

# 2006 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 last 10 to 12 years. Detailed variety reports and forage management publications are available at the University of Kentucky forage Web site: [www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage).

## 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. 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.

## Contents

Table 1. Kentucky White Clover Yield Trials .....	3
Table 2. Kentucky Red Clover Yield Trials .....	4
Table 3. Kentucky Alfalfa Yield Trials .....	5
Table 4. Kentucky Tall Fescue and Festulolium Yield Trials .....	7
Table 5. Kentucky Orchardgrass Yield Trials .....	8
Table 6. Kentucky Timothy Yield Trials .....	9
Table 7. Kentucky Bluegrass Yield Trials .....	9
Table 8. Kentucky Annual Ryegrass Yield Trials .....	10
Table 9. Kentucky Perennial Ryegrass Yield Trials .....	11
Table 10. Kentucky White Clover Grazing Trials .....	12
Table 11. Kentucky Alfalfa Grazing Trials .....	13
Table 12. Kentucky Tall Fescue Grazing Trials .....	14
Table 13. Kentucky Orchardgrass Grazing Trials .....	15
Table 14. Kentucky Perennial Ryegrass Grazing Trials .....	16

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 KY-31 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 KY-31. 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 three to four 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.

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).

## Important Selection Considerations

**Local Adaptation and Seasonal Yield.** Choose a variety that is adapted to 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)

**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 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. 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-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 horses or 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.

## 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 is 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, while 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 2006 reports on the forage Web site. See below for specific reports. The forage Web site also contains reports from 2001 through 2005.

Yield and Grazing Tolerance Reports ([www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm](http://www.uky.edu/Ag/Forage/ForageVarietyTrials2.htm))

1. 2006 Alfalfa Report
2. 2006 Red and White Clover Report
3. 2006 Tall Fescue Report
4. 2006 Orchardgrass Report
5. 2006 Timothy and Kentucky Bluegrass Report
6. 2006 Annual and Perennial Ryegrass Report
7. 2006 Alfalfa Grazing Tolerance Report
8. 2006 Red and White Clover Grazing Tolerance Report
9. 2006 Cool Season Grass Grazing Tolerance Report
10. 2006 Cool Season Grass Horse Grazing Report

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**Table 1. Summary of Kentucky White Clover Yield Trials, 1998-2006 (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)
		2002 <sup>1,2</sup> 3yr <sup>4</sup>	2003 3yr	2004 3-yr	2003 3yr	2005 2-yr	1998 3yr	2003 2yr	2003 2yr	
Advantage (Ladino)	Allied Seed		125						106	116(2)
Alice (Intermediate)	Barenbrug					84				-
Avoca (Dutch)	DLF Inter national Seeds					81				-
Barblanca (Intermediate)	Barenbrug		92							-
CA ladino (Ladino)	Public	100		124	103		100	98		105(5)
Colt (Intermediate)	Seed Research of OR		90			109				100(2)
Common (Dutch)	Public	100				87				94(2)
Crescendo (Ladino)	Cal/West	105				108				107(2)
Excel (Ladino)	Allied Seed			100						-
Durana (Dutch)	Pennington		94		87	85		101	95	92(5)
Ivory (Intermediate)	Cebeco	96								-
Jumbo (Ladino)	Ampac Seed	93								-
Kopu II (Intermediate)	Ampac Seed	97								-
Patriot (Intermediate)	Pennington		103		104	100		98	99	101(5)
Pinnacle (Ladino)	Allied Seed					109				-
Regal (Ladino)	Public	99	96	92	107	105	100	104		100(7)
Seminole (Ladino)	Saddle Butte Ag. Inc			108						-
Super Haifa (Intermediate)	Allied Seed			77						-
Tillman II (Ladino)	Caudill Seed	103								-
Will (Ladino)	Allied Seed	107				133				120(2)

<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 three years, so the final report would be "2004 Red and White Clover Report" archived in the Kentucky 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.

