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2023 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 stable performance; others may have performed 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 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

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cattle, and is used for both hay and pasture. The predominant variety, 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 (two to three 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 wildenowii*) 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 2023 reports on the forage website (https://forages.ca.uky.edu). See below for specific reports. Reports from 2001 to 2022 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.

- 2023 Alfalfa Report (PR-837)
- 2023 Red and White Clover Report (PR-836)
- 2023 Orchardgrass Report (PR-838)
- 2023 Tall Fescue and Bromegrass Report (PR-839)
- 2023 Timothy and Kentucky Bluegrass Report (PR-840)
- 2023 Annual and Perennial Ryegrass and Festulolium Report (PR-841)
- 2023 Alfalfa and Red and White Clover Grazing Tolerance Report (PR-842)
- 2023 Cool-Season Grass Grazing Tolerance Report (PR-843)
- 2023 Cool-Season Grass Horse Grazing Report (PR-844)
- 2023 Annual Grass Report: Warm Season and Cool Season (Cereals) (PR-845)
- 2023 Long-Term Summary of Kentucky Forage Variety Trials (PR-846)

For more information

The following comprehensive bulletins may be especially useful:

- Grain, Forage, and Cover 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)
- Frost Seeding Clover: A Recipe for Success (AGR-271)

About the Authors

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Table 1. Summary of Kentucky white clover yield trials 2002-2023 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington																		Princeton		Mean[3] (#trials)
			02[1,2]	03	04	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	03	05	
			3yr[4]	3yr	3-yr	2-yr	2-yr	3yr	2yr	3yr	3yr	2yr	3yr	3yr	2yr	3yr	3yr	2-yr	3-yr	3-yr	3yr	3-yr	
Advantage	Ladino	Allied Seed, L.L.C.		125																			–
Alice	Intermediate	Barenbrug USA												105	120	78	94	93	112	100		86	100(8)
Apis	–	Smith Seed Services																	96	99			98(2)
Avoca	Dutch	DLF Pickseed				59																82	71(2)
Barblanca	Intermediate	Barenbrug USA		92																			–
Bombus	Ladino	Hood River														111	115						113(2)
Brianna	Ladino	DLF Pickseed														103	100						102(2)
CA ladino	Ladino	Public	100		124																103		109(3)
Colt	Intermediate	Seed Research of OR		90		57																114	87(3)
Common	Dutch	Public	100				53			98												78	82(4)
Companion	Ladino	Oregro Seeds						87	94	92									90				89(4)
Crescendo	Ladino	Cal/West Seeds	105			140														100		109	114(4)
Crusader II	Intermediate	Allied Seed, L.L.C.								90	50	54	75										67(4)
Excel	Ladino	Allied Seed, L.L.C.			100																		–
Domino	Ladino	Grassland Oregon												87									–
Durana	Intermediate	Pennington		94		94	88	82	85	97	93	84	97	89	78	99	89	73	82	85	87	83	88(18)
Dusi	Ladino	Barenbrug USA																		106			–
GWC-AS10	Ladino	Ampac Seed									102												–
Insight	Ladino	Allied Seed, L.L.C.				128																	–
Ivory	Intermediate	Cebeco	96																				–
Ivory II	Intermediate	DLF Pickseed					86			101	127												105(3)
Jumbo	Ladino	Ampac Seed	93																				–
Jumbo II	Ladino	Ampac Seed									121	101			99								107(3)
Kakariki	Ladino	Luisetti Seeds															108						–
Kopu II	Intermediate	Ampac Seed	97			97	95	95	103	96	80	90											94(8)
KY Select	Intermediate	KY. Agric. Exp. Station									98	95											97(2)
Neches	Intermediate	Barenbrug USA													79				93	101			91(3)
Ocoee	Ladino	Allied Seed, L.L.C.								89	74												82(2)
Patriot	Intermediate	Pennington		103		87	104	113	95	117	117	99	82	78	88	100	93	92	88	99	104	100	98(18)
Pinnacle	Ladino	Allied Seed, L.L.C.				120																111	116(2)
Rampart	Ladino	Allied Seed, L.L.C.					80	89	97	83									90	90			88(6)
Regal	Ladino	Public	99	96	92		125	100	116	118	129	147	123								107	100	113(12)
RegalGraze	Ladino	Cal/West Seeds				127	140	102	103						111	119	112	120	120	108			116(10)
Renovation	Intermediate	Smith Seed Services												83	85	91			99				90(4)
Resolute	Intermediate	Southern States				63																	–
RIVENDEL	–	DLF Pickseed														59	88						74(2)
Seminole	Ladino	Saddle Butte Ag. Inc			108	70	79							114									93(4)
Super Haifa	Intermediate	Allied Seed, L.L.C.			77																		–
Tillman II	Ladino	Caudill Seed	103																				–
WBDX	Dutch	Saddle Butte Ag. Inc									72												–
Will	Ladino	Allied Seed, L.L.C.	107			162	150	132	107	119	137	130	123	143	140	140	102	122	122	111		136	128(17)

[1] Year trial was established.

[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the spring of 2010 was harvested three years, so the final report would be "2012 Red and White Clover Report" archived in the UK Forage website (https://forages.ca.uky.edu).

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

[4] Number of years of data.

Table 2. Summary of Kentucky red clover yield trials 2004-2023 (yield shown as a percentage of the mean of the named commercial varieties in the trial).

Variety	Proprietor	Lexington																Princeton							Quicksand				EdenShale		Mean[3] (#trials)
		04[1,2]	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	
		3yr[4]	2yr	3yr	2yr	3yr	3yr	2yr	3yr	3yr	3yr	3yr	2-yr	3-yr	3-yr	3-yr		2yr	3yr	2yr	2yr	3yr	3yr	2-yr	3yr	3yr	3yr	2-yr	3yr	3yr	
AA117ER	ABI Alfalfa		110															87							92						96(3)
Barduro	Barenbrug USA														86	82								73				83			81(4)
Bearcat	Brett Young Seeds											122																			–
Bigfoot	Preferred Alf. Genetics														97									107							101(2)
Blaze	Mountain View Seeds														107	108															108(2)
Cinnamon Plus	Southern States		109	112	123	117	94	116	101	98								112	102	102	100	100			103	108	124		108	122	108(18)
Common O	Public					96	97	63	84	92	70	49	80	67	77	79						67	91	70			72	85		77	77(17)
CW9901	Barenbrug USA														103									115				109			109(3)
Dominion	Seed Research of OR		102															95	102						93				109		100(5)
Emarwan	Turf-Seed	91			117															106							99				103(4)
Evolve	DLF Pickseed USA										98	96	102										99									99(4)
FF9615	LaCrosse Seed											110	104																			107(2)
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		112								117	126			101		108				82	111		128	115		125	112(13)
FSG 402	Allied Seed								104													114									108(2)
FSG 9601	Allied Seed	89																														–
Gallant	Turner Seed								101		112		105	101	97	111						107	101	121							106(9)
GA9908	Smith Seed												93		93	107								92				85			94(5)
Juliet	Caudill Seed				84														93	90									84	59	82(5)
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					82						41							74								67		66	92	70(6)
Kenton	KY Ag.Exp Sta.	95	112	121														105	112	94					106	98					105(8)
Kenway	KY Ag.Exp Sta.	97	119	118														94	106	103					103	94					104(8)
LS 9703	Lewis Seed							107														86									97(2)
Morning Star	Cal/West Seeds																		90										90		90(2)
Plus II	Allied Seed			130																						97					114(2)
Quinequeli	Caudill Seed				92															80										57	76(3)
Red Gold	Proseeds Marketing		81																89										102		91(3)
Red Gold Plus	Turner Seed	95																														–
Redkin	DLF Pickseed USA															94																–
Redland Max	ABI Alfalfa	95																														–
Renegade	DLF Pickseed USA															100																–
Robust	Blu Moon Farms												78																			–
Robust II	Seed Research of OR																		110										108		109(2)
Robust III	Seed Research of OR															100																–
Rocket	Seed Research of OR																		106										108		107(2)
Rustler	Oregro Seeds			83		101	84									81										94	99			104	92(7)
Solid	Production Service		79															86							76						80(3)
SS-0303RCG	Southern States									103	109	150	117	102	93	114						103	104	104				80			107(11)
Starfire II	Cal/West & Ampac			101		111				107									112							110	112		115	111	110(8)
Triple Trust 350	ABI Alfalfa		101															92							92						95(3)
Wildcat	Brett Young Seeds				101															107							98				102(3)

