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UNIVERSITY OF KENTUCKY
College of Agriculture, Food and Environment

2013 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.

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Table 1. Summary of Kentucky white clover yield trials 1998-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

			Lexington									Princeton		Quicksand		Eden Shale	
			02[1,2]	03	04	06	07	08	09	10	11	03	05	98	03	03	Mean[3]
Variety	Type	Proprietor	3yr[4]	3yr	3-yr	2-yr	2-yr	3yr	2yr	3yr	3yr	3yr	3-yr	3yr	2yr	2yr	(#trials)
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		100	98		105(5)
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						70(2)
Excel	Ladino	Allied Seed, L.L.C.			100												–
Durana	Intermediate	Pennington		94		94	88	82	85	97	93	87	83		101	95	91(11)
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						–
Kopu II	Intermediate	Ampac Seed	97			97	95	95	103	96	80						95(7)
KY Select	Intermediate	Saddle Butte Ag. Inc									98						–
Ocoee	Ladino	Allied Seed, L.L.C.								89	74						82(2)
Patriot	Intermediate	Pennington		103		87	104	113	95	117	117	104	100		98	99	103(11)
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	107	100	100	104		107(12)
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		136				131(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 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 three 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

Table 2. Summary of Kentucky red clover yield trials 2000-2013 (yield shown as a percentage of the mean of the named commercial varieties in the trial).

		Lexington											Princeton						Quicksand					Eden Shale				Mean[3]
		00[1,2]	00	01	02	03	04	06	08	09	10	11	00	03	05	08	09	11	01	03	05	08	10	00	03	08	10	
Variety	Proprietor	3yr[4]	3yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	3yr	3yr	3yr	3yr	2yr	3yr	2yr	2yr	2yr	2yr	3yr	3yr	3yr	3yr	2yr	3yr	3yr	*(#trials)*
AA117ER	ABI Alfalfa							110							87						92							96(3)
Acclaim	Allied Seed				92																							–
Arlington	WI Agr. Exp.Sta.				72																							–
Belle	Agribiotech	88			82																							85(2)
Cherokee	FL Agr. Exp. Sta.	78			65																							72(2)
Cinnamon	FFR/Sou.St.	111			108																							110(2)
Cinnamon Plus	FFR/Sou.St.					97		109	112	123	117	94			112	102	102	100			103	108	124			108	122	109(15)
Common O	Public										96	97											72				77	86(4)
Dominion	Seed Research of OR							102							95	102					93					109		100(5)
Duration	Cisco Co.			86	100														106									97(3)
Emarwan	Turf-Seed						91			117							106		101				99					103(5)
Freedom!	Barenbrug USA	108	105	127	123	96	118	91	100	108	106	109	105	110	136	107	116	95	111	103	119	106	115	102	102	100	140	110(26)
Freedom!MR	Barenbrug USA				118	115	102	114	114		112			106	101		108			94	111		128		118		125	112(14)
FSG 9601	Allied Seed						89																					–
Impact	Specialty Seeds	106	97										98															100(3)
Juliet	Caudill Seed									84						93	90									84	59	82(5)
Kenland (cert.)	KY Ag.Exp Sta.	110	111	127	139	118	117	117	99	111	99	116	104	102	92	113	106	106	111	88	105	104	123	104	98	110	138	110(26)
Kenland (uncert)	Public										82					74			83				67			66	92	77(6)
Kenstar	KY Ag.Exp Sta.		105										104															105(2)
Kenton	KY Ag.Exp Sta.	100	93	119	109	90	95	112	121				98	95	105	112	94		93	99	106	98		102	98			102(19)
Kenway	KY Ag.Exp Sta.	106	104	111	134		97	119	118				100		94	106	103		100		103	94		102				106(15)
Morning Star	Cal/West Seeds															90										90		90(2)
Plus	Allied Seed	113			113																			97				108(3)
Plus II	Allied Seed								130													97						114(2)
Prima	Public	92			74																							83(2)
Quinequeli	Caudill Seed									92							80										57	76(3)
Red Gold	Proseeds Marketing							81								89										102		91(3)
Red Gold Plus	Turner Seed		97	97			95						95						98					98				97(6)
RedlanGraze	ABI Alfalfa	95																										–
RedlanGraze II	Americas Alfalfa			91	104														93									96(3)
Redland Max	ABI Alfalfa						95																					–
Redstart	Syngenta	102			78																							90(2)
Robust	Scott Seed	92																										–
Robust II	Seed Research of OR															110										108		109(2)
Rocket	Seed Research of OR															106										108		107(2)
Rojo Diablo	Great Plains			99															101									100(2)
Royal Red	FFR/Sou.St.	108	92		91																			96				97(4)
Rustler	Oregro Seeds								83		101	84										94	99				104	94(6)
Scarlet	Dairyland	95																										–
Sienna	Great Plains			91															106									99(2)
Solid	Production Service	97	102		98	84		79					98	87	86						76			105	84			91(11)
Starfire	Ampac Seed	97	93		99								98											95				96(5)
Starfire II	Cal/West & Ampac								101		111					112						110	112			115	111	110(7)
Triple Trust 350	ABI Alfalfa							101							92						92							95(3)
Vesna	DLF-Jenks			53															96									75(2)
Wildcat	Brett Young Seeds									101							107						98					102(3)

[1] Year trial was established.

[2] Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2000 was harvested three 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.

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.

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 and wildlife habitat. Choosing a good alfalfa variety is a key step in establishing a stand of alfalfa. The choice of variety can impact yield, stand persistence, insect and disease resistance, and grazing tolerance.

Orchardgrass (*Dactylus 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.

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 limited because they do not survive as long as tall fescue.

Sudangrass *(Sorghum bicolor* ssp. *drummondi)* 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.

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 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)

Table 3. Summary of Kentucky alfalfa yield trials 2000-2013 (yield shown as a percentage of the mean of the commercial varieties in the test).