**Table 2. Summary of Kentucky Red Clover Yield Trials, 1998-2006 (yield shown as a percentage of the mean of the named commercial varieties in the trial).**

Variety/Proprietor	Lexington						Princeton						Quicksand						Eden Shale			Mean <sup>2</sup> (# trials)
	00 <sup>1,2</sup> 3yr <sup>4</sup>	01 3yr	02 3yr	03 3yr	04 3yr	05 3yr	99 3yr	00 3yr	03 3yr	05 2-yr	98 3yr	01 2yr	03 2yr	05 2-yr	00 3yr	03 2yr	05 2yr					
AA117ER																	89	88(2)				
Acclaim			92															-				
Arlington			72															-				
Belle	88		82				93											88(3)				
Cherokee	78		65															72(2)				
Cinnamon	111		108				115											109(4)				
Cinnamon Plus				97						112						103		104(3)				
Dominion										95						96		96(2)				
Duration		86	100								106							97(3)				
Emarwan					91						101							96(2)				
Freedom!	108	105	127	123	96	118	103	105	110	136	109	111	103	109	102	102	118	110(16)				
Freedom!MR													94					108(8)				
FSG 9601																		-				
Greenstar																		-				
Impact	106	97									100							-				
Kenland (cert.)	110	111	127	139	118	117	117	104	102	92	112	111	88	105	104	98		100(3)				
Kenland (uncert.)											78	83						81(2)				
Kenstar		105						104			107							105(3)				
Kenton	100	93	119	109	90	95	104	98	95	105		93	99	105	102	98		101(15)				
Kenway	106	104	111	134		97	103	100		94		100	101	102				105(11)				
Mammoth																		-				
Plus	113			113														108(4)				
Prima	92			74														83(2)				
Red Gold Plus		97	97			95		95				98			98			97(6)				
RedlanGraze	95						101											98(2)				
RedlanGraze II		91	104									93						96(3)				
Redland Max						95												-				
Redstart	102			78														90(2)				
Robust	92																	-				
Rojo Diablo			99									101						100(2)				
Royal Red	108	92		91			79									96		93(5)				
Scarlet	95																	-				
Sienna																		99(2)				
Solid	97	102		98	84		112	98	87	86	94			92	105	84		95(12)				
Starfire	97	93		99			98							95				96(5)				
Triple Trust 350										92						91		92(2)				
Vesna												96						75(2)				

1 Year trial was established.  
2 Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific trial. For example, the Lexington trial planted in 2000 was harvested three years, so the final report would be "2002 Red and White Clover Report" archived in the Kentucky 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 4. Summary of Kentucky Tall Fescue and Festulolium Yield Trials, 1998-2006 (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> 2-yr <sup>4</sup>	2001 3-yr	2003 2-yr	1998 2-yr	2000 2-yr	2002 3-yr	2004 2-yr	1999 2-yr	2001 2-yr	2003 2-yr	
<b>Tall Fescue Varieties</b>												
Atlas	Proseeds	107							89			99(2)
Bariane	Barenbrug			87								–
BAR 9 TMPO	Barenbrug	96							97			97(2)
Bull	Improved Forages			98		102	103				97	100(4)
Carmine	DLF-Jenks		99							97		98(2)
DLF-B	DLF-Trifolium	96										–
Enhance	Allied Seed							110				–
Festival	Pickseed West		107						105	107		106(3)
Fuego	Advanta Seeds	99										–
Hoedown	DLF-Jenks		104							106		105(2)
Jesup EF	Pennington Seed				106							–
Jesup MaxQ	Pennington Seed						98				100	99(2)
Johnstone	Proseeds	95	108						95			99(3)
Kenhy	KY Agric Exp Sta.							94				–
Kokanee	Ampac Seed		89			86						88(2)
KY31+	KY Agric Exp Sta.	102	118	113	122	108	104	79	107	124	98	108(10)
Maximize	Turf-Seed	96	95						105	93		97(4)
Resolute	Ampac Seed		90							65		78(2)
Seine	Advanta Seeds	99						98				99(2)
Select	FFR/Sou. St.	106	106	94	105	105	95	110	107	112	102	104(10)
Stockman	Seed Research of OR			109					104			105
TF33	Barenbrug				70							–
Tuscany	Forage Genetics		112									–
Vulcan	International Seeds				97							–
<b>Festulolium Varieties</b>												
Duo	Ampac Seed	104										–
Felina	DLF-Jenks		101									–
Hykor	DLF International			98							98	98(2)
Spring Green	Turf-Seed		88							97		93(2)
Vorage	Improved Forages					99						–
<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 1999 was harvested two years, so the final report would be "2001 Tall Fescue Report" archived in the Kentucky Forage Web site at < <a href="http://www.uky.edu/Ag/Forage">www.uky.edu/Ag/Forage</a> >. <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 5. Summary of Kentucky Orchardgrass Yield Trials, 1999-2006 (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> 2-yr <sup>4</sup>	2001 2-yr	2003 3-yr	1998 2-yr	2000 2-yr	2002 3-yr	1999 2-yr	2001 2-yr	2003 3-yr	
Abertop	Pennington					71				-	
Albert	Univ. of Wis.		103					106		105(2)	
Amba	DLF-Jenks		96					80		88(2)	
Athos	DLF-Jenks		98					105		102(2)	
Benchmark	FFR/Sou. St.	103			101	97	113	106		104(5)	
Benchmark Plus	FFR/Sou. St.					107			107	107(2)	
Boone	Public				103	104				104(2)	
Bronc	Grassland West					98				-	
Crown	Donley Seed	101			105		101	97		101(4)	
Crown Royale	Donley Seed							110		-	
Crown Royale Plus	Donley Seed					108			97	103(2)	
Eastwood	Ampac Seed		86					86		86(2)	
Hallmark	James VanLeeuwen		102	102			103	101	96	101(5)	
Haymate	FFR/Sou. St.	106			93	100	106	108	104	103	103(7)
Intensiv	Barenbrug			102						-	
Mammoth	DLF-Jenks		102					104		103(2)	
Megabite	Turf-Seed	94	105					101		100(3)	
Niva	DLF-Jenks					81				-	
Persist	Smith Seed			123					108	116(2)	
Potomac	Public	104				98	99			100(3)	
Prairie	Turner Seed		101			95	104	102	105	101(5)	
Renegade	Grassland West					95				-	
Shiloh	Proseeds				109					-	
Spanish Pink	International Seeds				82					-	
Spanish Red	International Seeds	101						94		98(2)	
Takena	Smith Seed		107				100		108	105(3)	
Tekena II	Smith Seed			110					106	108(2)	
Tekapo	Ampac Seed	88					94	92	105	95(4)	
Udder	Improved Forages			100		102	102			106	103(4)
Vision	Cropmark Seeds			63					67	65(2)	