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

Table 3. Summary of Kentucky alfalfa yield trials 2006-2023 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	Variety Characteristics[1]							06[3,4]	08	11	12	15	16	17	18	19	00	01	Princeton					Mean[5] (# trials)
		FD	Disease Resistance[2]																	05	08	09	11	13	
			Bw	Fw	An	PRR	APH1	APH2	7yr[6]	6yr	6yr	6yr	5yr	6yr	6yr	5yr	5yr	4yr	3yr	5yr	5yr	6yr	4yr	3yr	
A-4440	Producers Choice	4	HR	HR	HR	HR	HR	HR		100										99					100(2)
A 5225	Producers Choice	5	HR	HR	HR	HR	R	R		104											107				106(2)
Adrenalin	Brett Young Seeds	4	HR	HR	HR	HR	HR	–														104			–
Alfabar	Barenbrug USA	3	HR	HR	HR	HR	HR/R	–										108							–
Alfagraze	America's Alfalfa	3	HR	HR	HR	HR	HR	–									78	89	97						88(3)
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR	R	99	91	102	94									100	101	107	99	99(8)
Ameristand 403T Plus	America's Alfalfa	4	HR	HR	HR	HR	HR	R					104	102	107	112	106	99	101			94			103(8)
Ameristand 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	R														103	104		104(2)
Ameristand 427TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	HR					109												–
Anchormate	ProSeed Marketing	–	–	–	–	–	–	–		100															–
Arc (certified)	Public	4	LR	MR	HR	–	–	–			93	92								95	86			95	92(5)
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR	–														106			–
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR	–												104					–
Buffalo	Public	–	–	–	–	–	–	–	86	80	89		85							95	78	87		91	86(8)
Bulldog-505	Univ. of GA	5	–	HR	–	R	–	–				103		93	91							96		103	97(5)
Caliber	Beck's Hybrids	4	HR	HR	HR	HR	HR	–				99	105	99	105								99		101(5)
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR	–									103						106		104(2)
Contender	Beck's Hybrids	5	HR	HR	HR	HR	HR	–					101	103	101										101(3)
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR	–		102															–
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR	–		110															–
DG4210	Crop Production	4	HR	HR	HR	HR	HR	–															101	103	102(2)
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R	–												101					–
Evermore	Southern States	5	HR	HR	HR	HR	HR	–				100		102	107										103(3)
Expedition	NEXGROW	5	HR	HR	R	RR	R	–	112											96					104(2)
Fierce	Beck's Hybrids	4	HR	HR	HR	HR	HR	–					102		107										104(2)
FSG 403LR	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	–																102	–
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R	–													110				–
FSG 415BR	Allied Seeds	4	HR	HR	HR	HR	HR	–						103			109	108							107(3)
FSG 424	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	–																109	–
FSG 426	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	HR					103												–
FSG 450	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	HR											102						–
FSG 524	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	–																96	–
FSG 527	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	–										98							–
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R	–		107															–
GA-409	Pref. Alf. Genetics	4	HR	HR	HR	HR	HR	–										101							–
GA-497HD	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	–						104			109	104	99						104(4)
GA-535	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	–									108	103							109(2)
Genoa	NEXGROW	4	HR	HR	HR	HR	HR	–		99										98	118				105(3)
Gunner	Croplan Genetics	5	HR	HR	HR	HR	HR	–															103		–
HighFive	Allied Seeds	5	HR	HR	HR	HR	HR	HR											111						–
HVS4220Q	Mountain View Seeds	4	HR	HR	HR	HR	HR	–										106							–
KingFisher 243	Cal/West	5	HR	HR	HR	HR	HR	–														98			–
Kingfisher 4020	Byron Seeds	4	HR	HR	HR	HR	HR	–			101														–
L447HD	Legacy Seeds	4	HR	HR	HR	HR	HR	–	105																–
L449Aph2	Legacy Seeds	4	HR	HR	HR	HR	HR	HR															97		–
L455HD	Legacy Seeds	4	HR	HR	HR	HR	HR	–																102	–
Lancer	Allied Seeds	4	HR	HR	HR	HR	HR	–															101		–
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR	–	99											103					101(2)
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR	R													99				–

(continued on the next page)

Table 3. Summary of Kentucky alfalfa yield trials 2006-2023 (continued)

Variety	Proprietor	Variety Characteristics[1]							06[3,4]	08	11	12	15	16	17	18	19	00	01	Princeton					Mean[5] (# trials)
		FD	Disease Resistance[2]																	05	08	09	11	13	
			Bw	Fw	An	PRR	APH1	APH2	7yr[6]	6yr	6yr	6yr	5yr	6yr	6yr	5yr	5yr	4yr	3yr	5yr	5yr	6yr	4yr	3yr	
Mariner V	Allied Seeds	4	HR	HR	HR	HR	HR	HR											98						–
Optimus	Brett Young Seeds	–	HR	HR	HR	HR	HR	–																98	–
Paola	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR									99	97							99(2)
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR	–	106																–
PGI 459	Producers Choice	4	HR	HR	HR	HR	R	R		102															–
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R	–												105					–
Phoenix	Southern States	5	HR	HR	HR	HR	R	–	99	102		105									101		94		100(5)
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR	–				101										105	103		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			103(2)
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR	HR			104												101		103(2)
Rebound 6XT	Croplan Genetics	4	HR	HR	HR	HR	HR	HR						107			115								111(2)
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R	–												103					–
Saranac AR (certified)	Public	4	MR	R	HR	LR	–	–	85	86	91	97	92	88	83	88	90	94	86	95	88	92	82	97	90(16)
Signature	Allied Seeds	4	HR	HR	HR	HR	HR	HR											99						
Triade	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR									85	93							93(2)
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR	–												100					–
TripleTrust 500	Central Farm Supply	5	HR	HR	HR	HR	HR	–			108														–
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	–	–													113				–
Vernal	Public	2	R	MR	–	–	–	–												95					–
Withstand	Southern States	4	HR	HR	HR	HR	HR	HR	100	90		96									100		87		95(5)
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR	–	101	110											100				104(3)
WL 349HQ	W-L Research	4	HR	HR	HR	HR	HR	HR									106								–
WL 354HQ	W-L Research	4	HR	HR	HR	HR	HR	HR															115		–
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR	–												106					–
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR	–		105	103											105			104(3)
WL 365HQ	W-L Research	5	HR	HR	HR	HR	HR	–						99											–
4030	Brett Young Seeds	4	HR	HR	HR	HR	HR	R				104													–
53H92	Pioneer	3	HR	HR	HR	HR	HR	R			95														–
54Q16	Pioneer	4	HR	HR	HR	HR	HR	HR											99						–
54Q29	Pioneer	4	HR	HR	HR	HR	R	R											104						–
54Q32	Pioneer	4	HR	HR	HR	HR	HR	–			99														–
54VQ52	Pioneer	4	HR	R	HR	HR	HR	HR											109						–
55H96	Pioneer	5	HR	HR	HR	HR	HR	HR											95						–
55V48	Pioneer	5	HR	HR	HR	HR	HR	R			102														–
55V50	Pioneer	5	HR	R	Hr	HR	HR	HR				110					94							105	104(3)
6415	NEXGROW	4	HR	HR	HR	HR	HR	–												103					–
6417	NEXGROW	4	HR	HR	HR	HR	HR	HR		105															–
6422Q	NEXGROW	4	HR	HR	HR	HR	HR	–			112											102			107(2)
6552	NEXGROW	5	HR	HR	HR	HR	HR	–		105															–

[1] Variety 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.
[2] Disease 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_Leafllet.pdf)
[3] Year trial was established.
[4] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Lexington trial planted in the spring of 2008 was harvested for six years, so the final yield report would be "2013 Alfalfa Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

