

2015 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 an environmentally friendly role in soil conservation, water quality, and air quality. There are over 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

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Table 1. Summary of Kentucky white clover yield trials 2002-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington												Princeton		Quicksand	Eden Shale	Mean ³ (#trials)
			02 ^{1,2}	03	04	06	07	08	09	10	11	12	13	03	05	03	03		
			3yr ⁴	3yr	3-yr	2-yr	2-yr	3yr	2yr	3yr	3yr	2yr	2yr	3yr	3-yr	2yr	2yr		
Advantage	Ladino	Allied Seed, L.L.C.		125														106	116(2)
Alice	Intermediate	Barenbrug USA														86			-
Avoca	Dutch	DLF International Seeds				59										82			71(2)
Barblanca	Intermediate	Barenbrug USA		92															-
CA ladino	Ladino	Public	100		124									103			98		106(4)
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									91(3)
Crescendo	Ladino	Cal/West Seeds	105			140										109			118(3)
Crusader II	Intermediate	Allied Seed, L.L.C.									90	50	54	69					66(4)
Excel	Ladino	Allied Seed, L.L.C.			100														-
Durana	Intermediate	Pennington		94		94	88	82	85	97	93	84	94	87	83		101	95	91(13)
GWC-AS10	Ladino	Ampac Seed									102								-
Insight	Ladino	Allied Seed, L.L.C.				128													-
Ivory	Intermediate	Cebeco	96																-
Ivory II	Intermediate	DLF International Seeds					86				101	127							105(3)
Jumbo	Ladino	Ampac Seed	93																-
Jumbo II	Ladino	Ampac Seed										121	101						111(2)
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)
Ocoee	Ladino	Allied Seed, L.L.C.								89	74								82(2)
Patriot	Intermediate	Pennington		103		87	104	113	95	117	117	99	81	104	100		98	99	101(13)
Pinnacle	Ladino	Allied Seed, L.L.C.				120										111			116(2)
Rampart	Ladino	Allied Seed, L.L.C.					80	89	97	83									87(4)
Regal	Ladino	Public	99	96	92		125	100	116	118	129	147	127	107	100		104		112(13)
RegalGraze	Ladino	Cal/West Seeds				127	140	102	103										118(4)
Resolute	Intermediate	FFR/Southern States				63													-
Seminole	Ladino	Saddle Butte Ag. Inc			108	70	79												86(3)
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	128		136				131(10)

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 2010 was harvested three years, so the final report would be "2012 Red and White Clover Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

Table 2. continued

Variety	Proprietor	Lexington												Princeton						Quicksand						Eden Shale						Mean ³ (#trials)
		00 ^{1,2}	00	01	02	03	04	06	08	09	10	11	12	13	14	00	03	05	08	10	00	03	08	10								
		3yr ⁴	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr							
Quinequeli	Caudill Seed								92															57	76(3)							
Red Gold	Proseeds Marketing						81																		91(3)							
Red Gold Plus	Turner Seed		97	97		95																			97(6)							
RedlanGraze	ABI Alfalfa	95																							96(3)							
RedlanGraze II	Americas Alfalfa		91	104																					90(2)							
Redland Max	ABI Alfalfa	102																							90(2)							
Redstart	Syngenta				78																				109(2)							
Robust	Scott Seed	92																							107(2)							
Robust II	Seed Research of OR																								109(2)							
Rocket	Seed Research of OR																								107(2)							
Royal Red	Great Plains FFR/Sou.St.	108	92	99	91																				100(2)							
Rustler	Oregro Seeds								83																97(4)							
Scarlet	Dairyland	95								101	84														94(6)							
Sienna	Great Plains			91																					99(2)							
Solid	Production Service	97	102		98	84	79																		91(11)							
SS-0303RCG	FFR/Sou.St.													110											107(2)							
Starfire	Ampac Seed	97	93	99											98										96(5)							
Starfire II	Cal/West & Ampac							101		111				104											110(8)							
Triple Trust 350	ABI Alfalfa						101																		95(3)							
Vesna	DLF-Jenks			53																					75(2)							
Wildcat	Brett Young Seeds							101																	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 2010 was harvested three years, so the final report would be "2012 Red and White Clover Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

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. This grass, used for both hay and pasture, is the forage base for most of Kentucky's livestock enterprises, particularly beef cattle. 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 are increasing 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 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.

