyna-Gro Seed	4.1	100	30.5	31.0	45.0	37	35	37	1.37	1.43	1.53	0.59	4.92
DannyBoy II BMR	Dyna-Gro Seed	3.6	97	29.0	31.8	32.0	32	36	35	1.26	1.61	1.44	0.60	4.91
FirstGraze	Dyna-Gro Seed	4.4	100	31.0	31.3	43.0	41	35	38	1.42	1.44	1.46	0.49	4.80
SWSU0029	S&W Seed Company	4.4	100	31.0	31.3	45.0	41	36	38	1.42	1.41	1.46	0.49	4.78
SordanHeadless	S&W Seed Company	4.0	77	29.5	32.0	32.0	33	37	40	1.20	1.62	1.40	0.48	4.69
DynaGraze II	Dyna-Gro Seed	4.5	100	29.7	31.3	36.3	37	36	34	1.37	1.35	1.42	0.50	4.64
FullGraze II	Dyna-Gro Seed	3.8	98	30.0	31.0	32.0	40	33	38	1.40	1.29	1.43	0.39	4.51
SWSB8803	S&W Seed Company	3.9	100	29.0	31.0	31.0	29	34	27	1.21	1.62	1.13	0.51	4.47
F75FS13	Dyna-Gro Seed	3.5	99	29.0	31.0	41.5	32	33	32	1.32	1.36	1.26	0.46	4.40
AS6402 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	3.5	95	29.0	31.0	38.3	29	34	28	1.07	1.46	1.09	0.53	4.15
SP4105 BMR	Sorghum Partners	4.3	99	29.0	31.0	31.3	27	33	26	1.07	1.58	1.05	0.45	4.15
SWBD8801	S&W Seed Company	3.9	97	29.5	38.0	42.8	36	32	32	1.33	1.20	1.21	0.31	4.05
XtraGraze BMR	Coffey Seed	3.5	99	29.0	31.0	45.0	34	32	33	1.19	1.37	1.06	0.42	4.04
Surpass BMR	Turner Seed	3.9	99	29.0	31.0	48.0	30	31	29	1.11	1.32	0.95	0.56	3.94
SweetforEver	Gayland Ward Seed	3.4	98	29.0	31.0	31.5	33	34	35	1.16	1.35	0.95	0.29	3.75
Mean		4.1	97	29.7	31.5	39.4	35	34	35	1.33	1.45	1.38	0.48	4.64
CV,%		10.3	10	2.6	5.8	11.4	4	6	7	8.10	7.18	11.13	21.11	7.01
LSD,0.05		0.6	14	1.1	2.6	6.4	2	3	3	0.15	0.15	0.22	0.15	0.46

[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 3 for complete scale.
[3] BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 19 (Total of 120 lb of N/acre).

Table 13. Dry matter yields, maturity, and plant height of sorghum-sudangrass varieties sown June 2, 2020, at Princeton, Kentucky.

Variety	Proprietor/Distibutor	Maturity[1] Jul 10	Plant Height (in)		Yield (DM tons/acre)			
			Jul 10	Aug 4	Jul 10	Aug 4	Sep 11	Total
Commercial Varieties-Available for Farm Use								
Super Sweet 10	Dyna-Gro Seeds	31.3	52	50	1.31	1.52	2.22	5.05*
Sordan 79	S&W Seed Company	31.3	52	53	1.31	1.79	1.77	4.87*
DynaGraze II	Dyna-Gro Seeds	31.8	57	55	1.02	1.71	2.07	4.80*
SugarGraze II	Coffey Seed	30.8	52	54	1.04	1.78	1.98	4.80*
FirstGraze	Dyna-Gro Seeds	31.5	51	52	1.14	1.71	1.82	4.67*
HyGain	Turner Seed	31.5	57	52	1.23	1.57	1.54	4.35
AS6401 BMR[2]	Advanta Seed/Ramer Seed	29.0	40	50	0.90	1.59	1.68	4.17
Sordan Headless	S&W Seed Company	29.0	42	47	1.11	1.48	1.61	4.03
DannyBoy II BMR	Dyna-Gro Seeds	29.0	36	50	0.71	1.64	1.54	3.89
NutraKing BMR	Public	29.5	44	49	0.93	1.34	1.52	3.79
F75FS13	Dyna-Gro Seeds	29.0	41	42	1.02	1.34	1.34	3.71
FullGraze II	Dyna-Gro Seeds	29.0	41	51	0.77	1.45	1.49	3.71
FullGraze II BMR	Dyna-Gro Seeds	30.0	39	44	0.83	1.47	1.34	3.64
SP7106 BMR	Sorghum Partners	29.5	34	32	1.04	1.17	1.39	3.60
AS6402 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	29.0	32	45	0.57	1.64	1.14	3.34
SP4105 BMR	Sorghum Partners	29.0	32	39	0.88	1.22	1.03	3.14
Xtragraze BMR	Coffey Seed	29.5	40	46	0.74	1.28	0.93	2.95
Surpass BMR	Turner Seed	29.0	32	41	0.54	1.27	0.98	2.78
Mean		25.9	43	47	0.95	1.49	1.52	3.95
CV,%		2.0	8	8	17.97	13.94	16.80	10.29
LSD,0.05		0.9	5	5	0.24	0.30	0.36	0.59

[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. See Table 3 for complete scale.
[2]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/acre of actual nitrogen on June 1, July 23, and August 13 (Total of 180 lb of N/acre).

Table 14. Dry matter yields, stand rating, maturity, and plant height of sorghum sudangrass varieties sown May 25, 2021, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Percent Stand		Maturity[1] Jul 22	Plant Height (in)				Yield (DM tons/acre)				
		Jun 28	Sep 27		Jun 28	Jul 22	Aug 18	Sep 27	Jun 29	Jul 22	Aug 18	Sep 30	Total
Commercial Varieties-Available for Farm Use													
SWSU0029	S&W Seed Company	100	91	35.0	36	42	48	38	1.02	1.58	1.84	1.60	6.04*
SugarGraze II	Coffey Seed	100	89	36.8	35	43	49	35	0.96	1.68	1.94	1.46	6.03*
SuperSweet 10	Dyna-Gro Seeds	100	89	35.5	33	40	48	35	0.88	1.58	1.91	1.51	5.87*
FirstGraze	Dyna-Gro Seeds	100	90	35.8	35	43	45	39	0.99	1.47	1.71	1.67	5.84*
HyGain	Turner Seed	100	90	39.5	34	48	53	36	0.79	1.79	1.84	1.38	5.80*
AS6504 BMR[2] (Brachytic Dwarf)	Advanta Seed/Ramer Seed	100	76	35.5	31	42	44	32	0.89	1.83	1.64	1.33	5.69*
Sordan79	S&W Seed Company	100	64	36.3	38	44	48	29	1.14	1.55	1.93	1.05	5.67*
FullGraze II	Dyna-Gro Seeds	100	86	35.0	33	37	44	36	0.98	1.48	1.34	1.60	5.40*
DynaGraze II	Dyna-Gro Seeds	100	80	35.5	35	40	46	33	0.93	1.55	1.73	1.18	5.39*
FullGraze II BMR	Dyna-Gro Seeds	100	85	35.0	30	40	41	34	0.80	1.50	1.46	1.52	5.28
SordanHeadless	S&W Seed Company	100	76	36.8	31	43	41	35	0.98	1.57	1.53	1.10	5.19
SP4555BMR	Sorghum Partners	100	79	35.0	33	35	41	29	1.03	1.37	1.58	1.08	5.06
DannyBoy II BMR	Dyna-Gro Seeds	100	75	35.8	31	43	38	32	0.85	1.55	1.44	1.22	5.06
NutraKing BMR	Public	100	71	35.8	34	42	45	30	1.00	1.48	1.57	1.00	5.04
Sweet Six BMR (Dry Stalk)	Gayland Ward Seed	100	75	35.5	33	40	42	32	0.99	1.39	1.42	1.05	4.84
F75FS13	Dyna-Gro Seeds	100	88	35.0	31	40	40	31	0.81	1.34	1.34	1.14	4.63
XtraGraze BMR	Coffey Seed	100	63	35.0	32	38	41	26	0.88	1.31	1.18	1.01	4.37
Surpass BMR	Turner Seed	100	86	35.0	29	40	33	30	0.71	1.37	1.11	1.12	4.32
AS6402 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	100	55	35.0	28	39	35	24	0.80	1.41	1.22	0.77	4.20
SP4105 BMR	Sorghum Partners	100	25	35.0	27	35	34	22	0.98	1.36	1.24	0.35	3.93
Mean		100	77	35.7	32	41	43	32	0.92	1.51	1.55	1.21	5.18
CV,%		0	27	3.2	6	8	11	19	14.97	11.63	11.12	32.04	9.96
LSD,0.05		0	29	1.6	3	5	7	9	0.20	0.25	0.24	0.55	0.73

[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. See Table 3 for complete scale.
[2]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/acre of actual nitrogen on May 27, June 29 and July 30 (Total of 180 lb of N/acre).

Table 15. Dry matter yields and plant height of sorghum sudangrass varieties sown June 1, 2022 at Princeton, Kentucky.

Variety	Proprietor/Distributor	Plant Height (in)				Yield DM tons/acre)				
		Jul 6	Jul 25	Aug 15	Sep 26	Jul 6	Jul 25	Aug 15	Sep 26	Total
Commercial Varieties-Available for Farm Use										
Sordan 79	S&W Seed Company	40	23	41	26	1.32	0.76	1.73	1.27	5.09*
SugarGraze II	Coffey Seed	38	27	37	30	1.18	0.83	1.48	1.39	4.89*
Super Sweet 10	Dyna-Gro Seed	34	25	36	27	1.02	0.79	1.56	1.50	4.88*
SWSU0029	S&W Seed Company	37	26	36	29	1.07	0.80	1.42	1.50	4.79*
Sordan Headless	S&W Seed Company	30	34	34	26	1.12	1.18	1.40	1.04	4.75*
SP4105 BMR[1]	Sorghum Partners	27	28	29	24	1.14	1.22	1.17	1.21	4.73*
NutraKing BMR	Public	35	23	36	24	1.16	0.79	1.44	1.28	4.66*
SWSD8801	S&W Seed Company	27	30	31	23	1.02	1.07	1.24	1.05	4.38
SP4555 BMR	Sorghum Partners	34	25	35	24	1.03	0.77	1.26	1.26	4.33
SWSB8803	S&W Seed Company	29	30	33	26	0.85	0.98	1.17	1.13	4.13
Surpass BMR	Turner Seed	28	27	23	24	0.94	1.02	0.76	1.02	3.75
F75FS13	Dyna-Gro Seed	30	29	23	25	0.86	1.11	0.66	1.10	3.74
SweetforEver	Gayland Ward Seed	32	31	28	21	0.92	0.99	1.05	0.57	3.52
XtraGraze BMR	Coffey Seed	31	26	28	20	0.98	0.79	0.92	0.62	3.31
Mean		32	27	32	25	1.04	0.94	1.24	1.14	4.35
CV,%		7	8	8	11	16.69	11.16	10.06	20.01	7.71
LSD,0.05		3	3	3	4	0.25	0.15	0.18	0.33	0.48

[1]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 27 (Total of 120 lb of N/acre).

Table 16. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of pearl millet varieties sown May 27, 2020, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 25	Percent Stand Jun 25	Maturity[2]			Plant Height (in)			Yield (DM tons/acre)				
				Jul 17	Aug 11	Sep 4	Jul 17	Aug 11	Sep 4	Jul 17	Aug 11	Sep 4	Oct 6	Total
Commercial Varieties-Available for Farm Use														
Leafy22 Hybrid	Turner Seed	4.8	99	21.5	55.5	54.5	28	41	29	0.96	1.77	1.07	1.03	4.82*
PearlMil	Dyna-Gro Seeds	4.8	98	22.0	56.0	54.5	29	41	34	1.05	1.68	1.02	1.03	4.78*
Millex32	S&W Seed Company	5.0	100	39.8	49.3	56.5	45	37	39	1.44	1.26	0.94	1.06	4.69*
SS635	Southern States	4.1	92	21.3	55.5	56.0	26	42	34	0.97	1.37	1.10	1.04	4.48*
Exceed BMR[3]	Coffey Seed	5.0	100	18.5	52.3	55.0	27	31	29	1.01	1.43	0.90	1.02	4.36*
Wonderleaf	Advanta Seed/Ramer Seed	4.9	98	42.0	46.3	54.5	37	39	38	1.42	1.13	0.78	0.89	4.23
SweetSummer	Cisco Seeds	4.6	100	18.8	49.3	56.5	27	28	26	1.12	1.27	0.74	0.99	4.12
Pennleaf Hybrid	Pennington Seed	4.0	94	28.3	58.5	55.5	29	40	30	0.80	1.51	0.70	1.03	4.04
Tifleaf III Hybrid	Gayland Ward Seed	4.5	100	25.0	55.0	55.0	27	35	30	0.85	1.36	0.93	0.90	4.03
SS1562M BMR	Southern States	4.4	99	17.8	42.0	54.5	25	29	27	0.88	1.20	0.90	1.01	3.99
Epic BMR	Coffey Seed	3.8	98	17.8	47.0	54.5	25	30	26	0.62	1.32	1.02	1.00	3.97
PP102M Hybrid	Cisco Seeds	4.6	98	45.0	55.5	54.0	35	36	38	1.18	1.12	0.82	0.77	3.89
Prime360	Byron Seed	4.0	92	18.5	51.5	53.0	26	32	26	0.91	1.14	0.70	1.08	3.83
Experimental Varieties														
LeafyTR7	Coffey Seed	3.9	98	19.0	52.8	55.0	29	38	32	1.02	1.63	1.07	1.22	4.93*
18183	Gayland Ward Seed	5.0	100	22.0	54.5	55.0	30	38	28	1.02	1.53	1.03	1.15	4.75*
LeafyTR9	Coffey Seed	4.6	100	18.5	54.5	50.3	27	34	28	0.87	1.47	0.98	1.19	4.51*
Mean		4.5	98	24.7	52.2	54.6	29	36	31	1.01	1.39	0.92	1.02	4.34
CV,%		10.6	4	20.9	6.3	3.4	11	9	11	25.36	17.25	30.94	11.06	10.28
LSD,0.05		0.7	6	7.4	4.7	2.6	5	5	5	0.36	0.34	0.40	0.16	0.64

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 50 lb/A of actual nitrogen on May 29, 50 lb/A on July 17 and 60 lb/A on Aug 14 (Total of 160 lb of N/acre).