Table 4. Summary of Kentucky Roundup Ready alfalfa yield trials 2011-2023 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	Variety Characteristics[1]							Lexington					Princeton			Quicksand	Mean[5] (# trials)
		Disease Resistance[2]							12[3,4]	15	16	20	21	11	13	15	14	
		FD	Bw	Fw	An	PRR	APH1	APH2	6yr[6]	6yr	5-yr	4-yr	3yr	5yr	4yr	2yr	2yr	
Alfagraze 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	–	95	96	100	99	91	93	99	93		96(8)
Alfagraze 600 RR	America's Alfalfa	6		R	HR	R	R	–		97						85	93	92(3)
Ameristand 405T RR	America's Alfalfa	4	HR	HR	HR	HR	HR	MR	100	100	89	102	100	97	100	98	93	98(9)
Ameristand 433T RR	America's Alfalfa	3	HR	R	R	HR	HR	–	92	98	100	94	103		95	96	107	98(8)
Ameristand 445TQ RR	America's Alfalfa	4	HR	HR	HR	HR	HR	–	105	104					100			103(3)
AphaTron RR	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	99						98			99(2)
Consistency 4.10 RR	Croplan Genetics	4	HR	HR	HR	HR	HR	–	101					102				102(2)
DKA-41-18 RR	Monsanto	4	HR	HR	HR	HR	HR	–	100					101		100		100(3)
DKA 44-16 RR	Monsanto	4	HR	HR	HR	HR	HR	–	104						100			102(2)
Stratica RR	Croplan Genetics	4	HR	HR	HR	HR	HR	–	97		105				96			99(3)
Tonnica RR	Crop Genetics	5	HR	HR	HR	HR	HR	–	105						101			103(2)
WL 355 RR	W-L Research	4	HR	HR	HR	HR	HR	–	99					102		110		104(3)
WL 356HQ RR	W-L Research	5	HR	HR	HR	HR	HR	HR	100	99					96			98(3)
WL 372HQ RR	W-L Research	5	HR	HR	HR	HR	HR	–	102						106			104(2)
428 RR	Allied Seed	4	HR	HR	HR	HR	HR	–		100	100				104		111	104(4)
438 RR	Allied Seed	4	HR	HR	HR	HR	HR	–				110	95					103(2)
54R02 RR	Pioneer	4	HR	HR	HR	HR	HR	–	97	107	96			104		102	97	101(6)
54VR10 RR	Pioneer	4	HR	HR	R	HR	HR						111					–
55VR06 RR	Pioneer	5	HR	R	HR	HR	HR	MR		95							99	97(2)
55VR08 RR	Pioneer	5	–	HR	HR	HR	HR	HR		103	111					110		108(3)
6516R RR	NEXGROW	5	HR	–	HR	HR	HR	–	106						109			108(2)

[1] Variety 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.
[2] Disease 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_Alfalfa_Variety_Leaflet.pdf)
[3] Year trial was established.
[4] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Princeton trial planted in the spring of 2011 was harvested for five years, so the final yield report would be "2015 Alfalfa Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

Table 5. Summary of Kentucky orchardgrass yield trials 2005-2023 (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]	07	09	11	12	13	14	15	16	17	18	19	20	21	06	08	10	12	15	21	05	10	13	16	18	
		4-yr[4]	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	4-yr	3-yr	3-yr	3-yr	2-yr	
Albert	Oregro Seeds									99		106	100												98		101(4)
Aldebaran	DLF Pickseed										99																–
Alpine II	Mountain View Seeds									106				98	105						92						100(4)
Ambrosia	American Grass Seed Prod.															90											–
Barlegro	Barenbrug USA											95			84						93					94	92(4)
Benchmark Plus	Southern States	100	108	105	106	97	109	104								107	104	102	107			102	94	102			103(14)
Berta	Mountain View Seeds										76																–
Bighorn	Mountain View Seeds													124	94						114						111(3)
Blizzard	Allied Seed												104														–
Bounty	Allied Seed	101																				98					100(2)
Captur	DLF Pickseed													81	97						93						90(3)
Century	Seed Research of Oregon	98																				104					101(2)
Checkmate	Seed Research of Oregon		102			117													106								108(3)
Christoss	Proseeds Marketing		92																								–
Crown	Donley Seed			97													105										101(2)
Devour	Mountain View Seeds									98				88													92(2)
Echelon	DLF Pickseed									99			101												113		104(3)
Elise	Rose-AgriSeed					86											98		98								94(3)
Endurance	DLF Pickseed									102						104									82		96(3)
Extend	Allied Seed				107													105						108				107(3)
Harvestar	Columbia Seeds	91	97				94							116		106						100		102			101(7)
Haymaster	Southern States	94			102																	97					98(3)
HLR	Barenbrug USA												82	89													86(2)
Icon	Seed Research of Oregon	105																				98					102(2)
Inavale	DLF Pickseed								99	94										97					106		99(4)
Intensiv	Barenbrug USA											99		91	97						90					93	94(5)
Lazuly	Proseeds Marketing																97										–
Lyra	Hood River Seed								90		77									97							88(3)
Megabite	Turf-Seed																106										–
Olathe	DLF Pickseed								111	104				101						112					89		103(5)
Paiute	DLF Pickseed		108																								–
Persist	Smith Seed	105	106	107	112	106	100	103	111	98	111	103	105	98	104			105	102	101	111	101	102	103	107	126	106(23)
Persist II	Smith Seed												111	111	104						109						109(4)
Potomac	Public			103	96	97	103	116	100	94	104	98			98		108	101	98	102	96		94	111	99		101(18)
Prairie	Turner Seed	107	101	109	106	113	123	108	103	111	111	105	98	109	103	100	104	99	104	96	97	107	120	102	105	107	102(25)
Prodigy	Caudill Seed			101		99	97			97			93	111	107		103		101		107			95			101(11)
Profit	Ampac Seed		107	96	98	103	96	97	89				97	96	111		103	102	102	96	89		115	96			100(17)
Quickdraw	Grassland Oregon												113														–
RAD-LCF 25	Radix Research																	99					102				101(2)
Rushmore II	Mountain View seeds									98	111														102		104(3)
Shawnee	Rose-AgriSeed																86										–
SS0708OGDT	Southern States							91	105	101	111	109	100	103	96					100	108				99	100	102(12)
Swante	Smith Seed											88		82												79	83(3)
Tekena II	Smith Seed	102																				104					103(2)
Tekapo	Ampac Seed	91	81	82	78	82	76	80					95			98	86	92	82			91	81	89			86(15)
Treposno	Hood River Seed								92		99									99							97(3)
Tucker	Oregro Seeds				96							95		103		96	102	96					85			100	97(8)
Udder	Improved Forages	107																				99					103(2)
Vailliant	Proseeds Marketing		96																								–

[1] Year trial was established.

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

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

[4] Number of years of data.