		Variety Characteristics[1]						Lexington					Princeton						Bowling Green[2]		Eden Shale	
			Disease Resistance[3]					00[4,5]	02	04	06	08	01	05	08	09	11	11[6]	03	06	03	Mean[7]
Variety	Proprietor	FD	Bw	Fw	An	PRR	APH	5yr[8]	5yr	5yr	7yr	6yr	4yr	5yr	5yr	5yr	3yr	3yr	3yr	4yr	4yr	*(# trials)*
A-4440	Producers Choice	4	HR	HR	HR	HR	HR					100		99								100(2)
A 5225	Producers Choice	5	HR	HR	HR	HR	R					104			107							106(2)
AC Longview	Newfield Seeds	–	HR	–	–	–	–			83												–
Adrenalin	Brett Young	4	HR	HR	HR	HR	HR									105						–
Alfagraze300 RR	America's Alf.	3	HR	R	HR	HR	HR										98	91				95(2)
Ameristand 403T	America's Alf.	3	HR	HR	HR	HR	HR				99	91	97		100	101	105					101(6)
Ameristand 403T Plus	America's Alf.	4	HR	HR	HR	HR	HR									95						–
Ameristand 405T RR	America's Alf.	4	HR	HR	HR	HR	HR										90	101				96(2)
Ameristand 407TQ	America's Alf.	4	HR	HR	HR	HR	HR									104	103					104(2)
Anchormate	ProSeed Marketing	–	–	–	–	–	–					100										–
Arc (certified)	Public	4	LR	MR	HR	–	–	91	96	76			99	95	86				98			92(7)
Archer III	America's Alf.	5	HR	HR	HR	HR	HR									104						–
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR							104								–
Buffalo	Public	–	–	–	–	–	–		90	82	86	80		95	78	90				81	95	86(9)
Caliber	Beck's Hybrids	4	HR	HR	HR	HR	HR										99					–
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR										103					–
Consistency 4.10 RR	Croplan Genetics	4	HR	HR	HR	HR	HR										105	101				103(2)
DK 140	Monsanto	4	HR	HR	HR	HR	HR		95				100									98(2)
DKA-41-18RR	Monsanto	4	HR	HR	HR	HR	HR				106						95	100				100(3)
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR					102										–
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR					110										–
DS4210	Crop Production	4	HR	HR	HR	HR	HR										98					–
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R							101						101		101(2)
Enforcer	FFR/Sou. St.	4	HR	HR	HR	HR	HR			90										82		86(2)
Escalade	Allied Seeds	5	HR	HR	HR	HR	HR													106		–
Evermore	FFR/Sou. St.	5	HR	HR	HR	HR	HR												105	101	103	103(3)
Expedition	NEXGROW	5	HR	HR	R	RR	R			107	112			96								105(3)
Feast +EV	NEXGROW	3	HR	HR	HR	R	HR			106									101		96	101(3)
FSG 406	Allied Seeds	4	HR	HR	HR	HR	HR												110			–
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R			105					110							108(2)
FSG 505	Allied Seeds	5	HR	HR	HR	HR	R												106		108	107(2)
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R					107										–
GA-505	Univ. of GA	–	–	–	–	–	–									98						–
Geneva	NEXGROW	4	HR	HR	HR	HR	HR	106	103				104									104(3)
Genoa	NEXGROW	4	HR	HR	HR	RR	HR			112		99		98	118							107(4)
GH 744	NEXGROW	4	HR	HR	HR	HR	MR		104													–
Gunner	Croplan Genetics	5	HR	HR	HR	HR	HR										106					–
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR													101		–
KingFisher 243	Cal/West	5	HR	HR	HR	HR	HR									98						–
L447HD	Legacy Seeds	4	HR	HR	HR	HR	HR				105											–
L449Aph2	Legacy Seeds	4	HR	HR	HR	HR	HR										96					–
Lancer	Allied Seeds	4	HR	HR	HR	HR	HR										103					–
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR				99			103						110		104(3)
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR								99							–
Mountaineer 2.0	Croplan Gen.	5	HR	HR	HR	HR	HR			108												–
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR				106											–

continued

Table 3. *(continued)*

		Variety Characteristics[1]						Lexington					Princeton						Bowling Green[2]		Eden Shale	
			Disease Resistance[3]					00[4,5]	02	04	06	08	01	05	08	09	11	11[6]	03	06	03	Mean[7]
Variety	Proprietor	FD	Bw	Fw	An	PRR	APH	5yr[8]	5yr	5yr	7yr	6yr	4yr	5yr	5yr	5yr	3yr	3yr	3yr	4yr	4yr	*(# trials)*
PGI 459	Producers Choice	4	HR	HR	HR	HR	R					102										–
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R							105						102		104(2)
Phoenix	FFR/Sou. St.	5	HR	HR	HR	HR	R			113	99	102			101		101			96		102(6)
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR									105	101					103(2)
Radiant-AM	Ampac Seed	4	HR	HR	HR	HR	HR				97											–
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR					103				102				108		104(3)
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR										97					–
Regal	Great Plains	5	HR	HR	R	HR	MR												103		94	99(2)
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R						99	103					94		103	100(4)
Saranac AR (certified)	Public	4	MR	R	HR	LR	–	93	87	77	85	86	92	95	88	94	95		99	89	95	90(13)
Summer Gold	Beck's Hybrids	4	HR	HR	HR	HR	HR			107												–
6422Q	NEXGROW	4	HR	HR	HR	HR	HR									101						–
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR							100						105		103(2)
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	–								113							–
Vernal	Public	2	R	MR	–	–	–		93					95								94(2)
Withstand	FFR/Sou. St.	4	HR	HR	HR	HR	HR				100	90			100		93			114		99(5)
WL 319HQ	W-L Research	3	HR	HR	HR	HR	HR		108													–
WL 327	W-L Research	4	HR	HR	HR	HR	HR		105													–
WL 338SR	W-L Research	4	HR	HR	HR	HR	HR		101													–
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR				101	110			100							104(3)
WL 348AP	W-L Research	4	HR	HR	HR	HR	HR													99		–
WL 354HQ	W-L Research	4	HR	HR	HR	HR	HR										107					–
WL 355RR	W-L Research	4	HR	HR	HR	HR	HR				103						100	97				100(3)
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR			123				106					101		106	109(4)
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR					105				106						106(2)
4m76	FFR/Sou. St.	4.7	HR	HR	R	HR	R		116													–
5-star	Croplan Gen.	5	R	HR	R	R	R												97		99	98(2)
54R02 RR	Pioneer	4	HR	HR	HR	HR	HR										104	110				107(7)
54V46	Pioneer	4	R	HR	HR	HR	R														99	–
54V54	Pioneer	4	HR	HR	HR	HR	HR	98	94				105									99(3)
54V56	Pioneer	–	–	–	–	–	–												98			–
6400HT	NEXGROW	4	HR	HR	HR	HR	HR			108									96			102(2)
6415	NEXGROW	4	HR	HR	HR	HR	HR							103						105		104(2)
6417	NEXGROW	4	HR	HR	HR	HR	HR					105										–
6420	NEXGROW	4	HR	R	HR	R	HR		106													–
6530	NEXGROW	5	HR	HR	HR	HR	HR												92			–
6552	NEXGROW	5	HR	HR	HR	HR	HR					105										–

[1] Variety characteristics: FD = fall dormancy, Bw = bacterial wilt, Fw = fusarium wilt, An = anthracnose, PRR = phytophthora root rot, APH-aphanomyces root rot. Information provided by seed companies.
[2] The Bowling Green test is on soil infested with phytophthora and aphanomyces root rots.
[3] Disease resistance: S = susceptible, LR = low resistance, MR = moderate resistance, R = resistance, HR = high resistance.
[4] Year trial was established.
[5] 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 2002 was harvested for five years, so the final yield report would be "2006 Alfalfa Report" archived in the KY Forage Web site at www.uky.edu/Ag/Forage.
[6] This is a Roundup Ready alfalfa trial.
[7] Mean only presented when respective variety was included in two or more trials.
[8] Number of years of data.