Table 5. Summary of Kentucky orchardgrass yield trials 2002-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington							Princeton							Quicksand			Mean ³ (#trials)
		2003 ^{1,2} 3-yr ⁴	2006 4-yr	2007 3-yr	2009 3-yr	2011 3-yr	2012 3-yr	2013 2-yr	2013 3-yr	2014 3-yr	2016 3-yr	2008 3-yr	2010 3-yr	2012 3-yr	2013 3-yr	2015 4-yr	2010 3-yr	2013 2-yr	
Abertop	Pennington																		
Ambassador	DLF International Seeds																		
Ambrosia	American Grass Seed Prod.										90								
Benchmark	FFR/Sou. St.																		
Benchmark Plus	FFR/Sou. St.		100	108	105	106	97	103			107	104	102	107	107	102	94	103	103(15)
Bounty	Allied Seed		101													98			100(2)
Century	Seed Research of Oregon		98												104				101(2)
Checkmate	Seed Research of Oregon			102										106					108(3)
Christoss	Proseeds Marketing			92															
Command	Seed Research of Oregon										87								
Crown	Donley Seed				97						101	105							101(3)
Crown Royale Plus	Donley Seed										108								103(2)
Elise	Rose-AgriSeed							86				98		98					94(3)
Endurance	DLF International Seeds											104							
Extend	Allied Seed					107						100					108		105(4)
Hallmark	James VanLeeuwen	102									103	98				96			100(4)
Harvestar	Columbia Seeds		91	97				93				106				100		98	99(6)
Haymaster	FFR/Sou. St.		94			102										97			98(3)
Haymate	FFR/Sou. St.										106								105(2)
Icon	Seed Research of Oregon		105													98			102(2)
Intensiv	Barenbrug																		
Lazuly	Proseeds Marketing		102																
LG-31	DLF International Seeds																		
Megabite	Turf-Seed																		
Niva	DLF International Seeds										81								
Paiute	DLF International Seeds			108															
Persist	Smith Seed	123	105	106	107	112	106	101				101				108	102	98	106(14)
Potomac	Public				103	96	97	102								108	101	98	100(10)
Prairie	Turner Seed		107	101	109	106	113	125				100	104	104	105	107	120	104	107(15)
Prodigy	Caudill Seed				101		99	99										94	100(6)
Profit	Ampac Seed			107	96	98	103	94									115	100	102(10)
RAD-LCF 25	Radix Research																102		101(2)
Shawnee	Rose-AgriSeed																		
Shiloh II	Proseeds Marketing																		
Takana	Smith Seed																		
Tekena II	Smith Seed	110	102									109							
Tekapo	Ampac Seed		91	81	82	78	82	81				98	86	82	105	91	81	88	87(14)
Tucker	Oregro Seeds					96						96	102	96			85		95(5)
Udder	Improved Forages	100	107																103(5)
Vaillant	Proseeds Marketing			96															
Vision	Cropmark Seeds	63																67	65(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 2012 was harvested three years, so the final report would be "2015 Orchardgrass Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

Timothy (*Phleum pratense*) is the fourth most widely sown cool-season perennial grass used in Kentucky for forage 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.

Sudangrass (*Sorghum bicolor* ssp. *drummondii*) is a rapidly growing annual grass in the sorghum family. It is medium yielding and well suited for grazing or hay because of its smaller stem size. Sudangrass regrows quickly after harvest and can be grazed 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. BMR (Brown Mid-rib) sudangrass and BMR sorghum-sudangrass varieties have been developed. See tables 11 and 12 for information.

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

Table 6. Summary of Kentucky annual ryegrass yield trials 2000-2015 (yield shown as a percentage of the yield value of Marshall).

Variety	Type	Proprietor	Lexington ¹													Bowling Green	Mean ⁴ (#trials)																						
			03 ^{2,3}	04	05	06	07	08	09	10	10	11	11	12	12			13	14	00	02																		
			Princeton																																				
Abundant	tetraploid	Ampac Seed																																					
Acrobat	-	Proseeds Marketing				12																																	
AE110	Westerwold tetraploid	Pickseed USA, Inc.					144																						95(2)										
Amp	Westerwold tetraploid	Columbia Seeds																																					
Andy	Westerwold tetraploid	DLF International																																					
Assist	Westerwold diploid	SaddleButte																																					
Attain	Westerwold tetraploid	Smith Seed Services																																					
Avance	Westerwold diploid	DLF International																																					
Barextra	Italian tetraploid	Barenbrug USA																																					
Barmultra II	Italian tetraploid	Barenbrug USA																																					
Big Bang	-	Brett Young																																					
Big Boss	Westerwold tetraploid	Smith Seed Services																																					
Big Daddy	Westerwold tetraploid	FER/Sou. St.																																					
Bill	Westerwold diploid	Smith Seed Services																																					
Brangus	Italian diploid	KB SeedSolutions																																					
Bruiser	Westerwold diploid	Ampac Seed																																					
Common	-	Public																																					
Centurion	Westerwold diploid	Mountain View Seeds																																					
DH-3	Italian tetraploid	Allied Seed																																					
Diamond T	Italian tetraploid	Orego Seeds																																					
Dixie Gold	Westerwold tetraploid	Caudill Seed																																					
Domino	Italian tetraploid	DLF International																																					
Dyna-Gain	Westerwold diploid	Columbia Seeds																																					
Ed	Westerwold diploid	Smith Seed Services																																					
Fantastic	Westerwold diploid	Ampac Seed																																					
Feast II	Italian tetraploid	Ampac Seed																																					
Flying A	Westerwold diploid	Orego Seeds																																					
Fox	Italian diploid	DLF International																																					
Fria	Westerwold diploid	Allied Seed																																					
GR-AS10	Italian	Ampac Seed																																					

