

# 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](http://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	Mean <sup>3</sup> (# trials)
		96 <sup>1,2</sup> 3yr <sup>4</sup>	03 2yr	04 3yr	06 4yr	07 3yr	08 2yr	02 3yr	
Adam 1	Radix Research			98					-
Barderby	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						-

<sup>1</sup> Year trial was established.  
<sup>2</sup> 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](http://www.uky.edu/Ag/Forage). The '96 and '03 Lexington and '02 Princeton results are in the appropriate tall fescue reports.  
<sup>3</sup> Mean only presented when respective variety was included in two or more trials.  
<sup>4</sup> 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 <sup>1,2</sup>	2001	2003	2005	2007	Mean <sup>3</sup> (# trials)
		4yr <sup>4</sup>	3yr	4yr	3yr	3yr	
AGRLP103	AgResearch USA	133		86			110(2)
Aries	Ampac Seed		139				-
BG 34	Barenbrug USA				176 <sup>5</sup>	193 <sup>5</sup>	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 <sup>5</sup>			-
Tonga	Ampac Seed				61		-

<sup>1</sup> Year trial was established.  
<sup>2</sup> 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](http://www.uky.edu/Ag/Forage).  
<sup>3</sup> Mean only presented when respective variety was included in two or more trials.  
<sup>4</sup> Number of years of data  
<sup>5</sup> 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** (*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.

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

Variety	Proprietor	Variety Characteristics <sup>1</sup>					
		FD	Disease Resistance <sup>2</sup>				
			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.



**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](http://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 Characteristics <sup>1</sup>					
		FD	Disease Resistance <sup>2</sup>				
			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 355SR	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

<sup>1</sup> 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.

<sup>2</sup> Disease resistance: S=susceptible, LR=low resistance, MR=moderate resistance, R=resistance, HR=high resistance.



**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).<sup>1</sup>**

Variety	Proprietor	Lexington						Princeton	Quicksand		Mean <sup>4</sup> (# trials)
		1999 <sup>2,3</sup>	2001	2003	2005	2007	2008	2000	2001	2003	
		2yr <sup>5</sup>	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			-

<sup>1</sup> The festuloliums were in fescue trials from 1999-2005.

<sup>2</sup> Year trial was established.

<sup>3</sup> 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>.

<sup>4</sup> Mean only presented when respective variety was included in two or more trials.

<sup>5</sup> 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 <sup>1,2</sup>	2004	2006 <sup>3</sup>	2006	2008 <sup>4</sup>	2008	Mean <sup>5</sup> (# trials)
			2yr <sup>6</sup>	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)

<sup>1</sup> Year trial was established.

<sup>2</sup> 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>.

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

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

<sup>5</sup> Mean only presented when respective variety was included in two or more trials.

<sup>6</sup> 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 <sup>3</sup> (# trials)
			02 <sup>1,2</sup>	03	04	06	07	08	09	03	05	98	03	03	
			3yr <sup>4</sup>	3yr	3yr	2yr	2yr	3yr	2yr	3yr	3yr	3yr	2yr	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)

<sup>1</sup> Year trial was established.

<sup>2</sup> 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](http://www.uky.edu/Ag/Forage)>.

<sup>3</sup> Mean only presented when respective variety was included in two or more trials.

<sup>4</sup> 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 Alfagraze, 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 <sup>3</sup> (# trials)
		00 <sup>1,2</sup> 2yr <sup>4</sup>	01 3yr	02 4yr	06 3yr	07 3yr	08 2yr	99 2yr	01 2yr	00 3yr	04 2yr	
Alma	Newfield Seeds Co/Caudill Seed Co.										81	-
Auroro	General Feed and Grain	100						98				99(2)
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)

<sup>1</sup> Year trial was established.  
<sup>2</sup> 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>.  
<sup>3</sup> Mean only presented when respective variety was included in two or more trials.  
<sup>4</sup> Number of years of data.

