

2010 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 tolerance trials conducted in Kentucky over the past 10 to 12 years. Detailed variety reports and forage management publications are available from your local county agent or at the University of Kentucky forage web site at www.uky.edu/Ag/Forage by clicking on the "Forage Variety Trial" link.

Species in This Report

Red clover (*Trifolium pratense* L.) 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.

Table 1. Summary of Kentucky Bluegrass Yield Trials 1996-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington						Princeton	Mean³ (# trials)
		96^{1,2}	03	04	06	07	08		
		3yr⁴	2yr	3yr	4yr	3yr	2yr		
Adam 1	Radix Research			98					—
Barberby	Barenbrug USA					94		114	104(2)
Common	Public				71	66	73		70(3)
Ginger	ProSeeds Marketing		89		118	119	109		109(4)
Kenblue	Public	90		102	133				110(3)
Lato	Turf Seed Inc.	110				122			116(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						119		—
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 2004 was harvested 2 years, so the final report would be "2006 Timothy and Kentucky Bluegrass Report" archived in the KY Forage web site at <www.uky.edu/Ag/Forage>. The '96 and '03 Lexington and '02 Princeton 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.

Table 2. Summary of 2000-2010 Kentucky Perennial Ryegrass Grazing Tolerance Trials (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

Variety	Proprietor	2000^{1,2}	2001	2003	2005	2007	Mean³ (# trials)
		4yr⁴	3yr	4yr	3yr	3yr	
AGRLP103	AgResearch USA	133		86			110(2)
Aries	Ampac Seed		139				—
BG 34	Barenbrug USA				176 ⁵	193 ⁵	185(2)
Citadel	Donley Seed	112					—
Granddaddy	Smith Seed Services		121			56	89(2)
Lasso	DLF-Jenks		130				—
Linn	Public	117	129	63			103(3)
Maverick	Ampac Seed		36				—
Polly II	FFR/Southern States	37	68				53(2)
Power	Ampac Seed					112	—
Quartet	Ampac Seed		77		63	39	60(3)
Remington	Barenbrug USA			151 ⁵			—
Tonga	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 2000 was grazed 4 years so the final report would be "2004 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage web site 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.

White clover (*Trifolium repens* L.) 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*) has historically been 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. Choosing a good alfalfa variety is a key step in establishing a stand of alfalfa. The choice of variety can impact yield, stand persistence, and insect and disease resistance.

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. 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 four to six months 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 more tolerant to heavy grazing.

Table 3. Summary of Kentucky Alfalfa Yield Trials 1995-2010 (yield shown as a

Variety	Proprietor	FD	Variety Characteristics¹				
			Disease Resistance²				
			Bw	Fw	An	PRR	APH
A-4440	Producers Choice	4	HR	HR	HR	HR	HR
A 5225	Producers Choice	5	HR	HR	HR	HR	R
Abilene +Z	America's Alf.	5	HR	HR	HR	HR	R
ABT 205	W-L Research	2	HR	HR	HR	HR	R
ABT 350	W-L Research	3	HR	HR	HR	HR	HR
ABT 400SCL	W-L Research	4	HR	HR	HR	HR	HR
ABT 405	W-L Research	4	HR	HR	HR	HR	R
AC Longview	Newfield Seeds	-	HR	-	-	-	-
Affinity+Z	ABI Alfalfa	4	HR	HR	HR	HR	R
Alfagraze	America's Alf.	2	MR	R	MR	R	-
AmeriGraze 401+Z	America's Alf.	4	HR	HR	HR	HR	R
AmeriStand 403T	America's Alf.	3	HR	HR	HR	HR	HR
Ameriguard 302+Z	America's Alf.	3	HR	HR	HR	HR	HR
Anchormate	ProSeed Marketing	-	-	-	-	-	-
Apollo	America's Alf.	4	R	R	R	R	-
Arc (cert.)	Public	4	LR	MR	HR	-	-
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR
Baralfa 54	Barenbrug USA	-	R	HR	HR	HR	HR
Buffalo	Public	-	-	-	-	-	-
Choice	FFR/Sou. St.	4	HR	R	R	HR	R
Cimarron 3i	Great Plains	4	HR	HR	HR	HR	HR
Cimarron SR	Great Plains	4	HR	HR	HR	HR	MR
Cimarron VR	Great Plains	5	HR	HR	R	R	MR
Demand	ABI Alfalfa	3	HR	HR	HR	HR	R
Depend+EV	ABI Alfalfa	-	-	-	-	-	-
DK 127	Monsanto	3	HR	HR	HR	HR	-
DK 133	Monsanto	4	HR	HR	HR	HR	R
DK 131HQ	Monsanto	3	HR	HR	HR	HR	R
DK 140	Monsanto	4	HR	HR	HR	HR	HR
DK 141	Monsanto	4	HR	HR	HR	HR	HR
DKA-41-18RR	Monsanto	4	HR	HR	HR	HR	HR
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR
Dominator	America's Alf.	4	HR	HR	HR	HR	HR
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R
Emperor	ABI Alfalfa	4	HR	HR	HR	HR	HR
Enforcer	FFR/Sou. St.	4	HR	HR	HR	HR	HR
Escalade	Allied Seeds	5	HR	HR	HR	HR	HR
Evermore	FFR/Sou. St.	5	HR	HR	HR	HR	HR
Excalibur II	Allied Seeds	4	HR	HR	HR	HR	R
Expedition	Syngenta	5	HR	HR	R	RR	R
Feast	Garst Seeds	3	HR	HR	HR	HR	R
Feast +EV	Garst Seeds	3	HR	HR	HR	R	HR
FK 421	Donley Seed	4	HR	HR	HR	HR	HR
Fortress	Syngenta	3	R	R	R	HR	-
FSG 406	Allied Seeds	4	HR	HR	HR	HR	HR
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R
FSG 505	Allied Seeds	5	HR	HR	HR	HR	R
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R
Gem	FFR/Sou. St.	4	HR	HR	HR	HR	S
Geneva	Syngenta	4	HR	HR	HR	HR	HR
Genoa	Syngenta	4	HR	HR	HR	RR	HR
GH 744	Golden Harvest	4	HR	HR	HR	HR	MR
Goldplus	PGI Alfalfa	4	HR	HR	HR	HR	R
GrazeKing	FFR/Sou. St.	5	MR	HR	HR	R	S
Haygrazer	Great Plains	4	HR	HR	R	R	MR
HybridForce 400	Dairyland	4	HR	HR	R	HR	MR
Imperial	America's Alf.	3	HR	HR	HR	HR	R
Innovator+Z	America's Alf.	3	HR	HR	HR	HR	R
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR
L447HD	Legacy Seeds	4	HR	HR	HR	HR	HR
Legacy	Green Seed	4	R	R	R	R	R
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR
LH4	Pioneer	3	HR	HR	HR	R	R
Magnum V	Dairyland	4	HR	HR	R	HR	HR
Magnum V-wet	Dairyland	3	HR	HR	R	HR	MR
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR
Mountaineer 2.0	Croplan Gen.	5	HR	HR	HR	HR	HR
Multiqueen	Cal/West	4	HR	HR	HR	HR	R
Pasture Plus	MBS	3	HR	HR	R	HR	MR