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 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 2013 reports on the forage Web site. See below for specific reports. The forage Web site contains all reports from 2001 through 2013.

Yield and Grazing Tolerance Reports

Reports can be found at www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm.

- 2013 Alfalfa Report (PR-660)
- 2013 Red and White Clover Report (PR-661)
- 2013 Orchardgrass Report (PR-662)
- 2013 Tall Fescue and Bromegrass Report (PR-663)
- 2013 Timothy and Kentucky Bluegrass Report (PR-664)
- 2013 Annual and Perennial Ryegrass and Festulolium Report (PR-665)
- 2013 Alfalfa Grazing Tolerance Report (PR-666)
- 2013 Red and White Clover Grazing Tolerance Report (PR-667)
- 2013 Cool-Season Grass Grazing Tolerance Report (PR-668)
- 2013 Cool-Season Grass Horse Grazing Report (PR-669)
- 2013 Summer Annual Grass Report (PR-670)

About the Authors

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Table 4. Summary of Kentucky tall fescue yield trials 1999-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

		Lexington							Princeton							Quicksand				
		99[1,2]	01	03	05	07	09	11	98	00	02	04	06	08	10	99	01	03	05	Mean[3]
Variety	Proprietor	2-yr[4]	3-yr	2-yr	3-yr	3-yr	3-yr	2-yr	2-yr	2-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	2-yr	4-yr	*(#trials)*
Atlas	ProSeeds Marketing	107														89				98(2)
Atlas Select	ProSeeds Marketing													96						–
Aprilia	ProSeeds Marketing													94						–
BarElite	Barenbrug USA					99		100							92					97(3)
Bariane	Barenbrug USA			87	99														95	94(3)
Barolex	Barenbrug USA				90															–
BarOptima PLUS E34	Barenbrug USA				122	101		111							99					108(4)
BAR 9 TMPO	Barenbrug USA	96														97				97(2)
Bronson	Ampac Seed				88	100	105	103							101				102	100(6)
Bull	Improved Forages			98	102					102	104							97		101(5)
Cajun II	Smith Seed Services							97							101					99(2)
Carmine	DLF International		99														97			98(2)
Cowgirl	Rose-AgriSeeds													102	100					100(2)
DLF-B	DLF International	96																		–
DuraMax GOLD	DLF International							103					106							105(2)
Enhance	Allied Seed							98				107								103(2)
Estancia/ArkShield	Mountain View Seeds			102							101									102(2)
Festival	Pickseed West		107									102					107			105(3)
Fuego	Advanta Seeds	99																		–
Goliath	Ampac Seed						100								99					100(2)
Hoedown	DLF International		104														106			105(2)
HyMark	Fraser Seeds							92						102						97(2)
Jesup EF	Pennington Seed							99	106						103					103(3)
Jesup MaxQ	Pennington Seed				98	104	110	107			94			95	100			100	102	101(9)
Johnstone	ProSeeds Marketing	95	108													95				99(3)
KENHY	KY Agric Exp Sta.											89								–
Kentucky 32	Oregro Seeds							97						99	94					97(3)
Kokanee	Ampac Seed		89							86										88(2)
KY31+[5]	KY Agric Exp Sta.	102	118	112	108	105	102	96	122	108	104		104	93	112	107	124	98	110	107(17)
Maximize	Turf-Seed	96	95													105	93			97(4)
Martin2/647	DLF International							105												–
Nanryo	Jap. Grassland ForageSeed/ USDA-ARS, El Reno, OK					99														–
Noria	ProSeeds Marketing					100														–
RAD-ERF50	Radix Research, Inc.													113						–
Resolute	Ampac Seed		90														65			78(2)
Savory	DLF International												92							–
Seine	Advanta Seeds	99										96								98(2)
Select	FFR/Sou. St.	106	106	94	99	102	98	92	105	105	97	105	102	105	99	107	112	102	91	102(18)
Stockman	Seed Research of OR			108								101	98					105		103(4)
Texoma MaxQ II	Pennington Seed				95															–
TF0203G	Seed Research of OR					90														–
TF33	Barenbrug USA								70											–
Tower/647	DLF International							102												–
Tuscany	Forage Genetics		112																	–
Tuscany II	Seed Research of OR												98							–
Vulcan	International Seeds								97											–
5CAN	Brett Young						86													–

[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 two years, so the final report would be "2001 Tall Fescue 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] KY31+ contains the toxic endophyte. Jesup MaxQ, Texoma MaxQ II, DuraMax GOLD, Martin2/647, Tower/647 and Estancia/Arkshield 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 5. Summary of Kentucky orchardgrass yield trials 1999-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