Table 6. Summary of Kentucky tall fescue yield trials 2005-2023 (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[2,3]	07	09	11	12	13	14	15	16	17	18	19	20	21	06	08	10	12	15	17	19	21	05	13	16	18	21	
			3-yr[5]	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	3-yr	3-yr	3-yr	3-yr	2-yr	3-yr	3-yr	2-yr	4-yr	3-yr	3-yr	3-yr	2-yr	
Atlas Select	free	ProSeeds Marketing																95												–
Aprilia	free	ProSeeds Marketing																93												–
Armory	free	Barenbrug USA												98	99								98	99						99(4)
Baguala	free	Allied Seed								92											96									94(2)
BarElite	free	Barenbrug USA		96		100													92											96(3)
BARFASTF-43	free	Barenbrug USA												99									85							92(2)
Bariane	free	Barenbrug USA	99																						95					97(2)
Barolex	free	Barenbrug USA	90																											–
BarOptima PLUS E34	novel	Barenbrug USA	122	99		107	108	102	99	113	99	90	95	102	101	97			99	100	96	105	102	96		93	118	85	83	101(23)
Bronson	free	Ampac Seed	88	97	105	102	99	99			100			110					101	91	103				102					100(12)
Brutus	free	Saddle Butte Ag. Inc.							90																					–
Bull	free	Improved Forages	102				100						100							99						95				99(5)
Cajun II	free	Smith Seed Services				97		105	99	99	98	107	109	99	104	96			101		104	91	111			90	96	104	119	102(18)
Cowgirl	free	Rose-AgriSeeds					94											102	100	98										99(4)
DLFPS-FTF 100 Protek	novel	DLF Pickseed												98									80							89(2)
Dominate	free	Allied Seed								90						101					99			103						98(4)
Drover	free	Barenbrug USA							105	120																				113(2)
DuraMax GOLD	novel	DLF Pickseed				102											106													104(2)
Enhance	free	Allied Seed				93																								–
Estancia ArkShield	novel	Mountain View Seeds					106				96		105	99	100	100				102			102	100			103		90	100(11)
Fillmore(FTF70)	free	DLF Pickseed													103															–
Flourish	free	Allied Seed					92													101										97(2)
FSG 402TF	free	Farm Science Genetics								92											103									98(2)
Goliath	free	Ampac Seed			100			104											99											101(3)
Greendale	free	DLF Pickseed												105		101							113	101						105(4)
Greendale Protek	novel	DLF Pickseed												106	97								116							107(3)
HyMark	free	Fraser Seeds				91				104								102			103									100(4)
Jesup EF	free	Pennington Seed				98	105												103	100										102(4)
Jesup MaxQ	novel	Pennington Seed	98	101	110	103	100	93	106	102	111	104	101		111			95	100	98	98	103			102	100	116	105		103(21)
Jesup MaxQII	novel	Pennington Seed												103		92													102	99(3)
Kentucky 32	free	Oregro Seeds				93	94		101				83	101				98	94	101										96(8)
Kokanee	free	Smith Seed Services												81																–
Kora Protek	novel	DLF Pickseed									101																86			94(2)
KY31+	toxic	KY Agric Exp Sta.	108	102	102	93	95	103	100	99	103	101	107	71	93	103	104	93	112	101	92	105	105	94	110	110	110	107	112	101(27)
Lacefield MaxQ II	novel	Pennington Seed		109				97	104	93	92	94	106	112	100	100	101	106			105	100		95		113	102	95	107	102(19)
Martin2 Protek	novel	DLF Pickseed				104					96			105	97								99				106			101(6)
Nanryo	free	Jap. Grassland ForageSeed/		96																										–
Noria	free	ProSeeds Marketing		98																										–
Palatine	free	Mountain View Seeds													101														88	95(2)
Payload	free	Brett Young									89																111			100(2)
RAD-ERF50	free	Radix Research, Inc.																113												–
Ranchero	free	Smith Seed Services										92		101	107	95						96	107						103	100(7)
Savory	free	DLF Pickseed															91													–
Select	free	Southern States	99	99	98	90	100	97	103	97	102						102	105	99	100	99				91	99	86			98(17)
SS-0705TFSL	free	Southern States							99	99	106	111	94	110	103	107					103	101		104			101	104	100	103(14)
STF43	free	Barenbrug USA													91															–
Stockman	free	Seed Research of OR															97													–
Teton II	free	Mountain View Seeds				107	105		96		103									99							91			100(6)
Texoma MaxQ II	novel	Pennington Seed	95											111	107	107													94	105(4)
TF0203G	free	Seed Research of OR		87																										–
Tower	free	DLF Pickseed									101			105									96				91			98(4)
Tower Protek	novel	DLF Pickseed				98					104			102	90								92				81			94(5)
Triumphant	free	DLF Pickseed												95		101							95	108						100(4)
Triumphant Protek	novel	DLF Pickseed												96	96								97							97(3)
Tuscany II	free	Seed Research of OR					97										98			106										–
Velvet	free	Oregro Seeds												91																–
5CAN	free	Brett Young			86																									–

[1] Free-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.
[2] Year trial was established.
[3] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was harvested three years, so the final report would be "2019 Tall Fescue Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[4] Mean only presented when respective variety was included in two or more trials.
[5] Number of years of data.

Table 7. Summary of Kentucky bromegrass yield trials at Lexington 2006-2023 (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	2015	2016	2017	2018	2019	2020	2021	Mean[3] (#trials)
			4-yr[4]	3-yr	3-yr	3-yr	3-yr	3-yr	4-yr	3-yr	3-yr	3-yr	3-yr	2-yr	
AC Knowles	hybrid	Agriculture Canada	85		82	102	89								89(4)
Admiral	meadow	Cisco Seeds							107	106	100	100	102	101	103(6)
Arid	smooth	Mountain View Seeds							94	93					94(2)
Arsenal	meadow	Barenbrug USA									106	106	104	112	107(4)
Artillery	smooth	Barenbrug USA									100	99	89	94	96(4)
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	107	103	123	100	95	105	105	111(11)
Olga	smooth	Barenbrug USA		116	101										109(2()
Peak	smooth	Allied Seed		97		100		93	95	88	103		99	88	97(8)
Persister	prairie	DLF Pickseed		72											–
RAD-BI29	smooth	Columbia Seeds	96	86											91(2)
Stratus	meadow	Allied Seed												100	–

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2016 was harvested three years, so the final report would be "2019 Tall Fescue and Brome Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.

Table 8. Summary of Kentucky Timothy Yield Trials 2000-2023 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	01[1,2]	02	06	07	08	09	11	12	13	14	15	16	17	19	20	21	Princeton 00	Princeton 04	Mean[3] (#trials)
		3yr[4]	4yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	
Alma	Newfield Seeds Co/Caudill Seed Co.																		81	–
Anjo	Hood River Seed												81							–
Barfleo	Barenbrug USA						95	91	101		108	80	97	94	92	98				95(9)
Baronaise	Barenbrug USA															83				–
Barpenta	Barenbrug USA				74			82	82					94	92	90				86(6)
Carson	Mountain View Seeds													113	106	105	105			107(4)
Clair	Ky Agric. Exp. Station	104	113	107	95	107	104	112	99	97	111	107	88	88	85	96	109		122	103(17)
Classic	Cebeco International Seeds		86																	–
Climax	Canada Agr. Res. Station			79	102	104	98	102	100	82	96	90	102	92	98	94	83			94(14)
Colt	FS Growmark		100	90															99	96(3)
Common	Public	95																		–
Comtral	Caudill Seed								92	92										92(2)
Conquest	Allied Seed, L.L.C.																104			–
Dawn	Hood River Seed													103	107	110				107(3)
Derby	Southern States			112	111		106	112	108	112	119	123	112		112	104			124	113(12)
Dolina	DLF Pickseed		90																	–
Express	Seed Research of Oregon		95		91		97	95												95(4)
Express II	Allied Seed, L.L.C.																90			–
Hokusei	Snow Brand Seed																			–
Joliette	Newfield Seeds Co/Caudill Seed Co.					86	89												90	88(3)
Jonaton	Newfield Seeds Co/Caudill Seed Co.																		84	–
KY Early	Smith Seed/Central Farm Supply	103	115			102				119				115	99	106	99			107(8)
Outlaw	Grassland West Company																	107		–
Summergraze	Brett Young									96										–
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)
Tuukka	Ampac Seed Company	94	88															93		92(3)
Valor	DLF Pickseed																102			–
Varis	Mountain View Seeds										83									–
Zenyatta	DLF Pickseed									103			119		109	114	109			111(5)

[1] Year trial was established.

[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 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).

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

[4] Number of years of data.

Table 9. Summary of Kentucky Bluegrass Yield Trials at Lexington 2004-2023 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	04[1,2]	06	07	08	09	10	11	12	13	14	16	17	18	19	20	21	Mean[3] (#trials)
		3yr[4]	4yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	3yr	2yr	3yr	3yr	2yr	
Adam 1	Radix Research	98																–
Balin	Pure Seed												91	80				86(2)
Barderby	Barenbrug USA			94		101	91	98	87	103	101	103	128	120	109	125		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	108	126	110(15)
Isabel	Smith Seed Services															64	68	66(2)
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	102	106	100(9)
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)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2017 was harvested three years, so the final report would be "2020 Timothy and Kentucky Bluegrass Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.

Table 10. Summary of Kentucky annual ryegrass yield trials 2003-2023 (yield shown as a percentage of the yield value of Marshall).