Table 3 varieties are continued on page 4.

percentage of the mean of the commercial varieties in the test).																			
Lexington								Princeton					Bowling Green ⁶				Eden Shale		Mean ⁷ (# trials)
953,4	97	97	99	00	02	04	06	97	99	01	05	08	96	98	03	06	98	03	Mean ⁷ (# trials)
6yr ⁵	5yr	6yr	4yr	5yr	5yr	5yr	3yr	5yr	4yr	4yr	5yr	3yr	7yr	7yr	3yr	4yr	5yr	4yr	
								100				99							100(2)
								103				102							103(2)
			99					104											102(2)
		100						97				98		105			101		99(2)
											102		102						101(3)
	101	101						108				101							102(2)
			83																103(4)
		99							101			104							—
	99																97		101(3)
	102		99					102	99								102		98(2)
				98	93				97		96								101(5)
		103						99											96(4)
																			—
80	108												96						95(3)
98	101	87	99	91	96	76		96	100	99	95	89	91	90	98		94		94(16)
											104								—
													96				99		98(2)
			90	82	88	92				95	81	93				81		95	89(9)
110	104							106					103	97			103		104(6)
	100												99				96		98(3)
		103						101											102(2)
	99												99						—
111													104						—
106													102						107(2)
	105												104						105(2)
	104			95				102	100				103				103		101(6)
	99							98				103							100(3)
			103																—
				100															—
				109															—
102													101				101		101(2)
													102			93			98(2)
			90											82					86(2)
107														106					—
		107	111							96									105(3)
101				106				101						101			96		101(2)
													101						—
99	96							97				98				99			98(5)
			105								100				110				—
				107										106			108		107(2)
100				98							101					105			—
	106	103						99	104				101			102			103(6)
		112		100						98	108								105(4)
			104											90					—
100																102			101(2)
102													106				100		101(2)
														104					—
													101						—
		107																	—
88													96						92(2)
			100						103						110				104(3)
	99																		—
		104																	—
		105											94						—
103			108											108					—

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 lasting two to four 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 still limited because they do not survive as long as tall fescue.

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 Web site 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)
- *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 by 15 feet in a randomized complete block design with four replications. Grass plots were 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