		Lexington							Princeton							Quicksand					
		1999[1,2]	2001	2003	2006	2007	2009	2011	1998	2000	2002	2004	2006	2008	2010	1999	2001	2003	2005	2010	Mean[3]
Variety	Proprietor	2-yr[4]	2-yr	3-yr	4-yr	3-yr	3-yr	2-yr	2-yr	2-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	3-yr	4-yr	3-yr	*(#trials)*
Abertop	Pennington										71										–
Albert	Univ. of Wis.		103														106				105(2)
Amba	DLF International Seeds		96														80				88(2)
Ambassador	DLF International Seeds											95									–
Ambrosia	American Grass Seed Prod.												90								–
Athos	DLF International Seeds		98														105				102(2)
Benchmark	FFR/Sou. St.	103							101	97	113					106					104(5)
Benchmark Plus	FFR/Sou. St.				100	108	105	104			107		107	104	102			107	102	94	104(11)
Boone	Public								103	104											104(2)
Bronc	Grassland West									98											–
Bounty	Allied Seed				101														98		100(2)
Century	Seed Research of Oregon				98														104		101(2)
Checkmate	Seed Research of Oregon					102															–
Christoss	Proseeds Marketing					92															–
Command	Seed Research of Oregon											87									–
Crown	Donley Seed	101					97		105		101			105		97					101(6)
Crown Royale	Donley Seed																110				–
Crown Royale Plus	Donley Seed										108							97			103(2)
Eastwood	Ampac Seed		86														86				86(2)
Elsie	Rose-AgriSeed													98							–
Endurance	DLF International Seeds												104								–
Extend	Allied Seed							105				100			105					108	105(4)
Hallmark	James VanLeeuwen		102	102							103	98					101	96			100(6)
Harvestar	Columbia Seeds				91	97							106						100		99(4)
Haymaster	FFR/Sou. St.				94			101											97		96(2)
Haymate	FFR/Sou. St.	106							93	100	106					108	104	103			103(7)
Icon	Seed Research of Oregon				105														98		102(2)
Intensiv	Barenbrug			102																	–
Lazuly	Proseeds Marketing													97							–
LG-31	DLF International Seeds											92									–
Mammoth	DLF International Seeds		102														104				103(2)
Megabite	Turf-Seed	94	105											106		101					102(4)
Niva	DLF International Seeds										81										–
Paiute	DLF International Seeds					108															–
Persist	Smith Seed			123	105	106	107	113				101			105			108	101	102	107(10)
Potomac	Public	104					103	95			98			108	101	99				94	100(8)
Prairie	Turner Seed		101		107	101	109	104		95	104		100	104	99		102	105	107	120	104(14)
Prodigy	Caudill Seed						101							103							102(2)
Profit	Ampac Seed					107	96	99						103	102					115	104(6)
RAD-LCF 25	Radix Research														99					102	101(2)
Renegade	Grassland West									95											–
Shawnee	Rose-AgriSeed													86							–
Shiloh	Proseeds Marketing								109												–
Shiloh II	Proseeds Marketing											117									–
Spanish Pink	DLF International Seeds								82												–
Spanish Red	DLF International Seeds	101														94					98(2)
Takena	Smith Seed		107								100						108				105(3)

continued

Table 5. *(continued)*

Variety	Proprietor	Lexington							Princeton							Quicksand					Mean[3] (#trials)
		1999[1,2]	2001	2003	2006	2007	2009	2011	1998	2000	2002	2004	2006	2008	2010	1999	2001	2003	2005	2010	
		2-yr[4]	2-yr	3-yr	4-yr	3-yr	3-yr	2-yr	2-yr	2-yr	3-yr	3-yr	3-yr	3-yr	3-yr	2-yr	2-yr	3-yr	4-yr	3-yr	
Tekena II	Smith Seed			110	102							109						106	104		106(5)
Tekapo	Ampac Seed	88			91	81	82	84					98	86	92	94	92	105	91	81	90(13)
Tucker	Oregro Seeds							95					96	102	96					85	95(5)
Udder	Improved Forages			100	107					102	102							106	99		103(6)
Vailliant	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 1999 was harvested two years, so the final report would be "2001 Orchardgrass 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 6. Summary of Kentucky timothy yield trials 2000-2013 (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	09	11	99	01	00	04	
		2yr[4]	3yr	4yr	3yr	3yr	3yr	3yr	2yr	2yr	2yr	3yr	2yr	
Alma	Newfield Seeds Co/Caudill Seed Co.												81	–
Auroro	General Feed and Grain	100								98				99(2)
Barfleo	Barenbrug USA							95	91					93(2)
Barpenta	Barenbrug USA					74			79					77(2)
Clair	Ky Agric. Exp. Station		109	115	107	95	108	104	113		108		122	109(9)
Classic	Cebeco International Seeds	100		88						87				92(3)
Climax	Canada Agr. Res. Station				79	102	105	98	104					98(5)
Colt	FFR Cooperative	105		101	90					112			99	101(5)
Common	Public		96											–
Derby	FFR Cooperative				112	111		106	112				124	113(5)
Dolina	DLF-Trifolium	100		91										96(2)
Express	Seed Research of Oregon			97		91		97	96					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)
Summit	Allied Seed, L.L.C.			114										–
Talon	Seed Research of Oregon				110	112		108	103					108(4)
Treasure	Seed Research of Oregon				103	115		103	102					106(4)
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 two 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.

Table 7. Summary of Kentucky bluegrass yield trials 1996-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington									Mean[3] (#trials)
		96[1,2] 3yr[4]	03 2yr	04 3yr	06 4yr	07 3yr	08 3yr	09 3yr	10 3yr	11 2yr	
Adam 1	Radix Research			98							–
Barderby	Barenbrug USA					94		101	91	94	95(4)
BigBlue	Rose-AgriSeed							82			–
Common	Public				71	66	68				68(3)
Ginger	ProSeeds Marketing		89		118	119	114	118	112	114	112(7)
Kenblue	Public	90		102	133				96	92	103(5)
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						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 2004 was harvested three years, so the final report would be "2007 Timothy and Kentucky Bluegrass Report" archived in the KY Forage Web site 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.

Table 8. Summary of Kentucky annual ryegrass yield trials 2000-2013 (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)
			03[2,3]	04	05	06	07	08	09	10	10	11	11	12	12	00	02	04	00	03	
Abundant	tetraploid	Ampac Seed				26															–
Acrobat	–	Proseeds Marketing						244													–
AE110	Westerwold tetraploid	Pickseed USA, Inc.										95		107							101(2)
Andy	Westerwold tetraploid	DLF International														99					–
Angus I	Westerwold tetraploid	DLF International																80			–
Attain	Westerwold tetraploid	Smith Seed Services								113											–
Aurelia	Italian tetraploid	Forage Genetics																130			–
Avance	Westerwold diploid	DLF International														109					–
Barextra	Italian tetraploid	Barenbrug USA															117				–
Barmultra II	Italian	Barenbrug USA								136					116						126(2)
Big Boss	Westerwold tetraploid	Smith Seed Services								99					97						98(2)
Big Daddy	Westerwold tetraploid	FFR/Sou. St.								88	102	87				90	85		104		93(6)
Brangus	Italian diploid	KB SeedSolutions								96											–
Bruiser	Westerwold diploid	Ampac Seed						111	104	102		110		93							104(5)
Common	–	Public														85	85		95	87	88(4)
DH-3	Italian tetraploid	Allied Seed					106	45				95									82(3)
Diamond T	Italian tetraploid	Oregro Seeds				18															–
Domino	Italian tetraploid	DLF International															121				–

