



2022 Long-Term Summary of Kentucky Forage Variety Trials

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Introduction

Forage crops occupy approximately 7 million acres in Kentucky. Forages provide a majority of the nutrition for beef, dairy, horse, goat, sheep, and wildlife in the state. In addition, forage crops play a positive environmental role in soil conservation, water quality, and air quality. There are more than 60 forage species adapted to the climate and soil conditions of Kentucky. Only 10 to 12 of these species occupy the majority of the acreage, but within these species there is a tremendous variation in varieties.

This publication was developed to provide a user-friendly guide to choosing the best variety for producers based on a summary of forage yield and grazing tolerance trials conducted in Kentucky over the past twenty years. Detailed variety reports and forage management publications are available from your county Extension agent or at the University of Kentucky forage website (<https://forages.ca.uky.edu>) by clicking on the “Forage Variety Trial” link.

How to Interpret the Summary Tables

These tables summarize long-term yield and stand persistence data of commercial varieties that have been entered in the University of Kentucky trials. Except for the alfalfa and tall fescue grazing tolerance trials, the data are listed as a percentage of the mean of the commercial varieties entered in each specific trial. In other words, the mean for each trial is 100 percent; varieties with percentages over 100 yielded better than average, and varieties with percentages less than 100 yielded lower than average. For the alfalfa and tall fescue grazing tolerance trials using cattle, data are listed as a percentage of the grazing tolerant varieties Alfagraze and KY31, respectively. In the horse grazing trials, the data for fescue varieties were expressed as a percentage of endophyte free KY31 instead of the mean of all the commercial varieties. Direct, statistical comparisons of varieties cannot be made using the summary tables, but these data do help to identify varieties for further consideration. Varieties that have performed better than average over many years and at several locations have very stable performance; others may have performed very well in wet years or on particular soil types. These details may influence variety choice, and more information can be found in the yearly reports. See the footnote in each table to determine which yearly report should be referenced.

Species in this Report

Red clover (*Trifolium pratense*) is a high-quality, short-lived, perennial legume that is used in mixed or pure stands for pasture, hay, silage, green chop, soil improvement, and wildlife habitat. This species is adapted to a wide range of climatic and soil conditions and therefore is versatile as a forage crop. Stands of improved varieties are generally productive for two to three years, with the

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highest yields occurring in the year following establishment. Red clover is used primarily as a renovation legume for grass pastures. It is a dominant forage legume in Kentucky because it is relatively easy to establish and has high forage quality and high yield.

White clover (*Trifolium repens*) is a low-growing, perennial pasture legume with white flowers. It differs from red clover in that the stems (stolons) grow along the surface of the soil and can form adventitious roots that may lead to the development of new plants. White clover is classified into ladino, Dutch, and intermediate types. The intermediate types combine the higher yield of ladino with the grazing tolerance of the Dutch types.

Alfalfa (*Medicago sativa*) is the highest yielding, highest quality forage legume grown in Kentucky. It forms the basis of Kentucky’s cash hay enterprise and is an important component in dairy, horse, beef, and sheep diets and wildlife habitat. Choosing a good alfalfa variety is a key step in establishing a stand of alfalfa. The choice of variety can impact yield, stand persistence, insect and disease resistance, and grazing tolerance.

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

Tall fescue (*Festuca arundinacea*) is a productive, well-adapted, persistent, soil-conserving, cool-season grass that is grown on approximately 5.5 million acres in Kentucky. Tall fescue is the forage base for most of Kentucky’s livestock enterprises, particularly beef cattle, and is used for both hay and pasture. The predominant vari-

ety, KY31, was developed in Kentucky for long-term persistence but contains a fungal endophyte that produces alkaloids detrimental to livestock production and reproductive health. Endophyte-free tall fescue varieties produce no detrimental alkaloids, but UK research shows that they are less persistent than KY31. New novel endophyte tall fescue varieties contain safe endophytes, which enhance stand persistence but cause no detrimental animal symptoms.

Annual ryegrass (*Lolium multiflorum*) and **perennial ryegrass** (*Lolium perenne*) are high-quality, productive, cool-season grasses used in Kentucky. Both have exceptionally high seedling vigor and are highly palatable to livestock. Annual ryegrasses (both Italian and Westerwolds types) are increasingly in use across Kentucky as more winter-hardy varieties are released and promoted. Annual ryegrass is productive for six to eight months when planted early fall (late August/September) and is used primarily for late fall and early to late spring pasture. Perennial ryegrass can be used as a short-lived (2 to 3 years) hay or pasture plant and has growth characteristics similar to tall fescue. It is less persistent than other cool-season grass species. There are both diploid (two sets of chromosomes) and tetraploid (four sets of chromosomes) varieties of perennial ryegrass. Tetraploids have larger tillers and seedheads and wider leaves. Tetraploid types tend to be taller and less dense than diploid types, even in early stages of regrowth. Diploid types produce more tillers, have better stand persistence, and are typically more tolerant to heavy grazing.

Timothy (*Phleum pratense*) is the fourth most widely sown cool-season perennial forage grass used in Kentucky after tall fescue, orchardgrass, and Kentucky bluegrass. Timothy is primarily harvested as hay, particularly for horses. In Kentucky, timothy behaves like a short-lived perennial, with stands usually lasting two years.

Kentucky bluegrass (*Poa pratensis*) is a high-quality, highly palatable, long-lived pasture plant with limited use for hay. It tolerates close, frequent grazing better than most grasses. It has low yields and low summer production and becomes dormant and brown during hot, dry summers. Kentucky bluegrass is best suited for pastures where a dense sod is more important than high-forage production (e.g., horse pastures).

Festuloliums are hybrids between various fescues and ryegrasses with higher quality than tall fescue and improved stand survival over perennial ryegrass. Their use in Kentucky is limited because they do not survive as long as tall fescue. Newer varieties show promise where high quality and yield are more important than long-term persistence.

Bromegrasses have several advantages over tall fescue, including retaining quality as they mature and better growth during dry weather, but they are generally less well adapted in Kentucky. Smooth bromegrass (*Bromus inermis*) is a perennial pasture and hay grass native to Europe. It has creeping underground stems or rootstocks from which the leafy stems arise. Smooth bromegrass is palatable to all classes of livestock, from emergence to the heading stage. Meadow bromegrass (*Bromus biebersteinii*) is a native of southeastern Europe and the adjacent Near East. It resembles smooth bromegrass but has only short rhizomes or none at all. Meadow bromegrass is densely tufted and has a similar growth habit to tall fescue. Hybrid bromegrasses are a cross between smooth and meadow bromegrasses. Alaska bromegrass (*Bromus sitchensis*), also called Sitka bromegrass, is a long-lived perennial bunchgrass that will actively grow at moderate rates during the

spring and summer season. It does not spread by rhizomes and is more suited to environments with harsh winters. Prairie bromegrass (*Bromus willdenowii*) is a tall, cool-season, leafy short-lived, perennial, deep-rooted bunchgrass. It was introduced from South America. Seedheads are produced throughout the growing season. Prairie bromegrass can maintain productive stands for several years if at least one growth cycle each year is allowed to go to seed. Some prairie bromegrasses are susceptible to winterkill. Mountain bromegrass (*Bromus marginatus*) is native to North America from Alaska to northern Mexico, where it can be found in many types of habitat. It is a short-lived, perennial, cool-season, sod-forming grass.

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 compared to other sorghum species. Sudangrass regrows quickly after harvest and can be harvested several times during summer and early fall.

Sorghum-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 6 to 12 feet tall 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 are available which are leafier and better suited for grazing.

The brown midrib or BMR trait is an outward expression of a naturally occurring 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 desirable for animal production. Therefore, it is advisable 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 love-grass (*Eragrostis tef*), is a warm-season annual grass native to Ethiopia and 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 which 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.

Important Selection Considerations

Local adaptation and seasonal yield. Choose a variety/species that is adapted to your region of Kentucky, as indicated by good performance across years and locations in replicated yield trials. Also, look for varieties that are productive in the desired season of use. For management recommendations, check with your county Extension agent or see the forage website (<https://forages.ca.uky.edu>).

Seed quality. Buy premium-quality seed that is high in germination and purity and free from weed seed. Buy certified seed or proprietary seed of an improved variety. An improved variety is one that has performed well in independent trials. Other information on the label will include the test date (which must be within the past nine months), the level of germination, and the amount of other crop and weed seed. Order seed well in advance of planting time to assure that it will be available when needed.

Description of the Tests

Yield trials. Plots were seeded at the recommended seeding rate per acre and were planted into a prepared seedbed with a disk drill. Plots were 5 feet by 15 feet in a randomized complete block design with four replications. Cool season perennial grass plots were typically fertilized with 60 pounds of actual N per acre in March, after the first cutting, and again in late summer for a total of up to 180 pounds per acre per season. Warm season grasses were fertilized with about 120 pounds of actual N per acre, depending on the species. No nitrogen was applied to the legume trials. Other fertilizers (lime, P, and K) were applied as needed according to the University of Kentucky soil test recommendations. The tests were harvested using a sickle-type forage plot harvester at timings appropriate for the specific crop. Fresh weight samples were taken at each harvest to calculate percent dry matter production. Management practices for establishment, fertility, weed control, and harvest timing were in accordance with University of Kentucky recommendations.