continued

Table 6. continued

Variety	Type	Proprietor	Lexington ¹																Bowling Green	Mean ⁴ (# trials)				
			03-3	04	05	06	07	08	09	10	10	11	11	12	12	13	14	00			02	00	03	
Graze-N-Gro	Westerwold diploid	Seed Research of OR	114				67														100	94(3)		
Green Farm	Westerwold diploid	Smith Seed Services																						
Gulf	Westerwold diploid	Public					67	26	87	78													71(10)	
Hercules	Westerwold tetraploid	Barenbrug USA																					100(2)	
HS-1	Italian diploid	KB Seed Solutions								72														
Jackson	Westerwold diploid	The Wax Co.		66	100	62	103	59	101	99	106	106	106	91	91	77	70	100	90				91(14)	
Jumbo	Westerwold tetraploid	Barenbrug USA	112																				105(2)	
KB Royal	Italian diploid	KB Seed Solutions								83														
Kospeed	Westerwold diploid	Smith Seed Services																						
Kowinearly	Westerwold diploid	Smith Seed Services																						
LHT-102	Intermediate	Ampac Seed												100										
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(17)	
Maximo	Intermediate tetraploid	Pickseed USA, Inc.										101												
Merco	Westerwold diploid	Smith Seed Services																						
MX 108	Westerwold tetraploid	Pickseed USA, Inc.													114								105(2)	
Nelson	Westerwold tetraploid	The Wax Co.									86					93	65	77					86(4)	
Passerel Plus	Westerwold diploid	Pennington Seed																						
Primecut	Westerwold brand	Oregro Seeds																						
Rio	Westerwold diploid																				98	99	90	96(3)
Spark	tetraploid	DLF International																						
Stockaid	diploid																							
Striker	Westerwold tetraploid	Seed Research of OR						90																
TAMTBO	Italian tetraploid	Tex. Ag Exp Sta.							47	101														
Tam 90	Italian diploid	Tex. Ag Exp Sta.							49												88			
TetraPrime	Italian tetraploid	Mountain View Seeds																						
TetraPro	Italian tetraploid	Tex. Ag Exp Sta.							40															
TillageRootMax	Westerwold diploid	Cover Crop Solutions																						
TillageMax-Bristol ⁵	Westerwold diploid	Cover Crop Solutions																						
TillageMax-INDY ⁵	Westerwold diploid	Cover Crop Solutions																						
T-Rex	Westerwold tetraploid	SaddleButte																						
Verdure	Westerwold tetraploid	Smith Seed Services																						
Winterhawk	Westerwold diploid	Oregro Seeds								86														
Winter Star	Italian tetraploid	Ampac Seed								104														
Zorro	Italian tetraploid	DLF International																			99			
																					132	134	104	123(3)

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 2014 was harvested one year, so the final report would be "2015 Annual and Perennial Ryegrass and Festulolium Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁵ These are TillageRootMax that included crimson clover and/or tillage radish.

Table 7. Summary of Kentucky Timothy Yield Trials 2000-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington										Quicksand		Princeton		Mean ³ (#trials)
		00 ^{1,2} 2yr ⁴	01 3yr	02 4yr	06 3yr	07 3yr	08 3yr	09 3yr	11 3yr	12 3yr	13 2yr	99 2yr	01 2yr	00 3yr	04 2yr	
Alma	Newfield Seeds Co/Caudill Seed Co.														81	-
Auroro	General Feed and Grain	100										98				99(2)
Barfleo	Barenbrug USA							95	91	101						96(3)
Barpenta	Barenbrug USA					74			82	82						79(3)
Clair	Ky Agric. Exp. Station		109	115	107	95	108	104	112	99	103		108		122	107(11)
Classic	Cebeco International Seeds	100		88								87				92(3)
Climax	Canada Agr. Res. Station				79	102	105	98	102	100	85					96(7)
Colt	FFR Cooperative	105		101	90							112			99	101(5)
Common	Public		96													-
Contral	Caudill Seed									92	96					94(2)
Derby	FFR Cooperative				112	111		106	112	108	112				124	112(7)
Dolina	DLF International	100		91												96(2)
Express	Seed Research of Oregon			97		91		97	95							95(4)
Hokuei	Snow Brand Seed	103														-
Hokusei	Snow Brand Seed	97										99				98(2)
Joliette	Newfield Seeds Co/Caudill Seed Co.						87	89							90	89(3)
Jonaton	Newfield Seeds Co/Caudill Seed Co.														84	-
Outlaw	Grassland West Company													107		-
Richmond	Pickseed Canada Inc.	100										103				102(2)
Summergraze	Brett Young										96					-
Summit	Allied Seed, L.L.C.			114												-
Talon	Seed Research of Oregon				110	112		108	106	109						109(5)
Treasure	Seed Research of Oregon				103	115		103	101	108						106(5)
Tundra	DLF International	95														-
Tuukka	Ampac Seed Company		95	90									92	93		93(4)
Zenyatta	DLF International										107					-

¹ Year trial was established.

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

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 Bluegrass Yield Trials at Lexington 1996-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	96 ^{1,2}	03	04	06	07	08	09	10	11	12	13	Mean ³ (#trials)
		3yr ⁴	2yr	3yr	4yr	3yr	3yr	3yr	3yr	3yr	3yr	2yr	
Adam 1	Radix Research			98									-
Barderby	Barenbrug USA					94		101	91	98	87	104	96(6)
Big Blue	Rose-AgriSeed							82			95		89(2)
Common	Public				71	66	68						68(3)
Ginger	ProSeeds Marketing		89		118	119	114	118	112	107	110	104	110(9)
Kenblue	Public	90		102	133				96	95	118	95	104(7)
Lato	Turf Seed Inc.	110				122							116(2)
Park (certified)	Public										90	98	94(2)
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						-
Slezanka	DLF International Seeds		111										-

¹ Year trial was established.

² Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2012 was harvested three years, so the final report would be "2015 Timothy and Kentucky Bluegrass Report" archived in the KY Forage website at www.uky.edu/Ag/Forage. The 96 and 03 Lexington results are in the appropriate Tall Fescue Reports.

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

⁴ Number of years of data.

Teff, also referred to as Summer Lovegrass (*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.

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 at www.uky.edu/Ag/Forage.

The following comprehensive bulletins may be especially useful:

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

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. 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 180 pounds per acre per season. 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 to simulate a spring cut hay/summer grazing/fall stockpile management system. Fresh weight samples were taken at each harvest to calculate percent dry matter production. Management practices for establishment, fertility, 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 check stand survival 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.