<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 1999 was harvested two years, so the final report would be "2001 Orchardgrass Report" archived in the Kentucky 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.



**Table 6. Summary of Kentucky Timothy Yield Trials, 1999-2006 (yield shown as a percentage of the mean of the commercial varieties in the trial).**

Variety/Proprietor		Lexington			Quicksand		Princeton		Mean <sup>3</sup> (# trials)
		00 <sup>1,2</sup> 2yr <sup>4</sup>	01 3yr	02 4yr	99 2yr	01 2yr	00 3yr	04 2yr	
<b>Commercial Varieties—Available for Farm Use</b>									
Alma	Newfield Seeds Co/Caudill Seed Co.							81	–
Auroro	General Feed and Grain	100			98				99(2)
Clair	Ky Agric. Exp. Station		109	115		108		122	114(4)
Classic	Cebeco International Seeds	100		88	87				92(3)
Colt	FFR Cooperative	105		101	112			99	104(4)
Common	Public		96						–
Derby	FFR Cooperative							124	–
Dolina	DLF-Trifolium	100		91					96(2)
Express	Seed Research of Oregon			97					–
Hokuei	Snow Brand Seed	103							–
Hokusei	Snow Brand Seed	97			99				98(2)
Joliet	Newfield Seeds Co/Caudill Seed Co.							90	–
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					–
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 two years, so the final report would be “2002 Timothy Report” archived in the Kentucky 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.

**Table 7. Summary of Kentucky Bluegrass Yield Trials, 1996-2006 (yield shown as a percentage of the mean of commercial varieties in the trial).**

Variety/Proprietor		Lexington			Princeton	Mean <sup>3</sup> (# trials)
		96 <sup>1,2</sup> 3yr <sup>4</sup>	03 2yr	04 2yr	02 3yr	
Adam 1	Radix Research			100		–
Barderby	Barenbrug				114	–
Ginger	Proceeds Marketing		89	100		95(2)
Kenblue	Public	90				–
Lato	Turf Seed Inc.	110				–
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 two years, so the final report would be “2006 Timothy and Kentucky Bluegrass Report” archived in the Kentucky Forage Web site at <[www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage)>. The 1996 and 2003 Lexington and 2002 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 8. Summary of Kentucky Annual Ryegrass Yield Trials, 1999-2006 (yield shown as a percentage of the mean of the commercial varieties in the trial).**