Table 17. Dry matter yields, seedling vigor, stand ratings, maturity, and plant height of pearl millet varieties sown May 19, 2021, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 9	Percent Stand		Maturity[2]			Plant Height (in)			Yield (DM tons/acre)			
			Jun 9	Nov 11	Jul 16	Aug 23	Oct 1	Jul 16	Aug 23	Oct 1	Jul 16	Aug 23	Oct 1	Total
Commercial Varieties-Available for Farm Use														
Tifleaf III	Gayland Ward Seed	3.4	95	53	29.0	57.5	58.0	31	43	25	1.42	2.15	1.45	5.01*
Millex32	S&W Seed Company	4.8	97	19	47.5	55.5	56.5	45	37	29	2.16	1.12	1.69	4.98*
PearlMil	Dyna-Gro Seeds	3.5	92	51	29.0	56.5	57.0	30	41	23	1.43	1.92	1.24	4.59*
Leafy22 Hybrid	Turner Seed	3.3	89	46	29.0	56.0	56.5	32	42	23	1.31	2.01	1.22	4.55*
PP102M Hybrid	Cisco Seeds	3.5	96	4	50.0	56.0	55.5	37	38	21	1.44	1.50	0.99	3.93*
SS635	Southern States	2.8	86	43	29.0	57.0	56.0	29	43	25	0.74	1.92	1.15	3.82*
Pennleaf Hybrid	Pennington Seed	2.6	76	23	29.0	56.0	56.0	26	33	24	0.84	2.01	0.96	3.81*
SweetSummer	Cisco Seeds	2.6	91	38	29.0	54.5	57.0	24	32	22	0.86	1.52	1.32	3.69
Wonderleaf	Advanta Seeds/Ramer Seed	2.9	88	7	42.3	55.5	56.5	37	35	26	1.35	0.96	0.99	3.29
Epic BMR[3]	Coffey Seed	3.1	85	41	29.0	49.0	56.0	24	29	23	0.66	1.26	1.23	3.15
Exceed BMR	Coffey Seed	3.0	88	35	29.0	54.5	56.0	25	28	25	0.92	0.98	1.19	3.09
Prime360	Byron Seed	2.5	71	38	29.0	53.0	56.0	24	25	23	0.57	1.06	1.28	2.92
SS1562M BMR	Southern States	3.3	95	44	29.0	54.0	55.5	25	26	22	0.66	1.01	1.08	2.76
Experimental Varieties														
LeafyTR9	Coffey Seed	3.8	97	59	29.0	54.5	56.0	33	39	22	1.27	1.96	1.35	4.59*
LeafyTR7	Coffey Seed	2.8	85	41	29.0	55.5	56.5	30	40	25	1.10	2.04	1.22	4.36*
Mean		3.2	89	36	55.0	56.3	30.0	30	35	24	1.12	1.56	1.22	3.90
CV,%		15.9	7	48	4.0	1.6	8.0	8	15	16	28.12	31.53	22.25	22.19
LSD,0.05		0.7	9	25	3.2	1.3	4.0	4	7	5	0.45	0.70	0.39	1.24

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 21 and 40 lb/A of actual nitrogen on August 3 (Total of 100 lb of N/acre).

Table 18. Dry matter yields, seedling vigor, stand rating, and plant height of pearl millet varieties sown May 31, 2022, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 22	Percent Stand Jun 22	Maturity[2]			Plant Height (in)			Yield (DM tons/acre)				
				Jul 20	Aug9	Sep 6	Jul 20	Aug 9	Sep 6	Jul 20	Aug 9	Sep 6	Oct 4	Total
Commercial Varieties-Available for Farm Use														
Tifleaf III	Gayland Ward Seed	4.3	99	29.0	55.0	55.5	25	41	32	1.11	1.60	1.20	1.07	4.99*
PearlMil	Dyna-Gro seed	3.3	98	29.0	56.0	55.5	26	43	35	1.00	1.58	1.13	0.96	4.67*
Wonderleaf	Advanta Seeds/Ramer Seed	3.9	99	38.5	46.3	55.0	35	35	33	1.50	1.34	1.01	0.74	4.60*
SS635	Southern States	3.6	99	29.0	56.0	55.0	26	44	35	1.00	1.49	1.08	0.92	4.49
Millex32	S&W Seed Company	4.4	100	46.8	49.8	57.0	40	35	38	1.52	1.25	1.00	0.68	4.45
Leafy22 Hybrid	Turner Seed	3.5	100	29.0	54.5	55.5	26	43	33	0.94	1.51	1.10	0.87	4.42
Epic BMR[3]	Coffey Seed	3.3	100	29.0	39.0	57.0	25	26	36	1.03	1.31	1.26	0.77	4.37
SS1562 BMR	Southern States	3.9	100	29.0	36.5	56.0	26	26	29	1.07	1.20	1.17	0.86	4.29
Exceed BMR	Coffey Seed	3.8	100	29.0	44.8	58.0	26	26	34	0.99	1.28	1.12	0.84	4.24
Pennleaf Hybrid	Pennington Seed	3.6	99	29.0	50.0	56.0	25	34	33	0.92	1.24	1.14	0.89	4.19
SweetSummer	Cisco Seeds	3.8	100	29.0	41.0	57.0	26	25	34	1.00	1.17	1.18	0.79	4.15
PP102M Hybrid	Cisco Seeds	3.3	91	30.8	50.3	57.5	29	38	32	1.09	1.36	0.93	0.64	4.03
Prime360	Byron Seed	3.0	98	29.0	34.0	56.5	24	26	34	0.81	1.11	1.11	0.81	3.83
Experimental Varieties														
LeafyTR7	Coffey Seed	3.5	99	29.0	47.5	55.5	26	35	32	0.96	1.41	1.14	1.12	4.64*
LeafyTR9	Coffey Seed	3.5	99	29.0	42.3	54.5	25	32	32	0.86	1.26	1.07	0.86	4.04
Mean		3.6	99	30.9	46.9	56.1	27	34	33	1.05	1.34	1.11	0.85	4.36
CV,%		19.6	4	7.1	10.4	2.3	9	8	9	23.61	9.48	9.12	13.91	7.94
LSD,0.05		1.0	6	3.2	7.0	1.9	4	4	4	0.36	0.18	0.14	0.17	0.49

[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 3 for complete scale.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 21 and 40 lb/A of actual nitrogen on August 3 (Total of 100 lb of N/acre).

Table 19. Dry matter yields and plant height of pearl millet varieties sown June 2, 2020, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Plant Height (in)		Yield (DM tons/acre)			
		Jul 16	Aug 16	Jul 16	Aug 16	Sep 9	Total
Commercial Varieties-Available for Farm Use							
Millex32	S&W Seed Company	62	20	3.47	0.44	2.09	6.00*
Leafy22 Hybrid	Turner Seed	42	20	3.00	0.72	2.07	5.99*
SS635	Southern States	42	25	2.70	0.99	1.96	5.92*
Wonderleaf	Advanta Seed/Ramer Seed	58	20	3.09	0.73	2.03	5.85*
Tifleaf III Hybrid	Gayland Ward Seed	40	23	3.02	0.95	1.46	5.43*
PearlMil	Dyna-Gro Seed	44	21	2.71	0.84	1.86	5.41*
Epic BMR[1]	Coffey Seed	34	19	2.59	1.04	1.68	5.18
Prime360	Byron Seed	36	20	2.51	0.76	1.88	5.15
SS1562M BMR	Southern States	34	19	2.60	0.98	1.55	5.13
SweetSummer	Cisco Seeds	36	21	2.54	0.78	1.59	4.91
Pennleaf Hybrid	Pennington Seed	40	24	2.56	0.65	1.62	4.82
Exceed BMR	Coffey Seed	35	20	2.56	0.55	1.71	4.82
Experimental Varieties							
LeafyTR9	Coffey Seed	40	24	2.64	0.78	2.06	5.47*
LeafyTR7	Coffey Seed	39	21	2.59	1.16	1.38	5.14
Mean		41	21	2.76	0.71	1.78	5.35
CV,%		6	13	11.78	38.81	19.91	9.82
LSD,0.05		3	4	0.46	0.46	0.51	0.78

[1]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/acre of actual nitrogen on June 1, July 23, and August 13 (Total of 180 lb of N/acre).

Table 20. Dry matter yields, maturity, and plant height of pearl millet varieties sown May 25, 2021, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Maturity[1] Jul 16	Plant Height (in)		Yield (DM tons/acre)[2]		
			Jul 16	Aug18	Jul 16	Aug 18	Total
Commercial Varieties-Available for Farm Use							
Tifleaf III	Gayland Ward Seed	35.0	39	26	2.37	1.08	3.45*
Leafy22 Hybrid	Turner Seed	35.0	41	28	2.37	1.01	3.39*
PearlMil	Dyna-Gro Seeds	35.0	38	28	2.14	1.00	3.14*
Exceed BMR[3]	Coffey Seed	35.0	35	26	1.93	1.10	3.03*
Prime360	Byron Seed	35.0	32	28	1.87	1.05	2.92
SweetSummer	Cisco Seeds	35.0	32	27	1.68	1.13	2.81
SS635	Southern States	35.0	41	27	1.95	0.83	2.78
Millex32	S&W Seed Company	44.5	54	27	2.39	0.26	2.65
Wonderleaf	Advanta Seed/Ramer Seed	37.5	49	26	2.03	0.58	2.61
SS1562M BMR	Southern States	35.0	31	26	1.59	0.97	2.57
Epic BMR	Coffey Seed	35.0	32	27	1.66	0.82	2.48
PP102M	Cisco Seeds	41.8	47	22	2.10	0.20	2.30
Experimental Varieties							
LeafyTR9	Coffey Seed	35.0	39	26	2.11	0.90	3.00*
LeafyTR7	Coffey Seed	35.0	38	25	2.05	0.64	2.69
Mean		36.3	39	26	2.02	0.83	2.84
CV,%		4.0	6	10	13.95	32.89	11.39
LSD,0.05		2.1	4	4	0.41	0.39	0.46

[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. See Table 3 for complete scale.
[2]Low yields possibly due to heavy weed pressure.
[3]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/A of actual nitrogen on May 27 and July 30 (Total of 120 lb of N/acre).

Table 21. Dry matter yields and plant height of pearl millet varieties sown June 1, 2022, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Plant Height (in)			Yield (DM tons/acre)			
		Jul 20	Aug 18	Sep 26	Jul 20	Aug 18	Sep 26	Total
Commercial Varieties-Available for Farm Use								
Tifleaf III	Gayland Ward Seed	32	44	22	1.38	2.24	1.33	4.94*
PearlMil	Dyna-Gro Seed	35	41	23	1.53	1.76	1.21	4.50*
Wonderleaf	Advanta Seeds/Ramer Seed	38	43	21	1.49	1.95	1.07	4.50*
PP102M Hybrid	Cisco Seeds	42	40	20	1.73	1.66	1.04	4.43*
Leafy22 Hybrid	Turner Seed	34	41	23	1.41	1.85	0.99	4.25
Millex32	S&W Seed Company	52	42	26	2.03	1.19	1.04	4.25
SS635	Southern States	34	41	24	1.27	1.85	1.12	4.24
Exceed BMR[1]	Coffey Seed	26	35	20	1.11	1.91	1.11	4.13
Epic BMR	Coffey Seed	27	32	20	1.27	1.77	1.07	4.11
Prime360	Btron Seed	26	35	22	1.02	1.80	1.22	4.03
SS1562 BMR	Southern States	26	32	19	1.18	1.73	1.06	3.97
SweetSummer	Cisco Seeds	28	32	20	1.23	1.62	1.13	3.97
Experimental Varieties								
LeafyTR7	Coffey Seed	32	41	23	1.36	2.03	1.30	4.67*
LeafyTR9	Coffey Seed	32	38	23	1.51	1.86	1.31	4.67*
Mean		33	38	22	1.39	1.80	1.14	4.34
CV,%		9	7	8	19.95	12.29	17.28	8.95
LSD,0.05		4	4	3	0.40	0.32	0.28	0.56

[1]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 27 (Total of 120 lb of N/acre).