Grazing trials. Plots were 5 feet by 15 feet in a randomized complete block design, with each variety replicated six times. Plots were seeded at the recommended seeding rate per acre and were planted into a prepared seedbed using a disk drill. Grazing was continuous from April to October.

Plots were grazed down to below 4 inches quickly and were maintained at 2 to 4 inches (sometimes less) for the remainder of the grazing season. Supplemental hay was fed during periods of slowest growth. Visual ratings of percent stand were made in the fall several weeks after the cattle were removed to determine stand persistence after the grazing season and in the spring prior to grazing to check on winter survival and spring growth. Because trials were seeded in rows, persistence ratings were based on density within a row and not total ground cover. Grass plots were fertilized with 60 pounds of actual N per acre in the spring and 30 to 40 pounds of actual N in early November after cattle or horses were removed from the pasture. Other fertilizers (lime, P, and K) were applied as needed according to the University of Kentucky soil test recommendations. Management practices for establishment, fertility, and weed control were in accordance with University of Kentucky recommendations.

Summary

Selecting a good forage variety is an important first step in establishing a productive stand of forage. Proper management, beginning with seedbed preparation and continuing throughout the life of the stand, is necessary for even the highest-yielding variety to produce to its genetic potential. For more detailed information on yield and grazing tolerance within species, go to individual 2022 reports on the forage website (<https://forages.ca.uky.edu>). See below for specific reports. Reports from 2001 to 2021 can be

found in the archive website (<https://forages.ca.uky.edu/content/archived-research-reports>).

Yield and Grazing Tolerance Reports

Individual forage species reports can be found at https://forages.ca.uky.edu/variety_trials.

- 2022 Alfalfa Report (PR-817)
- 2022 Red and White Clover Report (PR-816)
- 2022 Orchardgrass Report (PR-818)
- 2022 Tall Fescue and Bromegrass Report (PR-819)
- 2022 Timothy and Kentucky Bluegrass Report (PR-820)
- 2022 Annual and Perennial Ryegrass and Festulolium Report (PR-821)
- 2022 Alfalfa and Red and White Clover Grazing Tolerance Report (PR-822)
- 2022 Cool-Season Grass Grazing Tolerance Report (PR-823)
- 2022 Cool-Season Grass Horse Grazing Report (PR-824)
- 2022 Annual Grass Report: Warm Season and Cool Season (Cereals) (PR-825)
- 2022 Long-Term Summary of Kentucky Forage Variety Trials (PR-826)

For more information

The following comprehensive bulletins may be especially useful:

- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Establishing Forage Crops (AGR-64)
- Rotational Grazing (ID-143)
- Extending Grazing and Reducing Stored Feed Needs (AGR-199)
- Forage Identification and Use Guide (AGR-175)
- Lime and Fertilizer Recommendations (AGR-1)
- 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)
- Growing Wheat for forage (AGR-263)

About the Authors

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Table 2. Summary of Kentucky red clover yield trials 2004-2022 (yield shown as a percentage of the mean of the named commercial varieties in the trial).

Variety	Proprietor	Lexington												Princeton												Quicksand			Eden/Shale			Mean ³ (#trials)
		04	06	08	09	10	11	12	13	14	15	16	17	18	19	20	05	08	09	11	13	15	19	05	08	10	19	08	10	10		
		3yr ⁴	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr		
AA117ER	ABI Alfalfa	110																					92							96(3)		
Barduro	Barenbrug USA														86	82														81(4)		
Bearcat	Brett Young Seeds																															
Bigfoot	Preferred Alf. Genetics																															
Blaze	Mountain View Seeds																															
Cinnamon Plus	Southern States	109	112	123	117	94	97	63	84	92	70	49	80	67	77	79																
Common O	Public																															
CW9901	Barenbrug USA																															
Dominion	Seed Research of OR	102																														
Emarwan	Turf Seed	91		117																												
Evolve	DLF Pickseed USA																															
FF9615	LaCrosse Seed																															
Freedom!	Barenbrug USA	118	91	100	108	106	109	99	101	97	107	114	113	107	114	116	136	107	116	95	107	104	124	119	106	115	133	100	140	112(28)		
Freedom!MR	Barenbrug USA	102	114	114													101		108													
FSG 402	Allied Seed																															
FSG 9601	Allied Seed	89																														
Gallant	Turner Seed																															
GA9908	Smith Seed																															
Juliet	Caudill Seed																															
Kenland (cert.)	KY Ag. Exp Sta.	117	117	99	111	99	116	114	109	103	105	119	108	107	107	109	92	113	106	106	115	100	113	105	104	123	110	110	138	110(28)		
Kenland (uncert)	Public																															
Kenton	KY Ag. Exp Sta.	95	112	121																												
Kenway	KY Ag. Exp Sta.	97	119	118																												
LS 9703	Lewis Seed																															
Morning Star	Cal/West Seeds																															
Plus II	Allied Seed																															
Quinequeli	Caudill Seed																															
Red Gold	Proseeds Marketing																															
Red Gold Plus	Turner Seed	95																														
Redkin	DLF Pickseed USA																															
Redland Max	ABI Alfalfa	95																														
Renegade	DLF Pickseed USA																															
Robust	Blu Moon Farms																															
Robust II	Seed Research of OR																															
Robust III	Seed Research of OR																															
Rocket	Seed Research of OR																															
Rustler	Oregro Seeds																															
Solid	Production Service	79																														
SS-0303RCG	Southern States																															
Starfire II	Cal/West & Ampac																															
Triple Trust 350	ABI Alfalfa	101																														
Wildcat	Brett Young Seeds																															

¹Year trial was established.
²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the spring of 2010 was harvested 3 years, so the final report would be "2012 Red and White Clover Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).
³Mean only presented when respective variety was included in two or more trials.
⁴Number of years of data

Table 3. Summary of Kentucky alfalfa yield trials 2004-2022 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	Variety Characteristics ¹										Lexington										Princeton						Mean ⁵ (# trials)		
		FD	Disease Resistance ²					04 ^{3,4} 5yr ⁶	06 7yr	08 6yr	11 6yr	12 6yr	15 5yr	16 6yr	17 6yr	18 5yr	19 4yr	20 3yr	00 3yr	05 5yr	08 5yr	09 6yr	11 4yr	13 3yr						
			Bw	Fw	An	PRR	APH1																		APH2					
A-4440	Producers Choice	4	HR	HR	HR	HR	HR		100									99											100(2)	
A 5225	Producers Choice	5	HR	HR	HR	HR	R	R												107										106(2)
Adrenalin	Brett Young Seeds	4	HR	HR	HR	HR	HR	-													104									-
Alfabar	Barenbrug USA	3	HR	HR	HR	HR	HR/R	-																						-
Alfagaze	America's Alfalfa	3	HR	HR	HR	HR	HR	-																						-
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR	R																						85(2)
Ameristand 403T Plus	America's Alfalfa	4	HR	HR	HR	HR	HR	R													100									99(8)
Ameristand 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	R																						104(7)
Ameristand 427TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	HR																						104(2)
Anchormate	ProSeed Marketing	-	-	-	-	-	-	-																						-
Arc (certified)	Public	4	LR	MR	HR	-	-	-																						-
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR	HR																						95 90(6)
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR	-																						-
Buffalo	Public	-	-	-	-	-	-	-																						-
Bulldog-505	Univ. of GA	5	-	HR	-	R	-	-																						91 86(9)
Calliber	Beck's Hybrids	4	HR	HR	HR	HR	HR	-																						103 97(5)
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR	-																						101(5)
Contender	Beck's Hybrids	5	HR	HR	HR	HR	HR	-																						104(2)
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR	-																						101(3)
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR	-																						-
DG4210	Crop Production	4	HR	HR	HR	HR	HR	-																						-
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R	-																						101 103 102(2)
Enforcer	Southern States	4	HR	HR	HR	HR	HR	-																						-
Evermore	Southern States	5	HR	HR	HR	HR	HR	-																						-
Expedition	NEXGROW	5	HR	HR	R	RR	R	-																						103(3)
Feast +EV	NEXGROW	3	HR	HR	HR	R	HR	-																						105(3)
Fierce	Beck's Hybrids	4	HR	HR	HR	HR	HR	-																						-
FSG 403LR	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	-																						104(2)
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R	-																						-
FSG 415BR	Allied Seeds	4	HR	HR	HR	HR	HR	-																						108(2)
FSG 424	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	-																						106(3)
FSG 426	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	HR																						-
FSG 524	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	-																						-
FSG 527	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	-																						-
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R	-																						-
GA-409	Pref. Alf. Genetics	4	HR	HR	HR	HR	HR	-																						-
GA-497HD	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	-																						105(3)
GA-535	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	-																						109(2)
Genoa	NEXGROW	4	HR	HR	HR	HR	HR	-																						107(4)
Gunner	Croplan Genetics	5	HR	HR	HR	HR	HR	-																						-
HVS4220Q	Mountain View Seeds	4	HR	HR	HR	HR	HR	-																						-
Kingfisher 243	Cal/West	5	HR	HR	HR	HR	HR	-																						-
Kingfisher 4020	Legacy Seeds	4	HR	HR	HR	HR	HR	-																						-
L447HD	Legacy Seeds	4	HR	HR	HR	HR	HR	-																						-
L449Aph2	Legacy Seeds	4	HR	HR	HR	HR	HR	HR																						-
L455HD	Legacy Seeds	4	HR	HR	HR	HR	HR	-																						-
Lancer	Allied Seeds	4	HR	HR	HR	HR	HR	-																						-
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR	-																						-
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR	R																						101(2)
Optimus	Brett Young Seeds	-	HR	HR	HR	HR	HR	-																						-