Variety/Proprietor		Lexington					Princeton			Bowling Green		Mean <sup>3,4</sup> (# trials)
		1999 <sup>1,2</sup>	2001	2003	2004	2005	2000	2002	2004	2000	2003	
Andy	DLF International	112	105				99					105(3)
Angus I	DLF International								80			-
Aurelia	Forage Genetics		120						130			125(2)
Avance	DLF International	113					109					111(2)
Barextra	Barenbrug							117				-
Big Daddy	FFR/Sou. St.	87	86				90	85		104		90(5)
Common	Public						85	85		95	87	88(4)
Domino	DLF International							121				-
Fantastic	Ampac Seed	83					90			97		90(3)
Feast	Ampac Seed		90									-
Feast II	Ampac Seed		98					123				111(2)
Graze-N-Gro	Seed Research of OR			105					94		107	102(3)
Gulf	Public		72				81	77	57	86		75(5)
Hercules	Barenbrug	114					110					112(2)
Jackson	The Wax Co.				80	100		87			96	91(4)
Jeanne	DLF International		124									-
Jumbo	Barenbrug			103							104	104(2)
King	Lewis Seed		92									-
Marshall	The Wax Co.	87		92	120	100	102	97		114	106	102(8)
Monarque	Seed Research of OR								117			-
Passerel Plus	Pennington Seed							100				-
Rio		88					100	97		102		97(4)
Spark	DLF International	87								83		85(2)
Tam 90								85				-
Tetrelite II	DLF International								122			-
Winter Star	Ampac Seed		87					96				92(2)
Zorro	DLF International	120	127				135	130		118		126(5)

<sup>1</sup> Year trial was established. All trials are 1 year yields.

<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 1999 was harvested one year, so the final report would be "2000 Annual and Perennial Ryegrass Report" archived in the Kentucky 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> In annual ryegrass, low yielding varieties usually result from winterkill.

**Table 9. Summary of Kentucky Perennial Ryegrass Yield Trials, 1999-2006 (yield shown as a percentage of the mean of the commercial varieties in the trial).**

Variety/Proprietor		Lexington				Princeton		Bowling Green		Mean <sup>3,4</sup> (# trials)
		1999 <sup>1,2</sup> 2yr <sup>5</sup>	2001 2yr	2003 2yr	2004 2yr	2000 2yr	2002 3yr	2000 2yr	2003 2yr	
Aires	Ampac Seed		95				93			94(2)
Amazon	AgriBioTech	108			98		107			104(3)
Anaconda	Caudill Seed	113				95		103		104(3)
Aubisque	Seed Research of OR			144					99	122(2)
Bandit	Grassland West					106		114		110(2)
Bastion C-2	Seed Research of OR				90					-
Bestfor	Improved Forages					113	107	120		113(3)
Bestfor Plus	Improved Forages			116	111				136	121(3)
Bison	International Seeds								140	-
Boxer	AgriBioTech	121				106				114(2)
Calibra	DLF International						112			-
CAS MP64	Cascade International		97							-
Citadel	Ag Canada	101				94	113	103		103(4)
Derby	Public							74		-
Granddaddy	Smith seed		118				111			115(2)
Lasso	DLF International		98							-
Linn	Public	87	98	98	102	87	88	77		91(7)
Manhattan							85			-
Mara	Barenbrug							85		-
Matrix	Cropmark seeds			77					64	-
Maverick Gold	Ampac Seed		97				71			84(2)
Polly II	FFR/Sou. St.	104				110		125		113(3)
Polly Plus	Allied Seed			64					60	62(2)
Quartet	Ampac Seed		97				113			105(2)
Sampson	International Seeds	87								-
Yatsyn	Barenbrug	80				89				85(2)

<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 1999 was harvested two years, so the final report would be "2001 Annual and Perennial Ryegrass Report" archived in the Kentucky 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> In perennial ryegrass, low yielding varieties usually result from winterkill or summer mortality.

<sup>5</sup> Number of years of data.