Table 22. Dry matter yields, seedling vigor, stand rating, heading date, plant height, and maturity of forage sorghum varieties sown May 28, 2020, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 25	Percent Stand Jun 25	Heading Date[2]	Plant Height(ft) Sep 16	Maturity[3] Sep 16	Yield (DM tons/acre) Sep18
Commercial Varieties-Available for Farm Use							
SS405	Sorghum Partners	4.6	97	Aug 31	11.5	88.5	8.48*
TopTon	Dyna-Gro Seed	3.9	95	Aug 27	10.0	85.5	7.71*
Ensilemaster	Caudill Seed	4.3	95	Aug 26	10.8	85.5	7.67*
SP1615	Sorghum Partners	4.4	99	did not head	11.5	29.0	7.42*
SS304	Sorghum Partners	3.5	97	Aug 28	11.3	87.0	7.15
Super Sile 20	Dyna-Gro Seed	4.1	99	Aug 30	10.0	87.5	7.09
Super Sile 30	Dyna-Gro Seed	4.0	97	Aug 27	10.8	88.0	6.79
SS1515	Southern States	4.1	98	Aug 16	6.5	88.0	6.20
NK300	Sorghum Partners	4.8	100	Aug 16	6.8	87.0	6.17
AF8301	Advanta Seed/Ramer Seed	4.4	99	Aug 17	7.0	89.0	6.10
F75FS13	Dyna-Gro Seed	4.1	98	Aug 1	8.8	93.0	5.57
F74FS23 BMR[4]	Dyna-Gro Seed	4.1	97	Aug 15	9.5	88.0	5.56
ADV7232 BMR	Advanta Seed/Ramer Seed	4.1	99	Aug 26	5.6	86.0	5.44
GW2120	Gayland Ward Seed	4.3	99	Jul 31	7.5	93.0	5.42
FSG114 BMR	Farm Science Genetics	4.5	100	Jul 29	8.6	93.0	5.37
SP3904BD BMR(Brachytic Dwarf)	Sorghum Partners	3.8	94	Aug 25	6.0	85.0	5.21
F74FS72 BMR	Dyna-Gro Seed	3.9	97	Aug 25	5.5	87.5	5.15
GW400 BMR	Gayland Ward Seed	4.4	98	Jul 31	7.6	93.0	5.04
AF7201 BMR(Brachytic Dwarf)	Advanta Seed/Ramer Seed	4.6	96	Jul 31	7.5	92.5	4.99
GW475 BMR	Gayland Ward Seed	4.6	99	Aug 1	8.6	91.5	4.97
GW600 BMR	Gayland Ward Seed	4.9	100	Jul 30	7.4	92.0	4.96
SP3905BD BMR(Brachytic Dwarf)	Sorghum Partners	3.6	99	Aug 2	5.9	93.0	4.79
AF7401 BMR	Advanta Seed/Ramer Seed	4.0	98	Aug 25	5.9	86.0	4.56
FSG115 BMR(Brachytic Dwarf)	Farm Science Genetics	4.6	98	Aug 24	7.0	88.5	4.55
Mean		4.2	98	Aug 16	8.2	86.5	5.93
CV,%		13.4	4	4 days	6.8	2.7	13.37
LSD,0.05		0.8	5	4 days	0.8	3.3	1.12

[1]Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2]Approximately 50% of heads fully emerged. Those without a date are photoperiod sensitive and remain vegetative all season.
[3]Maturity rating scale: 29=9 or more elongated sheaths, 45=boot swollen, 62=beginning of pollen shed, 75=endosperm milky, 93=endosperm hard and dry. See Table 3 for complete scale.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 100 lb/A of actual nitrogen on May 29.

Table 23. Dry matter yields, seedling vigor, stand rating, heading date, lodging, and maturity of forage sorghum varieties sown May 24, 2021, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jun 11	Percent Stand Jun 11	Heading Date[2]	Lodging[3] Sep 18	Plant Height(ft) Sep 18	Maturity[4] Sep 18	Yield (DM tons/acre) Sep 21
Commercial Varieties-Available for Farm Use								
SS405	Sorghum Partners	4.8	99	Aug 28	0.0	13.3	88.5	16.44*
SP1615	Sorghum Partners	4.5	100	did not head	0.0	13.0	29.0	13.84
TopTon	Dyna-Gro Seed	4.5	100	Aug 22	6.5	12.0	88.0	12.24
Super Sile 20	Dyna-Gro Seed	4.0	99	Aug 23	0.5	11.6	88.0	12.23
Super Sile 30	Dyna-Gro Seed	3.8	100	Aug 26	0.0	11.8	88.5	10.80
NK300	Sorghum Partners	4.5	100	Aug 18	0.0	7.6	87.5	10.16
SS304	Sorghum Partners	3.3	96	Aug 24	1.5	12.0	90.0	10.03
F74FS23 BMR[5]	Dyna-Gro Seed	4.8	98	Aug 22	6.3	10.5	88.0	9.33
FSG114 BMR	Farm Science Genetics	4.5	97	Aug 7	4.0	11.3	90.0	9.31
F75FS13	Dyna-Gro Seed	4.8	98	Aug 4	2.0	11.3	90.0	8.96
SP3904BD BMR	Sorghum Partners	4.5	98	Aug 21	0.0	6.5	87.5	8.49
AF8301	Advanta Seed/Ramer Seed	4.3	99	Aug 20	0.0	6.8	88.3	8.29
Ensilemaster	Caudill Seed	3.8	92	Aug 24	8.0	12.0	87.5	8.16
FSG115 BMR (Brachytic Dwarf)	Farm Science Genetics	4.5	98	Aug 26	0.8	7.5	87.0	8.04
SS1515	Southern States	4.9	99	Aug 18	0.0	8.3	88.5	7.99
ADV7232 BMR	Advanta Seed/Ramer Seed	4.3	99	Aug 22	0.5	6.9	88.0	7.76
AF7401 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	4.3	95	Aug 17	0.0	7.3	88.3	7.42
GW475 BMR	Gayland Ward Seed	4.1	99	Aug 10	5.3	10.3	89.5	7.14
F74FS72 BMR	Dyna-Gro Seed	4.5	100	Aug 20	0.0	6.0	88.5	7.00
GW600 BMR	Gayland Ward Seed	5.0	100	Aug 5	7.5	9.9	89.5	6.92
AF7201 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	4.8	98	Aug 5	6.5	9.8	90.0	6.54
SP3905BD BMR	Sorghum Partners	3.9	94	Aug 3	1.3	8.1	90.0	6.32
GW2120	Gayland Ward Seed	2.8	96	Aug 13	6.3	10.3	89.5	6.16
SiloPro BMR (Brachytic Dwarf)	Gayland Ward Seed	3.8	99	Aug 27	0.0	7.5	86.5	5.97
GW400 BMR	Gayland Ward Seed	4.3	98	Aug 6	9.0	10.8	90.0	5.89
SWFS8802	S&W Seed Company	4.0	97	Aug 6	0.0	7.0	89.0	5.78
Mean		4.3	98	Aug 17	2.7	9.6	88.7	8.76
CV,%		13.8	3	5 days	48.7	10.1	1.8	16.66
LSD,0.05		0.8	5	6 days	1.8	1.4	2.3	2.08

[1]Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2]Approximately 50% of heads fully emerged. Those without a date are photoperiod sensitive and remain vegetative all season.
[3]Lodging score based on a scale of 0 to 9. 0 indicating no lodging and 9 indicating all plants lodged.
[4]Maturity rating scale: 29=9 or more elongated sheaths, 45=boot swollen, 62=beginning of pollen shed, 75=endosperm milky, 93=endosperm hard and dry. See Table 3 for complete scale.
[5]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 75 lb/A of actual nitrogen on May 26 and 60 lb/A of actual nitrogen on June 20 (total of 135 lb of N/acre)..

Table 24. Dry matter yields, seedling vigor, stand rating, heading date, aphid damage, plant height, and maturity of forage sorghum varieties sown Jun 3, 2022, at Lexington, Kentucky.

Variety	Proprietor/Distributor	Seedling Vigor[1] Jul 1	Percent Stand Jul 1	Heading Date[2]	Sugarcane Aphid injury[3] Sep 19	Plant Height(ft) Sep 19	Maturity[4] Sep 19	Yield (DM tons/ acre) Sep 19
Commercial Varieties-Available for Farm Use								
SP1615	Sorghum Partners	4.9	100	did not head	1.5	13.0		11.07*
F74FS72 BMR[5]	Dyna-Gro Seeds	5.0	98	Aug 26	2.8	9.6	83.0	8.86*
TopTon	Dyna-Gro Seeds	4.6	97	Aug 26	1.8	9.3	77.5	7.39
NK300	Sorghum Partners	4.6	99	Aug 31	2.8	10.5	81.3	7.09
F74FS23 BMR	Dyna-Gro Seeds	4.9	97	Aug 23	1.3	11.0	84.3	7.04
SS304	Sorghum Partners	4.4	98	Aug 30	3.3	10.6	85.0	7.00
Ensilemaster	Caudill Seed	4.9	100	Aug 20	1.5	12.0	80.0	6.95
Super Sile 30	Dyna-Gro Seeds	5.0	100	Aug 23	2.3	11.8	81.3	6.05
SS1515	Southern States	4.9	99	Aug 23	2.5	9.8	81.3	5.97
AF7401 BMR	Advanta Seed/Ramer Seed	4.8	98	Aug 20	2.5	7.8	85.5	5.93
Super Sile 20	Dyna-Gro Seeds	4.6	99	Aug 24	2.5	8.4	80.5	5.67
GW2120	Gayland Ward Seed	4.9	100	Aug 18	1.5	8.6	81.8	5.60
SS405	Sorghum Partners	4.8	86	Aug 25	3.5	12.3	84.3	5.54
AF8301	Advanta Seed/Ramer Seed	4.6	95	Aug 30	1.3	10.1	77.5	5.53
AF7201 BMR Brachytic Dwarf)	Advanta Seed/Ramer Seed	4.8	98	Aug 19	2.0	8.8	83.0	5.53
ADV7232 BMR	Advanta Seed/Ramer Seed	4.5	98	Aug 31	2.5	7.5	83.8	5.32
SP3905BD BMR	Sorghum Partners	4.5	100	Aug 20	3.0	7.3	86.3	5.26
SiloPro BMR (Brachytic Dwarf)	Gayland Ward Seed	4.6	88	Sep 3	4.3	7.0	77.5	5.11
F75FS13	Dyna-Gro Seeds	4.6	97	Aug 31	3.3	9.9	77.5	5.05
SP3904BD BMR	Sorghum Partners	4.3	96	Aug 27	2.0	9.0	80.5	4.74
Experimental Varieties								
Kallisto	KWS SAAT SE&Co. KGaA	5.0	96	Aug 15	2.8	11.5	87.8	7.89
Freya	KWS SAAT SE&Co. KGaA	4.9	90	Aug 26	2.0	8.8	80.0	5.00
Mean		4.7	97	Aug 25	2.4	9.7	81.9	6.36
CV,%		8.4	7	13 days	47.2	23.1	7.4	26.16
LSD,0.05		0.6	10	15 days	1.6	3.2	8.5	2.39

[1]Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[2]Approximately 50% of heads fully emerged. Those without a date are photoperiod sensitive and remain vegetative all season.
[3]Aphid damage score based on a scale of 1 to 9 with 9 indicating all leaves affected by aphids.
[4]Maturity rating scale: 29=9 or more elongated sheaths, 45=boot swollen, 62=beginning of pollen shed, 75=endosperm milky, 93=endosperm hard and dry. See Table 3 for complete scale.
[5]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 100 lb/A of actual nitrogen on June 6.

Table 25. Dry matter yields, maturity, plant height, lodging, and sugarcane aphid rating of forage sorghum varieties sown May 25, 2021, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Sugarcane Aphid[1] Sep 20	Plant Height (ft) Sep 20	Lodging[2] Sep 20	Maturity[3] Sep 20	Yield (DM tons/acre) Sep 23
Commercial Varieties-Available for Farm Use						
SS405	S&W Seed Company	3.0	12.6	1.1	77.5	16.69*
SP1615	Sorghum Partners	1.8	13.0	0.3	29.0	14.32*
Super Sile 20	Dyna-Gro Seed	1.8	10.6	6.0	83.0	12.85
Super Sile 30	Dyna-Gro Seed	2.0	11.1	5.4	85.0	11.39
TopTon	Dyna-Gro Seed	2.0	10.5	10.0	82.5	10.68
AF8301	Advanta Seed/Ramer Seed	2.3	7.6	5.0	87.0	9.66
SS1515	Southern States	2.0	7.3	6.4	86.5	9.60
SP3904BD BMR[4](Brachytic Dwarf)	Sorghum Partners	1.5	6.8	1.3	85.0	8.74
GW600 BMR	Gayland Ward Seed	1.3	9.8	9.9	87.0	8.70
SS304	Sorghum Partners	2.3	11.0	7.5	82.5	8.18
NK300	Sorghum Partners	1.8	7.1	6.9	86.5	8.00
F74FS23 BMR	Dyna-Gro Seed	2.5	9.6	9.4	85.5	7.98
ADV7232 BMR	Advanta Seed/Ramer Seed	1.5	6.3	0.5	83.0	7.94
AF7201 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	1.5	8.3	8.8	87.0	7.91
F75FS13	Dyna-Gro Seed	1.5	9.5	7.8	87.0	7.51
SiloPro BMR (Brachytic Dwarf)	Gayland Ward Seed	2.5	7.4	2.0	82.5	7.50
F74FS72 BMR	Dyna-Gro Seed	1.8	6.1	0.0	82.5	7.33
GW2120	Gayland Ward Seed	1.3	8.8	3.0	87.0	7.03
Ensilemaster	Caudill Seed	1.8	11.0	9.5	82.5	6.85
AF7401 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	1.0	6.9	0.3	85.0	6.26
GW475 BMR	Gayland Ward Seed	2.3	9.0	9.6	87.0	5.77
GW400 BMR	Gayland Ward Seed	1.3	8.9	9.9	87.0	5.70
SWFS8802	S&W Seed Company	2.0	6.5	4.1	87.0	5.49
SP3905BD BMR (Brachytic Dwarf)	Sorghum Partners	1.5	7.0	9.9	87.0	4.98
Mean		1.8	8.9	5.6	84.9	8.63
CV,%		36.1	6.7	40.1	3.6	22.61
LSD,0.05		0.9	0.8	3.2	4.3	2.75

[1]Aphid damage score based on a scale of 1 to 9 with 9 indicating all leaves affected by aphids.
[2]Lodging score based on a scale of 0 to 10. 0 indicating no lodging and 10 indicating all plants lodged.
[3]Maturity rating scale: 29=9 or more elongated sheaths, 45=boot swollen, 62=beginning of pollen shed, 75=endosperm milky, 93=endosperm hard and dry. See Table 3 for complete scale.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 120 lb/A of actual nitrogen on May 27.