Results and Discussion

These tables summarize long-term yield and stand persistence data of commercial varieties that have been entered in the University of Kentucky 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 grazing trials, varieties with percentages over 100 persisted better than average, and varieties with percentages less than 100 persisted less than average. Also in the grazing trials, the alfalfa varieties were compared to Alfagraze, and the fescue varieties were compared to KY31+ instead of the mean of all the commercial varieties. In the horse grazing trials, the fescue varieties were compared to KY31- instead of the mean of all the commercial varieties. Direct, statistical comparisons of varieties cannot be made using the summary tables, but these comparisons do help to identify varieties for further consideration. Varieties that have performed better than average over many years and at several locations have very stable performance; others may have performed very well in wet years or on particular soil types. These details may influence variety choice, and the information can be found in the yearly reports. To determine to which yearly report to refer, see the footnote in each table.

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 2015 reports on the forage Web site. See below for specific reports. The forage Web site contains all reports from 2001 through 2015.

Yield and Grazing Tolerance Reports

Individual forage species reports can be found at www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm.

- 2015 Alfalfa Report (PR-694)
- 2015 Red and White Clover Report (PR-695)
- 2015 Orchardgrass Report (PR-696)
- 2015 Tall Fescue and Bromegrass Report (PR-697)
- 2015 Timothy and Kentucky Bluegrass Report (PR-698)
- 2015 Annual and Perennial Ryegrass and Festulolium Report (PR-699)
- 2015 Alfalfa Grazing Tolerance Report (PR-700)
- 2015 Red and White Clover Grazing Tolerance Report (PR-701)
- 2015 Cool-Season Grass Grazing Tolerance Report (PR-702)
- 2015 Cool-Season Grass Horse Grazing Report (PR-703)
- 2015 Annual Grass Report: Warm Season and Cool Season (Cereals) (PR-704)
- 2015 Long-Term Summary of Kentucky Forage Variety Trials (PR-705)

About the Authors

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Table 9. Summary of Kentucky perennial ryegrass yield trials 1999-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington										Bowling Green		Mean ^{3,4} (#trials)			
			99 ^{1,2} 2yr ⁵	01 2yr	03 2yr	04 3yr	05 3yr	06 2yr	07 3yr	08 3yr	09 3yr	10 2yr	11 3yr	12 3yr		13 2yr	00 2yr	02 3yr
Aires	diploid	Ampac Seed	95													93		94(2)
Amazon	tetraploid	AgriBioTech	108			99										107		104(3)
Anaconda	tetraploid	Caudill Seed	113														103	104(3)
Aubisque	tetraploid	Seed Research of OR			144													122(2)
Bandit	tetraploid	Grassland West															114	110(2)
Bastion C-2	tetraploid	Seed Research of OR				91												
Bestfor	tetraploid	Improved Forages																
Best for Plus	hybrid tetraploid	Improved Forages			116	108	118											113(3)
BG-34	diploid	Barenbrug USA					83	85					86					120(4)
Bison	hybrid tetraploid	International Seeds																86(5)
Boost	tetraploid	Allied Seed							130	125	120	143	109					140
Boxer	tetraploid	AgriBioTech	121															120(7)
Calibra	tetraploid	DLF International												106				114(2)
CAS MP64	diploid	Cascade International								96	109	81	99	103	95	112		101(7)
Citadel	tetraploid	Ag Canada	97													94	113	103(4)
Grave	tetraploid	Ampac Seed																
Derby	-	Public															74	
Elena DS	tetraploid	Allied Seed																
Eurostar	tetraploid	Seed Research of OR							112									
Everlast	diploid	Caudill Seed													100			
Feeder	diploid	Seed Research of OR							76									
Grand Daddy	tetraploid	Smith Seed	118						101	109	76	92	84			111		97(8)
Green Gold	tetraploid	Grasslands Oregon							96									
Herbal	-	ProSeeds Marketing								77								
Impressario	tetraploid	DLF International									107							100(2)
Kentaur	tetraploid	DLF International										110	106					108(2)
Lactan	tetraploid	Brett Young									102							
Lasso	diploid	DLF International	98															

continued

Table 9. continued

Variety	Type	Proprietor	Lexington															Princeton			Bowling Green			Mean ^{3,4} (#trials)															
			99 ^{1,2}	01	03	04	05	06	07	08	09	10	11	12	13	00	02	00	03																				
			2yr ⁵	2yr	2yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	3yr	2yr	2yr	2yr	3yr	2yr	2yr																				
LHT-102	tetraploid	Ampac Seed																																					
Linn	diploid	Public	87	98	98	102		98	85	84	101	92	88	88	87	88	77																		91(15)				
Manhattan	diploid	Public																																					
Mara	diploid	Barenbrug USA																																					
Matrix	diploid	Cropmark seeds																																					
Maverick Gold	hybrid tetraploid	Ampac Seed		97																																			
Orantas	diploid	DLF International																																					
Ortet	tetraploid	Oregro Seeds								114																													
PayDay	tetraploid	Mountain View Seeds																																					
Polly II	tetraploid	FFR/Sou. St.	104																																				
Polly Plus	hybrid tetraploid	Allied Seed																																					
Power	tetraploid	Ampac Seed																																					
Polim	tetraploid	DLF International																																					
Quartermaster	tetraploid	Radix Research																																					
Quartet	tetraploid	Ampac Seed		97																																			
RAD-CPS212	hybrid tetraploid	Radix Research																																					
RAD-MI125	hybrid tetraploid	Mountain View Seeds																																					
Sampson	diploid	International Seeds	87																																				
Sierra	diploid	Lewis Seed Co.																																					
TetraGain	tetraploid	Pure Seed																																					
TetraMag	tetraploid	Mountain View Seeds																																					
Tonga	tetraploid	Kings AgriSeeds																																					
Verseka	tetraploid	Allied Seed																																					
Victorian	diploid	Caudill Seed																																					
Yatsyn	diploid	Barenbrug USA	80																																				

1 Year trial was established.

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

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.