**Table 10. Summary of Kentucky White Clover Grazing Trials, 2002-2006 (stand persistence shown as a percent of the mean of the commercial varieties in the test).**

Variety/Proprietor		2002 <sup>1,2</sup> 2yr <sup>4</sup>	2004 2yr	2005 1yr	Mean <sup>3</sup> (# trials)
Alice (intermediate)	Barenbrug USA		91	100	96(2)
Barblanca (Intermediate)	Barenbrug USA		133	103	118(2)
Colt (intermediate)	Seed Research of OR		100	111	106(2)
Crescendo (Ladino)	Cal/West	84			–
Durana (Dutch)	Pennington		88	106	97(2)
Ivory (Intermediate)	Cebeco	132	119		133(2)
Kopu II (Intermediate)	Ampac Seed			88	–
Patriot (intermediate)	Pennington		95	110	103(2)
Regal (Ladino)	Public	92		83	93(2)
RegalGraze (Ladino)	Cal/West		103		–
Resolute (Intermediate)	FFR/Southern States			106	–
Seminole (Ladino)	Saddle Butte Ag. Inc.		72		–
Tillman II (Ladino)	Caudill Seed	92			–
Will (Ladino)	Allied Seed			95	–

<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 two years so the final persistence report would be "2004 Red and White Clover Grazing Tolerance Report" archived in the Kentucky 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.

**Table 11. Summary of Kentucky Alfalfa Grazing Trials, 1994-2006 (stand persistence shown as a percent of the grazing tolerant Alfagrazee).**

Variety/Proprietor	Variety Characteristics <sup>1</sup>										1994 <sup>3,4</sup> 3yr <sup>6</sup>	1996 3yr	1997 4yr	1998 3yr	2000 2yr	2000 3yr	2001 3yr	2004 2yr	Mean <sup>5</sup> (# trials)
	FD	Disease Resistance <sup>2</sup>					APH												
		Bw	Fw	An	PRR	HR													
ABT 205	2	HR	HR	HR	HR	R	HR	R	HR	R	84								89(2)
ABT 350	3	HR	HR	HR	HR	HR	HR	HR	HR	HR				46					-
ABT 405	4	HR	HR	HR	HR	HR	HR	HR	HR	R	69			46		100			83(5)
Alfagrazee	2	MR	R	MR	R	-	R	-	R	-	100	100	100	100	100	100	100	100	100(8)
Amerigraze 401+Z	4	HR	HR	HR	HR	HR	HR	HR	HR	R	120	53	56	26	85	125			78(6)
Apollo	4	R	R	R	R	-	R	-	R	-	75	33	47	17	31	25			39(7)
Arc (certified)	4	LR	MR	HR	-	-	-	-	-	-	38								-
Baralfa 54	-	R	HR	HR	HR	HR	HR	HR	HR	HR			78						-
Cut-n-Graze	3	HR	HR	HR	HR	HR	HR	HR	HR	R	68								-
FK 421	4	HR	H	H	H	H	H	H	H	H						100			-
Feast	3	HR	HR	HR	HR	HR	HR	HR	HR	R	146			87	92				108(3)
Fortress	3	R	R	R	R	R	R	R	R	R	40	71							56(2)
Gold Plus	4	HR	HR	HR	HR	HR	HR	HR	HR	R			81						-
Grazeking	5	MR	HR	HR	HR	R	R	R	S	S	91	41				50			61(3)
Haygrazer	4	HR	HR	HR	R	R	R	R	MR	MR	75	39			38				51(3)
Legacy	4	R	R	R	R	R	R	R	R	R	32								-
Magnagrazee	3	HR	HR	R	HR	HR	HR	HR	-	HR	56								-
Pasture Plus	3	HR	HR	R	HR	R	HR	MR	MR	MR	60								-
Pioneer 98	3	HR	R	HR	R	R	R	R	-	-			56						-
ProGro	4	HR	HR	R	R	R	R	R	MR	MR			81						-
Quantum	2	HR	HR	HR	HR	HR	HR	HR	R	R	71								-
Rushmore	4	HR	HR	HR	HR	HR	HR	HR	HR	HR	32								-
Saranac AR (cert.)	4	MR	R	HR	LR	-	-	-	-	-	77					100			89(2)
Spredor 3	1	HR	HR	R	MR	S	MR	S	S	S	123		75						90(3)
Stampede	3	HR	R	R	R	R	R	R	R	R	73								-
Wintergreen	3	HR	HR	R	HR	R	HR	R	R	R	95	57	72						75(3)
WL 326GZ	4	HR	HR	HR	HR	HR	HR	HR	HR	HR	118		88						103(2)
115 Brand	3	HR	HR	R	HR	R	HR	R	R	R				56	85				71(2)
5373	4	HR	HR	HR	HRT	MR	MR	LR	LR	LR	21								-
5432	4	HR	HR	HR	-	MR	-	-	-	-							56		-

<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.