Table 26. Dry matter yields, lodging, sugarcane aphid injury, plant height, and maturity of forage sorghum varieties sown June 1, 2022, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Lodging[1] Sep 15	Sugarcane Aphid Injury[2] Sep 15	Plant Height (ft) Sep 15	Maturity[3] Sep 15	Yield (DM tons/acre) Sep 16
Commercial Varieties-Available for Farm Use						
SS405	Sorghum Partners	0.0	5.3	13.7	73.5	12.40*
SP1615	Sorghum Partners	0.3	4.4	13.4	29.0	9.10
Supersile 30	Dyna-Gro Seeds	2.8	4.5	12.3	80.0	7.83
AF8301	Advanta Seeds/Ramer Seed	0.8	6.5	8.4	84.0	7.30
SS304	Sorghum Partners	1.5	5.0	12.6	80.0	7.13
Supersile 20	Dyna-Gro Seeds	2.7	5.7	12.2	77.7	6.80
SS1515	Southern States	0.9	5.8	8.2	82.5	6.42
NK300	Sorghum Partners	0.0	6.6	8.0	85.0	6.26
SP3904BD BMR[4]	Sorghum Partners	0.0	4.5	7.1	75.0	6.24
Ensilemaster	Southern Etates	4.0	5.6	12.2	75.0	6.23
F74FS23 BMR	Dyna-Gro Seeds	3.5	6.9	11.4	75.0	5.86
ADV7232 BMR	Advanta Seeds/Ramer Seed	0.0	5.9	6.4	74.5	5.82
AF7201 BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed	1.3	5.8	9.2	86.5	5.62
AF7401 BMR	Advanta Seeds/Ramer Seed	0.0	4.4	6.8	75.0	5.62
TopTon	Dyna-Gro Seeds	4.5	4.5	13.3	74.5	5.28
F74FS72 BMR	Dyna-Gro Seeds	0.0	6.0	6.2	78.3	5.25
GW2120	Gayland Ward Seed	0.3	5.1	9.2	87.0	5.15
SP3905BD BMR	Sorghum Partners	0.0	5.3	6.9	91.0	4.81
F75FS13	Dyna-Gro Seeds	1.8	6.1	9.3	91.0	4.74
SiloPro BMR (Brachytic Dwarf)	Gayland Ward Seed	0.0	7.1	7.7	76.5	4.68
Experimental Varieties						
Kallisto	KWS SAAT SE&Co.KGaA	0.5	6.1	12.6	91.0	9.83
Freya	KWS SAAT SE&Co.KGaA	0.0	7.8	10.2	91.0	7.21
Mean		1.1	5.7	9.9	78.8	6.63
CV,%		99.0	21.3	8.3	5.2	16.67
LSD,0.05		1.6	1.7	1.2	5.9	1.59

[1]Lodging score based on a scale of 0 to 9 with 0 indicating no lodging and 9 indicating all plants lodged.
[2]Aphid damage score based on a scale of 1 to 9 with 9 indicating all leaves affected by aphids.
[3]Maturity rating scale: 29=9 or more elongated sheaths, 45=boot swollen, 62=beginning of pollen shed, 75=endosperm milky, 93=endosperm hard and dry. See Table 3 for complete scale.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 120 lb/ A of actual nitrogen on June 6.

Table 27. Dry matter yields, seedling vigor, stand rating, and maturity of teff varieties sown May 19, 2021, at Lexington, Kentucky.

Variety[3]	Proprietor/ Distributor	Seedling Vigor[1] Jun 9	Percent Stand		Maturity[2]				Yield (tons/acre)				
			Jun 9	Oct 11	Jul 6	Jul 30	Sep 2	Oct 11	Jul 6	Jul 30	Sep 2	Oct 11	Total
Commercial Varieties-Available for Farm Use													
HorseCandi	–	3.8	100	64	50.0	49.8	52.0	56.0	2.33	1.65	1.46	0.23	5.67*
Velvet	–	4.3	100	78	52.0	49.3	53.5	56.0	2.26	1.48	1.42	0.30	5.46*
Dessie	Allied Seed	4.6	100	95	51.0	48.0	54.0	56.0	2.24	1.51	1.45	0.43	5.42*
Pharoah	First Line Seeds	4.8	100	71	50.0	48.0	52.5	56.0	1.89	1.54	1.55	0.28	5.25*
CW0604	Barenbrug USA	5.0	100	50	51.5	48.0	54.0	56.0	2.15	1.37	1.50	0.20	5.21*
SummerDelight	Cisco Seeds	4.0	98	65	52.0	49.3	52.5	56.0	2.10	1.26	1.52	0.22	5.10*
Moxie	Barenbrug USA	4.6	100	66	51.0	54.0	55.0	56.0	2.01	1.46	1.35	0.23	5.05*
VAT1Brown	Hankins Seed	5.0	100	50	50.0	48.5	50.5	56.0	1.97	1.44	1.43	0.13	4.97*
Tiffany	Barenbrug USA	4.9	100	67	50.5	50.3	52.3	56.0	2.00	1.36	1.29	0.26	4.81*
Corvallis	Smith Seed Services	4.4	100	34	50.5	49.8	50.5	56.0	1.88	1.31	1.45	0.10	4.73*
Experimental Varieties													
F11	Mountain View Seeds	4.9	100	85	50.5	49.3	53.5	56.0	2.09	1.18	1.45	0.35	5.06*
BARETCT	Barenbrug USA	5.0	100	44	52.0	48.0	52.5	56.0	1.97	1.43	1.36	0.19	4.95*
Mean		4.6	100	63	50.9	49.3	52.7	56.0	2.07	1.41	1.44	0.24	5.14
CV,%		6.4	1	27	1.5	6.0	4.1	0.0	15.11	18.95	21.79	48.79	12.41
LSD,0.05		0.4	1	26	1.1	4.2	3.1	0.0	0.45	0.39	0.45	0.17	0.95

[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 3 for complete scale.
[3]Check with local dealers for available varieties.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 21 and 40lb/A onJuly 7 and August 3 (Total of 140 lb of N/acre).

Table 28. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of teff varieties sown May 31, 2022, at Lexington, Kentucky.

Variety[3]	Proprietor/Distributor	Seedling Vigor[1] Jun 22	Percent Stand Jun 22	Maturity[2]			Plant Height (in) Jul 20	Yield (tons/acre)				
				Jul 20	Aug 9	Sep 6		Jul 20	Aug 9	Sep 6	Oct 4	Total
Commercial Varieties-Available for Farm Use												
Corvallis	Smith Seed Services	4.6	100	52.5	52.5	53.5	17	0.95	1.67	0.78	0.30	3.70*
Moxie	Barenbrug USA	4.0	100	52.5	54.0	54.5	19	0.97	1.65	0.79	0.28	3.68*
Tiffany	Barenbrug USA	4.0	100	53.5	54.5	55.0	19	0.97	1.60	0.82	0.28	3.67*
Pharoah	First Line Seeds	4.6	100	50.5	53.0	54.5	18	0.87	1.72	0.76	0.29	3.64*
CW0604	Barenbrug USA	4.8	100	52.5	54.5	54.5	18	0.96	1.59	0.77	0.32	3.64*
Dessie	Allied Seed	4.1	100	51.5	54.0	54.5	17	0.84	1.59	0.82	0.31	3.56*
HorseCandi	–	4.1	100	52.0	53.5	55.0	17	0.88	1.55	0.79	0.30	3.52*
Velvet	–	4.0	100	52.5	55.0	54.0	18	0.76	1.54	0.84	0.27	3.41*
VAT1Brown	Hankins Seed	4.6	100	51.5	54.0	53.5	17	0.85	1.46	0.75	0.30	3.36*
Experimental Varieties												
BARETCT	Barenbrug USA	4.3	100	53.0	53.5	54.5	19	0.99	1.62	0.78	0.25	3.64*
Mean		4.3	100	52.2	53.9	54.4	18	0.90	1.60	0.79	0.29	3.58
CV,%		10.4	0	2.7	2.7	2.0	12	25.75	9.95	14.72	24.59	11.04
LSD,0.05		0.7	1	2.0	2.1	1.6	3	0.34	0.23	0.17	0.10	0.57

[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 3 for complete scale.
[3]Check with local dealers for available varieties.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 20 (Total of 120 lb of N/acre).

Table 29. Dry matter yields and plant height of teff varieties sown May 25, 2021 at Princeton, Kentucky.

Variety[2]	Proprietor/Distributor	Plant Height (in) Jul 23	Yield (tons/acre)[1]		
			Jul 23	Aug 19	Total
Commercial Varieties-Available for Farm Use					
Dessie	Allied Seed	20	0.50	0.71	1.22*
Moxie	Barenbrug USA	25	0.46	0.64	1.10*
VAT1Brown	Hankins Seed	23	0.53	0.47	1.00*
Tiffany	Barenbrug USA	24	0.47	0.51	0.99*
Pharaoh	First Line Seeds	19	0.50	0.43	0.93*
HorseCandi	–	22	0.48	0.44	0.92*
Corvallis	Smith Seed Services	23	0.44	0.45	0.88*
Velvet	–	23	0.51	0.38	0.88*
SummerDelight	Cisco Seeds	23	0.41	0.43	0.85*
CW0604	Barenbrug USA	25	0.55	0.28	0.83*
Mean		23	0.49	0.47	0.96
CV,%		18	23.17	54.74	27.96
LSD,0.05		6	0.16	0.38	0.39

[1]Low yields possibly due to heavy weed pressure.
[2]Check with local dealers for available varieties.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/A of actual nitrogen on May 27 and July 30 (Total of 120 lb of N/acre).

Table 30. Dry matter yields and plant height of teff varieties sown June 1, 2022, at Princeton, Kentucky.

Variety[1]	Proprietor/ Distributor	Plant Height (in)		Yield (tons/acre)		
		Jul 25	Aug 25	Jul 25	Aug 25	Total
Commercial Varieties-Available for Farm Use						
CW0604	Barenbrug USA	24	24	1.40	1.35	2.75*
Moxie	Barenbrug USA	24	24	1.50	1.24	2.74*
Corvallis	Smith Seed Services	25	25	1.38	1.29	2.68*
Pharoah	First Line Seeds	24	22	1.48	1.12	2.59*
Dessie	Allied Seed	26	23	1.49	1.08	2.58*
Tiffany	Barenbrug USA	25	23	1.27	1.26	2.53*
Velvet	–	25	21	1.22	1.13	2.35*
HorseCandi	–	23	23	1.16	1.11	2.27
Mean		25	23	1.36	1.20	2.56
CV,%		4	5	13.88	17.89	11.05
LSD,0.05		1	2	0.28	0.23	0.42

[1]Check with local dealers for available varieties.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 27 (Total of 120 lb of N/acre).

Table 31. Dry matter yields, seedling vigor, stand rating, and maturity of crabgrass varieties sown May 27, 2020, at Lexington, Kentucky.

Variety	Proprietor/ Distributor	Seedling Vigor[1] Jun 25	Percent Stand Jun 25	Maturity[2]		Yield (tons/acre)			
				Jul 17	Sep 9	Jul 17	Aug 11	Sep 9	Total
Commercial Varieties-Available for Farm Use									
Impact	Barenbrug USA	4.1	97	29	66	0.37	1.37	1.66	3.40*
Red River	Noble Foundation	4.6	100	29	66	0.58	1.30	1.26	3.13*
Mojo w/YJ[3]	Barenbrug USA	4.3	97	29	66	0.48	1.14	1.49	3.11*
QuickNBig	Noble Foundation	5.0	100	51	66	0.94	0.97	1.09	3.01*
Experimental Varieties									
BARDSiRR	Barenbrug USA	4.5	97	29	66	0.40	1.26	1.69	3.35*
Mean		4.5	98	33.5	66	0.55	1.21	1.44	3.20
CV,%		4.2	1	6.5	0	36.27	20.28	15.70	15.15
LSD,0.05		0.3	2	3.3	0	0.31	0.38	0.35	0.75

[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 3 for complete scale.
[3]YJ=yellow jacket coating on the seed (seeded at 8 lb/A vs 5 lb/A for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 50 lb/A of actual nitrogen on May 29, 50 lb/A on July 17 and 60 lb/A on Aug 14 (Total of 160 lb of N/acre).