Table 10. Summary of Kentucky festulolium yield trials 2001-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).¹

Variety	Type ²	Proprietor	Lexington								Mean ⁵ (#trials)	
			2001 ^{3,4} 2yr ⁶	2005 3yr	2008 3yr	2009 3yr	2010 3yr	2011 3yr	2012 2yr	2013 2yr		
Agula	MF x IR	Allied Seed					94			-		
Barfest	MF x PR	Barenbrug USA					105	101	107	114	107(4)	
Bonus	MF x IR	Allied Seed					93	46	32	45	54(4)	
Duo	MF x PR	Ampac Seed		89	98	99	95	106	103	96	99(7)	
Felina	(TF x IR) x TF	DLF International	104				132	118	134	107	119(5)	
Fojtan	(TF x IR) x TF	DLF International					112	101	124	91	107(4)	
Gain	MF x IR	Allied Seed					103	77	52	91	81(4)	
Hostyn	MF x IR	DLF International							107	112	110(2)	
Hykor	(TF x IR) x TF	DLF International					133	141	153	125	138(4)	
Lofa	(TF x Int) x Int	DLF International					105	107	110	125	112(4)	
Mahulena	(TF x IR) x TF	DLF International							131	99	115(2)	
Meadow Green	-	Pure Seed							37	44	41(2)	
Perseus	MF x IR	DLF International					132	114	126	125	124(4)	
Perun	MF x IR	DLF International					127	114	107	124	118(4)	
Rebab	(TF x IR) x TF	DLF International								95	-	
Spring Green	MF x PR	Turf-Seed	96	111	114	101	113	112	114	108	109(8)	
Sweet Tart	MF x IR	ProSeeds Marketing			88		82	63	62		74(4)	
Vorage	-	Improved Forages									-	

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 2012 was harvested three years, so the final report would be "2015 Annual and Perennial Ryegrass and Festulolium Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁶ Number of years of data.

Table 11. Summary of Kentucky sudangrass yield trials 2008-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington								Mean ³ (#trials)
		2008 ^{1,2}	2009	2010	2011	2012	2013	2014	2015	
All trials are 1 year yields										
AS9301 BMR ⁴	Alta Seeds/Ramer Seed					118				-
Enorma BMR	Cal/West Seeds			99	94	92	91	83	91	92(6)
FSG 1000 BMR	Farm Science Genetics								101	-
Hayking BMR	Central Farm Supply	111	112	91	97	97	96	92	94	99(8)
Monarch V	Public	104	96	102	97	93	98	110	99	100(8)
Piper	Public	90	91	97	94	104	105	89	94	96(8)
ProMax BMR	Ampac Seed	95	101	110	115	96	103	100	111	104(8)
SS130 BMR	Cal/West Seeds			101	103		107	106	110	105(5)
Trudan Headless	Chromatin							118		-

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 12. Summary of Kentucky sorghum-sudangrass yield trials 2008-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington								Mean ³ (#trials)
		2008 ^{1,2}	2009	2010	2011	2012	2013	2014	2015	
All trials are 1 year yields										
AS6402 BMR ⁴	Alta Seeds/Ramer Seed					91				–
AS6503 BMR6	Alta Seeds/Ramer Seed						96	103	90	96(3)
FSG 208 BMR	Farm Science Genetics			75						–
FSG 214 BMR6	Farm Science Genetics						99	108	112	106(3)
FSG 215 BMR6	Farm Science Genetics								112	–
Greengrazer V	Farm Science Genetics			166			122	107	92	122(4)
GW300 BMR	Gayland Ward Seed				88	78	88	81	73	82(5)
HyGain	Turner Seed	104	105	118						109(3)
MS 202 BMR	Farm Science Genetics			106						–
Nutra-King BMR6	Gayland Ward Seed								110	–
NutraPlus BMR	Cisco	106	97	94	103	106	109	106	96	102(8)
Sordan Headless	Chromatin							105		–
Special Effort	Cisco	109	110	93	94	115	120	91	111	105(8)
SS211	Southern States				104	93	114	103	118	106(5)
SS220 BMR	Southern States		107	84		112				101(3)
Surpass BMR-6	Turner Seed	81	80	64						75(3)
Super Sugar	Gayland Ward Seed				102	117	107		125	113(4)
Super Sugar (Delayed Maturity)	Gayland Ward Seed							101	82	–
Super Sugar Sterile	Gayland Ward Seed							94		92(2)
Sweet-For-Ever	Gayland Ward Seed				110	107	81			99(3)
Sweet-For-Ever BMR	Gayland Ward Seed					78	70		77	75(3)
SweetSix BMR	Gayland Ward Seed						93	101		97(2)
SweetSix BMR (Dry Stalk)	Gayland Ward Seed								102	–
Vita-Cane	Gayland Ward Seed					121				–