<sup>3</sup> Year trial was established.

<sup>4</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 Lexington trial planted in 1996 was grazed for three years so final persistence report would be "1999 Alfalfa Grazing Tolerance Report" archived in the Kentucky Forage Web site at <www.uky.edu/Ag/Forage>.

<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 12. Summary of Kentucky Tall Fescue Grazing Trials, 1996-2006 (stand persistence shown as a percent of the stand rating for 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 3yr		2002 4yr
Bariane	Barenbrug USA								97		-
Barcel	Barenbrug USA	92									-
BAR9TMPO	Barenbrug USA				75						-
Bronson	Ampac Seed			39							-
Cattle Club	Green Seed		37	98	70	93	91				78(2)
Carmine	DLF-Jenks						90				-
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					98		84(3)
Jesup MaxQ	Pennington Seed			114	79			103	99	105	100(5)
Johnstone	Proseeds		65	107			92				88(3)
KY31+	KY Agri. Exp Sta.	100	100	100	100	100	100	100	100	100	100(9)
KY31-	KY Agri. Exp Sta.	94	90	102	84		98	103	100	105	97(8)
Kenhy	Public			116							-
Kokanee	Ampac Seed					43					-
Martin II	International Seeds		59								-
Maximize	Turf Seed						99				-
Orygun								99			-
Resolute	Ampac Seed						23				-
Select	FFR/Sou. St.			109	69	107	101	100	99	98	98(7)
Southern Cross			25								-
Stargrazer	FFR/Sou. St.	90			52	86	89				79(4)
TF33	Barenbrug USA			34							-
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 in 1997 was grazed four years so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the Kentucky Forage Extension 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.

**Table 13. Summary of Kentucky Orchardgrass Grazing Trials, 1996-2006 (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	1999 4yr	2000 4yr	2001 4yr	2002 4yr	2003 3yr		2002 4yr
Abertop	Pennington Seed							38		-	
Albert	Univ. of Wisconsin						115			-	
Amba	DLF-Jenks						71			-	
Ambrosia	Pennington Seed		90							-	
Athos	DLF-Jenks						93			-	
Benchmark	FFR/Sou. States	100	105	115	94	118	123	114		133	113(8)
Benchmark Plus	FFR/Sou. States							120		133	127(2)
Boone	Public			131		102					117(2)
Cheyenne	Western Prod. Inc.			94							-
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		95	83	101(6)
Haymate	FFR/Sou. States	93	71	102	96	53	115	100	105	83	91(9)
Intensiv	Barenbrug USA								96		-
Mammoth	DLF-Jenks						115				-
Megabite	Turf Seed						77				-
Niva	DLF-Jenks							76		83	80(2)
Pizza	Advanta Seeds			63							-
Potomac	Public	98						116		117	110(3)
Prairie	Turner Seed					127	121			83	110(3)
Profile	Scott Seed	98						116			107(2)
Progress	Scott Seed	111									-
Tekapo	Ampac Seed	93	166	92	104		55	74	105	100	99(8)
Takena	Smith Seed		81				99				90(2)
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 four years so the final report would be "2001 Cool-Season Grass Grazing Tolerance Report" archived in the Kentucky Forage Extension 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.

**Table 14. Summary of Kentucky Perennial Ryegrass Grazing Trials, 2000-2006 (stand persistence shown as a percent of the mean of the commercial varieties in the trial).**

<b>Variety/Proprietor</b>		<b>2000<sup>1,2</sup> 4yr<sup>4</sup></b>	<b>2001 3yr</b>	<b>2003 3yr</b>	<b>Mean<sup>3</sup> (# trials)</b>
AGRLP103	AgResearch USA	133		81	107(2)
Aries	Ampac Seed		139		-
Citadel	Donley Seed	112			-
Granddaddy	Smith Seed Services		121		-
Lasso	DLF-Jenks		130		-
Linn	Public	117	129	79	108(3)
Maverick	Ampac Seed		36		-
Polly II	FFR/Southern States	37	68		53(2)
Quartet	Ampac Seed		77		-
Remington	Barenbrug USA			140	-

<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 four years so the final report would be "2004 Cool-Season Grass Grazing Tolerance Report" archived in the Kentucky Forage Extension 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.



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