Table 32. Dry matter yields, seedling vigor, stand ratings, and maturity of crabgrass varieties sown May 19, 2021,at Lexington, Kentucky.

Variety	Proprietor/ Distributor	Seedling Vigor[1] Jun 9	Percent Stand		Maturity[2]				Yield (tons/acre)				
			Jun 9	Oct 11	Jul 9	Aug 2	Sep 2	Oct 11	Jul 9	Aug 2	Sep 2	Oct 11	Total
Commercial Varieties-Available for Farm Use													
Impact	Barenbrug USA	4.0	99	99	37.0	46.3	58.0	58.0	1.69	1.62	2.11	1.12	6.54*
Mojo w/YJ[3]	Barenbrug USA	3.5	98	98	41.0	53.5	58.0	58.0	1.52	1.75	1.93	0.97	6.16*
RedRiver	Noble Foundation	3.5	96	88	45.0	55.5	58.0	58.0	1.65	1.49	1.66	0.68	5.48
QuickNBig	Noble Foundation	5.0	100	23	49.3	55.5	58.0	58.0	1.96	1.13	1.14	0.17	4.39
Experimental Varieties													
BARDSiRR	Barenbrug USA	4.1	97	97	41.0	51.8	58.0	58.0	1.45	1.53	2.00	0.88	5.87*
Mean		4.0	98	81	42.7	52.5	58.0	58.0	1.65	1.50	1.77	0.76	5.69
CV,%		12.3	2	13	7.5	4.5	0.0	0.0	9.98	24.53	10.38	17.01	7.72
LSD,0.05		0.8	3	16	4.9	3.7	0.0	0.0	0.25	0.57	0.28	0.20	0.68

[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 3 for complete scale.
[3]YJ=yellow jacket coating on the seed (seeded at 8 lb/A vs 5 lb/A for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 21 and 40lb/A on August 3 (Total of 100 lb of N/acre).

Table 33. Dry matter yields, seedling vigor, stand ratings, maturity, and plant height of crabgrass varieties sown May 31, 2022, at Lexington, Kentucky.

Variety	Proprietor/Distibutor	Seedling Vigor[1] Jun 22	Percent Stand		Maturity[2]			Plant Height (in) Jul 20	Yield (tons/acre)				
			Jun 22	Oct 12	Jul 20	Aug 9	Sep 6		Jul 20	Aug 9	Sep 6	Oct 4	Total
Commercial Varieties-Available for Farm Use													
Mojo w/YJ[3]	Barenbrug USA	3.4	100	100	47.8	57.5	58.0	15	0.71	1.92	1.05	0.21	3.89*
Quick-N-Big Spreader	Dalrymple Farms	4.9	100	100	56.0	57.5	58.0	26	0.88	1.70	0.91	0.15	3.64*
Impact	Barenbrug USA	3.8	100	100	45.0	54.5	56.0	14	0.58	1.76	1.07	0.21	3.61*
Dal's Big River	Dalrymple Farms	4.1	100	100	45.0	57.5	58.5	14	0.68	1.83	0.93	0.16	3.61*
Red River	Noble Foundation	3.9	100	100	45.0	56.0	58.0	14	0.59	1.78	1.03	0.20	3.60*
Quick-N-Big	Noble Foundation	5.0	100	92	57.5	58.0	57.5	29	1.09	1.39	0.69	0.12	3.29
Experimental Varieties													
BARDSiRR	Barenbrug USA	3.8	100	100	34.8	55.0	57.0	14	0.65	1.92	1.05	0.19	3.81*
Mean		4.1	100	99	47.3	56.6	57.6	18	0.75	1.76	0.96	0.18	3.64
CV,%		10.4	1	1	16.8	3.8	1.8	9	14.95	9.04	17.12	29.89	6.39
LSD,0.05		0.6	1	2	11.8	3.2	1.6	2	0.16	0.24	0.24	0.08	0.35

[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 3 for complete scale.
[3]YJ=yellow jacket coating on the seed (seeded at 8 lb/A vs 5 lb/A for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 20 (Total of 120 lb of N/acre).

Table 34. Dry matter yields, maturity and plant height of crabgrass varieties sown June 2, 2020, at Princeton, Kentucky.

Variety	Proprietor/ Distributor	Maturity[1] Jul 16	Plant Height (in) Jul 16	Yield (tons/acre)			
				Jul 16	Aug 6	Sep 9	Total
Commercial Varieties-Available for Farm Use							
Red River	Noble Foundation	41.5	22	2.04	0.74	2.15	4.92*
QuickNBig	Noble Foundation	41.5	20	2.01	1.06	1.81	4.87*
Impact	Barenbrug USA	41.5	20	1.77	1.02	2.19	4.84*
Mojo w/YJ[2]	Barenbrug USA	41.5	22	1.69	0.80	2.21	4.70*
Mean		41.5	21	1.86	0.90	2.08	4.83
CV,%		0	12	15.72	25.25	12.58	8.78
LSD,0.05		0	4	0.47	0.37	0.44	0.72

[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. See Table 3 for complete scale.
[2]YJ=yellow jacket coating on the seed (seeded at 8lb/A vs 5 lb/a for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 60 lb/acre of actual nitrogen on July 22 and August 13 (Total of 120 lb of N/acre).

Table 35. Dry matter yields, maturity, and plant height of crabgrass varieties sown May 25, 2021, at Princeton, Kentucky.

Variety	Proprietor/Distibutor	Maturity[1] Jul 23	Plant Height (in) Jul 23	Yield (tons/acre)[2]		
				Jul 23	Aug 19	Total
Commercial Varieties-Available for Farm Use						
RedRiver	Noble foundation	36.0	20	1.43	0.38	1.81
QuickNBig	Noble foundation	45.0	22	1.45	0.23	1.68
Mojo w/YJ[3]	Barenbrug USA	35.5	21	1.34	0.28	1.62
Impact	Barenbrug USA	35.5	21	1.34	0.25	1.59
Mean		39.3	21	1.39	0.29	1.68
CV,%		2.8	11	15.87	57.44	13.72
LSD,0.05		1.7	4	0.35	0.26	0.37

[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. See Table 3 for complete scale.
[2]Low yields possibly due to heavy weed pressure.
[3]YJ=yellow jacket coating on the seed (seeded at 8 lb/A vs 5 lb/A for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on May 27 and July 30 (Total of 120 lb of N/acre).

Table 36. Dry matter yields and plant height of crabgrass varieties sown June 1, 2022, at Princeton, Kentucky.

Variety	Proprietor/Distributor	Plant height (in)		Yield (tons/acre)		
		Jul 25	Aug 25	Jul 25	Aug 25	Total
Commercial Varieties-Available for Farm Use						
Impact	Barenbrug USA	23	28	2.02	1.67	3.69*
Dal's Big River	Dalrymple Farms	22	26	1.96	1.64	3.59*
Mojo w/YJ[1]	Barenbrug USA	24	29	1.85	1.71	3.56*
Red River	Noble Foundation	22	26	1.89	1.64	3.52*
Quick-N-Big Spreader	Dalrymple Farms	23	28	1.81	1.54	3.35*
Quick-N-Big	Noble Foundation	24	29	1.86	1.36	3.22*
Mean		23	28	1.90	1.59	3.49
CV,%		6	5	16.14	13.45	9.85
LSD,0.05		2	2	0.46	0.32	0.52

[1]YJ=yellow jacket coating on the seed (seeded at 8 lb/A vs 5 lb/A for uncoated seed).
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on June 6 and July 27 (Total of 120 lb of N/acre).

Table 37. Dry matter yields, stand rating, and maturity of cereal crops sown March 28, 2020, at Lexington, Kentucky.

Variety	Species	Proprietor/Distributor	Percent Stand		Maturity[1]		Yield (tons/acre)		
			Apr 23	Jul 16	Jun 10	Jul 16	Jun 10	Jul 16	Total
Excel	spring oat	Ag. Alumni Seed, IN	100	66	57.5	75.0	1.77	0.23	2.00*
Jerry	spring oat	Caudill Seed	100	81	55.5	75.0	1.50	0.40	1.90*
CCSO102	spring oat	Caldbeck Consulting	99	93	56.0	75.0	1.30	0.37	1.67*
Persik	black hulled oat	Caldbeck Consulting	100	83	55.5	75.0	1.40	0.22	1.62
Haywire	spring oat	Cisco Seeds	99	88	45.0	75.0	1.12	0.46	1.57
Reins	spring oat	Ag. Alumni Seed, IN	99	43	58.0	75.0	1.32	0.25	1.57
VNK	spring oat	public	100	48	57.5	75.0	1.32	0.17	1.48
CCSO120	black hulled oat	Caldbeck Consulting	99	86	54.0	75.0	1.15	0.30	1.45
BCO18006	spring oat	Seed-link Inc.	98	91	46.8	75.0	0.93	0.50	1.44
BCO18007	spring oat	Seed-link Inc.	100	79	57.5	75.0	1.07	0.25	1.32
CCSW330	spring wheat	Caldbeck Consulting	99	98	55.5	75.0	0.90	0.37	1.28
BCT18501	spring triticale	Seed-link Inc.	97	33	62.0	75.0	0.97	0.14	1.11
Elbon	cereal rye	Caudill Seed	100	100	62.0	71.8	0.45	0.42	0.87
Pembroke 2016	winter wheat	KY. Agric .Exp.Station	100	100	29.0	29.0	0.11	0.33	0.44
Mean			99	78	53.7	71.4	1.09	0.31	1.41
CV,%			1	18	2.7	2.4	17.46	35.77	16.58
LSD,0.05			1	20	2.1	2.5	0.27	0.16	0.33

[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. See Table 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen application: 50 lb/A of actual nitrogen on Mar 30.

Table 38. Dry matter yields, seedling vigor, stand rating, and maturity of cereal crops and annual ryegrass sown March 23, 2021, at Lexington, Kentucky.

Variety	Species	Proprietor/ Distributor	Seedling Vigor[1] Apr 20	Percent Stand Apr 20	Maturity[2]		Yield (tons/acre)		
					May 28	Jun 21	May 28	Jun 21	Total
Excel	spring oat	Ag. Alum.Seed, IN	4.3	100	54.5	49.8	2.68	0.55	3.24*
VNK	spring oat	public	3.1	98	55.0	55.0	2.28	0.94	3.22*
Jerry	spring oat	Caudill Seed	3.5	100	45.0	46.3	2.29	0.92	3.20*
CCSO120	black hulled oat	Caldbeck Consulting	3.4	100	47.3	46.3	2.33	0.87	3.19*
PSTSOKMJ06	spring oat	Caldbeck Consulting	4.1	99	46.8	48.0	2.53	0.66	3.19*
Persik	black hulled oat	Caldbeck Consulting	3.0	100	46.8	46.8	2.26	0.75	3.01*
PSTSOPH26	black hulled oat	Caldbeck Consulting	3.3	100	45.0	53.0	2.15	0.85	3.00*
Saber	spring oat	Ag. Alum.Seed, IN	3.9	100	56.0	56.0	2.40	0.55	2.95*
Reins	spring oat	Ag. Alum.Seed, IN	4.4	100	56.0	54.5	2.35	0.30	2.64
Marshall	annual ryegrass	The Wax Company	2.0	100	56.0	62.0	0.87	0.97	1.83
Elbon	cereal rye	Caudill Seed	4.5	99	61.0	62.0	1.02	0.54	1.56
Pembroke2016	winter wheat	Ky. Agric. Exp. Station	3.9	100	29.0	29.0	0.59	0.65	1.25
Mean			3.6	100	49.9	50.7	1.98	0.71	2.69
CV,%			20.5	1	4.3	4.1	15.58	26.13	12.61
LSD,0.05			1.1	2	3.1	3.0	0.44	0.27	0.49

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on Mar 23.

Table 39. Dry matter yields, seedling vigor, stand rating, plant height, and maturity of cereal crops and annual ryegrass sown March 18, 2022, at Lexington, Kentucky.

Variety	Species	Proprietor/Distibutor	Seedling Vigor[1] May 4	Percent Stand May 4	Plant Height (in) May 30	Maturity[2]		Yield (tons/acre)		
						May 30	Jun 29	May 30	Jun 29	Total
CCSO120	black hulled oat	Caldbeck Consulting	4.6	100	29	48.0	75.0	2.47	0.32	2.79*
Jerry	spring oat	Caudill Seed	4.0	97	29	50.5	75.0	2.38	0.40	2.79*
Excel	spring oat	Ag. Alum. Seed, IN	5.0	99	32	56.5	75.0	2.55	0.23	2.79*
PSTSOPH26	black hulled oat	Caldbeck Consulting	4.1	98	26	51.8	75.0	2.36	0.41	2.77*
PSTSOKMJ06	spring oat	Caldbeck Consulting	4.8	94	29	54.5	75.0	2.13	0.24	2.36
Saber	spring oat	Ag. Alum. Seed, IN	4.5	96	33	58.0	75.0	2.19	0.14	2.33
VNK	spring oat	public	4.8	95	34	56.5	75.0	2.11	0.18	2.29
PSTSBION2018	spring barley	Caldbeck Consulting	4.5	99	32	57.0	50.3	1.95	0.07	2.02
Reins	spring oat	Ag. Alum. Seed, IN	3.8	92	29	57.0	75.0	1.83	0.12	1.94
Elbon	cereal rye	Caudill Seed	4.5	100	48	58.0	64.0	1.54	0.30	1.84
Marshall	annual ryegrass	The Wax Company	3.0	100	32	58.0	63.5	1.41	0.42	1.83
PST20W2020	spring wheat	Caldbeck Consulting	3.8	94	34	58.0	63.3	1.49	0.15	1.64
PSTGIN2022	spring wheat	Caldbeck Consulting	3.5	97	32	58.0	68.0	1.45	0.18	1.63
Pembroke 2021	winter wheat	Ky Agric. Exp. Station	1.0	94	6	29.0	29.0	0.44	0.25	0.68
Mean			4.0	97	30	53.6	67.3	1.88	0.24	2.12
CV,%			12.1	3	6	3.2	7.8	12.89	31.08	10.91
LSD,0.05			0.7	5	3	2.4	7.6	0.35	0.11	0.33

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 60 lb/ A of actual nitrogen on March 18.