Table 3. continued

Variety	Proprietor	Variety Characteristics ¹												Lexington												Princeton					Mean ⁵ (# trials)
		FD	Disease Resistance ²						04 ^{3,4} 5yr ⁶	06 7yr	08 6yr	11 6yr	12 6yr	15 5yr	16 6yr	17 6yr	18 5yr	19 4yr	20 3yr	00 3yr	05 5yr	08 5yr	09 6yr	11 4yr	13 3yr						
			Bw	Fw	An	PRR	APH1	APH2																							
Paola	Interlake Forage Seeds	5	HR	HR	HR	HR	HR											98	100									99(2)			
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR	106																					-		
PGI 459	Producers Choice	4	HR	HR	HR	HR	R			102																			-		
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R																						-		
Phoenix	Southern States	5	HR	HR	HR	HR	R	113	99	102	102	105																	102(6)		
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR					101																	103(3)		
Radiant-AM	Ampac Seed	4	HR	HR	HR	HR	HR	97																					-		
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR			103																			103(2)		
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR																						103(2)		
Rebound 6XT	Croplan Genetics	4	HR	HR	HR	HR	HR							107															104(2)		
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R																						-		
Saranac AR (certified)	Public	4	MR	R	HR	LR	-	77	85	86	86	91	97	92	88	83	88	92	95	95	88	92	82	82	97				89(16)		
Triade	Interlake Forage Seeds	5	HR	HR	HR	HR	HR																						93(2)		
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR																						-		
TripleTrust 500	Central Farm Supply	5	HR	HR	HR	HR	HR					108																	-		
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	-																						-		
Vernal	Public	2	R	MR	-	-	-																						-		
Withstand	Southern States	4	HR	HR	HR	HR	HR			100	90		96																95(5)		
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR	101	110																				104(3)		
WL 349HQ	W-L Research	4	HR	HR	HR	HR	HR																						-		
WL 354HQ	W-L Research	4	HR	HR	HR	HR	HR																						-		
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR	123																					115(2)		
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR			105	103																		104(3)		
WL 365HQ	W-L Research	5	HR	HR	HR	HR	HR							99															-		
4030	Brett Young Seeds	4	HR	HR	HR	HR	HR																						-		
53H92	Pioneer	3	HR	HR	HR	HR	HR						104																-		
54Q32	Pioneer	4	HR	HR	HR	HR	HR																						-		
55V48	Pioneer	5	HR	HR	HR	HR	HR																						-		
55V50	Pioneer	5	HR	HR	HR	HR	HR																						-		
6400HT	NEXGROW	4	HR	HR	HR	HR	HR																						105		
6415	NEXGROW	4	HR	HR	HR	HR	HR	108																					-		
6417	NEXGROW	4	HR	HR	HR	HR	HR			105																			-		
6422Q	NEXGROW	4	HR	HR	HR	HR	HR																						107(2)		
6552	NEXGROW	5	HR	HR	HR	HR	HR			105																				-	

¹Variety characteristics: FD=fall dormancy, Bw=bacterial wilt, Fw=fusarium wilt, An=anthracnose, PRR=phytophthora root rot, APH=aphanomyces root rot, APH-aphanomyces root rot, information provided by seed companies.

²Disease resistance: S=susceptible, LR=low resistance, MR=moderate resistance, R=resistance, HR=high resistance. (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2023_Alfalfa_Variety_Leaflet.pdf)

³Year trial was established

⁴Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Lexington trial planted in the spring of 2008 was harvested for 6 years, so the final yield report would be "2013 Alfalfa Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁵Mean only presented when respective variety was included in two or more trials.

⁶Number of years of data

Table 4. Summary of Kentucky Roundup Ready alfalfa yield trials 2011-2022 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	FD	Variety Characteristics ¹												Lexington						Princeton			Quicksand		Mean ⁵ (# trials)	
			Bw	Fw	An	PRR	APH1	APH2	12 ^{3,4}	6yr ⁶	15	16	20	11	13	15	14	2yr									
Alfagraze 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	HR	–	–	95	96	100	100	93	99	93										97(7)
Alfagraze 600 RR	America's Alfalfa	6		R	HR	R	R	R	–	–	97						85	93									92(3)
Ameristand 405T RR	America's Alfalfa	4	HR	HR	HR	HR	HR	HR	MR	MR	100	100	89	103	97	100	98	93									98(8)
Ameristand 433T RR	America's Alfalfa	3	HR	R	R	HR	HR	HR	–	–	92	98	100	95		95	96	107									98(7)
Ameristand 445TQ RR	America's Alfalfa	4	HR	HR	HR	HR	HR	HR	–	–	105	104				100											103(3)
AphaTron RR	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	HR	HR	99					98											99(2)
Consistency 4.10 RR	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	–	–	101				102												102(2)
DKA-41-18 RR	Monsanto	4	HR	HR	HR	HR	HR	HR	–	–	100				101		100										100(3)
DKA 44-16 RR	Monsanto	4	HR	HR	HR	HR	HR	HR	–	–	104					100											102(2)
Stratica RR	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	–	–	97		105			96											99(3)
Tonnica RR	Crop Genetics	5	HR	HR	HR	HR	HR	HR	–	–	105					101											103(2)
WL 355 RR	W-L Research	4	HR	HR	HR	HR	HR	HR	–	–	99				102		110										104(3)
WL 356HQ RR	W-L Research	5	HR	HR	HR	HR	HR	HR	HR	HR	100	99				96											98(3)
WL 372HQ RR	W-L Research	5	HR	HR	HR	HR	HR	HR	–	–	102					106											104(2)
428 RR	Allied Seed	4	HR	HR	HR	HR	HR	HR	–	–		100	100			104		111									104(4)
438 RR	Allied Seed	4	HR	HR	HR	HR	HR	HR	–	–				108													–
54R02 RR	Dupont Pioneer	4	HR	HR	HR	HR	HR	HR	–	–	97	107	96		104		102										101(6)
55VR06 RR	Dupont Pioneer	5	HR	R	HR	HR	HR	HR	MR	MR		95						99									97(2)
55VR08 RR	Dupont Pioneer	5	–	HR	HR	HR	HR	HR	HR	HR		103	111														108(3)
6516R RR	NEXGROW	5	HR	–	HR	HR	HR	HR	–	–	106					109											108(2)

¹Variety characteristics: FD=fall dormancy, Bw=bacterial wilt, Fw=fusarium wilt, An=anthracnose, PRR=phytophthora root rot, APH=aphanomyces root rot. Information provided by seed companies.

²Disease resistance: S=susceptible, LR=low resistance, MR=moderate resistance, R=resistance, HR=high resistance. (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2022_Alfaalfa_Variety_Leaflet.pdf)

³Year trial was established

⁴Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Princeton trial planted in the spring of 2011 was harvested for 5 years, so the final yield report would be "2015 Alfalfa Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁵Mean only presented when respective variety was included in two or more trials.