Table 3. Summary of Kentucky Alfalfa Yield Trials 1995-2010 (yield shown as a

Variety	Proprietor	Variety Characteristics¹					
		Disease Resistance²					
		FD	Bw	Fw	An	PRR	APH
Pegasus	FFR/Sou. St.	4	HR	HR	HR	HR	R
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR
PGI 459	Producers Choice	4	HR	HR	HR	HR	R
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R
Phoenix	FFR/Sou. St.	5	HR	HR	HR	HR	R
ProGro	PGI Alfalfa	4	HR	HR	R	HR	MR
Radiant-AM	Ampac Seed	4	HR	HR	HR	HR	HR
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR
Regal	Great Plains	5	HR	HR	R	HR	MR
Reward	PGI Alfalfa	4	HR	HR	R	HR	MR
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R
Rushmore	Syngenta	4	HR	HR	HR	HR	HR
Saranac AR (cert.)	Public	4	MR	R	HR	LR	-
Spredor 3	Syngenta	1	HR	HR	R	MR	S
Stampede	Allied Seeds	3	HR	R	R	HR	R
Stellar	W-L Research	4	HR	HR	HR	HR	LR
Summer Gold	Beck's Hybrids	4	HR	HR	HR	HR	HR
Supercuts	ABI Alfalfa	4	HR	HR	HR	HR	S
TMF Generation	Mycogen Seeds	4	HR	HR	HR	HR	R
TMF 4355LH	Mycogen Seeds	3	HR	R	HR	HR	R
TMF 4464	Mycogen Seeds	4	HR	HR	HR	HR	R
Triple Crown	FFR/Sou. St.	4	HR	HR	HR	HR	HR
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	-
ValuePlus 1	Forage Genetics	4	HR	HR	HR	HR	R
Vernal	Public	2	R	MR	-	-	-
Wintergreen	ABI Alfalfa	3	HR	HR	HR	HR	R
Withstand	FFR/Sou. St.	4	HR	HR	HR	HR	HR
WL 252HQ	W-L Research	2	HR	HR	HR	HR	LR
WL 319HQ	W-L Research	3	HR	HR	HR	HR	HR
WL 323	W-L Research	4	HR	HR	HR	HR	R
WL 324	W-L Research	3	HR	HR	HR	HR	HR
WL 325HQ	W-L Research	3	HR	HR	HR	HR	R
WL 326GZ	W-L Research	4	HR	HR	HR	HR	HR
WL 327	W-L Research	4	HR	HR	HR	HR	HR
WL 332SR	W-L Research	4	HR	HR	HR	HR	HR
WL 338SR	W-L Research	4	HR	HR	HR	HR	HR
WL 342	W-L Research	4	HR	HR	HR	HR	HR
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR
WL 348AP	W-L Research	4	HR	HR	HR	HR	HR
WL 355RR	W-L Research	4	HR	HR	HR	HR	HR
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR
329	Cal/West	3	HR	HR	HR	HR	R
4m76	FFR/Sou. St.	4.7	HR	HR	R	HR	R
5-star	Croplan Gen.	5	R	HR	R	R	R
5246	Pioneer	2	R	R	HR	HR	R
5312	Public	3	HR	HR	HR	HR	HR
53H81	Pioneer	3	HR	HR	HR	R	HR
53Q60	Pioneer	3	HR	R	HR	HR	R
5454	Pioneer	4	R	HR	HR	HR	LR
54H69	Pioneer	4	HR	HR	HR	HR	R
54V46	Pioneer	4	R	HR	HR	HR	R
54V54	Pioneer	4	HR	HR	HR	HR	HR
54V56	Pioneer	-	-	-	-	-	-
630	Garst Seeds	3	HR	HR	MR	R	-
631	Garst Seeds	4	HR	R	HR	R	HR
6400HT	Garst Seeds	4	HR	HR	HR	HR	HR
6415	Garst Seeds	4	HR	HR	HR	HR	HR
6417	Garst Seeds	4	HR	HR	HR	HR	HR
6420	Garst Seeds	4	HR	R	HR	R	HR
645	Garst Seeds	4	HR	R	HR	HR	MR
6530	Garst Seeds	5	HR	HR	HR	HR	HR
6552	Garst Seeds	5	HR	HR	HR	HR	HR

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.

percentage of the mean of the commercial varieties in the test).																					
Lexington								Princeton						Bowling Green ⁶				Eden Shale		Mean ⁷ (# trials)	
95 ^{3,4}	97	97	99	00	02	04	06	08	97	99	01	05	08	96	98	03	06	98	03		
6yr ⁵	5yr	6yr	4yr	5yr	5yr	5yr	4yr	3yr	5yr	4yr	4yr	5yr	3yr	7yr	7yr	3yr	4yr	5yr	4yr	—	
								105												—	
								99												—	
								113	100	101				105				102		104(2)	
								98						98			96			102(5)	
								104									108			106(2)	
													98				103		94	99(2)	
													99	103			94			—	
													99						103	100(4)	
108				95				103						99						101(4)	
103	99	95	96	93	87	77	89	92	93				92	95	85	101	90	99	89	101	95
	95																		101		93(19)
	95																		106		98(2)
								107									94			101(2)	
	104														103					104(2)	
		100													103					—	
			102										98							—	
													100							101(2)	
													100						105	103(2)	
			106												105					—	
				93									95			91			96	94(4)	
	104							103						95					101	103(3)	
				99	92								95					114		100(4)	
					108									104						—	
103															106					—	
	103								101					99						101(3)	
	99							97							98				99		98(4)
		105							100												103(2)
			93																		—
		101												102							—
				98	102								93								98(3)
					106																—
					123								106				101			106	109(4)
94						101															—
		116															97		99	98(2)	
													98								—
		103																			—
		102												100							—
96				99																	—
				98	94								104	105						99	—
88																					100(4)
	107							106							106						106(3)
					108												96			103(2)	
														103				105		104(2)	
								104													—
					106										103						—
								103									92			—	

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 1995 was harvested for 6 years, so the final yield report would be "2000 Alfalfa Report" archived in the KY Forage web site at <www.uky.edu/Ag/Forage>.

⁵ Number of years of data.

⁶ The Bowling Green test is on soil infested with phytophthora and aphanomyces root rots.
⁷ Mean only presented when respective variety was included in two or more trials.

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

Table 4. Summary of Kentucky Festulolium Yield Trials 1999-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).¹

Variety	Proprietor	Lexington						Princeton	Quicksand		Mean ⁴ (# trials)
		1999 ^{2,3}	2001	2003	2005	2007	2008	2000	2001	2003	
		2yr ⁵	3yr	2yr	3yr	3yr	2yr	2yr	2yr	2yr	
Duo	Ampac Seed	104			84		101				96(23)
Felina	DLF International		101								—
Hykor	DLF International			98						98	98(2)
Spring Green	Turf-Seed		88		105	100	112		97		100(5)
Sweet Tart	ProSeeds Marketing						87				—
Vorage	Improved Forages							99			—

¹ The festuloliums were in fescue trials from 1999-2005.
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 1999 was harvested 2 years, so the final report would be "2001 Tall Fescue Report" archived in the KY Forage web site at <www.uky.edu/Ag/Forage>.
⁴ Mean only presented when respective variety was included in two or more trials.
⁵ Number of years of data.

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 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.