Table 40. Dry matter yields, seedling vigor, stand rating, plant height, and maturity of cereal crops sown October 16, 2019, at Lexington, Kentucky (three harvest-early first harvest).

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Nov 11, 2019	Percent Stand Nov 11, 2019	Plant Height (in) Apr 2,2020	Maturity[2]			Yield (tons/acre)			
						Apr 2	May 14	Jun 18	Apr 2	May 14	Jun 18	Total
Elbon	rye	Noble Foundation/Caudill Seed	5.0	100	30	45.0	55.5	62.0	2.21	1.28	0.42	3.91*
WrensAbruzzi	rye	Caudill Seed	5.0	100	26	45.0	56.5	62.0	1.93	1.04	0.36	3.32*
Triticale/rye	triticale/rye VNS blend	-	4.5	98	11	30.5	55.5	61.5	0.57	2.19	0.51	3.27
Forerunner	triticale	Cisco Seeds	4.0	94	10	29.3	46.3	61.5	0.54	2.07	0.42	3.03
Bobcat	triticale	Fabian Seed Farms	4.5	97	18	35.0	56.0	59.5	0.57	1.11	0.36	2.05
WheatVNS	wheat	Public	3.4	94	14	33.8	55.2	57.6	0.52	0.99	0.44	1.95
DG9701	wheat	Dyna-Gro Seed	4.4	100	12	31.3	52.8	59.0	0.48	0.92	0.30	1.70
DG9750	wheat	Dyna-Gro Seed	3.9	96	13	31.0	54.0	57.0	0.59	0.71	0.32	1.63
DG9600	wheat	Dyna-Gro Seed	4.7	99	12	30.7	51.0	57.3	0.53	0.50	0.32	1.34
Mean			4.3	97	16	34.7	53.8	59.7	0.88	1.22	0.39	2.48
CV,%			9.5	2	17	9.8	5.3	2.0	23.04	18.77	31.98	16.70
LSD,0.05			0.6	3	4	5.0	4.2	1.8	0.30	0.34	0.18	0.61

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 41. Dry matter yields, seedling vigor, stand rating, and maturity of cereal crops sown Oct 16, 2019, at Lexington, Kentucky (two hwrvests).

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Nov 11, 2019	Percent Stand Nov 11, 2019	Maturity[2]		Yield (tons/acre)		
					May 14	Jun 18	May 14	Jun 18	Total
Triticale/Rye VNS blend	triticale/rye		3.9	93	67.0	59.5	5.33	0.11	5.44*
Elbon	rye	Noble Foudation/Caudill Seed	5.0	100	70.0	62.0	3.83	0.58	4.41
Forerunner	triticale	Cisco Seeds	3.5	89	55.5	60.0	3.84	0.37	4.21
WrensAbruzzi	rye	Caudill Seed	5.0	100	70.0	62.0	3.51	0.38	3.90
DG9750	wheat	Dyna-Gro Seed	4.3	96	58.0	57.0	2.95	0.32	3.26
Bobcat	triticale	Fabian Seed Farm	3.9	94	58.0	58.0	2.81	0.30	3.11
DG9701	wheat	Dyna-Gro Seed	4.4	98	58.0	57.0	2.86	0.17	3.04
DG9600	wheat	Dyna-Gro Seed	4.3	97	58.0	57.3	2.93	0.08	3.01
WheatVNS	wheat	Public	3.3	93	58.0	57.6	2.68	0.33	3.00
Mean			4.1	95	61.4	58.9	3.41	0.30	3.71
CV,%			11.6	2	3.3	2.1	11.27	51.20	9.48
LSD,0.05			0.7	3	3.0	1.8	0.56	0.23	0.52

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 42. Dry matter yields, seedling vigor, stand rating, and maturity of cereal crops sown November 2, 2020, at Lexington, Kentucky (three harvests-early first harvest).

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Dec 8, 2020	Percent Stand		Maturity[2]			Yield (tons/acre)			
				2020 Dec 8	2021 Mar 24	Apr 13/ Apr 30[3]	May 13/ May 28	Jun 1/ Jun 30	Apr 13/ Apr 30	May 13/ May 28	Jun 1/ Jun 30	Total
Trical Flex 719	triticale	Cisco Seeds	3.9	98	98	45.0	50.8	55.5	2.06	1.00	0.20	3.25*
Elbon	rye	Noble Foundation/ Caudill Seed	4.9	100	100	45.0	53.0	56.0	1.61	0.98	0.31	2.90*
Wrens Abruzzi	rye	Caudill Seed	4.9	100	100	45.0	53.5	56.0	1.52	0.79	0.50	2.81*
Forerunner	triticale	Cisco Seeds	2.9	92	92	45.0	48.5	56.0	1.59	1.03	0.15	2.78*
Graze King 90	rye	Cisco Seeds	4.5	100	100	45.0	54.0	56.0	1.30	0.78	0.36	2.44
Wheat VNK	wheat	Public	2.9	93	94	45.0	53.5	54.5	1.22	0.96	0.19	2.37
Pembroke 2016	wheat	KY Agric.Exp. Station	3.1	97	97	45.0	53.5	55.5	1.24	0.64	0.16	2.04
Mean			3.9	97	97	45.0	57.4	55.6	1.50	0.88	0.27	2.66
CV,%			7.1	4	4	0.0	6.1	2.0	18.03	33.50	31.31	15.55
LSD,0.05			0.4	5	5	0.0	4.7	1.7	0.40	0.44	0.12	0.61

[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 3 for complete scale.
[3]Rye varieties on early date, wheat and triticale on later date.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 70 lb/ A of actual nitrogen on March 5.

Table 43. Dry matter yields, seedling vigor, stand rating, and maturity of cereal crops sown November 2, 2020, at Lexington, Kentucky (two harvests).

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Dec 8, 2020	Percent Stand		Maturity[2]		Yield (tons/acre)		
				2020	2021					
				Dec 8	Mar 24	May 21	Jun 23	May 21	Jun 23	Total
Trical Flex 719	triticale	Cisco Seeds	3.8	97	97	66.0		4.85	0.03	4.87*
Graze King 90	rye	Cisco Seeds	4.3	99	100	75.0	62.0	4.39	0.42	4.81*
Elbon	rye	Noble Foundation/ Caudill Seed	5.0	100	100	75.0	61.5	4.29	0.35	4.64*
Forerunner	triticale	Cisco Seeds	2.9	91	92	66.0	57.5	4.08	0.43	4.52*
Wrens Abruzzi	rye	Caudill Seed	4.8	100	100	75.0	61.5	4.06	0.28	4.34*
Pembroke 2016	wheat	KY Agric. Exp. Station	3.9	99	99	66.0	56.0	3.47	0.46	3.93
Wheat VNK	wheat	Public	3.5	99	99	66.0	57.5	3.07	0.30	3.37
Mean			4.0	98	98	69.9	59.3	4.03	0.32	4.35
CV,%			9.8	2	2	0.0	1.4	9.27	45.39	10.49
LSD,0.05			0.6	3	3	0.0	1.3	0.56	0.22	0.68

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 70 lb/ A of actual nitrogen on March 5.

Table 44. Dry matter yields, seedling vigor, stand rating, maturity, and plant height of cereal crops sown September 29, 2021, at Lexington, Kentucky (early first harvest).

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Oct 22, 2021	Percent Stand		Maturity[2]		Plant Height (in)		Yield (tons/acre)		
				2021	2022							
				Oct 22	Mar 22	Apr 15/ Apr 29[3]	May 20/ May 31	Apr 15/ Apr 29	May 20/ May 31	Apr 15/ Apr 29	May 20/ May 31	Total
Elbon	rye	Noble Foundation/Caudill Seed	4.8	100	100	45.0	59.5	34	39	3.16	1.59	4.75*
Graze King 90	rye	Cisco Seeds	3.6	100	100	45.0	60.0	34	42	3.02	1.42	4.45*
Wrens Abruzzi	rye	Caudill Seed	4.8	100	100	45.0	60.0	34	38	2.91	1.30	4.22
Forerunner	triticale	Cisco Seeds	3.5	100	100	45.0	55.0	29	17	3.12	0.43	3.55
Trical Flex 719	triticale	Cisco Seeds	3.8	100	100	45.0	56.0	28	15	3.24	0.18	3.42
Pembroke 2021	wheat	KY Agric. Exp. Station	3.6	100	100	45.0	57.5	20	17	2.31	0.49	2.80
Wheat VNK	wheat	Public	3.8	100	100	45.0	57.0	22	14	2.19	0.40	2.59
Mean			4.0	100	100	45.0	57.9	29	26	2.85	0.83	3.68
CV,%			6.1	0	0	0.0	1.8	4	8	9.68	20.42	8.77
LSD,0.05			0.4	0	0	0.0	1.5	2	3	0.41	0.25	0.48

[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 3 for complete scale.
[3]Rye varieties on early date, wheat and triticale on later date.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 30 lb/ A of actual nitrogen on September 29 and 60 lb/A on March 3.

Table 45. Dry matter yields, seedling vigor, stand rating, and maturity of cereal crops sown September 29, 2021, at Lexington, Kentucky.

Variety	Species	Proprietor/Distributor	Seedling Vigor[1] Oct 20, 2021	Percent Stand		Maturity[2] May 20	Yield (tons/acre) May 20
				2021	2022		
				Oct 20	Mar 22		
Elbon	rye	Noble Foundation/Caudill Seed	4.5	100	100	80	6.73*
Graze King 90	rye	Cisco Seeds	3.8	100	100	80	6.64*
Wrens Abruzzi	rye	Caudill Seed	4.4	100	100	80	6.61*
Trical Flex 719	triticale	Cisco Seeds	4.3	100	100	75	5.78
Forerunner	triticale	Cisco Seeds	3.3	100	100	75	4.97
Wheat VNK	wheat	Public	3.6	100	100	75	4.68
Pembroke 2021	wheat	KY Agric. Exp. Station	3.6	100	100	75	4.29
Mean			3.9	100	100	77	5.67
CV,%			17.7	0	0	0	9.88
LSD,0.05			1.0	0	0	0	0.83

[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 3 for complete scale.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.
Nitrogen applicatiion: 30 lb/ A of actual nitrogen on September 29 and 60 lb/A on March 3.

Table 46. 2022 Kentucky Wheat Variety Forage / Cover Crop Trial.

Variety	Soft Dough Stage Dry Matter (tons/a)		Cover Crop* Canopy (%)	Head Type
	2022	2021-22	2022	
Dyna-Gro WX21741	5.86	4.48	69	Bearded
KAS 20X29	5.62	4.70	69	Bearded
AgriMAXX 525	5.41		65	Bearded
Dyna-Gro WX22793	5.33		68	Bearded
KAS Reagan	5.31		71	Bearded
MI19R0347	5.30		80	Awnless
Revere 2266	5.28		69	Bearded
KWS398	5.25		66	Awnless
GP 747	5.23		79	Bearded
KWS394	5.21		75	Awnless
X11-0120-12-4-3	5.18	4.32	78	Awnless
AgriMAXX 513	5.16	3.94	69	Bearded
GROWMARK FS WX22B	5.05		74	Bearded
Dyna-Gro 9120	4.99	3.99	65	Bearded
X11-0170-52-3-3	4.98	3.95	83	Awnless
GROWMARK FS WX22A	4.92		71	Bearded
Dyna-Gro 9692	4.87	4.10	72	Bearded
KAS 21X60	4.83		68	Bearded
Dyna-Gro 9393	4.83		72	Bearded
Dyna-Gro 9172	4.82	3.82	64	Bearded
GROWMARK FS 616	4.82	3.92	79	Bearded
KWS403	4.79		76	Awnless
AgriMAXX 454	4.75	4.05	70	Bearded
KAS 21X56	4.72		74	Bearded
X12-265-56-8-1	4.67		78	Bearded
Dyna-Gro 9352	4.66		71	Awnless
GROWMARK FS 624	4.65	3.80	69	Awnless
AgriMAXX 511	4.64	3.76	74	Bearded
X11-0039-1-17-5	4.64	3.77	81	Awnless
AgriMAXX EXP 2105	4.63		62	Bearded
USG 3783	4.61		69	Bearded
GROWMARK FS 745	4.61	3.74	65	Bearded
AgriMAXX 505	4.60	3.84	72	Bearded
X12-3051-53-17-3	4.59	3.93	73	Tip-Awned
CROPLAN CP8045	4.59		65	Bearded
AgriMAXX 516	4.58	3.58	68	Bearded
GROWMARK FS 600	4.58	3.88	71	Bearded
GROWMARK FS 603	4.58		67	Bearded
Dyna-Gro 9151	4.58	3.77	72	Bearded
CROPLAN CP8081	4.58		80	Bearded
SY 547	4.53	3.65	73	Awnless
AgriMAXX 514	4.52	3.65	64	Bearded
KWS419	4.49		73	Bearded
X12-3010-4-4-1	4.49	3.74	70	Tip-Awned
GP 463	4.49		69	Awnless
Go Wheat 4059S	4.43	3.64	61	Awnless
KAS 21X61	4.43		73	Awnless
Go Wheat 6056	4.43		62	Bearded
X12-3114-65-7-1	4.43		68	Awnless
X12-924-40-7-5	4.37		78	Bearded
WSC 3506	4.35	3.63	75	Tip-Awned
USG 3472	4.33	3.32	67	Bearded
Go Wheat 2059	4.32	3.79	79	Awnless
Truman	4.29	3.63	75	Awnless
AgriMAXX 503	4.29	3.42	71	Awnless
KWS411	4.26		74	Bearded
CROPLAN CP8022	4.25		60	Bearded
X12-3024-47-4-5	4.23		80	Awnless
GROWMARK FS 623	4.21	3.63	72	Awnless
PEMBROKE 2021	4.18	3.67	80	Awnless
WSC 3400	4.17	3.70	62	Awnless
X12-3072-55-13-5	4.14		81	Awnless
VA17W-75	4.14		86	Awnless
Revere 2169	4.11	3.54	64	Bearded
SY Viper	4.10	3.44	78	Awnless
GP 348	4.10		77	Awnless
Go Wheat 2058	4.09	3.17	61	Bearded
KWS405	4.07		72	Awnless
GROWMARK FS 597	4.04		73	Bearded
SY 100	4.03	3.05	81	Awnless
MI19R0003	4.03		77	Tip-Awned
X12-3014-46-7-3	4.00		77	Awnless
USG 3352	3.99	3.56	65	Bearded
GP 381	3.98		68	Awnless
PEMBROKE 2016	3.96	3.55	80	Bearded
Dyna-Gro WX20738	3.95	3.50	75	Bearded
X12-3048-52-18-3	3.90		74	Awnless
X11-0414-116-11-3	3.89		74	Awnless
Dyna-Gro 9002	3.81	3.32	69	Bearded
Liberty 5658	3.81	3.45	87	Bearded
AgriMAXX 492	3.72	3.77	68	Bearded
WSC 2720	3.72	2.87	67	Awnless
GP 709	3.72		88	Bearded
Average	4.52	3.71	72	
C.V. (%)	9.66	11.71	8	
LSD (0.10)	0.72	0.54	9	