⁶Number of years of data

Table 5. Summary of Kentucky orchardgrass yield trials 2005-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington										Princeton										Quicksand			Mean ³ (#trials)		
		06 ^{1,2} 4-yr ⁴	07 3-yr	09 3-yr	11 3-yr	12 3-yr	13 3-yr	14 3-yr	15 3-yr	16 3-yr	17 3-yr	18 3-yr	19 3-yr	20 2-yr	06 3-yr	08 3-yr	10 3-yr	12 3-yr	15 2-yr	05 4-yr	10 3-yr	13 3-yr	16 3-yr	18 2-yr			
Albert	Oregro Seeds																									101(4)	
Aldebaran	DLF Pickseed																										-
Alpine II	Mountain View Seeds																										102(2)
Ambrosia	American Grass Seed Prod.																										-
Barlegro	Barenbrug USA																										95(2)
Benchmark Plus	Southern States	100	108	105	106	97	109	104																			103(14)
Beta	Mountain View Seeds																										-
Bighorn	Mountain View Seeds																										-
Blizzard	Allied Seed																										-
Bounty	Allied Seed	101																									100(2)
Captur	DLF Pickseed																										-
Century	Seed Research of Oregon	98																									101(2)
Checkmate	Seed Research of Oregon	102																									108(3)
Christoss	Proseeds Marketing		92																								-
Crown	Donley Seed			97																							101(2)
Devour	Mountain View Seeds																										92(2)
Echelon	DLF Pickseed																										104(3)
Elise	Rose-AgriSeed																										94(3)
Endurance	DLF Pickseed																										96(3)
Extend	Allied Seed																										107(3)
Harvestar	Columbia Seeds	91	97																								101(7)
Haymaster	Southern States	94																									98(3)
HLR	Barenbrug USA																										86(2)
Icon	Seed Research of Oregon	105																									102(2)
Inavale	DLF Pickseed																										99(4)
Intensiv	Barenbrug USA																										96(2)
Lazuly	Proseeds Marketing																										-
Lyra	Hood River Seed																										88(3)
Megabite	Turf-Seed																										-
Olathe	DLF Pickseed																										103(5)
Paiute	DLF Pickseed																										-
Persist	Smith Seed	105	106	107	112	106	100	103	111	98	111	98	111	101	103	105	97										106(21)
Persist II	Smith Seed																										112(2)
Potomac	Public																										102(16)
Prairie	Turner Seed	107	101	109	106	113	123	108	103	111	111	105	98	108	100	104	96	104	96	107	120	102	105	107		106(23)	
Prodigy	Caudill Seed																										98(9)
Profit	Ampac Seed																										100(15)
Quickdraw	Grassland Oregon																										-
RAD-LCF 25	Radix Research																										101(2)
Rushmore II	Mountain View seeds																										104(3)
Shawnee	Rose-AgriSeed																										-
SS0708OGDT	Southern States																										102(10)
Swante	Smith Seed																										83(3)
Tekena II	Smith Seed																										79
Tekapo	Ampac Seed																										103(2)
Treposno	Hood River Seed	91	81	82	78	82	76	80																			86(15)
Tucker	Oregro Seeds																										97(3)
Udder	Improved Forages																										100
Vaillant	Proseeds Marketing																										97(8)
		107																									103(2)
																											-

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2012 was harvested 3 years, so the final report would be "2015 Orchardgrass Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

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

⁴Number of years of data.

Table 6. Summary of Kentucky tall fescue yield trials 2005-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Endophyte Status ¹	Proprietor	Lexington										Princeton										Quicksand			Mean ⁴ (#trials)					
			05:3 3-yr ⁵	07 3-yr	09 3-yr	11 3-yr	12 3-yr	13 3-yr	14 3-yr	15 3-yr	16 3-yr	17 3-yr	18 3-yr	19 3-yr	20 2-yr	06 3-yr	08 3-yr	10 3-yr	12 3-yr	15 2-yr	17 3-yr	19 3-yr	05 4-yr	13 3-yr	16 3-yr		18 3-yr				
Atlas Select	free	ProSeeds Marketing															95														
Aprilia	free	ProSeeds Marketing															93														
Armory	free	Barenbrug USA																			98										
Baguala	free	Allied Seed																													
BarElite	free	Barenbrug USA																													
BARFAST-43	free	Barenbrug USA																													
Bariane	free	Barenbrug USA																													
Barolux	free	Barenbrug USA																													
BarOptima PLUS E34	novel	Barenbrug USA																													
Bronson	free	Ampac Seed																													
Brutus	free	Saddle Butte Ag. Inc.																													
Bull	free	Improved Forages																													
Cajun II	free	Smith Seed Services																													
Cowgirl	free	Rose-AgriSeeds																													
DLEPS-FTF 100 Protek	novel	DLF Pickseed																													
Dominate	free	Allied Seed																													
Drover	free	Barenbrug USA																													
DuraMax GOLD	novel	DLF Pickseed																													
Enhance	free	Allied Seed																													
Estancia ARKShield	novel	Mountain View Seeds																													
Fillmore(FTF70)	free	DLF Pickseed																													
Flourish	free	Allied Seed																													
FSG 402TF	free	Farm Science Genetics																													
Goliath	free	Ampac Seed																													
Greendale	free	DLF Pickseed																													
Greendale Protek	novel	DLF Pickseed																													
HyMark	free	Fraser Seeds																													
Jesup EF	free	Pennington Seed																													
Jesup MaxQ	novel	Pennington Seed																													
Jesup MaxQII	novel	Pennington Seed																													
Kentucky 32	free	Oregro Seeds																													
Kokanee	free	Smith Seed Services																													
Kora Protek	novel	DLF Pickseed																													
KY31+	toxic	KY Agric Exp Sta.																													
Lacefield MaxQ II	novel	Pennington Seed																													
Martin2 Protek	novel	DLF Pickseed																													
Namryo	free	Jap. Grassland ForageSeed/																													
Noria	free	ProSeeds Marketing																													
Palatine	free	Mountain View Seeds																													
Payload	free	Brett Young																													
RAD-ERF50	free	Radix Research, Inc.																													
Ranchero	free	Smith Seed Services																													
Savory	free	DLF Pickseed																													
Select	free	Southern States																													
SS-0705TFL	free	Southern States																													
STF43	free	Barenbrug USA																													
Stockman	free	Seed Research of OR																													
Teton II	free	Mountain View Seeds																													
Texoma MaxQ II	novel	Pennington Seed																													
TF0203G	free	Seed Research of OR																													

Table 6. continued

Variety	Endophyte Status ¹	Proprietor	Lexington												Princeton					Quicksand				Mean ⁴ (#trials)				
			05 ^{2,3} 3-yr ⁵	07 3-yr	09 3-yr	11 3-yr	12 3-yr	13 3-yr	14 3-yr	15 3-yr	16 3-yr	17 3-yr	18 3-yr	19 3-yr	20 2-yr	06 3-yr	08 3-yr	10 3-yr	12 3-yr	15 2-yr	17 3-yr	19 3-yr	05 4-yr		13 3-yr	16 3-yr	18 3-yr	
Tower	free	DLF Pickseed												101											91			98(4)
Tower Protek	novel	DLF Pickseed				98								104												81		94(5)
Triumphant	free	DLF Pickseed																										97(3)
Triumphant Protek	novel	DLF Pickseed																										97(3)
Tuscany II	free	Seed Research of OR								97																		
Velvet	free	Oregro Seeds																										
5CAN	free	Brett Young			86																							

¹Free-varieties that do not contain an endophyte. Toxic-KY31+ contains a toxic endophyte. Novel-varieties that contain an endophyte that aids persistence but is not toxic to cattle. ²Year trial was established.

³Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was harvested 3 years, so the final report would be "2019 Tall Fescue Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁴Mean only presented when respective variety was included in two or more trials.

⁵Number of years of data.

Table 7. Summary of Kentucky bromegrass yield trials at Lexington 2006-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial.)

Variety	Type	Proprietor/KY Distributor	2006 ^{1,2}	2008	2010	2012	2014	2016	2017	2018	2019	2020	Mean ³
			4-yr ⁴	3-yr	3-yr	3-yr	3-yr	3-yr	4-yr	3-yr	3-yr	3-yr	2-yr
AC Knowles	hybrid	Agriculture Canada	85		82	102	89		106	100	100	103	89(4)
Admiral	meadow	Cisco Seeds						107	93				103(5)
Arid	meadow	Mountain View Seeds						94					94(2)
Arsenal	meadow	Barenbrug USA								106	106	106	106(3)
Artillery	smooth	Barenbrug USA								100	99	85	95(3)
Bigfoot	hybrid	Grassland Oregon	108	116	105								110(3)
Canterbury	mountain	Barenbrug USA		79									
Carlton	smooth	Pickseed USA				82	95			85			87(3)
Doina	smooth	Barenbrug USA		114	108								111(2)
Fleet	meadow	Agriculture Canada	110			109							110(2)
Hakari	Alaska	Barenbrug USA		85	85								85(2)
MacBeth	meadow	Cisco Seeds		136	119	107	116	103	123	100	95	108	111(10)
Olga	smooth	Barenbrug USA		116	101								109(2)
Peak	smooth	Allied Seed		97		100		95	88	103		98	96(7)
Persister	prairie	DLF Pickseed		72									
RAD-BI29	smooth	Columbia Seeds	96	86									91(2)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was harvested 3 years, so the final report would be "2019 Tall Fescue and Brome Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

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

⁴Number of years of data.