continued

Table 8. *(continued)*

Variety	Type	Proprietor	Lexington[1]													Princeton			Bowling Green		Mean[4]
			03[2,3]	04	05	06	07	08	09	10	10	11	11	12	12	00	02	04	00	03	*(# trials)*
Ed	Westerwold diploid	Smith Seed Services								98											–
Fantastic	Westerwold diploid	Ampac Seed				105	98									90			97		95(3)
Feast II	Italian tetraploid	Ampac Seed						59	112	111		86		100	81		123				96(7)
Flying A	Westerwold diploid	Oregro Seeds				85		100													–
Fox	Italian diploid	DLF International								110											–
Fria	Westerwold diploid	Allied Seed								97		93		96							95(3)
GR-AS10	Italian	Ampac Seed								115											–
Graze-N-Gro	Westerwold diploid	Seed Research of OR	105				78											94		107	93(3)
Gulf	Westerwold diploid	Public					78	44	86	79		81		77		81	77	57	86		75(10)
Hercules	Westerwold tetraploid	Barenbrug USA													103	110					107(2)
HS-1	Italian diploid	KB SeedSolutions								73											–
Jackson	Westerwold diploid	The Wax Co.		80	100	138	120	100	100	101	105	113	98	98	86		87			96	199(13)
Jumbo	Westerwold tetraploid	Barenbrug USA	103																	104	104(2)
KB Royal	Italian diploid	KB SeedSolutions								84											–
LHT-102	Intermediate	Ampac Seed												108							–
Marshall	Westerwold diploid	The Wax Co.	92	120	100	221	116	169	99	102	104	106	107	107	113	102	97		114	106	110(16)
Maximo	Intermediate tetraploid	Pickseed USA, Inc.										107									–
Monarque	Italian tetraploid	Seed Research of OR																117			–
MX 108	Westerwold tetraploid	Pickseed USA, Inc.										111		122							117(2)
Nelson	Westerwold tetraploid	The Wax Co.									89		95		105						96(3)
Passerel Plus	Westerwold diploid	Pennington Seed															100				–
Primecut	Westerwold brand	Oregro Seeds										100									–
Rio	Westerwold diploid	–														100	97		102		100(3)
Spark	tetraploid	DLF International																	83		–
Stockaid	diploid	–				181															–
Striker	Westerwold tetraploid	Seed Research of OR					104														–
TAMTBO	Italian tetraploid	Tex. Ag Exp Sta.						80		103		115		102							100(4)
Tam 90	Italian diploid	Tex. Ag Exp Sta.						82									85				84(2)
TetraPro	Italian tetraploid	Tex. Ag Exp Sta.						67													–
Tetrelite II	Intermediate	DLF International																122			–
TillageRootMax	Westerwold diploid	Cover Crop Solutions										87		96							92(2)
TillageMax-Bristol	Westerwold diploid	Cover Crop Solutions										96		98							97(2)
TillageMax-INDY	Westerwold diploid	Cover Crop Solutions										95		97							96(2)
T-Rex	Westerwold tetraploid	SaddleButte				25															–
Verdure	Westerwold tetraploid	Smith Seed Services								87											–
Winterhawk	Westerwold diploid	Oregro Seeds								106		123		99							109(3)
Winter Star	Italian tetraploid	Ampac Seed															96				–
Zorro	Italian tetraploid	DLF International														135	130		118		128(3)

[1] In 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.
[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 2003 was harvested one year, so the final report would be "2004 Annual and Perennial Ryegrass 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.

Table 9. Summary of Kentucky perennial ryegrass yield trials 1999-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

			Lexington											Princeton		Bowling Green		Mean[3,4]
			99[1,2]	01	03	04	05	06	07	08	09	10	11	00	02	00	03	
Variety	Type	Proprietor	2yr[5]	2yr	2yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	2yr	2yr	3yr	2yr	2yr	(#trials)
Aires	diploid	Ampac Seed		95											93			94(2)
Amazon	tetraploid	AgriBioTech	108			99									107			104(3)
Anaconda	tetraploid	Caudill Seed	113											95		103		104(3)
Aubisque	tetraploid	Seed Research of OR			144												99	122(2)
Bandit	tetraploid	Grassland West												106		114		110(2)
Bastion C-2	tetraploid	Seed Research of OR				91												–
Bestfor	tetraploid	Improved Forages												113	107	120		113(3)
Best for Plus	hybrid tetraploid	Improved Forages			116	108	118										136	120(4)
BG-34	diploid	Barenbrug USA					83	85				86						85(3)
Bison	hybrid tetraploid	International Seeds															140	–
Boost	tetraploid	Allied Seed							130	125	120	143	113					126(5)
Boxer	tetraploid	AgriBioTech	121											106				114(2)
Calibra	tetraploid	DLF International								96	109	81	96		112			99(5)
CAS MP64	diploid	Cascade International		97														–
Citadel	tetraploid	Ag Canada	101											94	113	103		103(4)
Derby	–	Public														74		–
Eurostar	tetraploid	Seed Research of OR							112									–
Feeder	diploid	Seed Research of OR							76									–
Granddaddy	tetraploid	Smith Seed		118				101	109		76	92	86		111			99(7)
Green Gold	tetraploid	Grasslands Oregon						96										–
Herbal	–	ProSeeds Marketing								77								–
Impressario	tetraploid	DLF International									107							–
Kentaur	tetraploid	DLF International											114					–
Lactal	tetraploid	Brett Young									102							–
Lasso	diploid	DLF International		98														–
Linn	diploid	Public	87	98	98	102		98	85	84	101	92	86	87	88	77		91(13)
Manhatten	diploid	–													85			–
Mara	diploid	Barenbrug USA														85		–
Matrix	diploid	Cropmark seeds			77												64	–
Maverick Gold	hybrid tetraploid	Ampac Seed		97											71			84(2)
Orantas	diploid	DLF International									82							–
Ortet	tetraploid	Oregro Seeds								114								–
Polly II	tetraploid	FFR/Sou. St.	104											110		125		113(3)
Polly Plus	hybrid tetraploid	Allied Seed			64												60	62(2)