Location: Bluegrass Region - (Fayette County)
Planting date: 10-14-2021; conventional tillage.
Dry matter yield harvest date at soft dough stage: 5-24-2022.
* Winter cover crop / grazing biomass estimate (% canopy coverage using Canopeo): measured: 1-6-2022.

Originally appeared in PR-813, Table 4 (uky.edu/Ag/WheatVarietyTest).

Table 47. Quality values of sudangrass varieties sown May 27, 2020 at Lexington, Kentucky (sampled at first harvest on July 8, 2020 and ranked by TDN).

Variety	Proprietor/Distributor	CP	ADF	NDF	TDN
SS130 BMR	Cal/West Seeds	11.5	34.6	60.3	61.6*
AS9302 BMR (brachytic dwarf)	Advanta Seed/Ramer Seed	11.4	34.8	60.9	61.4*
Piper	Public	9.3	36.7	62.7	59.3*
ProMax BMR	Ampac Seed	9.3	36.9	61.9	59.1
Trudan Headless	S&W Seed Company	9.5	38.5	64.3	57.2
Mean		10.2	36.3	62.0	59.7
CV,%		13.1	3.8	3.3	2.6
LSD,0.05		2.1	2.1	3.2	2.4

Table 48. Quality values of sorghum-sudangrass varieties sown May 27, 2020 at Lexington, Kentucky (samples taken at first harvest on July 8, 2020 and ranked by TDN).

Variety	Proprietor/ Distributor	CP	ADF	NDF	TDN
Xtragraze BMR	Coffey Seed	12.5	33.0	57.6	63.4*
NutraKing BMR	Public	12.1	33.4	57.2	62.9*
Surpass BMR	Turner Seed	14.2	33.5	59.4	62.9*
AS6402 BMR	Advanta Seed/Ramer Seed	13.8	33.8	58.7	62.5*
SP4105 BMR	Sorghum Partners	14.4	33.9	57.7	62.4*
DannyBoy II BMR	Dyna_Gro Seeds	13.3	33.9	59.2	62.4*
FullGraze II BMR	Dyna_Gro Seeds	12.7	34.0	59.5	62.3*
AS6401 BMR	Advanta Seed/Ramer Seed	12.5	34.0	57.8	62.3*
FullGraze II	Dyna_Gro Seeds	11.8	34.5	60.0	61.8*
DynaGraze II	Dyna_Gro Seeds	11.0	34.8	59.5	61.4
FirstGraze	Dyna_Gro Seeds	12.2	34.9	58.8	61.4
SP7106 BMR	Sorghum Partners	12.6	35.0	59.2	61.2
SugarGraze II	Coffey Seed	11.3	35.2	59.4	60.9
HyGain	Turner Seed	11.6	35.3	59.8	60.9
F75FS13	Dyna_Gro Seeds	11.0	35.5	60.8	60.6
Sordan Headless	S&W Seed Company	11.6	35.5	60.2	60.6
SuperSweet 10	Dyna_Gro Seeds	9.7	35.5	60.5	60.6
Sordan 79	S&W Seed Company	9.1	36.3	60.9	59.8
Mean		12.1	34.6	59.2	61.7
CV,%		11.7	3.5	2.9	2.2
LSD,0.05		2.0	1.7	2.5	1.9

Table 49. Quality values of pearl millet varieties sown May 27, 2020 at Lexington, Kentucky (samples taken at first harvest on July 17, 2020 and ranked by TDN).

Variety	Proprietor/ Distributor	CP	ADF	aNDF	TDN
Commercial Varieties-Available for Farm Use					
SS1562M	Southern States	10.4	37.7	66.5	58.2*
Epic BMR	Coffey Seed	9.9	38.2	67.9	57.6*
SS635	Southern States	9.9	38.9	67.2	56.9*
Pennleaf Hybrid	Pennington Seed	9.9	39.0	66.0	56.7*
Prime360	Byron Seed	9.6	39.3	68.5	56.4*
Tifleaf III Hybrid	Gayland Ward Seed	8.7	39.8	67.3	55.8
Wonderleaf	Advanta Seed/Ramer Seed	9.7	40.1	68.9	55.5
Exceed BMR	Coffey Seed	9.4	40.1	69.5	55.4
PP102M Hybrid	Cisco Seeds	8.7	40.3	69.0	55.2
Leafy22 Hybrid	Turner Seed	9.1	40.5	68.4	55.1
SweetSummer	Cisco Seeds	9.0	40.6	69.7	54.9
PearlMil	Dyna-Gro Seeds	9.6	40.7	68.6	54.8
Millex32	S&W Seed Company	7.8	43.2	72.0	52.1
Experimental Varieties					
LeafyTR7	Coffey Seed	10.1	39.1	68.2	56.6*
LeafyTR9	Coffey Seed	9.8	39.3	68.5	56.4*
18183	Gayland Ward Seed	8.2	41.3	69.6	54.2
Mean		9.4	39.9	68.5	55.7
CV,%		15.0	3.8	3.0	3.0
LSD,0.05		2.0	2.1	2.9	2.4

Table 50. Quality values of forage sorghum varieties sown May 28, 2020 at Lexington, Kentucky (samples taken on September 18, 2020 at harvest and ranked by TDN).

Variety	Proprietor/ Distributor	CP	ADF	NDF	TDN
GW400 BMR	Gayland Ward Seed	5.6	28.7	49.4	68.2*
F74FS72 BMR	Dyna-Gro Seed	6.0	28.8	48.7	68.2*
Supersile 30	Dyna-Gro Seed	4.5	29.1	49.0	67.8*
Ensilemaster	Caudill Seed	5.2	29.3	49.4	67.5*
SS304	Sorghum Partners	4.8	29.4	50.2	67.5*
TopTon	Dyna-Gro Seed	3.9	30.0	50.1	66.8*
F74FS23 BMR	Dyna-Gro Seed	5.1	30.0	51.5	66.7*
GW2120	Gayland Ward Seed	5.7	30.5	51.8	66.3*
FSG115 BMR(Brachytic Dwarf)	Farm Science Genetics	6.0	30.6	54.8	66.1*
SP3904 BMR(Brachytic Dwarf)	Sorghum Partners	6.5	30.8	52.0	65.9*
ADV7232 BMR	Advanta Seed/Ramer Seed	6.2	30.9	51.5	65.7*
Supersile 20	Dyna-Gro Seed	4.9	30.9	52.6	65.7*
AF7401 BMR	Advanta Seed/Ramer Seed	5.9	31.1	53.0	65.6*
F75FS13	Dyna-Gro Seed	4.9	31.1	52.4	65.5*
SP3905 BMR(Brachytic Dwarf)	Sorghum Partners	5.9	31.2	52.8	65.5*
NK300	Sorghum Partners	3.8	31.2	54.0	65.4*
AF8301	Advanta Seed/Ramer Seed	3.8	31.9	54.2	64.7
FSG114 BMR	Farm Science Genetics	5.3	32.2	53.7	64.3
GW600 BMR	Gayland Ward Seed	4.5	32.2	54.3	64.3
GW475 BMR	Gayland Ward Seed	5.8	32.2	54.7	64.3
SS1515	Southern States	3.8	33.0	54.9	63.5
AF7201 BMR(Brachytic Dwarf)	Advanta Seed/Ramer Seed	5.7	35.1	59.2	61.0
SS405	Sorghum Partners	4.3	35.2	60.0	60.9
SP1615	Sorghum Partners	3.6	42.6	72.3	52.7
Mean		5.1	31.6	53.6	65.0
CV,5		13.9	5.7	5.7	3.1
LSD,0.05		1.0	2.6	4.3	2.9

Table 51. Quality values of teff varieties sown May 27, 2020 at Lexington, Kentucky (samples taken at the first harvest on July 17, 2020 and ranked by TDN).

Variety[1]	Proprietor/ Distributor	CP	ADF	aNDF	TDN
Commercial Varieties-Available for Farm Use					
Corvallis	Smith Seed Services	12.6	34.7	64.0	61.5*
VAT1Brown	Hankins Seed	11.9	35.1	64.2	61.1*
Tiffany	Turner Seed	11.7	35.2	64.9	61.0*
Velvet	–	11.7	35.2	64.5	60.9*
Dessie	Allied Seed	11.7	35.3	63.5	60.9*
SummerDelight	Cisco Seeds	10.6	35.3	65.0	60.9*
HorseCandi	–	11.3	35.3	64.8	60.8*
CW0604	Barenbrug USA	10.9	35.3	65.0	60.8*
Moxie	Barenbrug USA	11.2	35.6	64.6	60.5*
Pharaoh	First Line Seeds	10.7	35.6	66.1	60.5*
Experimental Varieties					
BARETCT	Barenbrug USA	11.5	35.5	65.0	60.6*
F11	Mountain View Seeds	11.6	35.6	65.1	60.6*
Mean		11.4	35.3	64.7	60.8
CV,%		14.4	3.7	2.6	2.4
LSD,0.05		2.4	1.9	2.4	2.1

[1]Check with local dealers for available varieties.

Table 52. Summary of Kentucky sudangrass yield trials 2008-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington															Princeton						Mean[3] (#trials)
		08[1,2]	09	10	11	12	13	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22	
		All trials are 1 year yields																					
AS9301 BMR[4]	Advanta Seeds/Ramer Seed					118																	–
AS9302 BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed										124	104	102	112	99	96	119	117	115	113	104	100	109(12)
Enorma BMR	Cal/West Seeds			99	94	92	91	83	91	98													93(7)
FSG 1000 BMR	Farm Science Genetics								101	124	110												112(3)
Hayking BMR	Central Farm Supply	111	112	91	97	97	96	92	94	90	80	109					99						97(12)
Monarch V	Public	104	96	102	97	93	98	110	99	82													98(9)
Piper	Public	90	91	97	94	104	105	89	94	85	81	86	93	83	92	102	86	99	88	82	98	101	92(21)
ProMax BMR	Ampac Seed	95	101	110	115	96	103	100	111	111	106	102	101	106	107	108	96	84	87	86	106	101	102(21)
SP7106 BMR	Sorghum Partners														92	95					90	95	93(4)
SS130 BMR	Cal/West Seeds			101	103		107	106	110	109	99		93	92	101	96			97	99	93		100(14)
Trudan Headless	S & W Seed Company							118					112	107	109	104			113	126	110	103	111(9)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.