Table 8. Summary of Kentucky Timothy Yield Trials 2000-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington																			Mean ³ (#trials)			
		00 ^{1,2} 2yr ⁴	01 3yr	02 4yr	06 3yr	07 3yr	08 3yr	09 3yr	11 3yr	12 3yr	13 3yr	14 3yr	15 3yr	16 3yr	17 3yr	19 3yr	20 2yr	Quicksand 99 2yr	01 2yr	Princeton 00 3yr		04 2yr		
Alma	Newfield Seeds Co/Caudill Seed Co.																				81	-		
Anjo	Hood River Seed												81										-	
Aurora	General Feed and Grain	100															98						99(2)	
Barfleo	Barenbrug USA							95	91	101			108	80	97									95(9)
Baronaise	Barenbrug USA																							
Barpenta	Barenbrug USA					74			82	82														85(6)
Carson	Mountain View Seeds																							109(3)
Clair	Ky Agric. Exp. Station		104	113	107	95	107	104	112	99	97	111	107	88	88	85	92		106				122	102(17)
Classic	Cebeco International Seeds	100		86														86						91(3)
Climax	Canada Agr. Res. Station				79	102	104	98	102	100	82	96	90	102	92	98	94							95(13)
Colt	FS Growmark	105		100	90													112						101(5)
Common	Public		95																					-
Comtral	Caudill Seed									92	92													92(2)
Dawn	Hood River Seed														103	107	109							106(3)
Derby	Southern States				112	111		106	112	108	112	119	123	112		112	104					124		113(12)
Dolina	DLF Pickseed	99		90																				95(2)
Express	Seed Research of Oregon			95					95															95(4)
Hokuei	Snow Brand Seed	103																						-
Hokusei	Snow Brand Seed	96																99						98(2)
Joliette	Newfield Seeds Co/Caudill Seed Co.							86	89															88(3)
Jonaton	Newfield Seeds Co/Caudill Seed Co.																							-
KY Early	Smith Seed/Central Farm Supply	102	103	115				102		119	119				115	99	108	104	103			107		107(10)
Outlaw	Grassland West Company																							-
Richmond	Pickseed Canada Inc.	100																103						102(2)
Summergraze	Brett Young																							-
Summit	Allied Seed, L.L.C.			112																				-
Talon	Seed Research of Oregon				110	112		108	106	109														109(5)
Tenho	Barenbrug USA											84												-
Treasure	Seed Research of Oregon				103	115		103	101	108														106(5)
Tundra	DLF Pickseed	95																						-
Tuukka	Ampac Seed Company		94	88															91		93			92(4)
Varis	Mountain View Seeds											83												-
Zenyatta	DLF Pickseed										103		119		109	114								111(4)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions; but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2017 was harvested 3 years, so the final report would be "2020 Timothy and Kentucky Bluegrass Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

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

⁴Number of years of data.

Table 9. Summary of Kentucky Bluegrass Yield Trials at Lexington 2004-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	04 ^{1,2} 3yr ⁴	06 4yr	07 3yr	08 3yr	09 3yr	10 3yr	11 3yr	12 3yr	13 3yr	14 3yr	16 3yr	17 3yr	18 2yr	19 3yr	20 2-yr	Mean ³ (#trials)
Adam 1	Radix Research	98															
Balin	Pure Seed												91	80			86(2)
Bardeby	Barenbrug USA		94		101		91	98	87	103	101	103	128	120	109	120	105(12)
Big Blue	Rose-AgriSeed				82				95								89(2)
Common	Public		71	66	68												68(3)
Ginger	ProSeeds Marketing		118	119	114	118	112	107	110	107	95	101	119	98	95	105	108(14)
Isabel	Smith Seed Services															71	
Kenblue	Public	102	133				96	95	118	95	100						106(7)
Lato	Turf Seed Inc.			122													
Park (certified)	Public								90	95	104	117	88	102	96	104	100(8)
RAD-5	Radix Research		103														
RAD-339	Radix Research		101														
RAD-643	Radix Research		94														
RAD-731zx	Radix Research		87														
RAD-762	Radix Research		94														
RAD-1039	Radix Research				118												
Tirem	DLF Pickseed											79	74				77(2)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2017 was harvested 3 years, so the final report would be "2020 Timothy and Kentucky Bluegrass Report" archived in the UK Forage website (<https://forages.ca.uky.edu>)

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

⁴Number of years of data.

Table 10. (continued)

Variety	Type	Proprietor	Lexington ¹																	Mean ⁴ (#trials)			
			03 ^{2,3}	04	05	06	07	08	09	10	10	11	12	12	13	14	15	16	17		18	19	21
Hercules	Westerwold tetraploid	Barenbrug USA										91	68										
HS-1	Italian diploid	KB SeedSolutions							72														
Jackson	Westerwold diploid	The Wax Co.	66	100	62	103	59	101	99	106	106	91	77	69	100	99	97	105	95	95	87	93(17)	
Jumbo	Westerwold tetraploid	Barenbrug USA	112														88	83				94(3)	
KB Royal	Italian diploid	KB SeedSolutions							83														
Koga	Westerwold tetraploid	Smith Seed Services															94	96	101	95	97(4)		
Kospeed	Westerwold diploid	Smith Seed Services													80	92						86(2)	
Kowinearly	Westerwold diploid	Smith Seed Services													95	96						96(2)	
LHT-102	Intermediate	Ampac Seed										100											
Mantis	Westerwold tetraploid	Smith Seed Services																			88		
Marshall	Westerwold diploid	The Wax Co.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(18)	
Master	Westerwold tetraploid	Smith Seed Services																82					
Maximo	Intermediate tetraploid	Pickseed USA, Inc.									101												
Maximus	Westerwold tetraploid	Barenbrug USA															63	84				74(2)	
Melquatro	Italian tetraploid	Hood River Seed														135	72					104(2)	
Meroa	Westerwold diploid	Smith Seed Services													93	102				108	96	100(4)	
MX 108	Westerwold tetraploid	Pickseed USA, Inc.									95	114										105(2)	
Nelson	Westerwold tetraploid	The Wax Co.								86			93	65	77	105	97	73	91	104	94	91(9)	
Oryx	Italian diploid	Hood River Seed														100							
Primecut	Westerwold brand	Oregro Seeds									94												
Rapido	Westerwold diploid	Smith Seed Services																		77			
Striker	Westerwold tetraploid	Seed Research of OR					90																
TAMTBO	Westerwold tetraploid	Tex. Ag Exp Sta.						47	101		108	95			79			91				87(6)	
Tam 90	Italian diploid	Tex. Ag Exp Sta.						49							78							64(2)	
TetraPrime	Italian tetraploid	Mountain View Seeds										101			96	104	91	99	90	86	80	93(8)	
TetraPro	Italian tetraploid	Tex. Ag Exp Sta.						40															
TillageRootMax	Westerwold diploid	Cover Crop Solutions									82	90										86(2)	
T-Rex	Westerwold tetraploid	SaddleButte			11																		
Trinova	Westerwold tetraploid	Smith Seed Services																78					
Ugne	Italian tetraploid	Hood River Seed															102						
Verdure	Westerwold tetraploid	Smith Seed Services							86					42	58							72(2)	
Winterhawk	Westerwold diploid	Oregro Seeds							104		117	92			119			113	96	91	98	104(8)	

¹In annual ryegrass, low-yielding varieties usually result from winterkill. Note: Due to severe winterkill, yield results from the 2006 and 2013 plantings were not included in the overall mean.

²Year trial was established.

³Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2015 was harvested 1 year, so the final report would be "2016 Annual and Perennial Ryegrass and Festulolium Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁴Mean only presented when respective variety was included in two or more trials.

⁵Type was not provided by the company.

Table 11. Summary of Kentucky perennial ryegrass yield trials 2000-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington																		Princeton			Mean ^{3,4} (#trials)		
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	00		01	02
			2yr ⁵	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr		2yr	3yr
Aires	diploid	Ampac Seed	95																					93	94(2)	
Albion	tetraploid	Grasslands Oregon																							104(2)	
Amazon	tetraploid	AgriBioTech			99																			107	103(2)	
Anaconda	tetraploid	Caudill Seed																					95			
Aubisque	tetraploid	Seed Research of OR	144																							
Bandit	tetraploid	Grassland West																								
Barvitra	diploid	Barenbrug USA													104					109						
Bastion C-2	tetraploid	Seed Research of OR			91																					
Bestfor	tetraploid	Improved Forages																								
Best for Plus	hybrid tetraploid	Improved Forages	116	108	118																					
BG-34	diploid	Barenbrug USA			83	85																				
Boost	tetraploid	Allied Seed					130	125	120	143	110	103	102													
Boxer	tetraploid	AgriBioTech																								
Callibra	tetraploid	DLF Pickseed																								
CAS MP64	diploid	Cascade International	97																							
Citadel	tetraploid	Ag Canada																								
Grave	tetraploid	Ampac Seed											95													
Elena DS	tetraploid	Allied Seed											110													
Eurostar	tetraploid	Seed Research of OR																								
Everlast	diploid	Caudill Seed																								
Feeder	diploid	Seed Research of OR																								
Grand Daddy	tetraploid	Smith Seed	118																							
Green Gold	tetraploid	Grasslands Oregon																								
Herbal	-7	ProSeeds Marketing																								
Impressario	tetraploid	DLF Pickseed																								
Kentaur	tetraploid	DLF Pickseed																								
Lactal	tetraploid	Brett Young																								
Lasso	diploid	DLF Pickseed	98																							
LHT-102	tetraploid	Ampac Seed																								
Linn (certified)	diploid	Public	98	98	102																					
Manhattan	diploid	-																								
Matrix	diploid	Cropmark seeds																								
Maverick Gold	hybrid tetraploid	Ampac Seed	97																							
Melpetra	tetraploid	Hood River Seed																								
Orantas	diploid	DLF Pickseed																								
Ortet	tetraploid	Oregro Seeds																								
PayDay	tetraploid	Mountain View Seeds																								
Polly II	tetraploid	FS Growmark																								
Polly Plus	hybrid tetraploid	Allied Seed	64																							
Power	tetraploid	Ampac Seed																								
Polim	tetraploid	DLF Pickseed																								
Quartermaster	tetraploid	Radix Research																								
Quartet	tetraploid	Ampac Seed	97																							
RAD-CPS212	hybrid tetraploid	Radix Research																								
RAD-MI125	hybrid tetraploid	Mountain View Seeds																								
Remington	tetraploid	Barenbrug USA																								
Remington PLUS NEA2 ⁶	tetraploid	Barenbrug USA																								
Sierra	diploid	Lewis Seed Co.																								
TetraGain	tetraploid	Pure Seed																								
TetraMag	tetraploid	Mountain View Seeds																								