Table 5. Summary of Kentucky White Clover Grazing trials 2002-2010 (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	Mean ⁵ (# trials)
			2yr ⁶	4yr	2yr	2yr	3yr	2yr	
Alice	Intermediate	Barenbrug USA		59	98				79(2)
Barblanca	Intermediate	Barenbrug USA		118	91	151			120(3)
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		138	107(4)
Insight	Ladino	Allied Seed				77			—
Ivory	Intermediate	Cebeco	132	142					137(2)
Ivory II	Intermediate	DLF International					102		—
Kopu II	Intermediate	Ampac Seed			77	122	96		98(3)
Patriot	Intermediate	Pennington		110	137	122		117	122(4)
Rampart	—	Oregro Seeds						86	—
Regal	Ladino	Public	92		57	54		91	74(4)
RegalGraze	Ladino	Cal/West			84	87	105	60	84(4)
Resolute	Intermediate	FFR/Southern States			101	106			104(2)
Seminole	Ladino	Saddle Butte Ag. Inc.		75		97	91		88(3)
Tillman II	Ladino	Caudill Seed	92						—
Will	Ladino	Allied Seed			117	87	107	109	105(4)

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 2002 was grazed for 2 years, so the final persistence report would be "2004 Red and White Clover Grazing Tolerance Report" archived in the KY Forage web site 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 6. Summary of Kentucky White Clover Yield Trials 1998-2010 (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} 3yr ⁴	03 3yr	04 3yr	06 2yr	07 2yr	08 3yr	09 2yr	03 3yr	05 3yr	98 2yr	03 2yr	03 2yr		
Advantage	Ladino	Allied Seed, LLC		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		100	98			105(5)
Colt	Intermediate	Seed Research of OR		90		57					114					87(3)
Common	Dutch	Public	100			53					78					77(3)
Companion	Ladino	Oregro Seeds					87	94								91(2)
Crescendo	Ladino	Cal/West Seeds	105			140					109					118(3)
Excel	Ladino	Allied Seed, LLC			100											—
Durana	Intermediate	Pennington		94		94	88	82	85	87	83		101	95		90(9)
Insight	Ladino	Allied Seed, LLC				128										—
Ivory	Intermediate	Cebeco	96													—
Ivory II	Intermediate	DLF International Seeds					86									—
Jumbo	Ladino	Ampac Seed	93													—
Kopu II	Intermediate	Ampac Seed	97			97	95	95	103							97(4)
Patriot	Intermediate	Pennington		103		87	104	113	95	104	100		98	99		100(9)
Pinnacle	Ladino	Allied Seed, LLC				120					111					116(2)
Rampart	Ladino	Allied Seed, LLC					80	89	97							89(3)
Regal	Ladino	Public	99	96	92		125	100	116	107	100	100	104			104(10)
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, LLC			77											—
Tillman II	Ladino	Caudill Seed	103													—
Will	Ladino	Allied Seed, LLC	107			162	150	132	107		136					132(6)

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 2002 was harvested 3 years, so the final report would be "2004 Red and White Clover Report" archived in the KY Forage web site 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.

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 Alfagraz, and 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 which yearly report to refer to, see 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 2010 reports on the forage web site. See below for specific reports. The forage web site contains all reports from 2001 through 2010.

Table 7. Summary of Kentucky Timothy Yield Trials 2000-2010 (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}	01	02	06	07	08	99	01	00	04		
		2yr ⁴	3yr	4yr	3yr	3yr	2yr	2yr	2yr	3yr	2yr		
Alma	Newfield Seeds Co/Caudill Seed Co.											81	-
Auroro	General Feed and Grain	100						98				99(2)	
Barpenta	Barenbrug USA					74							-
Clair	KY Agric. Exp. Station		109	115	107	95	107		108		122	109(7)	
Classic	Cebeco International Seeds	100		88				87				92(3)	
Climax	Canada Agr. Res. Station				79	102	106					96(3)	
Colt	FFR Cooperative	105		101	90			112			99	101(5)	
Common	Public		96										-
Derby	FFR Cooperative				112	111					124	116(3)	
Dolina	DLF-Trifolium	100		91								96(2)	
Express	Seed Research of Oregon			97		91						94(2)	
Hokuei	Snow Brand Seed	103											-
Hokusei	Snow Brand Seed	97						99				98(2)	
Joliette	Newfield Seeds Co/Caudill Seed Co.						87				90	89(2)	
Jonaton	Newfield Seeds Co/Caudill Seed Co.										84	-	
Outlaw	Grassland West Company									107		-	
Richmond	Pickseed Canada Inc.	100						103				102(2)	
Summit	Allied Seed, LLC			114								-	
Talon	Seed Research of Oregon				110	112						111(2)	
Treasure	Seed Research of Oregon				103	115						109(2)	
Tundra	DLF-Trifolium	95										-	
Tuukka	Ampac Seed Company		95	90						92	93		93(4)

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 2000 was harvested 2 years, so the final report would be "2002 Timothy Report" archived in the KY Forage web site 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.

Yield and Grazing Tolerance Reports

www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm

- 2010 Alfalfa Report (PR-609)
- 2010 Red and White Clover Report (PR-610)
- 2010 Orchardgrass Report (PR-611)
- 2010 Tall Fescue and Bromegrass Report (PR-612)
- 2010 Annual and Perennial Ryegrass and Festulolium Report (PR-613)
- 2010 Timothy and Kentucky Bluegrass Report (PR-614)
- 2010 Alfalfa Grazing Tolerance Report (PR-615)
- 2010 Red and White Clover Grazing Tolerance Report (PR-616)
- 2010 Cool-Season Grass Grazing Tolerance Report (PR-617)
- 2010 Cool-Season Grass Horse Grazing Report (PR-618)

Other Reports Not Included in this Summary Report

2010 Summer Annual Grass Report (PR-619)

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Table 8. Summary of Kentucky Red Clover Yield Trials 1998-2010 (yield shown as a percentage of the mean of the named commercial varieties in the trial).