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	00	02	00	03	
			2yr[5]	2yr	2yr	3yr	3yr	2yr	3yr	3yr	3yr	2yr	2yr	2yr	3yr	2yr	2yr	
Power	tetraploid	Ampac Seed							110	103	102	100	104					104(5)
Polim	tetraploid	DLF International										106						–
Quartermaster	tetraploid	Radix Research					122											–
Quartet	tetraploid	Ampac Seed		97			56		46						113			78(4)
RAD-CPS212	hybrid tetraploid	Radix Research					134											–
RAD-MI125	hybrid tetraploid	Mountain View Seeds						120										–
Sampson	diploid	International Seeds	87															–
Sierra	diploid	Lewis Seed Co.					89											–
Tonga	tetraploid	Kings AgriSeeds					96				103							100(2)
Yatsyn	diploid	Barenbrug USA	80											89				85(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 two years, so the final report would be "2001 Annual and Perennial Ryegrass 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] 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 1999-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).[1]

Variety	Type[2]	Proprietor	Lexington									Princeton	Quicksand		Mean[5] (#trials)
			1999[3,4]	2001	2003	2005	2007	2008	2009	2010	2011	2000	2001	2003	
			2yr[6]	3yr	2yr	3yr	3yr	3yr	3yr	3yr	2yr	2yr	2yr	2yr	
Agula	MF x IR	Allied Seed								94					–
Barfest	MF x PR	Barenbrug USA								105	98				102(2)
Bonus	MF x IR	Allied Seed								93	57				75(2)
Duo	MF x PR	Ampac Seed	104			84		103	99	95	104				98(6)
Felina	(TF x IR) x TF	DLF International		101						132	106				119(2)
Fojtan	(TF x IR) x TF	DLF International								112	96				104(2)
Gain	MF x IR	Allied Seed								103	88				96(2)
Hykor	(TF x IR) x TF	DLF International			98					133	122			98	118(3)
Lofa	(TF x Int) x Int	DLF International								105	114				115(2)
Perseus	MF x IR	DLF International								132	123				128(2)
Perun	MF x IR	DLF International								127	113				120(2)
Spring Green	MF x PR	Turf-Seed		88		105	100	114	101	113	109		97		103(8)
Sweet Tart	MF x IR	ProSeeds Marketing						88		82	71				80(3)
Vorage	–	Improved Forages										99			–

[1] The festuloliums were in fescue trials from1999-2005.
[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 1999 was harvested two years, so the final report would be "2001 Tall Fescue Report" archived in the KY Forage Web site 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 2008-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington						
		2008[1,2]	2009	2010	2011	2012	2013	Mean[3] (#trials)
		All trials are 1 year yields						
AS9301 BMR	Alta Seeds/Ramer Seed					118		–
Enorma BMR	Cal/West Seeds			99	94	92	91	94(4)
Hayking BMR	Central Farm Supply	111	112	91	97	97	96	101(6)
Monarch V	Public	104	96	102	97	93	98	98(6)
Piper	Public	90	91	97	94	104	105	97(6)
ProMax BMR	Ampac Seed	95	101	110	115	96	103	103(6)
SS130 BMR	Cal/West Seeds			101	103		107	104(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 12. Summary of Kentucky sorghum-sudangrass yield trials 2008-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

Variety	Proprietor/KY Distributor	Lexington						
		2008[1,2]	2009	2010	2011	2012	2013	Mean[3] (#trials)
		All trials are 1 year yields						
AS6402 BMR	Alta Seeds/Ramer Seed					91		–
AS6503 BMR6	Alta Seeds/Ramer Seed						96	–
FSG 208 BMR	Farm Science Genetics			75				–
FSG 214 BMR6	Farm Science Genetics						99	–
Greengrazer V	Farm Science Genetics			166			122	144(2)
GW300 BMR	Gayland Ward Seed				88	78	88	85(3)
HyGain	Turner Seed	104	105	118				109(3)
MS 202 BMR	Farm Science Genetics			106				–
NutraPlus BMR	Cisco	106	97	94	103	106	109	103(6)
Special Effort	Cisco	109	110	93	94	115	120	107(6)
SS211	Southern States				104	93	114	104(3)
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	109(3)
Sweet-For-Ever	Gayland Ward Seed				110	107	81	99(3)
Sweet-For-Ever BMR	Gayland Ward Seed					78	70	74(2)
SweetSix BMR	Gayland Ward Seed						93	–
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.

Table 13. Summary of Kentucky teff yield trials 2008-2013 (yield shown as a percentage of the mean of the commercial varieties in the trial).

	Princeton		Lexington						
	2008[1,2]	2009	2008	2009	2010	2011	2012	2013	Mean[3]
Variety	All trials are 1 year yields								*(#trials)*
Corvallis	94	112	81	101	91	101	96	100	97(8)
Dessie	102	87	99	92	96	94	95	97	95(8)
Excaliber	109	111	109	104	125	108	106	103	109(8)
Highveld	111	115	100	121	106	101	109	103	108(8)
HorseCandi	91	84	99	105	89	108	94	97	96(8)
Moxie								94	–
Pharaoh	95	101	105	85	106	106	97	101	100(8)
Rooiberg	102	107	112	109	113	108	115	102	109(8)
Summer Delight		90		91	96	88	93	100	93(6)
Tiffany	102	106	102	93	82	93	102	98	97(8)
VA T1 Brown		89		99	87	91	94	98	93(6)
Velvet		94		100	97	98	95	103	98(6)
Witkope	94	100	93	101	115	103	101	104	101(8)

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

Table 14. Summary of 2002-2013 Kentucky white clover grazing tolerance trials in Lexington (stand persistence shown as a percent of the mean of the commercial varieties in the test).

			2002[1,2]	2004	2006[3]	2006	2008[4]	2008	2009	2010	2011	Mean[5]
Variety	Type	Proprietor	2yr[6]	4yr	2yr	2yr	3yr	4yr	4yr	3yr	2yr	*(#trials)*
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		115	102	123	105	105(7)
GWC-AS10	–	Ampac Seed								98		–
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	98	98	97(6)
KY Select	Intermediate	KY Agr Ex. Sta./Saddle Butte						105		91		96(2)
Patriot	Intermediate	Pennington		110	137	122		100	111	116	106	115(7)
Pinnacle	Ladino	Allied Seed									89	–
Rampart	–	Oregro Seeds						90				–
Regal	Ladino	Public	92		57	54		93		105		80(5)
Regal Graze	Ladino	Cal/West			84	87	105	90	87	74	96	89(7)
Resolute	Intermediate	FFR/Southern States			101	106					102	103(3)
Seminole	Ladino	Saddle Butte Ag. Inc.		75		97	91					88(3)
Tillman II	Ladino	Caudill Seed	92									–
WBDX	Dutch	Saddle Butte Ag. Inc.								84		–
Will	Ladino	Allied Seed			117	87	107	105	108	112	104	106(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 test. For example, the trial planted in 2002 was grazed for two 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 15. Summary of Kentucky alfalfa grazing trials 1994-2013 (stand persistence shown as a percent of the grazing tolerant Alfagraze).