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 13. Summary of Kentucky pearl millet yield trials 2013-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	2013 ^{1,2}	2014	2015	Mean ³ (#trials)
FSG 300	Farm Science Genetics			109	–
FSG 315 Dwarf BMR	Farm Science Genetics			101	–
Pennleaf Hybrid	Pennington Seed	93	91	94	93(3)
PP102M Hybrid	Cisco	93	93	90	92(3)
SS501	Southern States	90	99	96	95(3)
SS635	Southern States	108	112	101	107(3)
Tiffleaf III Hybrid	Gayland Ward Seed	116	106	108	110(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 14. Summary of Kentucky teff yield trials 2008-2015 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Princeton		Lexington								Mean ³ (#trials)
	2008 ^{1,2}	2009	2008	2009	2010	2011	2012	2013	2014	2015	
	All trials are 1 year yields										
Corvallis	94	112	81	101	91	101	96	100	110	96	98(10)
Dessie	102	87	99	92	96	94	95	97	101	104	97(10)
Excaliber	109	111	109	104	125	108	106	103			109(8)
Highveld	111	115	100	121	106	101	109	103	102		108(9)
HorseCandi	91	84	99	105	89	108	94	97	80	104	95(10)
Moxie								94	96	105	98(3)
Pharaoh	95	101	105	85	106	106	97	101	93	97	99(10)
Rooiberg	102	107	112	109	113	108	115	102	88		106(9)
Summer Delight		90		91	96	88	93	100	119	101	97(8)
Tiffany	102	106	102	93	82	93	102	98	104	97	98(10)
VA T1 Brown		89		99	87	91	94	98	104	97	95(8)
Velvet		94		100	97	98	95	103	95	99	98(8)
Witkope	94	100	93	101	115	103	101	104	107		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.

Table 15. Summary of 2002-2015 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	2002 ^{1,2}	2004	2006 ³	2006	2008 ⁴	2008	2009	2010	2011	2013	Mean ⁵ (#trials)
			2yr ⁶	4yr	2yr	2yr	3yr	4yr	4yr	4yr	4yr	2yr	
Alice	Intermediate	Barenbrug USA		59	98								79(2)
Barblanca	Intermediate	Barenbrug USA		118	91	151							120(3)
Canterbury	Dutch	Allied Seed										84	-
Colt	Intermediate	Seed Research of OR		114	134	122							123(3)
Crescendo	Ladino	Cal/West	84			72							78(2)
Durana	Intermediate	Pennington		83	105	103		115	102	107	126	91	104(8)
GWC-AS10	-	Ampac Seed								77			-
Insight	Ladino	Allied Seed				77							-
Ivory	Intermediate	DLF International	132	142									137(2)
Ivory II	Intermediate	DLF International					102						-
Kopu II	Intermediate	Ampac Seed			77	122	96		93	113	112	97	101(7)
KY Select	Intermediate	KY Agr Ex. Sta./Saddle Butte						105		83			94(2)
Patriot	Intermediate	Pennington		110	137	122		100	111	110	123	84	112(8)
Pinnacle	Ladino	Allied Seed									87		-
Rampart	-	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	118	92(8)
Resolute	Intermediate	FFR/Southern States			101	106					65		91(3)
Seminole	Ladino	Saddle Butte Ag. Inc.		75		97	91					93	89(4)
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	114(8)

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 2010 was grazed for four years so the final persistence report would be "2014 Red and White Clover Grazing Tolerance Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

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

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

⁶ Number of years of data.

Table 16. Summary of 2000-2015 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	2000 ^{1,2}	2001	2003	2005	2007	2008	2010	2011	2012	Mean ³ (#trials)
			4yr ⁴	3yr	4yr	3-yr	4yr	4yr	4yr	4yr	3yr	
AGRLP103	–	AgResearch USA	128		86							107(2)
Aries	diploid	Ampac Seed		139								–
Barfest (FL)	MF x PR6	Barenbrug USA							111	104		108(2)
BG 34	diploid	Barenbrug USA				176 ⁵	145 ⁵		129	147	116	142(5)
Boost	tetraploid	Allied Seed						101	79	89	108	94(4)
Calibra	tetraploid	DLF International									114	–
Citadel	tetraploid	Donley Seed	107									–
Duo (FL)	MF x PR6	Ampac Seed	116					95	68	84	111	95(5)
Grand Daddy	tetraploid	Smith Seed Services		121			70		95	76	105	93(5)
Lasso	diploid	DLF-Jenks		130								–
Linn (certified)	diploid	Public	112	129	63			95	103	89	105	99(7)
Maverick	tetraploid	Ampac Seed		36								–
Meadow Green (FL)	–	Pure Seed									10	–
Polly II	tetraploid	FFR/Southern States	36	68								52(2)
Power	tetraploid	Ampac Seed					134		102	104	110	113(4)
Quartet	tetraploid	Ampac Seed		77		63	50					60(3)
Remington	tetraploid	Barenbrug USA			151 ⁵							–
Spring Green (FL)	MF x PR6	Rose Agri-Seed	101					109	109	108	113	108(5)
TetraGain	tetraploid	Pure Seed									110	–
Tonga	tetraploid	Ampac Seed				61						–

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 2010 was grazed four years so the final report would be “2014 Cool-Season Grass Grazing Tolerance Report” archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

⁵ Grazing tolerance values for these entries may have been elevated due to the low survival of the other commercial varieties in the trials for these years.

⁶ MF=meadow fescue, PR=perennial ryegrass.