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	22	
Abundant	tetraploid	Ampac Seed				12																		–
Acrobat	NA[5]	Proseeds Marketing						144																–
AE110	Westerwold tetraploid	Pickseed USA, Inc.										89	100											95(2)
Amp	Westerwold tetraploid	Columbia Seeds													75							91		83(2)
Assist	Westerwold diploid	SaddleButte													88									–
Attain	Westerwold tetraploid	Smith Seed Services								111					52	69					92			91(3)
Baqeuano	Westerwold tetraploid	Smith Seed Services																		77				–
Barmultra II	Italian tetraploid	Barenbrug USA								133				103	95		125	108						117(4)
Bendix	Westerwold tetraploid	Smith Seed Services																				91	90	91(2)
Big Bang	Westerwold tetraploid	Brett Young														67								–
Big Boss	Westerwold tetraploid	Smith Seed Services								98				86	38	73								86(3)
Big Daddy	Westerwold tetraploid	FFR/Sou. St.								86	98	82												89(3)
Bill	Westerwold diploid	Smith Seed Services														62								–
Brangus	Italian tetraploid	KB SeedSolutions								94														–
Bruiser	Westerwold diploid	Ampac Seed						65	105	100		104	86		100	105	95	86	113		96	84	91	94(12)
Centurion	Westerwold diploid	Mountain View Seeds											97			132		100	117			96	94	106(6)
Claro	Westerwold tetraploid	Smith Seed Services																				86	103	95(2)
Dexter	Westerwold tetraploid	Smith Seed Services																				89		–
DH-3	Italian tetraploid	Allied Seed					91	27				89												69(3)
Diamond T	Italian tetraploid	Oregro Seeds				8																		–
Dixie Gold	Westerwold tetraploid	Caudill Seed													19									–
DoubleDiamond	Westerwold tetraploid	Oregro Seeds																		84				–
Dyna-Gain	Westerwold diploid	Columbia Seeds													71									–
DynaPlus	Westerwold diploid	Columbia Seeds																				84		–
Ed	Westerwold diploid	Smith Seed Services								96					101	100								98(2)
Fantastic	Westerwold diploid	Ampac Seed				48	84																	86(3)
Feast II	Italian tetraploid	Ampac Seed						35	113	109		81	93	71	47	56	88	80	87	65	86	67	86	80(14)
Flying A	Westerwold diploid	Oregro Seeds				39		59																–
Fox	Italian diploid	DLF Pickseed								109														–
Fria	Westerwold diploid	Allied Seed								95		87	89		104	81	85	98						89(6)
Frostproof	Westerwold diploid	Smith Seed Services																96			93	80	90	90(4)
GR-AS10	Italian	Ampac Seed								113														–
Graze-N-Gro	Westerwold diploid	Seed Research of OR	114				67																	91(2)
Green Farm	Westerwold diploid	Smith Seed Services														85								–
Green Farm 2	Westerwold diploid	Smith Seed Services																				86	94	90(2)
Gulf	Westerwold diploid	Public					67	26	87	78		76	72		27	69	60	87	87	56	80	66	79	71(14)
Hellen	Westerwold tetraploid	Smith Seed Services																			95	83	93	90(3)
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	91	93(18)
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	107	98(2)
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	100	100(19)
Master	Westerwold tetraploid	Smith Seed Services																		82				–
Maximo	Intermediate tetraploid	Pickseed USA, Inc.										101												–

(continued on the next page)

Table 10. Summary of Kentucky annual ryegrass yield trials 2003-2023 (continued)

Variety	Type	Proprietor	Lexington[1]																				Mean4 (#trials)
			03[2,3]	04	05	06	07	08	09	10	10	11	12	12	13	14	15	16	17	18	19	21	22	
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	115	94(10)
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)
TetraPrime II	Italian tetraploid	Mountain View Seeds																					98	–
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	100	103(9)

[1] In 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.
[2] Year trial was established.
[3] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2015 was harvested one 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).
[4] Mean only presented when respective variety was included in two or more trials.
[5] Type was not provided by the company.

Table 11. Summary of Kentucky perennial ryegrass yield trials 2001-2023 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington																				Mean[3,4] (#trials)
			01[1,2]	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	
			2yr[5]	2yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	2yr	3yr	3yr	3yr	3yr	3yr	2yr	
Aires	diploid	Ampac Seed	95																				–
Albion	tetraploid	Grasslands Oregon													105	103							104(2)
Amazon	tetraploid	AgriBioTech			99																		–
Aubisque	tetraploid	Seed Research of OR		144																			–
Barvitra	diploid	Barenbrug USA														104				109			107(2)
Bastion C-2	tetraploid	Seed Research of OR			91																		–
Best for Plus	hybrid tetraploid	Improved Forages		116	108	118																	114(3)
BG-34	diploid	Barenbrug USA				83	85				86		87	84	85	81		83					84(8)
Boost	tetraploid	Allied Seed						130	125	120	143	110	103	102						108	112		117(9)
Calibra	tetraploid	DLF Pickseed							96	109	81	99	103	96	87	100	98	98	89	95			96(12)
Crave	tetraploid	Ampac Seed											95										–
Dexter 1	tetraploid	DLF Pickseed																				97	–
Elena DS	tetraploid	Allied Seed											110				110				110		110(3)
Eurostar	tetraploid	Seed Research of OR						112															–
Everlast	diploid	Caudill Seed												104									–
Feeder	diploid	Seed Research of OR						76															–
Grand Daddy	tetraploid	Smith Seed	118				101	109		76	92	84	86		107								97(8)
Green Gold	tetraploid	Grasslands Oregon					96																–
Herbal	NA[7]	ProSeeds Marketing							77														–
Impressario	tetraploid	DLF Pickseed								107			92										100(2)
Kentaur	tetraploid	DLF Pickseed										106		117									112(2)
Lactal	tetraploid	Brett Young								102													–
Lasso	diploid	DLF Pickseed	98																				–
LHT-102	tetraploid	Ampac Seed											114										–
Linn (certified)	diploid	Public	98	98	102		98	85	84	101	92	93	80	95	83	89	83	74	98	105	102	89	92(19)
Matrix	diploid	Cropmark seeds		77																			–
Maverick Gold	hybrid tetraploid	Ampac Seed	97																				–
Melpetra	tetraploid	Hood River Seed															83						–
Orantas	diploid	DLF Pickseed								82													–
Ortet	tetraploid	Oregro Seeds							114														–
PayDay	tetraploid	Mountain View Seeds											101	103	99		87	108	95	93	89	91	96(9)
Polly Plus	hybrid tetraploid	Allied Seed		64																			–
Power	tetraploid	Ampac Seed						110	103	102	100	109	104	95	101	107				100	86	91	101(12)
Polim	tetraploid	DLF Pickseed									106												–
Quartermaster	tetraploid	Radix Research				122																	–
Quartet	tetraploid	Ampac Seed	97			56		46															66(3)
RAD-CPS212	hybrid tetraploid	Radix Research				134																	–
RAD-MI125	hybrid tetraploid	Mountain View Seeds					120																–
Remington	tetraploid	Barenbrug USA													95	117	109	108	105	85	102	118	105(8)
Remington PLUS NEA2[6]	tetraploid	Barenbrug USA													119	99			105	91	89	105	101(6)
Sierra	diploid	Lewis Seed Co.				89																	–
TetraGain SLT	tetraploid	Pure Seed											111									112	–
TetraMag	tetraploid	Mountain View Seeds											110		136		127	124	121	116	130	100	121(8)
TetraSweet	tetraploid	Mountain View Seeds															104	105	87	97	80	97	95(6)
Tonga	tetraploid	Kings AgriSeeds				96				103													100(2)

(continued on the next page)

Table 11. Summary of Kentucky perennial ryegrass yield trials 2001-2023 (continued)

Variety	Type	Proprietor	Lexington																				Mean[3,4] (#trials)
			01[1,2]	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	
			2yr[5]	2yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	2yr	3yr	3yr	3yr	3yr	3yr	2yr	
Verseka	tetraploid	Allied Seed											75										–
Victorian	diploid	Caudill Seed												104	83								94(2)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2012 was harvested three 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).
[3] Mean only presented when respective variety was included in two or more trials.
[4] In perennial ryegrass, low yielding varieties usually result from winterkill or summer mortality.
[5] Number of years of data.
[6] Remington PLUS NEA2 contains a non-toxic (novel) endophyte.
[7] Type was not provided by the company.