Table 53. Summary of Kentucky sorghum-sudangrass yield trials 2008-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington															Princeton						Mean[3] (#trials)
		08[1,2]	09	10	11	12	13	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22	
		All trials are 1 year yields																					
AS6401 BMR[4]	Advanta Seeds/Ramer Seed												84	107	107				112	106			103(5)
AS6402 BMR (Brachytic Dwarf)	AdvantaSeeds/Ramer Seed					91					78	82	67	94	79	89	98	98	91	85	81		86(12)
AS6503 BMR	Advanta Seeds/Ramer Seed						96	103	90														96(3)
AS6504 BMR (Dry Stalk)	Advanta Seeds/Ramer Seed										105	103			95		114	112			110		107(6)
Danny Boy II BMR	Dyna-Gro Seeds												117	95	93	106			110	98	98		102(7)
DynaGraze II	Dyna-Gro Seeds													98	104	100				122	104		106(5)
FirstGraze	Dyna-Gro Seeds													109	101	103				118	113		109(5)
FSG 208 BMR	Farm Science Genetics			75																			–
FSG 214 BMR	Farm Science Genetics						99	108	112								109	111					108(5)
FSG 215 BMR	Farm Science Genetics								112														–
Fullgraze II	Dyna-Gro Seeds												100	105	100	97			108	94	104		101(7)
Fullgraze II BMR	Dyna-Gro Seeds												97	90	96	114			106	92	102		100(7)
F75FS13	Dyna-Gro Seeds												94	100	93	95			76	94	89	86	91(8)
Greengrazer V	Farm Science Genetics			166			122	107	92	103	110												117(6)
GW300 BMR	Gayland Ward Seed				88	78	88	81	73	101	100	98					79						87(9)
HyGain	Turner Seed	104	105	118						110	127	117	121	113	112		130	108	121	110	112		115(14)
KFSugar-Pro55S	Byron Seed										110												–
MS 202 BMR	Farm Science Genetics			106																			–
Nutra-King BMR	Gayland Ward Seed								110	108	96	113	118	103	110	114	108	114	105	96	97	107	107(14)
NutraPlus BMR	Public	106	97	94	103	106	109	106	96														102(8)
Sordan Headless	S&W Seed Company							105						110	103	101				102	100	109	104(7)
Sordan 79	S&W Seed Company													114	116	121				123	109	117	117(6)
Special Effort	Public	109	110	93	94	115	120	91	111														105(8)
SP 4105 BMR	Sorghum Partners													91	88	89				79	76	109	89(6)
SP4555 BMR	Sorghum Partners														117	110					98	100	106(4)
SP 7106 BMR	Sorghum Partners													90						91			91(2)
SS211	Southern States				104	93	114	103	118	111	121	118					109	87					108(10)
SS220 BMR	Southern States		107	84		112																	101(3)
Sugar Graze II	Coffey Seed												110	114	116	110			110	122	116	112	114(8)
Surpass BMR	Turner Seed	81	80	64						79	84	75	75	81	84	85	88	97	74	70	83	86	80(16)
Super Sugar	Gayland Ward Seed				102	117	107		125	85							91						105(6)
Super Sugar BMR	Gayland Ward Seed									107													–
Super Sugar (Delayed Maturity)	Gayland Ward Seed							101	82		89	104					95	83					92(6)
Super Sugar Sterile	Gayland Ward Seed							94															–
Super Sweet 10	Dyna-Gro Seeds												121	106	117	106			118	128	113	112	115(8)
Sweet-For-Ever	Gayland Ward Seed				110	107	81									81						81	92(5)
Sweet-For-Ever BMR	Gayland Ward Seed					78	70		77	104	106	83					77	82					85(8)
SweetSix BMR	Gayland Ward Seed						93	101		91													95(3)
SweetSix BMR (Dry Stalk)	Gayland Ward Seed								102		72	107			98		103	108			93		98(7)
SWSB8801	S&W Seed Company														90	87						101	93(2)
SWSB8803	S&W Seed Company															96						95	96(2)
SWSU0029	S&W Seed Company														98	103					117	110	107(4)
Vita-Cane	Gayland Ward Seed					121																	–
Xtragraze BMR	Coffey Seed												79	82	82	87			70	75	84	76	79(8)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.

Table 54. Summary of Kentucky pearl millet yield trials 2013-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/ KY Distributor	Lexington										Princeton						Mean[3] (#trials)
		13[1,2]	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22	
		All trials are 1 year yields																
Epic BMR[4]	Coffey Seed							97	93	83	100			99	96	87	96	94(8)
Exceed BMR	Coffey Seed							89	103	81	97			102	90	107	97	96(8)
FSG 300 Hybrid	Farm Science Genetics			109	99	109						117						109(4)
FSG 315 BMR (Dwarf)	Farm Science Genetics			101	102	81						97						95(4)
Leafy22 Hybrid	Turner Seed				105	124	108	108	113	119	101	115	100	116	111	119	99	111(13)
Millex32	S&W Seed Company								110	131	102				111	93	99	108(6)
PearlMil	Dyna-Gro Seed							103	113	120	107			110	100	110	105	109(8)
Pennleaf Hybrid	Pennington Seed	93	91	94	96	87	98	100	95	100	96	84	93		90			94(13)
PP102M Hybrid	Cisco Seeds	93	93	90	79	90	91	97	92	103	92	77	104	95		81	104	92(15)
Prime360	Byron Seed							91	90	77	88			103	96	103	94	93(8)
SS1562M BMR	Southern States							103	94	72	98			95	95	90	93	93(8)
SS501	Southern States	90	99	96	86	94	94					89	96					93(8)
SS635	Southern States	108	112	101	116	94	110	108	105	100	103	107	115	105	110	98	99	106(16)
Sweet Summer	Cisco Seeds						86	95	97	97	95		85	104	91	99	93	94(10)
Tifleaf III Hybrid	Gayland Ward Seed	116	106	108	116	120	113	119	95	131	114	114	112	111	101	121	116	113(16)
Wonderleaf	Advanta Seed/Ramer Seed							98	100	86	105		100	107	109	92	105	100(9)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.

Table 55. Summary of Kentucky teff yield trials 2008-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety[4]	Proprietor/Distributor	Lexington													Princeton						Mean[3] (#trials)
		08[1,2]	09	10	11	12	13	14	15	16	19	20	21	22	08	09	19	20	21	22	
		All Trials are 1 year yields																			
Corvallis	Smith Seed Services	81	101	91	101	96	100	110	96	102	110	116	92	103	94	112	99	112	92	105	101(19)
CW0604	Barenbrug USA										101	100	101	102			97	103	86	107	100(8)
Dessie	Allied Seed	99	92	96	94	95	97	101	104	105	89	109	105	100	102	87	101	98	127	101	100(19)
Excaliber	–	109	104	125	108	106	103								109	111					109(8)
Highveld	–	100	121	106	101	109	103	102							111	115					108(9)
HorseCandi	–	99	105	89	108	94	97	80	104	82	86	95	110	98	91	84	103	104	96	89	95(19)
Moxie	Barenbrug USA						94	96	105	107	110	105	98	103			95	101	115	107	103(12)
Pharaoh	First Line Seeds	105	85	106	106	97	101	93	97	94	102	90	102	102	95	101	107	104	97	101	99(19)
Rooiberg	–	112	109	113	108	115	102	88							102	107					106(9)
Summer Delight	Cisco Seeds		91	96	88	93	100	119	101	104	91	90	99			90	99	90	89		96(15)
Tiffany	Turner Seed	102	93	82	93	102	98	104	97	105	110	101	93	103	102	106	104	98	103	99	100(19)
VA T1 Brown	Hankins Seed		99	87	91	94	98	104	97	101	100	97	96	94		89		93	104		96(15)
Velvet	–		100	97	98	95	103	95	99	100	101	98	106	95		94	96	98	92	92	98(17)
Witkope	–	93	101	115	103	101	104	107							94	100					102(9)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]Check with local dealers for available varieties.

Table 56. Summary of Kentucky forage sorghum yield trials 2013-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington										Princeton					Mean[3] (#trials)
		13[1,2]	14	15	16	17	18	19	20	20	22	17	19[4]	19	21	22	
		All Trials are 1 year yields															
ADV7232 BMR[5]	Advanta Seed/Ramer Seed							88	92	89	84		93	84	92	91	89(7)
AF7201 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	89	81	101	89			94	84	79	87		74	83	92	87	88(11)
AF7203 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed							48				70					59(2)
AF7401 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	76	94	90	83	86	72	85	77	85	94	116	87	100	73	87	87(14)
AF8301	Advanta Seed/Ramer Seed							98	103	95	87		124	85	112	114	99(7)
Ensilemaster	Caudill Seed	125	90	101	106	111	129	118	129	93	110	171	77	85	79	97	110(14)
FSG114 BMR	Farm Science Genetics		94	128	93	125	91	76	91	106		71	89	79			95(10)
FSG115 BMR (Brachytic Dwarf)	Farm Science Genetics		51	31	72	81	74	67	77	92		72	60	74			69(10)
F74FS23 BMR	Dyna-Gro Seed							125	94	107	111		77	76	92	91	99(7)
F74FS72 BMR	Dyna-Gro Seed							93	87	82	140		59	117	85	82	98(7)
F75FS13	Dyna-Gro Seed							107	94	102	80		109	84	87	79	90(7)
GW2120	Gayland Ward Seed	117	89	113	84	107	88	102	91	70	88	85	98	115	81	80	94(14)
GW400 BMR	Gayland Ward Seed	93	79	128	78	91	88	83	85	67		42			66		82(11)
GW475 BMR	Gayland Ward Seed						80	99	84	82					67		82(5)
GW600 BMR	Gayland Ward Seed		107	111	90		90	100	84	80					101		95(8)
KFFiber-Pro70FS	Byron Seed					65	53					70					63(3)
NK300	Sorghum Partners		126	110	101	116	135	84	104	116	112	119			93	97	109(12)
SD1741 BMR	S&W SeedCompany		133	92	103	81	84	95				94					97(7)
SilageKing BMR (Dwarf)	Gayland Ward Seed		48														–
SiloPro BMR (Brachytic Dwarf)	Gayland Ward Seed			24	74		63			68	81				87	73	67(7)
SP1615	Sorghum Partners								125	158	175		164	170	166	142	156(6)
SP3904BD BMR (Brachytic Dwarf)	Sorghum Partners								88	97	75				101	97	92(5)
SP3905BD BMR (Brachytic Dwarf)	Sorghum Partners								81	72	83				58	75	74(5)
SS1515	Southern States							125	105	91	94		97	75	111	100	100(7)
SS304	Sorghum Partners								121	114	110				95	111	110(5)
SS405	Sorghum Partners		188	183	207	138	202	139	143	188	87	160	142	171	193	193	168(13)
Super Sile 20	Dyna-Gro Seed							107	120	140	90		106	124	149	106	119(7)
Super Sile 30	Dyna-Gro Seed							121	115	123	96		129	104	132	122	116(7)
SWFS8802	S&W SeedCompany									66					64		65(2)
TopTon	Dyna-Gro Seed							131	130	140	117		84	73	124	82	114(7)
XF7203 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed					74	73										74(2)
1990	S&W SeedCompany		121	89	118	125	177	113				131					125(7)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]This trial was sprayed with an aphicide and the results are not included in the overall mean.
[5]BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.

Table 57. Summary of Kentucky crabgrass yield trials 2016-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/ KY Distributor	Lexington						Princeton				Mean[3] (#trials)
		2016[1,2]	2018	2019	2020	2021	2022	2019	2020	2021	2022	
		All trials are 1 year yields										
Dal's Big River	Dalrymple Farms						100				103	102(2)
Impact	Barenbrug USA	107	107	108	108	116	100	105	100	95	106	105(10)
Mojo w/YJ[4]	Barenbrug USA				98	109	108		97	96	102	102(6)
Quick-N-Big	Noble Foundation	89	85	81	95	78	91	99	101	100	92	91(10)
Quick-N-Big Spreader	Dalrymple Farms						101				96	99(2)
Red River	Noble Foundation	104	108	110	99	97	100	96	102	108	101	103(10)

[1]Establishment year.
[2]Use this summary table as a guide in making variety decisions, but refer to specific tables in this report to determine statistical differences in forage yield between varieties.
[3]Mean only presented when respective variety was included in two or more trials.
[4]YJ = yellow jacket coating on the seed

Table 58. Summary of Kentucky spring oats yield trials 2015-2022 (planted mid March to early April) [yield shown as a percentage of the mean of the commercial varieties in the trial].

Variety	Proprietor/Distributor	2015[1,2]	2016	2017	2018	2019	2020	2021	2022	Mean[3] (#trials)
		All trials are 1 year yields								
BCO18006	Seed-Link Inc.						90			
BCO18007	Seed-Link Inc.						82			
CCSO-102	Caldbeck Consulting				95	102	104			100(3)
CCSO-120 (black hulled)	Caldbeck Consulting				106	106	91	104	111	104(5)
Common	Central Farm Supply	89								
Excel	Ag. Alumni Seed, IN	120	101	111	107	115	125	105	111	112(8)
Haywire	Cisco Seeds					81	98			90(2)
Jerry	Caudill Seed	107	93	103	99	95	119	104	111	104(8)
Persik (black hulled)	Caldbeck Consulting		112	114	127	106	101	98		110(6)
PST-241	Caldbeck Consulting	91	86	86	86					87(4)
PSTSO200	Caldbeck Consulting	102	90	87	79					90(4)
PSTSO-288C	Caldbeck Consulting	91	102	88	97					95(4)
PSTSOKMJ06	Caldbeck Consulting							104	94	99(2)
PSTSOPH26(black Hulled)	Caldbeck Consulting							98	110	104(2)
Reins	Ag. Alumni Seed, IN	94			102		98	86	77	91(5)
Robust	Ag. Alumni Seed, IN	104	111	117	102	94				106(5)
Saber	Ag. Alumni Seed, IN	104			100	97		96	93	98(5)
VNK	Public		97	107	101	94	92	105	91	98(7)
021A17815	Ag. Alumni Seed, IN	97	108	87						97(3)

[1]Establishment year.
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[3]Mean only presented when respective variety was included in two or more trials.

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