Table 11. continued

Variety	Type	Proprietor	Lexington																Princeton			Mean ^{3,4} (#trials)				
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19		20	00	01	02
			2yr ⁵	3yr	2yr	3yr	3yr	2yr	3yr	3yr	3yr	3yr	2yr	3yr	3yr	2yr	3yr	3yr	2yr	3yr	3yr		2yr	3yr	2yr	3yr
TetraSweet	tetraploid	Mountain View Seeds														104	105	87	97	82						
Tonga	tetraploid	Kings AgriSeeds						96																		95(5)
Verseka	tetraploid	Allied Seed								103																100(3)
Victorian	diploid	Caudill Seed										75														—
Yatsyn	diploid	Barenbrug USA											104	83												94(2)

¹Year trial was established.
²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2012 was harvested 3 years, so the final report would be "2015 Annual and Perennial Ryegrass and Festulolium Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).
³Mean only presented when respective variety was included in two or more trials.
⁴In perennial ryegrass, low yielding varieties usually result from winterkill or summer mortality.
⁵Number of years of data
⁶Lexington PLUS NEAZ contains a non-toxic (novel) endophyte.
⁷Type was not provided by the company.

Table 12. Summary of Kentucky festulolium yield trials 2001-2022 (yield shown as a percentage of the mean of the commercial varieties in the trial).¹

Variety	Type ²	Proprietor	Lexington																Mean ⁵ (#trials)							
			2001 ^{3,4}	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2019	2020										
			2yr ⁶	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	3yr	3yr	3yr	2yr	2yr									
Agula	MF x IR	Allied Seed					94																		—	
Barfest	MF x PR	Barenbrug USA					105	107	101	107	119	91	92													101(7)
Bonus	MF x IR	Allied Seed					93	46	32	34	34														51(4)	
Duo	MF x PR	Ampac Seed		89	98	99	95	106	103	103	96	96	83	83	80	96	94(13)								94(13)	
Felina	(TF x IR) x TF	DLF Pickseed	104				132	118	134	114	114	96													116(6)	
Fojtan	(TF x IR) x TF	DLF Pickseed					112	101	124	92	72	94	100	100	108	86									99(9)	
Gain	MF x IR	Allied Seed					103	77	52	75	75														77(4)	
Hostyn	MF x IR	DLF Pickseed						107	110	110	106	108													108(4)	
Hylkor	(TF x IR) x TF	DLF Pickseed					133	141	153	131	119	121	112	112	88	77									123(9)	
InaMerlin	MF x IR	Hood River Seed											88	88	77										83(2)	
Kenfest	MF x AR	KY Agr. Exp Station													97										—	
Lofa	(TF x Int) x Int	DLF Pickseed					105	107	110	128	112	112	91	109	108	104	105	108(10)							112(6)	
Mahulena	(TF x IR) x TF	DLF Pickseed																						36(2)		
Meadow Green	— ⁷	Pure Seed																							115(10)	
Perseus	MF x IR	DLF Pickseed					132	114	126	123	110	109	105	105	112	113	108	115(10)							110(10)	
Perun	MF x IR	DLF Pickseed					127	114	107	131	110	102	99	99	110	105	96	110(10)							86(2)	
Rebab	(TF x IR) x TF	DLF Pickseed									94	77													104(14)	
Spring Green	MF x PR	Turf-Seed	96	111	114	101	113	112	114	110	103	107	92	94	101	94	101	104(14)								
Sweet Tart	MF x IR	ProSeeds Marketing					82	63	62	62	62														74(4)	

¹The festuloliums were in fescue trials from 2001-2005 and in perennial ryegrass trials from 2008-2009.
²MF=meadow fescue, TF=tall fescue, IR=Italian ryegrass, PR=perennial ryegrass, Int=intermediate ryegrass.
³Year trial was established.
⁴Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2012 was harvested 3 years, so the final report would be "2015 Annual and Perennial Ryegrass and Festulolium Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).
⁵Mean only presented when respective variety was included in two or more trials.
⁶Number of years of data
⁷Type was not provided by the company.

Table 13. 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																	Mean ³ (#trials)							
		13:2	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22									
Epic BMR ⁴	Coffey Seed							97	93	83	100										96	94(8)				
Exceed BMR	Coffey Seed							89	103	81	97										102	90	97	96(8)		
FSG 300 Hybrid	Farm Science Genetics			109	99	109																		109(4)		
FSG 315 BMR (Dwarf)	Farm Science Genetics			101	102	81																		95(4)		
Leaf22 Hybrid	Turner Seed							108	113	119	101													111(13)		
Millix32	S&W Seed Company								110	131	102										111	93	99	108(6)		
PearlMtl	Dyna-Gro Seed							103	113	120	107										110	100	110	105	109(8)	
Pennleaf Hybrid	Pennington Seed							98	95	100	96										90			94(13)		
PP102M Hybrid	Cisco Seeds			90	79	90	91	97	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	96	86	94	94													89				93(8)	
SS635	Southern States			108	112	101	116	94	110	108	105	103	107	115	105	110	110	110	110	110	104	104	91	99	106(16)	
Sweet Summer	Cisco Seeds							86	95	97	95										85	104	91	99	93	94(10)
Trifleaf III Hybrid	Gayland Ward Seed			116	106	108	116	120	113	119	95	131	114	114	112	111	101	101	101	101	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 14. 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																						Mean ³ (#trials)				
		08:2	09	10	11	12	13	14	15	16	17	18	19	20	21	22	17	18	19	20	21	22						
AS9301 BMR ⁴	Advanta Seeds/Ramer Seed																											
AS9302 BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed																											
Enorma BMR	Cal/West Seeds			99	94	92	91	83	91	98																		
FSG 1000 BMR	Farm Science Genetics																											
Hayking BMR	Central Farm Supply																											
Monarch V	Public																											
Piper	Public																											
ProMax BMR	Ampac Seed																											
SP7106 BMR	Sorghum Partners																											
SS130 BMR	Cal/West Seeds																											
Trudan Headless	S & W Seed Company																											

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 16. Summary of Kentucky forage sorghum yield trials 2013-2022 (yield shown as a percentage 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)
Ensilmaster	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						89	79			95(10)
FSG115 BMR (Brachytic Dwarf)	Farm Science Genetics		51	31	72	81	74	67	77	92						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)
F75F513	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)
SPT1615	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)

¹Establishment year.
²Use 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.
³Mean only presented when respective variety was included in two or more trials.
⁴This trial was sprayed with an aphicide and the results are not included in the overall mean.
⁵BMR (Brown Mid-rib) means that a variety has been developed to produce lower amounts of lignin which usually translates into higher quality.

Table 17. 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																				
Convallis	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	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		98(17)	
Witkofo	--	93	101	115	103	101	104	107							94	100					102(9)	

¹Establishment year.

²Use 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.

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

⁴Check with local dealers for available varieties.

Table 18. 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			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)	

¹Establishment year.

²Use 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.

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

⁴YJ = yellow jacket coating on the seed

Table 19. 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	All trials are 1 year yields					2022	Mean ³ (#trials)	
					2018	2019	2020	2021	2022			
		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. Alummi Seed, IN	120	101	111	107	115	125	105	111			112(8)
Haywire	Cisco Seeds							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. Alummi Seed, IN	94	111	117	102	94	98	86	77			91(5)
Robust	Ag. Alummi Seed, IN	104	104	100	102	97	106(5)					106(5)
Saber	Ag. Alummi Seed, IN	104	104	100	100	97	93	96	93			98(5)
VNK	Public		97	107	101	94	91	105	91			98(7)
021A17815	Ag. Alummi Seed, IN	97	108	87								97(3)

¹Establishment year.

²Use 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.

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

Table 20. Summary of 2002-2022 Kentucky white clover grazing tolerance trials in Lexington (stand persistence shown as a percent of the mean of the commercial varieties in the test).