Table 12. Summary of Kentucky festulolium yield trials 2001-2023 (yield shown as a percentage of the mean of the commercial varieties in the trial).[1]

Variety	Type[2]	Proprietor	Lexington															
			2001[3,4]	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2019	2020	2021	Mean[5]
			2yr[6]	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	3yr	3yr	3yr	3yr	2yr	(#trials)
Agula	MF x IR	Allied Seed					94											–
Barfest	MF x PR	Barenbrug USA					105	101	107	119	91	92	92					101(7)
Bonus	MF x IR	Allied Seed					93	46	32	34								51(4)
Duo	MF x PR	Ampac Seed		89	98	99	95	106	103	96	96	83	83	80	98	97	87	94(14)
Felina	(TF x IR) x TF	DLF Pickseed	104				132	118	134	114	96							116(6)
Fojtan	(TF x IR) x TF	DLF Pickseed					112	101	124	92	72	94	100	108	86			99(9)
Gain	MF x IR	Allied Seed					103	77	52	75								77(4)
Hostyn	MF xIR	DLF Pickseed							107	110	106		108					108(4)
Hykor	(TF x IR) x TF	DLF Pickseed					133	141	153	131	119	121	112		94	109		124(9)
InaMerlin	MF x IR	Hood River Seed											88	77				83(2)
Kenfest	MFx AR	KY Agr. Exp Station												97				–
Lenor	ryegrass type	Columbia Seeds															101	–
Lofa	(TF x Int) x Int	DLF Pickseed					105	107	110	128	112	91	109	108	104	100	110	108(11)
Mahulena	(TF x IR) x TF	DLF Pickseed							131	109	107		111	114		106	103	112(7)
Meadow Green	NA[7]	Pure Seed							37	34								36(2)
Perseus	MF x IR	DLF Pickseed					132	114	126	123	110	109	105	112	113	105	115	115(11)
Perun	MF x IR	DLF Pickseed					127	114	107	131	110	102	99	110	105	87		109(10)
Rebab	(TF x IR) xTF	DLF Pickseed								94	77							86(2)
Spring Green	MF x PR	Turf-Seed	96	111	114	101	113	112	114	110	103	107	92	94	101	96	92	104(15)
Sugarcrest	MFxPR	Mountain View Seeds															96	–
Sweet Tart	MF x IR	ProSeeds Marketing			88		82	63	62									74(4)
Tatron	fescue type	Columbia Seeds															96	–

[1] The festuloliums were in fescue trials from 2001-2005 and in perennial ryegrass trials from 2008-2009.
[2] MF=meadow fescue, TF=tall fescue, IR=Italian ryegrass, PR=perennial ryegrass, Int=intermediate ryegrass.
[3] Year trial was established.
[4] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in the fall of 2012 was harvested three 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).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.
[7] Type was not provided by the company.

Table 13. Summary of Kentucky pearl millet yield trials 2013-2023 (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	23	17	18	19	20	21	22	23	
		All trials are 1 year yields																		
Epic BMR[4]	Coffey Seed							97	93	83	100	98			99	96	87	96	132	98(10)
Exceed BMR	Coffey Seed							89	103	81	97	100			102	90	107	97	73	94(10)
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	106	115	100	116	111	119	99	120	111(15)
Millex32	S&W Seed Company								110	131	102	105				111	93	99	94	106(8)
PearlMil	Dyna-Gro Seed							103	113	120	107	109			110	100	110	105	89	107(10)
Pennleaf Hybrid	Pennington Seed	93	91	94	96	87	98	100	95	100	96	97	84	93		90				94(14)
PP102M Hybrid	Cisco Seeds	93	93	90	79	90	91	97	92	103	92	101	77	104	95		81	104	80	92(17)
Prime360	Byron Seed							91	90	77	88	93			103	96	103	94	97	93(10)
SS1562M BMR	Southern States							103	94	72	98	87			95	95	90	93	125	95(10)
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	99	107	115	105	110	98	99	93	105(18)
Sweet Summer	Cisco Seeds						86	95	97	97	95	89		85	104	91	99	93	118	96(12)
Tifleaf III Hybrid	Gayland Ward Seed	116	106	108	116	120	113	119	95	131	114	120	114	112	111	101	121	116	141	115(18)
Wonderleaf	Advanta Seed/Ramer Seed							98	100	86	105	97		100	107	109	92	105	69	97(11)

[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 2008-2023 (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	23	17	18	19	20	21	22	23	
		All trials are 1 year yields																							
AS9301 BMR[4]	Advanta Seeds/Ramer Seed					118																			–
AS9302 BMR	Advanta Seeds/Ramer Seed										124	104	102	112	99	96	103	119	117	115	113	104	100	119	109(14)
(Brachytic Dwarf)																									
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	106	86	99	88	82	98	101	88	93(23)
ProMax BMR	Ampac Seed	95	101	110	115	96	103	100	111	111	106	102	101	106	107	108	106	96	84	87	86	106	101	88	101(23)
SP7106 BMR	Sorghum Partners														92	95	105					90	95	116	99(6)
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	80			113	126	110	103	89	106(11)

[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 15. Summary of Kentucky sorghum-sudangrass yield trials 2008-2023 (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	23	17	18	19	20	21	22	23	
		All trials are 1 year yields																							
ADV6218	Advanta Seeds/Ramer Seed																104							101	103(2)
ADVS6404 BMR (Brachytic Dwarf)	Advanta Seeds/Ramer Seed																84							90	87(2)
ADVS6520 BMR SCA PS	Advanta Seeds/Ramer Seed																99							118	109(2)
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		105	114	112			110			106(7)
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	120			106	92	102			102(8)
F75FS13	Dyna-Gro Seeds												94	100	93	95	103			76	94	89	86	104	93(10)
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	119	108	114	105	96	97	107		108(15)
NutraPlus BMR	Public	106	97	94	103	106	109	106	96																102(8)
Sordan Headless	S&W Seed Company							105						110	103	101	102				102	100	109	107	104(9)
Sordan 79	S&W Seed Company													114	116	121	135				123	109	117	119	119(8)
Special Effort	Public	109	110	93	94	115	120	91	111																105(8)
SP 4105 BMR	Sorghum Partners													91	88	89	96				79	76	109	90	90(8)
SP4555 BMR	Sorghum Partners														117	110	118					98	100	96	105(6)
SP 7106 BMR	Sorghum Partners													90							91				91(2)
SS211	Southern States				104	93	114	103	118	111	121	118					102	109	87					106	107(12)
SS220 BMR	Southern States		107	84		112											60							73	87(5)
SS1652SS	Southern States																98							110	104(2)
Sugar Graze II	Coffey Seed												110	114	116	110	113			110	122	116	112		114(9)
Surpass BMR	Turner Seed	81	80	64						79	84	75	75	81	84	85	74	88	97	74	70	83	86	88	80(118)
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	120			118	128	113	112	117	116(10)
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	87						101	82	89(5)
SWSB8803	S&W Seed Company															96							95		96(2)
SWSU0029	S&W Seed Company														98	103	107					117	110	110	108(6)
Vita-Cane	Gayland Ward Seed					121																			–
Xtragraze BMR	Coffey Seed												79	82	82	87	76			70	75	84	76	88	80(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] 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 2013-2023 (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	23	17	19[4]	19	21	22	23	
		All Trials are 1 year yields																	
ADV7232 BMR[5]	Advanta Seed/Ramer Seed							88	92	89	84	84		93	84	92	91	73	89(7)
AF7201 BMR (Brachytic Dwarf)	Advanta Seed/Ramer Seed	89	81	101	89			94	84	79	87	82		74	83	92	87	94	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	93	116	87	100	73	87	81	87(14)
AF8301	Advanta Seed/Ramer Seed							98	103	95	87	107		124	85	112	114	123	99(7)
ADV8322	Advanta Seed/Ramer Seed											105						115	
ADV84841G	Advanta Seed/Ramer Seed											111						106	
Ensilemaster	Caudill Seed	125	90	101	106	111	129	118	129	93	110	131	171	77	85	79	97	111	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	89		77	76	92	91	105	99(7)
F74FS72 BMR	Dyna-Gro Seed							93	87	82	140	89		59	117	85	82	75	98(7)
F75FS13	Dyna-Gro Seed							107	94	102	80	102		109	84	87	79	69	90(7)
GW2120	Gayland Ward Seed	117	89	113	84	107	88	102	91	70	88	97	85	98	115	81	80	83	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	92	119			93	97	100	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	65				87	73	61	67(7)
SP1615	Sorghum Partners								125	158	175	129		164	170	166	142	145	156(6)
SP1727	Sorghum Partners											91						88	
SP2606	Sorghum Partners											87						86	
SP2707DT	Sorghum Partners											82						95	
SP3904BD BMR (Brachytic Dwarf)	Sorghum Partners								88	97	75	105				101	97	74	92(5)
SP3905BD BMR (Brachytic Dwarf)	Sorghum Partners								81	72	83	82				58	75	70	74(5)
SS1515	Southern States							125	105	91	94	104		97	75	111	100	103	100(7)
SS2010BDF	Allies Seed/Southern States											60						67	
SS304	Sorghum Partners								121	114	110	106				95	111	111	110(5)
SS405	Sorghum Partners		188	183	207	138	202	139	143	188	87	146	160	142	171	193	193	174	168(13)
Super Sile 20	Dyna-Gro Seed							107	120	140	90	127		106	124	149	106	127	119(7)
Super Sile 30	Dyna-Gro Seed							121	115	123	96	125		129	104	132	122	131	116(7)
SWFS8802	S&W SeedCompany									66						64			65(2)
TopTon	Dyna-Gro Seed							131	130	140	117	112		84	73	124	82	147	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 17. Summary of Kentucky teff yield trials 2008-2023 (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	23	08	09	19	20	21	22	23	
		All Trials are 1 year yields																					
Corvallis	Smith Seed Services	81	101	91	101	96	100	110	96	102	110	116	92	103	101	94	112	99	112	92	105	86	100(21)
CW0604	Barenbrug USA										101	100	101	102	103			97	103	86	107	90	99(10)
Dessie	Allied Seed	99	92	96	94	95	97	101	104	105	89	109	105	100	96	102	87	101	98	127	101	129	101(21)
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	100	91	84	103	104	96	89	92	96(21)
Moxie	Barenbrug USA						94	96	105	107	110	105	98	103	94			95	101	115	107	107	103(14)
Pharaoh	First Line Seeds	105	85	106	106	97	101	93	97	94	102	90	102	102	102	95	101	107	104	97	101	81	98(21)
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		102		90	99	90	89		95	96(17)
Tiffany	Turner Seed	102	93	82	93	102	98	104	97	105	110	101	93	103	97	102	106	104	98	103	99	107	100(21)
VA T1 Brown	Hankins Seed		99	87	91	94	98	104	97	101	100	97	96	94	103		89		93	104		100	97(17)
Velvet	–		100	97	98	95	103	95	99	100	101	98	106	95	100		94	96	98	92	92	112	98(19)
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 18. Summary of Kentucky crabgrass yield trials 2016-2023 (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	2023	2019	2020	2021	2022	2023	
		All trials are 1-year yields												
Dal's Big River	Dalrymple Farms						100	99				103	111	103(4)
Impact	Barenbrug USA	107	107	108	108	116	100	91	105	100	95	106	112	105(12)
Mojo w/YJ[4]	Barenbrug USA				98	109	108	92		97	96	102	104	101(8)
Quick-N-Big	Noble Foundation	89	85	81	95	78	91	109	99	101	100	92	64	92(12)
Quick-N-Big Spreader	Dalrymple Farms						101	109				96	104	103(4)
Red River	Noble Foundation	104	108	110	99	97	100	99	96	102	108	101	104	102(12)