Variety	Proprietor	Lexington										Princeton										Quicksand									
		001,2 3yr ⁴	00 3yr	01 3yr	02 3yr	03 3yr	04 3yr	05 3yr	06 2yr	08 3yr	09 2yr	99 3yr	00 3yr	03 2yr	05 3yr	08 2yr	Mean ³ (# trials)														
AA117ER	ABI Alfalfa																													96(3)	
Acclaim	Allied Seed																													-	
Arlington	WI Agr. Exp.Sta.																													88(3)	
Belle	AgriBioTech	88																												72(2)	
Cherokee	FL Agr. Exp. Sta.	78																												109(4)	
Cinnamon	FFR/Sou.St.	111																												108(10)	
Cinnamon Plus	FFR/Sou.St.																													100(5)	
Dominion	Seed Research of OR																													109	
Duration	Cisco Co.	86	100																											97(3)	
Emanwan	Turf-Seed																													96(2)	
Freedom!	Barenbrug USA	108	105	127	123	96	118	91	100	108	103	105	110	136	107	116	109	111	103	119	106	102	100	102	100	109(23)					
Freedom!MR	Barenbrug USA																													109(11)	
FSG 9601	Allied Seed																													-	
Greenstar	Genesis Turf																														
Impact	Specialty Seeds	106	97																											100(3)	
Juliet	Caudill Seed																													84	
Kenland (cert.)	KY Ag.Exp Sta.	110	111	127	139	118	117	99	111	117	99	111	117	104	102	92	113	106	112	111	88	105	104	104	98	110	109(23)				
Kenland (uncert.)	Public																													66	
Kenstar	KY Ag.Exp Sta.	105																												75(4)	
Kenton	KY Ag.Exp Sta.	93	119	109	90	95	112	121																					105(3)		
Kenway	KY Ag.Exp Sta.	106	104	111	134	97	119	118	103	100	95	105	112	94	104	98	93	99	106	98	102	98	102	100	102(20)						
Mammouth	Public																													106(16)	
Morning Star	Cal/West Seeds																													-	
Plus II	Allied Seed	113																												90	
Prima	Public	92																												93(2)	
Quinequili	Caudill Seed																													86(2)	
Red Gold	Proseds																													92(3)	
Red Gold Plus	Marketing																													102	
Red Gold Plus	Turner Seed	97	97																											97(6)	
RedlanGraze	ABI Alfalfa	95																												98(2)	
RedlanGraze II	Americas Alfalfa	91	104																											96(3)	
Redland Max	ABI Alfalfa																													-	
Redstart	Syngenta	102																												90(2)	
Robust	Scott Seed	92																												-	
Robust II	Seed Research of OR																													108	
Rocket	Seed Research of OR																													108	
Rojo Diablo	Great Plains	99																												104(2)	
Royal Red	FFR/Sou.St.	108	92	91																										104(2)	
Ruster	Oregro Seeds																														
Scarlet	Dairyland	95																													
Sienna	Great Plains	91																													
Solid	Production Service	97	102	98	84	79																									
Starfire	Ampac Seed	97	93	99																											
Starfire II	Cal/West & Ampac																													96(5)	
Triple Trust 350	ABI Alfalfa																													109(4)	
Vesna	DLF-Jenks	53																												95(3)	
Wildcat	Brett Young Seeds																													75(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 2000 was harvested 3 years, so the final report would be "2002 Red and White Clover Report" archived in the KY Forage web site 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 9. Summary of Kentucky Tall Fescue Yield Trials 1999-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington										Princeton										Quicksand				Mean ³ (# trials)				
		1999 ^{1,2}		2001		2003		2005		2007		1998		2000		2002		2004		2006		2008		1999		2001		2003		
		2yr ⁴	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr											
Atlas	ProSeeds Marketing	107																										98(2)		
Atlas Select	ProSeeds Marketing																											-		
Aprilia	ProSeeds Marketing																											-		
BarElite	Barenbrug USA																											-		
Bariane	Barenbrug USA																											-		
Barolex	Barenbrug USA																											-		
BarOptima PLUS E34	Barenbrug USA																											-		
BAR 9 TMPO	Barenbrug USA	96																										97(2)		
Bronson	Ampac Seed																											102		
Bull	Improved Forages																											98(3)		
Carmine	DLF International	99																										101(5)		
Cowgirl	Rose-Agriseeds																											98(2)		
DLF-B	DLF International	96																										-		
Enhance	Allied Seed																											-		
Festival	Pickseed West	107																										-		
Fuego	Advanta Seeds	99																										-		
Hoedown	DLF International	104																										105(3)		
HyMark	Fraser Seeds																											-		
Jesup EF	Pennington Seed																											-		
Jesup MaxQ	Pennington Seed																											-		
Johnstone	ProSeeds Marketing	95	108																									106		
KENHY	KY Agric. Exp. Sta.																											105(2)		
Kentucky 32	Oregro Seeds																											-		
Kokane	Ampac Seed	89																										-		
KY31+5	KY Agric. Exp. Sta.	102	118	113	112	105	122	108	104	106	101	107	124	98	110	109(14)											88(2)			
Maximize	Turf-Seed	96	95																									97(4)		
Nanryo	Jap. Grassland Forage Seed/USDA-ARS, El Reno, Ok																											-		
Noria	ProSeeds Marketing																											-		
RAD-ERF50	Radix Research Inc.																											113		
Resolute	Ampac Seed	90																										65		
Savory	DLF International																											78(2)		
Seine	Advanta Seeds	99																										98(2)		
Select	FFRS/Sou. St.	106	106	94	103	102	105	95	105	103	104	107	112	102	91	103(15)											-			
Stockman	Seed Research of OR																											104(4)		
TF0203G	Seed Research of OR																											-		
TF33	Barenbrug USA																											-		
Tuscany	Forage Genetics	112																										-		
Tuscany II	Seed Research of OR																											-		
Vulcan	International Seeds																											-		

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 1999 was harvested 2 years, so the final report would be "2001 Tall Fescue Report" archived in the KY Forage web site at <www.uky.edu/AgrForage>.