		Variety Characteristics[1]						Lexington													
			Disease Resistance[2]					1994[3,4]	1996	1997	1998	2000	2000	2001	2004	2005	2006	2008	2009	2010	Mean[5]
Variety	Proprietor	FD	Bw	Fw	An	PRR	APH	3yr[6]	3yr	4yr	3yr	2yr	3yr	3yr	4yr	4yr	3yr	4yr	4yr	3yr	*(#trials)*
ABT 205	W-L Research	2	HR	HR	HR	HR	R	94		84											89(2)
ABT 350	W-L Research	3	HR	HR	HR	HR	HR						46								–
ABT 405	W-L Research	4	HR	HR	HR	HR	R	71	129	69			46	100							83(5)
Alfagraze	Americas Alfalfa	2	MR	R	MR	R	–	100	100	100	100	100	100	100	100	100	100	100	100	100	100(13)
Amerigraze 401+Z	Americas Alfalfa	4	HR	HR	HR	HR	R		120	53	56	26	85	125							78(6)
Ameristand 403T	Americas Alfalfa	4	HR	HR	HR	HR	HR									141	144	50		140	119(4)
Ameristand 403TPlus	Americas Alfalfa	4	HR	HR	HR	HR	HR												133		–
Ameristand 407TQ	Americas Alfalfa	4	HR	HR	HR	HR	HR									136			50		93(2)
Apollo	Americas Alfalfa	4	R	R	R	R	–	48	75	33	47	17	31	25		36	27	25	17	33	35(12)
Arc (certified)	Public	4	LR	MR	HR	–	–		38												–
Archer III	Americas Alfalfa	5	HR	HR	HR	HR	HR												33		–
Baralfa 54	Barenbrug USA	–	R	HR	HR	HR	HR				78										–
Cut-n-Graze	Americas Alfalfa	3	HR	HR	HR	HR	R	68													–
FK 421	Donley Seed Co.	4	HR	H	H	H	H							100							–
Feast	Garst Seeds	3	HR	HR	HR	HR	R		146			87	92								108(3)
Fortress	Syngenta	3	R	R	R	HR	R	40	71												56(2)
Gold Plus	PGI Alfalfa	4	HR	HR	HR	HR	R				81										–
Grazeking	FFR/Southern States	5	MR	HR	HR	R	S		91	41				50							61(3)
Haygrazer	Great Plains Research	4	HR	HR	R	R	MR		75	39			38								51(3)
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR									172					–
Legacy	Green Seed	4	R	R	R	R	R	32													–
LegenDairy5.0	Croplan Genetics	3	HR	HR	HR	HR	HR											0			–
Magnagraze	Dairyland Seed Co.	3	HR	HR	R	HR	–	56													–
Pasture Plus	MBS	3	HR	HR	R	HR	MR	60													–
PGI 424	Producers Choice	4	HR	HR	HR	HR	HR													73	–
PGI 459	Producers Choice	4	HR	HR	HR	HR	HR												17		–
Pioneer 98	Pioneer	3	HR	R	HR	R	–				56										–
ProGro	MBS Inc.	4	HR	HR	R	HR	MR				81										–
Quantum	ABI Alfalfa	2	HR	HR	HR	HR	R	71													–
Rebel	Target Seed	4	HR	HR	HR	HR	HR										79				–
Rugged	Target Seed	3	HR	HR	HR	HR	HR										146				–
Rushmore	Syngenta	4	HR	HR	HR	HR	HR	32													–
Saranac AR (cert.)	Public	4	MR	R	HR	LR	–		77					100							89(2)
Spredor 3	Syngenta	1	HR	HR	R	MR	S	71	123		75					68					96(4)
Spredor 4	Syngenta	2	HR	HR	HR	HR	R											25			–
Stampede	Allied Seed	3	HR	R	R	HR	R		73												–
TS 4007	Producers Choice	4	HR	R	HR	HR	HR													87	–
TS 4010/A4535	Producers Choice	4	HR	R	HR	HR	HR												83	186	135(2)
Triple Trust 450	ABI/America's Alfalfa	5	HR	HR	HR	HR	HR									145					–
Wintergreen	ABI Alfalfa	3	HR	HR	HR	HR	R	95		57	72										75(3)
WL 326GZ	W-L Research	4	HR	HR	HR	HR	HR		118		88										103(2)
115 Brand	Monsanto	3	HR	HR	R	HR	R					56	85								71(2)
5373	Pioneer	4	HR	HR	HRT	MR	LR	21													–
5432	Pioneer	4	HR	HR	–	MR	–								51						–

[1] Variety characteristics: FD = fall dormancy, Bw = bacterial wilt, Fw = fusarium wilt, An = anthracnose, PRR = phytophthera root rot, APH-aphanomyces root rot. Information provided by seed companies.
[2] Disease resistance: S = susceptible, LR = low resistance, MR = moderate resistance, R = resistance, HR = high resistance.
[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 three years so final persistence report would be "1999 Alfalfa Grazing Tolerance Report" archived in the KY Forage Web site 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 16. Summary of 1996-2013 Kentucky tall fescue grazing tolerance trials (stand persistence shown as a percent of the stand rating of KY 31+).

		Lexington															Princeton	
		1996[1,2]	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2002	Mean[3]
Variety	Proprietor	3yr[4]	4yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	*(#trials)*
Advance MaxQ	Pennington Seed											94						–
Bariane	Barenbrug USA								89		75	47	29					60(4)
Barcel	Barenbrug USA	92																–
BarElite	Barenbrug USA												96					–
Barolex	Barenbrug USA										78	101	86					88(3)
BarOptima PLUS E34	Barenbrug USA										100		97			98		98(3)
BAR9TMPO	Barenbrug USA				75													–
Bronson	Ampac Seed			39											98	99		79(3)
Cajun II	Smith Seed Services															98		–
Cattle Club	Green Seed		37	98	70	93	91											78(2)
Carmine	DLF-Jenks						90											–
Cowgirl	Rose Agri-Seed									99								–
Dovey	Barenbrug USA	92																–
Festival	Pickseed West						100	101									89	97(3)
Festorina	Advanta Seeds	98	86		57													80(3)
Fuego	Advanta Seeds			27														–
Goliath	Ampac Seed															98		–
Hoedown	DLF-Jenks					88												–
HyMark	Fraser Seeds													95				–
Jesup EF	Pennington Seed		63	91					99							100		88(4)
Jesup MaxQ	Pennington Seed			114	79			103	97		68	102	97	97	99	99	105	96(11)
Johnstone	Proseeds		65	107			92											88(3)
KY31+[5]	KY Agri. Exp Sta.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100(16)
KY31-[5]	KY Agri. Exp Sta.	94	90	102	84		98	103	98	100	82	100	100	98	99	99	105	97(15)
Kenhy	Public			116														–
Kokanee	Ampac Seed					43												–
Martin II	International Seeds		59															–
Maximize	Rose Agri-Seed						99											–
Nanryo	Japanese Grassland For. Seed/ USDA-ARS,ElReno,OK												100					–
Orygun	–							99										–
Resolute	Ampac Seed						23											–
Select	FFR/Sou. St.			109	69	107	101	100	100		67	100	93	95	97	100	98	95(13)
Southern Cross	–		25															–
Stargrazer	FFR/Sou. St.	90			52	86	89											79(4)
Stockman	Seed Res. of OR									102								–
TF33	Barenbrug USA			34														–
Tuscany II	Seed Res. of OR											100						–
Verdant	Am.Grass Seed											97						–
Vulcan	International Seeds			109														–