[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 19. Summary of Kentucky spring oats yield trials 2015-2023 (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	2023	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	113	112(9)
Haywire	Cisco Seeds					81	98				90(2)
Jerry	Caudill Seed	107	93	103	99	95	119	104	111	108	104(9)
Persik (black hulled)	Caldbeck Consulting		112	114	127	106	101	98		93	107(7)
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	95	101(3)
Reins	Ag. Alumni Seed, IN	94			102		98	86	77	102	93(6)
Robust	Ag. Alumni Seed, IN	104	111	117	102	94					106(5)
Saber	Ag. Alumni Seed, IN	104			100	97		96	93	96	98(6)
VNK	Public		97	107	101	94	92	105	91		98(7)
021A17815	Ag. Alumni Seed, IN	97	108	87							97(3)

[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.

Table 20. Summary of 2002-2023 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]	08	09	10	11	12	13	14	15	16	17	18	19	20	Mean[5]
			2yr[6]	4yr	2yr	2yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	4yr	4yr	4yr	3yr	3yr	(#trials)
Alice	Intermediate	Barenbrug USA		59	98									93	71	79	97	95	91	56	82(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														93	83(3)
Dusi	Ladino	Barenbrug USA																		121	–
Durana	Intermediate	Pennington		83	105	103		115	102	107	126	86	81	113	152	86	102	77	104	116	104(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			102	100(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	84	90(3)
Patriot	Intermediate	Pennington		110	137	122		100	111	110	123	102	132	109	123	107	111	107	118	116	115(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	97	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	116	118(16)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 four 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).
[3] This trial was planted in the spring of 2006 due to poor establishment of the fall 2005 planting.
[4] This trial was planted in the spring of 2008 due to poor establishment of the fall 2007 planting.
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.
[7] Type was not provided by the company.

Table 21. Summary of 2002-2023 Kentucky red clover grazing tolerance trials in Lexington (stand persistence shown as a percent of the mean of the commercial varieties in the test).

Variety	Proprietor	02[1,2]	05	06	07	08	10	11	12	13	14	15	16	17	18	19	20	21	Mean[3]
		1yr[4]	2yr	1yr	1yr	1yr	1yr	2yr	2yr	2yr	3yr	2yr	2yr	1yr	1yr	2yr	1yr	2yr	(#trials)
AA117ER	ABI Alfalfa		150																–
Blaze	Mountain View Seeds																	114	–
Barduro	Barenbrug USA														90	70	29	59	62(4)
Cinnamon Plus	Southern States	185		115	106	111	112	108	122	81									118(8)
Common	Public	31	6	82	106	91	88	54	44		88				57				65(10)
CW9901	Barenbrug USA														104				–
Freedom!	Barenbrug USA		155	93		104	107	95	56	94	111	73	128	81	142	134	142	118	109(15)
Freedom! MR	Barenbrug USA		117												118				118(2)
Gallant	Turner Seed										131			85	132	83		130	112(5)
GA9908	Smith Seed Services									69		102	80			115	55	90	85(6)
Juliet	Caudill Seed				80	90													85(2)
Kenland(cert)	KY Ag Exp Sta	108	127	108	106	104	93	122	133	113	95	92	104	117	109	83	134	90	108(17)
Kenton	KY Ag Exp Sta		111																–
Kenway	KY Ag Exp Sta		61																–
LS9703	Lewis Seed							122	100	131	82								109(4)
SS0303RCG	Southern States								144	113	92	133	88	117	47	115	139	98	109(10)
Starfire	Cal/West & Ampac	77																	–
Triple Trust 350	ABI Alfalfa		72																–
Vesna	DLF																		–

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 2019 was grazed for two years so the final persistence report would be "2021 Red and White Clover Grazing Tolerance Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.

Table 22. Summary of Kentucky alfalfa grazing trials 2001-2023 (stand persistence shown as a percent of the grazing tolerant Alfagraze).

Variety	Proprietor	Variety Characteristics[1]																					
		FD	Disease Resistance[2]						01[3,4]	04	05	06	08	09	10	11	12	13	14	16	17	19	20	Mean[5] (#trials)
			Bw	Fw	An	PRR	APH1	APH2	3yr[6]	4yr	4yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	2yr	3yr	3yr	
ABT 405	W-L Research	4	HR	HR	HR	HR	R	–	100															–
Alfabar	Barenbrug USA	3	HR	HR	HR	HR	HR/R	–														50	36	43(2)
Alfagraze	America's Alfalfa	3	MR	R	MR	R	–	–	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(15)
Alfagraze 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	–								110								–
Alfagraze 600 RR	America's Alfalfa	6	–	R	HR	R	R	–											12					–
Amerigraze 401+Z	America's Alfalfa	4	HR	HR	HR	HR	R	–	125															–
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	100	102(6)
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	–	–	25		36	27	25	17	27	70	55	86	24					39(10)
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															–
Grazeking	Southern States	5	MR	HR	HR	R	S	–	50															–
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR	R			172													–
LegenDairy5.0	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	36	54(3)
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													–
5432	Pioneer	4	HR	HR	–	MR	–	–		51														–