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

⁴ Number of years of data.

⁵ "+" indicates variety is endophyte infected.

Table 10. Summary of Kentucky Orchardgrass Yield Trials 1999-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor	Lexington										Princeton										Quicksand				Mean ³ (# trials)	
		1999 ^{1,2}		2001		2003		2006		2007		1998		2000		2004		2006		1999		2001		2003			
		2yr ⁴	2yr	3yr	4yr	3yr	4yr	3yr	2yr	2yr	3yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	
Abertop	Pennington																										-
Albert	Univ. of Wis.		103																								105(2)
Amba	DLF International Seeds		96																								88(2)
Ambrosia	American Grass Seed Prod.																										-
Athos	DLF International Seeds	98																									102(2)
Benchmark	FFR/Sou. St.	103																									104(5)
Benchmark Plus	FFR/Sou. St.																										105(6)
Boone	Public																										104(2)
Bronic	Grassland West																										-
Bounty	Allied Seed																										-
Century	Seed Research of Oregon																										100(2)
Checkmate	Seed Research of Oregon																										101(2)
Christoss	Proseeds Marketing																										-
Command	Seed Research of Oregon																										-
Crown	Donley Seed	101																									101(4)
Crown Royale	Donley Seed																										103(2)
Crown Royale Plus	Donley Seed																										86(2)
Eastwood	Ampac Seed	86																									-
Endurance	DLF International Seeds																										-
Extend	Allied Seed																										-
Hallmark	James VanLeeuwen	102	102									91	97													100(6)	
Harvestar	Columbia Seeds											94														99(4)	
Haymaster	FFR/Sou. St.	106										93	100													97	
Haymate	FFR/Sou. St.											105														103(7)	
Icon	Seed Research of Oregon											102														102(2)	
Intensiv	Barenbrug USA																										-
LG-31	DLF International Seeds											102														103(2)	
Mammoth	Turf-Seed	94	105																								100(3)
Megabite	DLF International Seeds																										-
Niva	DLF International Seeds																										-
Palute	DLF International Seeds																										-
Persist	Smith Seed											123	105	106											107(6)		
Potomac	Public											104														100(3)	
Prairie	Turner Seed											101	107	101	95	104									102(9)		
Profit	Ampac Seed																										-
Renegade	Grassland West																										98(2)
Shiloh	Proseeds Marketing																										105(3)
Shiloh II	DLF International Seeds																										-
Spanish Pink	DLF International Seeds	101										107		107												-	
Spanish Red	Smith Seed											107														-	
Takena	Smith Seed																										-
Tekena II	Smith Seed											110	102													-	
Tekapo	Ampac Seed	88										91	81													93(8)	
Tucker	Oregro Seeds																										-
Udder	Improved Forages											100	107													103(6)	
Valliant	Proseeds Marketing																										-
Vision	Cropmark Seeds											63														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 1999 was harvested 2 years, so the final report would be "2001 Orchardgrass Report" archived in the KY Forage web site at <www.uky.edu/Agr/Forages>.

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

⁴ Number of years of data.

Table 11. Summary of Kentucky Annual Ryegrass Yield Trials 1999-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Proprietor	Lexington ¹						Princeton						Bowling Green			Mean ⁴ (# trials)
			992.3	01	03	04	05	06	07	08	09	00	02	04	00	03		
All trials are 1 year yields																		
Abundant	tetraploid	Ampac Seed							26									—
Acrobat		Proseeds Marketing							244									—
Andy	Westervold tetraploid	DLF International	112	105						99								105(3)
Angus I	Westervold tetraploid	DLF International								80								—
Aurelia	Italian tetraploid	Forage Genetics			120						130							125(2)
Avance	Westervold diploid	DLF International	113							109								111(2)
Barextra	Italian tetraploid	Barenbrug USA								117								—
Big Daddy	Westervold tetraploid	FFR/Sou. St.	87	86						90	85							90(5)
Bruiser	Westervold diploid	Ampac Seed							111	104								108(2)
Common		Public								85	85							88(4)
DH-3	Italian tetraploid	Allied Seed							106	45								76(2)
Diamond T	Italian tetraploid	Oregro Seeds							18									—
Domino	Italian tetraploid	DLF International							105	98								—
Fantastic	Westervold diploid	Ampac Seed	83							90								92(4)
Feast	Italian tetraploid	Ampac Seed	90							59	112							—
Feast II	Italian tetraploid	Oregro Seeds	98						85	100								98(4)
Flying A	Westervold diploid	Seed Research of OR			105					78								—
Graze-N-Gro	Westervold diploid	Public	72						78	44	86	81	77	57	86			96(4)
Gulf	Westervold tetraploid	Barenbrug USA	114						80	100	138	120	100	87				73(8)
Hercules	Westervold diploid	The Wax Co.											110					112(2)
Jackson	Italian tetraploid	DLF International	124															98(7)
Jeanne	Westervold tetraploid	Barenbrug USA																—
Jumbo	Westervold diploid	Lewis Seed	92															104(2)
King	Westervold diploid	The Wax Co.	87															—
Marshall	Italian tetraploid	Seed Research of OR																109(11)
Monarque	Westervold diploid	Pennington Seed																—
Passerel Plus	Westervold diploid																	—
Rio	Westervold diploid		88															97(4)
Spark	tetraploid	DLF International	87							181								85(2)
Stockaid	diploid																	—
Striker	Westervold tetraploid	Seed Research of OR								104								—
TAMBO	Italian tetraploid	Tex. Ag. Exp. Sta.								80								—
Tam 90	Italian diploid	Tex. Ag. Exp. Sta.								82								84(2)
TetraPro	Italian tetraploid	Tex. Ag. Exp. Sta.								67								—
Tetrelite II	Intermediate	DLF International																—
T-Rex	Westervold tetraploid	SaddleButte								25								—
Winter Star	Italian tetraploid	Ampac Seed	87															92(2)
Zorro	Italian tetraploid	DLF International	120	127														126(5)

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

²Year trial was established.

³Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 1999 was harvested 1 year, so the final report would be "2000 Annual and Perennial Ryegrass Report" archived in the KY Forage web site at <www.uky.edu/AgrForage>.

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

Table 12. Summary of Kentucky Perennial Ryegrass Yield Trials 1999-2010 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Type	Lexington						Princeton						Bowling Green	
		991 ²	01	03	04	05	06	07	08	00	02	00	03		
	Proprietor	2yr ⁵	2yr	3yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	2yr	Mean ^{3,4} (# trials)	
Aires	diploid	Ampac Seed	95											94(2)	
Amazon	tetraploid	AgriBioTech	108											104(3)	
Anaconda	tetraploid	Caudill Seed	113											107	
Aubisque	tetraploid	Seed Research of OR												95	103
Bandit	tetraploid	Grassland West												106	114
Bastion C-2	tetraploid	Seed Research of OR												106	114
Bestfor	tetraploid	Improved Forages												113	107
Bestfor Plus	hybrid tetraploid	Improved Forages												113	107
BG-34	diploid	Barenbrug USA												83	85
Bison	hybrid tetraploid	International Seeds												136	136
Boost	tetraploid	Allied Seed												140	140
Boxer	tetraploid	AgriBioTech	121											127	127
Calibra	tetraploid	DLF International												106	106
CAS MP64	diploid	Cascade International	97											95	112
Citadel	tetraploid	Ag Canada	101											94	113
Derby	Public													74	74
Eurostar	tetraploid	Seed Research of OR												112	
Feeder	diploid	Seed Research of OR												76	
Granddaddy	tetraploid	Smith Seed	118											109	111
Green Gold	tetraploid	Grasslands Oregon												96	
Herbal		ProSeeds Marketing												74	
Lasso	diploid	DLF International													
Linn	diploid	Public	87	98	98	102								86	87
Manhattan	diploid													98	88
Mara	diploid	Barenbrug USA													77
Matrix	diploid	Cropmark seeds													
Maverick Gold	hybrid tetraploid	Ampac Seed													
Orient	tetraploid	Oregro Seeds													
Polly II	tetraploid	FFR/Sou. St.	104											117	117
Polly Plus	hybrid tetraploid	Allied Seed												110	110
Power	tetraploid	Ampac Seed													
Quartermaster	tetraploid	Radix Research												110	101
Quartet	tetraploid	Ampac Seed	97											56	46
RAD-CPS212	hybrid tetraploid	Radix Research												134	122
RAD-MI125	hybrid tetraploid	Mountain View Seeds												120	
Sampson	diploid	International Seeds	87											89	
Sierra	diploid	Lewis Seed Co.												96	
Tonga	tetraploid	Kings AgriSeeds													
Yatsyn	diploid	Barenbrug USA	80											89	89

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 1999 was harvested 2 years, so the final report would be www.uky.edu/AgrForage/.

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 13. Summary of Kentucky Alfalfa Grazing Trials 1994-2010 (stand persistence shown as a percent of the grazing-tolerant Alfagrazze).

Variety	Proprietor	Variety Characteristics ¹										Lexington															
		FD		Bw		Fw		An		Disease Resistance ²		1994 ^{3,4}		1996		1997		2000		2001		2004		2005		2006	
		2	HR	HR	HR	HR	HR	HR	R	PRR	APH	3yr	4yr	3yr	2yr	3yr	4yr										
ABT 205	W-L Research	2	HR	HR	HR	HR	HR	HR	R	94	84															89(2)	
ABT 350	W-L Research	3	HR	HR	HR	HR	HR	HR	HR																	-	
ABT 405	W-L Research	4	HR	HR	HR	HR	HR	HR	R	71	129	69														83(5)	
Alfagrazze	Americas Alfalfa	2	MR	R	MR	R	MR	R	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(10)		
Amerigraze 401+Z	Americas Alfalfa	4	HR	HR	HR	HR	HR	HR	R	120	53	56	26	85	125										78(6)		
Ameristand 403T	Americas Alfalfa	4	HR	HR	HR	HR	HR	HR	HR																	143(2)	
Ameristand 407TQ	Americas Alfalfa	4	HR	HR	HR	HR	HR	HR	HR																	-	
Apollo	Americas Alfalfa	4	R	R	R	R	R	R	-	48	75	33	33	47	17	31	25									39(9)	
Arc (certified)	Public	4	LR	MR	MR	MR	MR	MR	-	38																-	
Barlalfa 54	Barenbrug USA	-	R	HR	HR	HR	HR	HR	HR																	-	
Cut-n-Graze	Americas Alfalfa	3	HR	HR	HR	HR	HR	HR	HR																	-	
FK421	Donley Seed Co.	4	HR	H	H	H	H	H	H																	-	
Feast	Garst Seeds	3	HR	HR	HR	HR	HR	HR	HR																	108(3)	
Fortress	Syngenta	3	R	R	R	R	R	R	R																	56(2)	
Gold Plus	PGI Alfalfa	4	HR	HR	HR	HR	HR	HR	HR																	-	
Grazeking	FFR/Southern States	5	MR	MR	HR	HR	HR	HR	HR																	61(3)	
Haygrazer	Great Plains Research	4	HR	HR	HR	HR	HR	HR	HR																	51(3)	
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR	HR	HR																	-	
Legacy	Green Seed	4	R	R	R	R	R	R	R																	-	
Magnagrazze	Dairyland Seed Co.	3	HR	HR	HR	HR	HR	HR	HR																	-	
Pasture Plus	MBS	3	HR	HR	HR	HR	HR	HR	MR																	-	
Pioneer 98	Pioneer	3	HR	R	HR	HR	HR	HR	R																	-	
ProGro	MBS Inc.	4	HR	HR	HR	HR	HR	HR	MR																	-	
Quantum	ABI Alfalfa	2	HR	HR	HR	HR	HR	HR	R																	-	
Rebel	Target Seed	4	HR	HR	HR	HR	HR	HR	HR																	-	
Rugged	Target Seed	3	HR	HR	HR	HR	HR	HR	HR																	-	
Rushmore	Syngenta	4	HR	HR	HR	HR	HR	HR	HR																	-	
Saranac AR (cert.)	Public	4	MR	R	HR	HR	HR	LR	-																	89(2)	
Spredor 3	Syngenta	1	HR	HR	R	MR	R	MR	S																	96(4)	
Stampede	Allied Seed	3	HR	R	R	HR	HR	R	R																	-	
Triple Trust 450	ABI/America's Alfalfa	5	HR	HR	HR	HR	HR	HR	HR																	-	
Wintergreen	ABI Alfalfa	3	HR	HR	HR	HR	HR	HR	R																	75(3)	
WL 326GZ	W-L Research	4	HR	HR	HR	HR	HR	HR	HR																	103(2)	
115 Brand	Monsanto	3	HR	HR	HR	HR	HR	HR	R																	71(2)	
5373	Pioneer	4	HR	HR	HR	HR	HR	HRT	MR																	-	
5432	Pioneer	4	HR	HR	-	MR	-																			-	