Variety	Type	Proprietor	02 ^{1,2}		4	06 ³		6	08 ⁴		10	11	12	13	14	15	16	17	18	19	20	Means (#trials)
			2yr ⁶	4yr		2yr	4yr		3yr	4yr												
Alice	Intermediate	Barenbrug USA		59	98										93	71	79	97	95	91	100	87(9)
Barblanca	Intermediate	Barenbrug USA		118	91	151																120(3)
Canterbury	Dutch	Allied Seed												51	93							72(2)
Colt	Intermediate	Seed Research of OR		114	134	122																123(3)
Crescendo	Ladino	Cal/West	84		72																96	84(3)
Dusi	Ladino	Barenbrug USA																			103	-
Durana	Intermediate	Pennington		83	105	103			115	102	107	126	86	81	113	152	86	102	77	104	100	102(16)
GWC-AS10	- ⁷	Ampac Seed									77											-
Insight	Ladino	Allied Seed			77																	-
Ivory	Intermediate	DLF Pickseed	132	142																		137(2)
Ivory II	Intermediate	DLF Pickseed					102															-
Kakariki	Ladino	Luisetti Seeds															97				98	98(2)
Kopu II	Intermediate	Ampac Seed			77	122	96			93	113	112	86	106	93	87	107		95	106		99(13)
KY Select	Intermediate	KY Agr Ex. Sta.							105		83											94(2)
Neches	- ⁷	Barenbrug USA														104				83	97	95(3)
Patriot	Intermediate	Pennington		110	137	122			100	111	110	123	102	132	109	123	107	111	107	118	102	114(16)
Pinnacle	Ladino	Allied Seed									87											-
Rampart	- ⁷	Oregro Seeds							90													-
Regal	Ladino	Public		92	57	54			93		103											80(5)
Regal Graze	Ladino	Cal/West			84	87	105		90	87	93	72	94	81	102	87	107	87	95	85	100	91(16)
Renovation	Intermediate	Smith Seed											102	100	55		97			97		90(5)
Resolute	Intermediate	Southern States			101	106					65											91(3)
Seminole	Ladino	Saddle Butte Ag. Inc.		75	97	91								89	85							97(5)
Tillman II	Ladino	Caudill Seed	92																			-
WBDX	Dutch	Saddle Butte Ag. Inc.								70												-
Will	Ladino	Allied Seed			117	87	107		105	108	143	115	133	157	111	120	114	108	131	116	105	117(16)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific test. For example, the trial planted in the fall of 2016 was grazed for 4 years so the final persistence report would be "2020 Red and White Clover Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

³This trial was planted in the spring of 2006 due to poor establishment of the fall 2005 planting.

⁴This trial was planted in the spring of 2008 due to poor establishment of the fall 2007 planting.

⁵Mean only presented when respective variety was included in two or more trials.

⁶Number of years of data.

⁷Type was not provided by the company.

Table 21. Summary of Kentucky alfalfa grazing trials 2000-2022 (stand persistence shown as a percent of the grazing tolerant Alfagrange).

Variety	Proprietor	Variety Characteristics ¹														Mean ⁵ (#trials)										
		Disease Resistance ²																								
		FD	Bw	Fw	An	PRR	APH1	APH2	00 ^{3,4} 2yr ⁶	00	01	04	05	06	08		09	10	11	12	13	14	16	17	19	
ABT 350	W-L Research	3	HR	HR	HR	HR	HR	-		46																-
ABT 405	W-L Research	4	HR	HR	HR	HR	HR	-		46	100															73(2)
Alfabar	Barenbrug USA	3	HR	HR	HR	HR	HR/R	-																		50
Alfagrange	America's Alfalfa	3	MR	R	MR	R	-	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(16)
Alfagrange 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	-								110										-
Alfagrange 600 RR	America's Alfalfa	6	-	R	HR	R	-	-											12							-
Amerigrange 401+Z	America's Alfalfa	4	HR	HR	HR	HR	R	-	26	85	125															79(3)
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR	R				141	144	50		91		144	118	65						108(7)
Ameristand 403TPlus	America's Alfalfa	4	HR	HR	HR	HR	HR	R							133		90				50	150	88			102(5)
Ameristand 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	R				136			50		80									89(3)
Apollo	America's Alfalfa	4	R	R	R	R	-	-	17	31	25	36	27	25	17	27	70	55	86	24						37(12)
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR	-							33		83									58(2)
Bulldog-505	Univ. of GA	5	-	HR	-	R	-	-										144	100	57						100(3)
FK 421	Donley Seed Co.	4	HR	H	H	H	H	-			100															-
Feast	Garst Seeds	3	HR	HR	HR	HR	R	-	87	92																90(2)
Grazeking	Southern States	5	MR	HR	HR	R	S	-			50															-
Haygrazer	Great Plains Research	4	HR	HR	R	R	MR	-		38																-
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR	R				172														-
Legen Dairy5.0	Croplan Genetics	3	HR	HR	HR	HR	HR	-						0		87										44(2)
PGI 424	Producers Choice	4	HR	HR	HR	HR	R	-							45											-
PGI 459	Producers Choice	4	HR	HR	HR	HR	R	R							17		93									55(2)
Rebel	Target Seed	4	HR	HR	HR	HR	HR	-					79													-
Rugged	Target Seed	3	HR	HR	HR	HR	HR	MR					146													-
Saranac AR (cert.)	Public	4	MR	R	HR	LR	-	-			100													25		63(2)
Spredor 3	Syngenta	1	HR	HR	R	MR	S	-				68														-
Spredor 4	Syngenta	2	HR	HR	HR	HR	R	-						25												-
TS 4007	Producers Choice	4	HR	R	HR	HR	HR	-							82											-
TS 4010/A4535	Producers Choice	4	HR	R	HR	HR	HR	-						83	145	120										116(3)
Triple Trust 450	ABI/America's Alfalfa	5	HR	HR	HR	HR	HR	-				145														-
115 Brand	Monsanto	3	HR	HR	R	HR	R	-	56	85																71(2)
5432	Pioneer	4	HR	HR	-	MR	-	-			51															-

¹Variety characteristics: FD=fall dormancy, Bw=bacterial wilt, Fw=fusarium wilt, An=anthracnose, PRR=phytophthora root rot, APH=aphanomyces root rot, APH=aphanomyces root rot, APH=aphanomyces root rot, APH=aphanomyces root rot, APH=aphanomyces root rot. Information provided by seed companies.
²Disease resistance: S=susceptible, LR=low resistance, MR=moderate resistance, R=resistance, HR=high resistance (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2023_Alfalfa_Variety_Leaflet.pdf).
³Year trial was established
⁴Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific test. For example, the Lexington trial planted in the fall of 2011 was grazed for 4 years so final persistence report would be "2015 Alfalfa Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).
⁵Mean only presented when respective variety was included in two or more trials.
⁶Number of years of data

Table 22. Summary of 2001-2022 Kentucky tall fescue grazing tolerance trials in Lexington (stand persistence shown as a percent of the stand rating of KY 31+).

Variety	Endophyte Status ¹	Proprietor	2001 ^{2,3}	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mean ⁴	
			4yr ⁵	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	(#trials)
Advance MaxQ	novel	Pennington Seed						94															
Armory	free	Barenbrug USA																				99	
Baguala	free	Allied Seed															99						
Bariane	free	Barenbrug USA			89		75	47	29														60(4)
BarElite	free	Barenbrug USA						96															
Barolex	free	Barenbrug USA					78	101	86														88(3)
BarOptima PLUS E34	novel	Barenbrug USA					100		97			98	100	98	100	100	100	100	96	91	100		98(12)
Bronson	free	Ampac Seed									98	98						100					99(3)
Bull	free	Caudill Seed												96				100	98	91			96(4)
Cajun II	free	Smith Seed Services										98				97	100	100	99	96	99		98(7)
Cattle Club	free	Green Seed	91																				
Carmine	free	DLF-Jenks	90																				
Cowgirl	free	Rose Agri-Seed				99							99										99(2)
Dominate	free	Allied Seed															99						
Drover	free	Barenbrug USA															99						
Estancia Arkshield	novel	Mountain View Seeds																			100		
Festival	free	Pickseed West	100	101																			101(2)
FSG 402TF	free	Farm Service Genetics															99						
Flourish	free	Allied Seed											98										
Goliath	free	Ampac Seed									95	98						100					99(2)
HyMark	free	Fraser Seeds								97		100											98(2)
Jesup MaxQ	novel	Pennington Seed		103	97		68	102	97		99	98	100	99	99		100	100	100	99			97(16)
Jesup MaxQII	novel	Pennington Seed																				100	
Johnstone	free	Proseeds	92																				
KY31+	toxic	KY Agri. Exp Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		100(19)
KY31-	free	KY Agri. Exp Sta.	98	103	98	100	83	101	100	98	99	99	100	100	99	100	100	100	99	96	100		99(19)
Lacefield MaxQ II	novel	Pennington Seed					82	102	99		98	97			100	99	100	100	99	100			98(13)
Maximize	free	Rose Agri-Seed	99																				
Namryo	free	Japanese Grassland For.Seed							100														
Orygun	free	-		99																			
Ranchero	free	Smith Seed Services																	98				
Select	free	Southern States	101	100	100	67	100	93	95	97	100	100	100	99	99	99	101						97(14)
SS0705FSL	free	Southern States														100	100	100	99	96	100		99(6)
Stargrazer	free	Southern States	89																				88(2)
STF43	free	Barenbrug USA																			100		
Stockman	free	Seed Res. of OR				102																	
Texoma MaxQ II	novel	Pennington Seed					88	100	98														
Tuscany II	free	Seed Res. of OR					101																95
Verdant	free	Am.Grass Seed					97																

¹Free-varieties that do not contain an endophyte. Toxic-KY31+ contains a toxic endophyte. Novel-varieties that contain an endophyte that aids persistence but is not toxic to cattle.