[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 four 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/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 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 17. Summary of 1996-2013 Kentucky orchardgrass grazing tolerance trials (stand persistence shown as a percent of the mean of the commercial varieties in the trial).

		Lexington												Princeton	Mean[3]
		1996[1,2]	1997	1998	1999	2000	2001	2002	2003	2004	2005	2007	2009	2010	2002	
Variety	Proprietor	3yr[4]	4yr	3yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	4yr	3yr	4yr	*(#trials)*
Abertop	Pennington Seed							38								–
Albert	Univ. of Wisconsin						115									–
Amba	DLF-Jenks						71									–
Ambrosia	Pennington Seed		90									94				92(2)
Athos	DLF-Jenks						93				60					77(2)
Benchmark	FFR/Sou. States	100	105	115	94	118	123	114							133	113(8)
Benchmark Plus	FFR/Sou. States							120			152	135	106	102	133	124(6)
Boone	Public			131		102										117(2)
Cheyenne	Western Prod. Inc.			94												–
Command	Seed Research of OR									81						–
Crown	Donley Seed		86	96												91(2)
Crown Royale	Donley Seed						100									–
Crown Royale Plus	Donley Seed							124							83	104(2)
Hallmark	James VanLeeuwen	107		104	103		115		113						83	104(6)
Harvestar	Columbia Seeds											75		95		85(2)
Haymate	FFR/Sou. States	93	71	102	96	53	115	100	118						83	92(9)
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		112(4)
Pizza	Advanta Seeds			63												–
Potomac	Public	98						116		119					117	113(4)
Prairie	Turner Seed					127	121								83	110(3)
Profile	Scott Seed	98						116								107(2)
Profit	Ampac Seed												95	100		98(2)
Progress	Scott Seed	111														–
Tekapo	Ampac Seed	93	166	92	104		55	74	118		50	103	95	102	100	96(12)
Takena	Smith Seed		81				99									90(2)
Seco	FFR/Sou. States											85				–
WP300	Western Prod. Inc.			94												–

[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 four 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/Ag/Forage.
[3] Mean only presented when respective variety was included in two or more trials.
[4] Number of years of data.
Stand thinning may have been greater for preferred varieties due to closer grazing. See individual trial tables for preference ratings.

Table 18. Summary of 2000-2013 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	Proprietor	2000[1,2] 4yr[4]	2001 3yr	2003 4yr	2005 3yr	2007 4yr	2008 4yr	2010 3yr	Mean[3] *(#trials)*
AGRLP103	AgResearch USA	128		86					107(2)
Aries	Ampac Seed		139						–
Barfest (FL)	Barenbrug USA							101	–
BG 34	Barenbrug USA				176[5]	145[5]		111	144(3)
Boost	Allied Seed						101	91	96(2)
Citadel	Donley Seed	107							–
Duo (FL)	Ampac Seed	116					95	82	98(3)
Granddaddy	Smith Seed Services		121			70		98	96(3)
Lasso	DLF-Jenks		130						–
Linn	Public	112	129	63			95	107	101(5)
Maverick	Ampac Seed		36						–
Polly II	FFR/Southern States	36	68						52(2)
Power	Ampac Seed					134		101	118(2)
Quartet	Ampac Seed		77		63	50			60(3)
Remington	Barenbrug USA			151[5]					–
Spring Green (FL)	Rose Agri-Seed	101					109	109	106(3)
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 four 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.

Table 19. Summary of 1999-2013 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] 3-yr[4]	2001 4-yr	2002 4-yr	2003 4-yr	2004 4-yr	2005 4-yr	2006 4-yr	2007 4-yr	2008 4-yr	2009 4-yr	2010 3-yr	Mean[3] *(#trials)*
BarOptima PLUS E34	Barenbrug								107			101	104(2)
Bronson	Ampac Seed	80											–
Cattle Club	Green Seed	95											–
Cowgirl	Rose Agri-Seed									105			–
Festorina	Advanta Seed	102											–
Jesup MaxQ	Pennington Seed			98			78			104	97	100	95(5)
Johnstone	ProSeeds		88										–
KY31+[5]	KY Agri. Exp.Sta.		105				102	109	120	107	101	100	106(7)
KY31-[5]	KY Agri. Exp.Sta.	100	100	100	100	100	100	100	100	100	100	100	100(11)
Nanryo	Japanese Grassland For. Seed/ USDA-ARS, El Reno, OK								72				–
Seine	Seed Research of OR					135							–
Select	FFR/Southern States	82		109	94	99	73	104	76	108	98	99	94(10)
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 2001 was grazed four years so the final report would be "2005 Cool-Season Grass Horse 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] 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 20. Summary of 1999-2013 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] 3-yr[4]	2000 4-yr	2001 4-yr	2002 4-yr	2005 4-yr	2006 4-yr	2009 4-yr	2010 3-yr	Mean[3] *(#trials)*
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	103	124(5)
Crown Royale	Grassland Oregon			95						–
Crown Royale Plus	Grassland Oregon				97					–
Haymate	FFR/Southern States	96	85		97					93(3)
Persist	Smith Seed					114		103	102	106(3)
Potomac	Public				117					–
Prairie	Turner Seed			100						–
Profit	Ampac Seed							93		–
Tekapo	Ampac Seed	101	115		93	30		92	95	88(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 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 2005 was grazed four years so the final report would be "2009 Cool-Season Grass Horse 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.

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