## Yield and Grazing Tolerance Reports

[www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm](http://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 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 <sup>3</sup> (# trials)										
		1999 <sup>1,2</sup>		2001		2003		2006		2007		1998		2000		2002			2004		2006		2001		2003		2005	
		2yr <sup>4</sup>	3yr	2yr	3yr	2yr	3yr	4yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr		2yr	3yr	2yr	3yr	2yr	3yr	2yr	3yr	4yr	
Abertop	Pennington																											
Albert	Univ. of Wis.			103																								
Amba	DLF International Seeds			96																								
Ambassador	DLF International Seeds																											
Ambrosia	American Grass Seed Prod.																											
Athos	DLF International Seeds			98																								
Benchmark	FFR/Sou. St.	103																										
Benchmark Plus	FFR/Sou. St.																											
Boone	Public																											
Bronc	Grassland West																											
Bounty	Allied Seed																											
Century	Seed Research of Oregon																											
Checkmate	Seed Research of Oregon																											
Christoss	Proseeds Marketing																											
Command	Seed Research of Oregon																											
Crown	Donley Seed	101																										
Crown Royale	Donley Seed																											
Crown Royale Plus	Donley Seed																											
Eastwood	Ampac Seed			86																								
Endurance	DLF International Seeds																											
Extend	Allied Seed																											
Hallmark	James VanLeeuwen			102																								
Harvestar	Columbia Seeds																											
Haymaster	FFR/Sou. St.																											
Haymate	FFR/Sou. St.	106																										
Icon	Seed Research of Oregon																											
Intensiv	Barenbrug USA																											
LG-31	DLF International Seeds																											
Mammoth	DLF International Seeds			102																								
Megabite	Turf-Seed	94		105																								
Niva	DLF International Seeds																											
Paiute	DLF International Seeds																											
Persist	Smith Seed																											
Potomac	Public																											
Prairie	Turner Seed	104		101																								
Profit	Ampac Seed																											
Renegade	Grassland West																											
Shiloh	Proseeds Marketing																											
Shiloh II	Proseeds Marketing																											
Spanish Pink	DLF International Seeds																											
Spanish Red	DLF International Seeds																											
Takena	Smith Seed			107																								
Tekena II	Smith Seed																											
Tekapo	Ampac Seed																											
Tucker	Oregro Seeds	88																										
Udder	Improved Forages																											
Vaillant	Proseeds Marketing																											
Vision	Cropmark 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 Orchardgrass Report" archived in the KY Forage web site at <[www.uky.edu/Ag/Forage](http://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 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		Mean <sup>3</sup> (# trials)				
		1996 <sup>1,2</sup> 3yr <sup>4</sup>	1997 4yr	1998 3yr	1999 4yr	2000 4yr	2001 4yr	2002 4yr	2003 4yr	2004 4yr	2005 4yr	2006 4yr	2007 3yr		2008 4yr			
Advance MaxQ	Pennington Seed																	
Bariane	Barenbrug USA											89			75	47	72	71(4)
Barcel	Barenbrug USA	92																
BarElite	Barenbrug USA																100	
Barolex	Barenbrug USA														78	101	94	91(3)
BarOptima PLUS E34	Barenbrug USA														100	101	101	101(2)
BAR9TMO	Barenbrug USA				75													
Bronson	Ampac Seed			39														
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														
Hoedown	DLF-Jenks							88										
Jesup EF	Pennington Seed		63	91								99						84(3)
Jesup MaxQ	Pennington Seed			114	79					103	97				68	102	99	96(8)
Johnstone	Proseeds		65	107						92								88(3)
KY31+	KY Agric. Exp Sta.	100	100	100	100	100	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	100	82	100	101	96(12)
Kenhy	Public			116														
Kokanee	Ampac Seed					43												
Martin II	International Seeds		59															
Maximize	Rose Agri-Seed						99											
Nanryo	Japanese Grassland For.Seed/																101	
Onygun	USDA-ARSEI Reno, OK																	
Resolute	Ampac Seed						23				99							
Select	FFR/Sou. St.			109	69	107	101	100	100	100	100	100	100	67	100	100	98	94(10)
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														

<sup>1</sup> Year trial was established.

<sup>2</sup> 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/Ag/Forage>.

<sup>3</sup> Mean only presented when respective variety was included in two or more trials.

<sup>4</sup> 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		Mean <sup>3</sup> (# trials)		
		1996 <sup>1,2</sup> 3yr <sup>4</sup>	1997 4yr	1998 3yr	1998 4yr	1999 4yr	2000 4yr	2001 4yr	2002 4yr	2003 4yr	2004 4yr	2005 4yr	2007 3yr	2002 4yr				
Aberthop	Pennington Seed																	
Albert	Univ. of Wisconsin						38											
Amba	DLF-Jenks					71												
Ambrosia	Pennington Seed																	
Athos	DLF-Jenks					93												
Benchmark	FFR/Sou. States					123												
Benchmark Plus	FFR/Sou. States	100	105	115	94	118	114											
Boone	Public			131		102												
Cheyenne	Western Prod. Inc.			94														
Command	Seed Research of OR																	
Crown	Donley Seed		86	96														
Crown Royale	Donley Seed																	
Crown Royale Plus	Donley Seed																	
Hallmark	James VanLeeuwen	107		104	103													
Harvestar	Columbia Seeds																	
Haymatt	FFR/Sou. States	93	71	102	96	53	100											
Intensiv	Barenbrug USA																	
Mammoth	DLF-Jenks																	
Megabite	Turf Seed																	
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																	
WP300	Western Prod. Inc.			94														

<sup>1</sup> Year trial was established.

<sup>2</sup> 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/Ag/Forage](http://www.uky.edu/Ag/Forage)>.

<sup>3</sup> Mean only presented when respective variety was included in two or more trials.

<sup>4</sup> 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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