²Year trial was established.

³Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was grazed 4 years so the final report would be "2020 Cool-Season Grass Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁴Mean only presented when respective variety was included in two or more trials.

⁵Number of years of data

Table 23. Summary of 2000-2022 Kentucky orchardgrass grazing tolerance trials in Lexington (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

Variety	Proprietor	2000 ^{1,2}	2001	2002	2003	2004	2005 ³	2007	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mean ⁴	
		4yr ⁵	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	(#trials)
Abertop	Pennington Seed		38																		
Albert	Univ. of Wisconsin		115																		
Amba	DLF-Jenks		71																		
Ambrosia	Pennington Seed						94														
Athos	DLF-Jenks		93				60														
Benchmark	Southern States	118	123	114																	118(3)
Benchmark Plus	Southern States			120			152	135	106	106	108	115	146	154							120(5)
Boone	Public	102																			
Command	Seed Research of OR					81															
Crown Royale	Donley Seed		100																		
Crown Royale Plus	Donley Seed			124																	
Devour	Mountain View Seeds														145						
Elise	Pure Seed											97			62						80(2)
Hallmark	James VanLeeuwen		115		113																114(2)
Harvestar	Columbia Seeds							75		89	94		51	34	60						70(5)
Haymate	Southern States	53	115	100	118																97(4)
HLR	Barenbrug USA																		93		
Intensiv	Barenbrug USA				51																
Mammoth	DLF-Jenks		115																		
Megabite	Turf Seed		77																		
Niva	DLF-Jenks			76																	
Persist	Smith Seed Services						138	107	103	100	96	115	102	123	104	131	116	132	107		113(11)
Persist II	Smith Seed Services														109	82	109		107		
Potomac (certified)	Public			116		119					94		131	90	97	107	60	105	91		107(5)
Prairie	Turner Seed	127	121										109	119		94	109	97	93		102(5)
Prodigy	Caudill Seed																				
Profile	Scott Seed			116																	
Profit	Ampac Seed								95	99	102	94	95	90	82						94(6)
Tekapo	Ampac Seed		55	74	118		50	103	95	105	106	80	66	63	77						87(10)
Takana	Smith Seed Services		99																		
Seco	Southern States							85													
SS07080GDT	Southern States													128	131	118	106	109	103		116(6)
Swante	Smith Seed Services																57				

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was grazed 4 years so the final report would be "2020 Cool-Season Grass Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

³Due to high variation during 2005 and 2013 trials these values are not included in the overall mean

⁴Mean only presented when respective variety was included in two or more trials.

⁵Number of years of data

Stand thinning may have been greater for preferred varieties due to closer grazing. See individual trial tables for preference ratings.

Table 24. Summary of 2001-2022 Kentucky perennial ryegrass and festulolium (FL) grazing tolerance trials in Lexington (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	2001 ^{1,2}		2003	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mean ³ (#trials)
			3yr ⁴	4yr														
AGRLP103	-	AgResearch USA		86														
Albion	tetraploid	Grassland Oregon											112					
Aries	diploid	Ampac Seed	128															
Barfest (FL)	MF x PR ⁶	Barenbrug USA					116	112										114(2)
BG-34	diploid	Barenbrug USA											78					
Boost	tetraploid	Allied Seed					101	95	92									93(4)
Calibra	tetraploid	DLF International							106			88	90	98		94		95(5)
Citadel	tetraploid	Donley Seed																
Duo (FL)	MF x PR ⁶	Ampac Seed					95	72	90	102			65	65				82(6)
Lasso	diploid	DLF-Jenks	120															
Linn (certified)	diploid	Public	118	63			95	108	95	91	96	80	69	88	79	99	117	93(13)
Melpetra	tetraploid	Hood River Seed												90				
PayDay	tetraploid	Mountain View Seeds									101	85			99	90	100	95(5)
Polly II	tetraploid	FS Growmark	63															52(2)
Power	tetraploid	Ampac Seed					158	107	112	96	89	79	78					103(7)
Quartet	tetraploid	Ampac Seed	70				59											68(2)
Remington	tetraploid	Barenbrug USA		151								138	168	169	124	116	119	141(7)
Remington PLUS NEA2 ⁵	tetraploid	Barenbrug USA										145	159		122	122	122	137(4)
Spring Green (FL)	MF x PR ⁶	Rose Agri-Seed					109	115	106				81	88				102(6)
TetraGain	tetraploid	Pure Seed							102						90			96(2)
TetraMag	tetraploid	Mountain View Seeds														89	51	70(2)
TetraSweet	tetraploid	Mountain View Seeds														89	87	88(2)
Victorian	diploid	Caudill Seed									114				109			112(2)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was grazed 4 years so the final report would be "2020 Cool-Season Grass Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

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

⁴Number of years of data

⁵Remington PLUS NEA2 contains a non-toxic (novel) endophyte.

⁶MF=meadow fescue, PR=perennial ryegrass, IR=Italian ryegrass.

Table 25. Summary of 2002-2022 Kentucky tall fescue horse grazing tolerance trials with three or more years of data in Lexington (stand persistence shown as a percent of the stand rating of the endophyte free variety KY 31-).

Variety	Endophyte Status ¹	Proprietor/KY Distributor	2002 ^{2,3}	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mean ⁴
			4-yr ⁵	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	3-yr
BarOptima PLUS E34 ⁶	novel	Barenbrug USA						107			101	101	95	104	99	99	101	100			101(9)
Cajun II	free	Smith Seed Services												96		101					99(2)
Cowgirl	free	Rose Agri-Seed							105				99								102(2)
Jesup MaxQ	novel	Pennington Seed	98			78			104	97	100	101	97	105	98	100	99	101	99	100	98(14)
KY31+	toxic	KY Agri. Exp.Sta.				102	109	120	107	101	101	101	99	105	99	100	101	100	99	119	104(15)
KY31-	free	KY Agri. Exp.Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(18)
Lacefield MaxQ II	novel	Pennington Seed					105	110		98				104							104(9)
Namryo	free	Japanese Grassland Forage Seed						72													—
Seine	free	Seed Research of Oregon			135																—
Select	free	Southern States	109	94	99	73	104	76	108	98	100	101	98	98	97	100					97(14)
SS0705TF5L	free	Southern States													98	100	100	101	99	119	103(6)
Stockman	free	Seed Research of Oregon			125																—
Texoma MaxQII	novel	Pennington Seed																		117	—

¹Free-varieties that do not contain a toxic endophyte. Novel-varieties that contain an endophyte that aids persistence but is not toxic to cattle.

²Year trial was established.

³Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was grazed 4 years so the final report would be "2020 Cool-Season Grass Horse Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

⁴Mean only presented when respective variety was included in two or more trials.

⁵Number of years of data

⁶BarOptima PLUS E34 is not recommended for pregnant mares because it produces low levels of the alkaloid ergovaline.

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Table 26. Summary of 1999-2022 Kentucky orchardgrass horse grazing tolerance trials with three or more years of data in Lexington (stand persistence shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	1999 ^{1,2}	2000	2001	2002	2005 ³	2006	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Mean ⁴	
		3-yr ⁵	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	3-yr	(#trials)
Albert	Univ. of Wisconsin			95																—
Ambrosia	Amer.Grass Seed Prod.						61													—
Benchmark	Southern States	104			85															95(2)
Benchmark Plus	Southern States				111	157	139	111	114	121	121	137	105							120(8)
Crown Royale	Grassland Oregon			95																—
Crown Royale Plus	Grassland Oregon				97															—
Elise	Pure Seed									87										—
Haymate	Southern States	96	85		97															93(3)
Persist	Smith Seed Services					114		103	101	92	112	146	95	123	109	116	138	104		113(11)
Potomac	Public															65				91(2)
Prairie	Turner Seed			100										92	95	112	91	107		100(6)
Prodigy	Caudill Seed										54						73	90		72(3)
Profit	Ampac Seed							93	86		92	108								95(4)
SS-07080GDT	Southern States								104					77	95	107	99			96(6)
Tekapo	Ampac Seed	101	115		93	30		92	100	83	87	63		108						94(9)

¹Year trial was established.

²Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in stand persistence between varieties. To find actual persistence ratings, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was grazed 4 years so the final report would be "2020 Cool-Season Grass Horse Grazing Tolerance Report" archived in the UK Forage website (<https://forages.ca.uky.edu>).

³Due to high variation during 2005 these values are not included in the overall mean

⁴Mean only presented when respective variety was included in two or more trials.

⁵Number of years of data