Table 17. Summary of 1999-2015 Kentucky orchardgrass horse grazing tolerance trials 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	Mean ⁴ (#trials)
		3-yr ⁵	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	FFR/Southern States	104			85							95(2)
Benchmark Plus	FFR/Southern States				111	157	139	111	114	121	130	121(6)
Crown Royale	Grassland Oregon			95								–
Crown Royale Plus	Grassland Oregon				97							–
Elise	Pure Seed										86	
Haymate	FFR/Southern States	96	85		97							93(3)
Persist	Smith Seed					114		103	101	92	115	103(4)
Potomac	Public				117							–
Prairie	Turner Seed			100								–
Profit	Ampac Seed							93	86		73	84(3)
SS-0708OGDT	FFR/Southern States								104			–
Tekapo	Ampac Seed	101	115		93	30		92	100	83	95	98(7)

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 2010 was grazed four years so the final report would be “2014 Cool-Season Grass Horse Grazing Tolerance Report” archived in the KY Forage website at www.uky.edu/Ag/Forage.

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 18. Summary of Kentucky alfalfa grazing trials 1998-2015 (stand persistence shown as a percent of the grazing tolerant Alfagraze).

Variety	Proprietor	Variety Characteristics ¹					Lexington														Mean ⁵ (#trials)
		FD	Bw	Fw	An	PRR	APH	1998 ^{3,4} 3yr ⁶	2000 2yr	2000 3yr	2001 3yr	2004 4yr	2005 4yr	2006 3yr	2008 4yr	2009 4yr	2010 4yr	2011 4yr	2012 3yr		
ABT 350	W-L Research	3	HR	HR	HR	HR	HR			46											
ABT 405	W-L Research	4	HR	HR	HR	HR	R			46	100									73(2)	
Alfagraze	Americas Alfalfa	2	MR	R	MR	R	–	100	100	100	100	100	100	100	100	100	100	100	100	100(12)	
Alfagraze300 RR	Americas Alfalfa	3	HR	R	HR	HR	HR											110		–	
Amerigrize 401+Z	Americas Alfalfa	4	HR	HR	HR	HR	R	56	26	85	125									73(4)	
Ameristand 403T	Americas Alfalfa	4	HR	HR	HR	HR	HR										91		115	108(5)	
Ameristand 403TPlus	Americas Alfalfa	4	HR	HR	HR	HR	HR					141	144	50	133		90			112(2)	
Ameristand 407TQ	Americas Alfalfa	4	HR	HR	HR	HR	HR					136			50		80			89(3)	
Apollo	Americas Alfalfa	4	R	R	R	R	–	47	17	31	25	36	27	25	17	27	70	69		36(11)	
Archer III	Americas Alfalfa	5	HR	HR	HR	HR	HR								33		83			58(2)	
Baralfa 54	Barenbrug USA	–	R	HR	HR	HR	HR	78												–	
Bulldog-505	Univ. of GA	5	–	HR	–	R	–												138	–	
FK 421	Donley Seed Co.	4	HR	H	H	H	H			100										–	
Feast	Garst Seeds	3	HR	HR	HR	HR	R		87	92										90(2)	
Gold Plus	PGI Alfalfa	4	HR	HR	HR	HR	R	81												–	
Grazeking	FFR/Southern States	5	MR	HR	HR	R	S			50										–	
Haygrazer	Great Plains Research	4	HR	HR	R	R	MR			38										–	
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR					172								–	
LegenDairy5.0	Croplan Genetics	3	HR	HR	HR	HR	HR							0			87			44(2)	
PGI 424	Producers Choice	4	HR	HR	HR	HR	HR									45				–	
PGI 459	Producers Choice	4	HR	HR	HR	HR	HR								17		93			55(2)	
Pioneer 98	Pioneer	3	HR	R	HR	R	–	56												–	
ProGro	MBS Inc.	4	HR	HR	R	HR	MR	81												–	
Rebel	Target Seed	4	HR	HR	HR	HR	HR						79							–	
Rugged	Target Seed	3	HR	HR	HR	HR	HR						146							–	
Saranac AR (cert.)	Public	4	MR	R	HR	LR	–				100									–	
Spredor 3	Syngenta	1	HR	HR	R	MR	S	75						68						72(2)	
Spredor 4	Syngenta	2	HR	HR	HR	HR	R								25					–	
TS 4007	Producers Choice	4	HR	R	HR	HR	HR													–	
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							–	
Wintergreen	ABI Alfalfa	3	HR	HR	HR	HR	R	72												–	
WL 326GZ	W-L Research	4	HR	HR	HR	HR	R	88												–	
115 Brand	Monsanto	3	HR	HR	R	R	HR		56	85										71(2)	
5432	Pioneer	4	HR	HR	–	MR	–					51								–	

¹ Variety characteristics: FD=fail 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.

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 2011 was grazed for four years so final persistence report would be “2015 Alfalfa Grazing Tolerance Report” archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁶ Number of years of data.

Table 19. Summary of 2000-2015 Kentucky tall fescue grazing tolerance trials (stand persistence shown as a percent of the stand rating of KY 31+).