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, R=resistance, MR=moderate resistance, LR=low 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 1996 was grazed for 3 years so final persistence report would be "1999 Alfalfa Grazing Tolerance Report" archived in the KY Forage web site at <www.uky.edu/Agr/Forage>.

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

⁶ Number of years of data.

Table 14. Summary of 1996-2010 Kentucky Tall Fescue Grazing Tolerance Trials (stand persistence shown as a percent of the stand rating of KY 31+).

Variety	Proprietor	Lexington						Princeton					
		1996 ^{1,2}	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
		3yr ⁴	4yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr
Advance MaxQ	Pennington Seed												
Bairane	Barenbrug USA												
Barcel	Barenbrug USA	92											
BarElite	Barenbrug USA												
Barolex	Barenbrug USA												
BarOptima PLUS E34	Barenbrug USA												
BAR9TMPO	Barenbrug USA												
Bronson	Ampac Seed												
Cattle Club	Green Seed	37	98	70	93	91							
Carmine	DLF-Jenks												
Cowgirl	Rose Agri-Seed												
Dovey	Barenbrug USA	92											
Festival	Pickseed West												
Festolina	Advanta Seeds	98	86			57							
Fuego	Advanta Seeds		27										
Hoedown	DLF-Jenks					88							
Jesup FF	Pennington Seed	63	91						99				
Jesup MaxQ	Pennington Seed		114	79			103	97					
Johnstone	Proseeds	65	107			92							
KY31+	KY Agric. Exp Sta.	100	100	100	100	100	100	100	100	100	100	100	100(13)
KY31-	KY Agric. Exp Sta.	94	90	102	84	98	103	98	100	82	100	101	96(12)
Kenny	Public			116									
Kokanee	Ampac Seed				43								
Martin II	International Seeds	59											
Maximize	Rose Agri-Seed					99							
Nanryo	Japanese Grassland For.Seed/											101	
Orygun	USDA-ARS/El Reno, OK								99				
Resolute	Ampac Seed						23						
Select	FFR/Sou. St.			109	69	107	101	100					
Southern Cross	Stargrazer		25							67	100	92	98
Stockman	Seed Res. of OR	90											
TF33	Barenbrug USA				52	86	89						
Tuscany II	Seed Res. of OR									102			
Verdant	Am.Grass Seed										100		
Vulcan	International Seeds										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 1997 was grazed 4 years, so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage web site at <www.uky.edu/AgrForage>.

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

4 Number of years of data.

Table 15. Summary of 1996-2010 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	Mean³ (# trials)	
		1996^{1,2}	1997	1998	1999	2000	2001	2002	2003	2004	2005	
		3yr⁴	4yr	3yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	
Abertop	Pennington Seed											-
Albert	Univ. of Wisconsin											-
Amba	DLF-Jenks											-
Ambrosia	Pennington Seed	90										92(2)
Athos	DLF-Jenks											77(2)
Benchmark	FFR/Sou. States	100	105	115	94	118	123	114				113(8)
Benchmark Plus	FFR/Sou. States											
Boone	Public											
Cheyenne	Western Prod. Inc.											
Command	Seed Research of OR											
Crown	Donley Seed	86	96									91(2)
Crown Royale	Donley Seed											-
Crown Royale Plus	Donley Seed											-
Hallmark	James VanLeeuwen	107		104	103							-
Harvestar	Columbia Seeds											
Haymate	FFR/Sou. States	93	71	102	96	53	115	100	118			-
Intensiv	Barenbrug USA											
Mammoth	DLF-Jenks											
Megabite	TurfSeed											
Niva	DLF-Jenks											
Persist	Smith Seed											
Pizza	Advanta Seeds	63										-
Potomac	Public	98										-
Prairie	Turner Seed											
Profile	Scott Seed	98										-
Progress	Scott Seed	111										-
Tekapo	Ampac Seed	93	166	92	104							-
Takena	Smith Seed	81										-
Seco	FFR/Sou. States											-
VP300	Western Prod. Inc.											-

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 1997 was grazed 4 years, so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the KY Forage web site at <www.uky.edu/AgrForage>.

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

⁴ Number of years of data.

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



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