[1] Variety characteristics: FD=fall dormancy, Bw=bacterial wilt, Fw=fusarium wilt, An=anthracnose, PRR=phytophthera root rot, APH-aphanomyces root rot. Information provided by seed companies.
[2] Disease 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).
[3] Year trial was established.
[4] Use 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 four years so final persistence report would be "2015 Alfalfa Grazing Tolerance Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

Table 23. Summary of 2001-2023 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	2020	Mean[4] (#trials)
			4yr[5]	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	
Advance MaxQ	novel	Pennington Seed						94															–
Armory	free	Barenbrug USA																			99	100	100(2)
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	100	98(13)
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	100	99(8)
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	100	100(2)
Evergraze	free	Bailey Seed & Grain																				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										98						100				100	99(3)
HyMark	free	Fraser Seeds								95			100										98(2)
Jesup MaxQ	novel	Pennington Seed		103	97		68	102	97	97	99	98	100	99	99	99	100	100	100	99		100	97(17)
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	100(20)
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	100	99(20)
Lacefield MaxQ II	novel	Pennington Seed					82	102	99	98	98	97			100	99	100	100	99	100	100	100	98(14)
Maximize	free	Rose Agri-Seed	99																				–
Ranchero	free	Smith Seed Services																	98		96	100	98(3)
Select	free	Southern States	101	100	100		67	100	93	95	97	100	100	99	99	99	101						97(14)
SS0705TFSL	free	Southern States														100	100	100	99	96	100	100	99(7)
Stargrazer	free	Southern States	89																				–
STF43	free	Barenbrug USA																			97	100	99(2)
Stockman	free	Seed Res. of OR				102																	–
Texoma MaxQ II	novel	Pennington Seed					88	100	98												95		95(4)
Tuscany II	free	Seed Res. of OR						101															–
Verdant	free	Am.Grass Seed						97															–

[1] Free-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.
[2] Year trial was established.
[3] Use 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 four 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).
[4] Mean only presented when respective variety was included in two or more trials.
[5] Number of years of data.

Table 24. Summary of 2000-2023 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[3]	2014	2015	2016	2017	2018	2019	2020	Mean[4] (#trials)
		4yr[5]	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	
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				115	130(2)
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																		90	108	99(2)
Intensiv	Barenbrug USA				51															96	74(2)
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	140	115	115(12)
Persist II	Smith Seed Services																		117	115	116(2)
Potomac (certified)	Public			116		119									109	82	109				107(5)
Prairie	Turner Seed	127	121								94		131	90	97	107	60	105	90	113	100(10)
Prodigy	Caudill Seed												109	119		94	109	97	87		101(5)
Profile	Scott Seed			116																	–
Profit	Ampac Seed								95	99	102	94	95	90	82					107	96(7)
Swante	Smith Seed Services																			81	–
Tekapo	Ampac Seed		55	74	118		50	103	95	105	106	80	66	63	77						87(10)
Takena	Smith Seed Services		99																		–
Seco	Southern States							85													–
SS0708OGDT	Southern States													128	131	118	106	109	87		113(6)
Swante	Smith Seed Services																	57			–

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 four 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).
[3] Due to high variation during 2005 and 2013 trials, these values are not included in the overall mean.
[4] Mean only presented when respective variety was included in two or more trials.
[5] Number 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 25. Summary of 2001-2023 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	2020	Mean[3] (#trials)
			3yr[4]	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	
AGRLP103	–	AgResearch USA		86														–
Albion	tetraploid	Grassland Oregon										112						–
Aries	diploid	Ampac Seed	128															–
Barfest (FL)	MF x PR6	Barenbrug USA					116	112										114(2)
BG-34	diploid	Barenbrug USA										78						–
Boost	tetraploid	Allied Seed				101	83	95	92									93(4)
Calibra	tetraploid	DLF International							106		88	90	98		94			95(5)
Citadel	tetraploid	Donley Seed																–
Duo (FL)	MF x PR6	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	96	52	88(14)
Melpetra	tetraploid	Hood River Seed											90					–
PayDay	tetraploid	Mountain View Seeds								101	85			99	90	73	95	91(6)
Polly II	tetraploid	FS Growmark	63															52(2)
Power	tetraploid	Ampac Seed			158		107	112	96	89	79	78					95	102(8)
Quartet	tetraploid	Ampac Seed	70		59													68(2)
Remington	tetraploid	Barenbrug USA		151							138	168	169	124	116	147	128	143(8)
Remington PLUS NEA2[5]	tetraploid	Barenbrug USA									145	159			122	151	129	141(5)
Spring Green (FL)	MF x PR[6]	Rose Agri-Seed				109	115	115	106			81	88					102(6)
TetraGain	tetraploid	Pure Seed							102					90				96(2)
TetraMag	tetraploid	Mountain View Seeds													89	55		72(2)
TetraSweet	tetraploid	Mountain View Seeds													89	82		86(2)
Victorian	diploid	Caudill Seed								114				109				112(2)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 four years so the final report would be "2020 Cool-Season Grass Grazing Tolerance Report" archived in the UK Forage website (htpps://forages.ca.uky.edu).
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.
[5] Remington PLUS NEA2 contains a non-toxic (novel) endophyte.
[6] MF=meadow fescue, PR=perennial ryegrass, IR=Italian ryegrass.

Table 26. Summary of 2002-2023 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	2020	Mean[4] (#trials)
			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				100	99(3)
Cowgirl	free	Rose Agri-Seed							105				99									102(2)
Estancia Arkshield	novel	Mountain View Seeds																			100	–
Jesup MaxQ	novel	Pennington Seed	98			78			104	97	100	101	97	105	98	100	99	101	99			98(13)
Jesup MaxQII	novel	Pennington Seed																		100	100	100(2)
KY31+	toxic	KY Agri. Exp.Sta.				102	109	120	107	101	101	101	99	105	99	100	101	100	99	101	100	103(16)
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	100(19)
Lacefield MaxQII	novel	Pennington Seed					105	110		98				104		100	100	100	98	100	100	102(10)
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)
SS0705TFSL	free	Southern States													98	100	100	101	99	101	100	100(7)
Stockman	free	Seed Research of Oregon			125																	–
Texoma MaxQII	novel	Pennington Seed																		97		–

[1] Free-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.
[2] Year trial was established.
[3] Use 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 four 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).
[4] Mean only presented when respective variety was included in two or more trials.
[5] Number of years of data.
[6] BarOptima PLUS E34 is not recommended for pregnant mares because it produces low levels of the alkaloid ergovaline.

Table 27. Summary of 1999-2023 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	2020	Mean[4] (#trials)
		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	
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	116	111	114(12)
Potomac	Public				117											65				91(2)
Prairie	Turner Seed			100										92	95	112	91	92	94	97(7)
Prodigy	Caudill Seed											54					73	91		73(3)
Profit	Ampac Seed							93	86		92		108						95	95(5)
SS-0708OGDT	Southern States									104			92	77	95	107	99			96(6)
Tekapo	Ampac Seed	101	115		93	30		92	100	83	87	63		108						94(9)

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 four 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).
[3] Due to high variation during 2005, these values are not included in the overall mean.
[4] Mean only presented when respective variety was included in two or more trials.
[5] Number of years of data.

Table 28. Summary of 2000-2023 Kentucky perennial ryegrass and festulolium(FL) 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	2000[1,2]	2004	2007	2009	2010	2011	2012	2014	2015	2019	2020	Mean[3] (#trials)
		4-yr[4]	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	4-yr	3-yr	
Aries	Ampac Seed		55										–
Duo(FL)	Ampac Seed	96					87			82			88(3)
Granddaddy	Smith Seed Services		145	100	83	96		75	80				97(6)
Linn (certified)	Public										90	64	77(2)
Mara	Barenbrug USA	104											–
PayDay	Mountain View Seeds										74		–
Power	Ampac Seed				118	103			120	136		78	111(5)
Quartet	Ampac Seed												–
Remington	Barenbrug USA										111	157	134(2)
Remington PLUS NEA2[5]	Barenbrug USA										125		–
Spring Green(FL)	Turf-Seed						113	140		82			112(3)
TetraGain	Pure Seed Testing							84					–

[1] Year trial was established.
[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in 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 four 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).
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.
[5] Remington PLUS NEA2 contains a nontoxic (novel) endophyte.

Notes

2023 Long-Term Summary of Kentucky Forage Variety Trials

12-2023