Variety	Proprietor	Lexington														Princeton	Mean ³ (#trials)
		2000 ^{1,2} 4yr ⁴	2001 4yr	2002 4yr	2003 4yr	2004 4yr	2005 4yr	2006 4yr	2007 4yr	2008 4yr	2009 4yr	2010 4yr	2011 4yr	2012 3yr	2002 4yr		
Advance MaxQ ⁵	Pennington Seed							94									-
Bariane	Barenbrug USA				89		75	47	29								60(4)
BarElite	Barenbrug USA								96								-
Barolex	Barenbrug USA						78	101	86								88(3)
BarOptima PLUS E34 ⁵	Barenbrug USA						100		97				98	100	99		99(5)
Bronson	Ampac Seed											98	98				98(2)
Cajun II	Smith Seed Services											98					-
Cattle Club	Green Seed	93	91														92(2)
Carmine	DLF-Jenks		90														-
Cowgirl	Rose Agri-Seed					99									100		100(2)
Festival	Pickseed West		100	101												89	97(3)
Festorina	Advanta Seeds																80(3)
Flourish	Allied Seed													98			-
Goliath	Ampac Seed											98					-
Hoedown	DLF-Jenks	88															-
HyMark	Fraser Seeds									95				100			98(2)
Jesup EF	Pennington Seed				99								99	100	99		99(4)
Jesup MaxQ ⁵	Pennington Seed			103	97		68	102	97	97	99	98	100	99	105		97(11)
Johnstone	Proseeds		92														-
KY31+ ⁵	KY Agri. Exp Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(14)
KY31- ⁵	KY Agri. Exp Sta.		98	103	98	100	82	100	100	98	99	99	100	99	105		99(13)
Kokanee	Ampac Seed	43															-
Maximize	Rose Agri-Seed		99														-
Nanryo	Japanese Grassland For. Seed								100								-
Orygun	-			99													-
Resolute	Ampac Seed		23														-
Select	FFR/Sou. St.	107	101	100	100		67	100	93	95	97	99	100	99	98		97(13)
Stargrazer	FFR/Sou. St.	86	89														79(4)
Stockman	Seed Res. of OR					102											-
Texoma MaxQ ⁵	Pennington Seed						88	100	98								95(3)
Tuscany II	Seed Res. of OR							100									-
Verdant	Am.Grass Seed							97									-

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 2010 was grazed four years so the final report would be "2014 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

⁵ KY 31- is the variety KY31 from which the toxic endophyte has been removed. KY31+ contains the toxic endophyte. Jesup MaxQ, Texoma MaxQ and Advance MaxQ contain a non-toxic endophyte. BarOptima PLUS E34 contains a beneficial endophyte. The other fescue varieties in this table do not contain an endophyte.

Table 20. Summary of 1999-2015 Kentucky tall fescue horse grazing tolerance trials in Lexington (stand persistence shown as a percent of the stand rating of KY 31-).

Variety	Proprietor/KY Distributor	1999 ^{1,2}	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Mean ³ (#trials)	
		3-yr ⁴	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 ⁵	Barenbrug									107			101	101	95	101(4)
Bronson	Ampac Seed	80														-
Cattle Club	Green Seed	95														-
Cowgirl	Rose Agri-Seed									105					99	102(2)
Festorina	Advanta Seed	102														-
Jesup MaxQ ⁵	Pennington Seed			98			78			104	97	100	101	98		97(7)
Johnstone	ProSeeds		88													-
KY31+ ⁵	KY Agri. Exp.Sta.		105				102	109	120	107	101	101	101	99		105(9)
KY31- ⁵	KY Agri. Exp.Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(13)
Nanryo	Japanese Grassland For. Seed								72							-
Seine	Seed Research of OR					135										-
Select	FFR/Southern States	82		109	94	99	73	104	76	108	98	100	101	99		95(12)
Stargrazer	FFR/Southern States	70														-
Stockman	Seed Research of OR					125										-

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 2010 was grazed four years so the final report would be "2014 Cool-Season Grass Horse Grazing Tolerance Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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

⁴ Number of years of data.

⁵ KY 31- is the variety KY31 from which the toxic endophyte has been removed. KY31+ contains the toxic endophyte. Jesup MaxQ contains a non-toxic endophyte. BarOptima PLUS E34 contains a beneficial endophyte. The other fescue varieties in this table do not contain an endophyte.

Table 21. Summary of 2000-2015 Kentucky orchardgrass grazing tolerance trials (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington											Princeton	Mean ⁴ (#trials)	
		2000 ^{1,2} 4yr ⁵	2001 4yr	2002 4yr	2003 4yr	2004 4yr	2005 ³ 4yr	2007 4yr	2009 4yr	2010 4yr	2011 4yr	2012 3yr	2002 4yr		
Abertop	Pennington Seed			38											-
Albert	Univ. of Wisconsin		115												-
Amba	DLF-Jenks		71												-
Ambrosia	Pennington Seed							94							-
Athos	DLF-Jenks		93				60								-
Benchmark	FFR/Sou. States	118	123	114									133	122(4)	
Benchmark Plus	FFR/Sou. States			120			152	135	106	106	108	113	133	117(7)	
Boone	Public	102												-	
Command	Seed Research of OR					81								-	
Crown Royale	Donley Seed		100											-	
Crown Royale Plus	Donley Seed			124									83	104(2)	
Elise	Pure Seed											102		-	
Hallmark	James VanLeeuwen		115		113								83	104(3)	
Harvestar	Columbia Seeds							75		89	94			86(3)	
Haymate	FFR/Sou. States	53	115	100	118								83	94(5)	
Intensiv	Barenbrug USA				51									-	
Mammoth	DLF-Jenks		115											-	
Megabite	Turf Seed		77											-	
Niva	DLF-Jenks			76									83	80(2)	
Persist	Smith Seed						138	107	103	100	96	93		106(6)	
Potomac	Public			116		119							117	117(3)	
Prairie	Turner Seed	127	121								94		83	106(4)	
Profile	Scott Seed			116										-	
Profit	Ampac Seed								95	99	102	99		99(4)	
Tekapo	Ampac Seed		55	74	118		50	103	95	105	106	93	100	94(9)	
Takena	Smith Seed		99											-	
Seco	FFR/Sou. States							85						-	

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 2010 was grazed four years so the final report would be "2014 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage website at www.uky.edu/Ag/Forage.

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.

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



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