College of Agriculture,

2013 Alfalfa Report

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Introduction

Alfalfa (Medicago sativa) has historically been the highest-yielding, highest-quality forage legume grown in Kentucky. It is an important part of Kentucky's cash hay enterprise and is an important component in dairy, horse, beef, and sheep diets. Choosing a good variety is a key step in establishing a stand of alfalfa. The choice of variety can impact yield, thickness of stand, and persistence.

This report provides yield data on alfalfa varieties included in current yield trials in Kentucky as well as guidelines for selecting alfalfa varieties. Table 12 shows a summary of all alfalfa varieties tested in Kentucky during the past 10-plus years. The UK Forage Extension Web site at www.uky.edu/Ag/Forage contains electronic versions of all forage variety testing reports from Kentucky and surrounding states as well as a large number of other forage publications.

Considerations in Selecting an Alfalfa Variety

Local adaptation and persistence.

High yields in variety tests over a range of years and locations are the best indication a variety is locally adapted and persistent. Several varieties are adapted for use in Kentucky as determined from results in this report.

Winter-hardiness. Each variety has a fall dormancy (FD) rating that ranges from 1 (very dormant) to 9 (non-dormant). In general, varieties with lower dormancy ratings are more winterhardy but are slower to initiate growth in the spring and show reduced fall growth. Therefore, fall dormancy can lead to reduced annual yields compared to less-dormant varieties. Generally, alfalfa varieties with FD ratings of 2 to 5 will show good winter survival in Kentucky. Varieties with ratings of 6 and above are usually not winter-hardy under Kentucky conditions. Many Kentucky producers have found that FD 4 varieties provide the best combination of yield and winter survival. In recent years some companies also have begun to report a winter survival index (WS) that ranges from 1 to 6. Varieties with a WS of 1 show superior winter survival, and varieties with a WS of 6 are not winter-hardy.

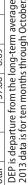
Disease and pest resistance. In Kentucky, producers should use varieties that are resistant (R) to aphanomyces root rot (APH), phytophthora root rot (PRR) and anthracnose (AN) and have at least a moderate resistance (MR) to bacterial wilt (Bw) and fusarium wilt (Fw). Kentucky research indicates that aphanomyces root rot is a widespread problem in the state during stand establishment and resistance is beneficial, particularly in soils also infested with phytophthora root rot.

Phytophthora root rot is a fungal disease associated with poorly drained soils or excessive rainfall. This disease causes yellowish- to reddishbrown areas on roots and crowns that eventually become black and rotten. The top growth of infected plants appears stunted and yellow.

Anthracnose, also caused by a fungus, attacks the stems of alfalfa, preventing water flow to the rest of the shoot and causing sudden wilting. These wilted shoots have a characteristic "shepherd's crook" appearance. Anthracnose can also cause a bluish-black crown rot. Bacterial wilt and fusarium wilt are infections of the water-conducting tissues of alfalfa roots and do not cause any noticeable root rot. These diseases prevent water flow to leaves, resulting in wilting of shoots and the eventual death of infected plants. Roots infected with bacterial wilt often have a

11, 2012, and 2013.	
2007, 2008, 2009, 2010, 2011, 2012,	
at Lexington, Kentucky in 20	
. Temperature and rainfall a	
Table 1	

Name Name <th< th=""><th>2007</th><th>2007</th><th>:</th><th></th><th></th><th></th><th>0</th><th>8</th><th>:</th><th></th><th>2009</th><th></th><th>:</th><th></th><th>2010</th><th></th><th></th><th></th><th>2011</th><th></th><th>:</th><th></th><th>2012</th><th>2</th><th>:</th><th></th><th>20132</th><th>32</th><th>:</th></th<>	2007	2007	:				0	8	:		2009		:		2010				2011		:		2012	2	:		20132	32	:
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-0.12 28 -8 2.15 -1.93 41 +5 5.58 +1.60 42 +6 9.57 +4.94 +4.16 36.14 -8.41 -8.41 -8.80 +24.25 -89.49 +4.94 -4.94	46 +1 2.86 -0.53 43 -2 2.53 -0.86 49 +4	2.86 -0.53 43 -2 2.53 -0.86 49	-0.53 43 -2 2.53 -0.86 49	-0.53 43 -2 2.53 -0.86 49	-2 2.53 -0.86 49	2.53 -0.86 49	-0.86 49	46		+4	_		2.45				+1.19	20	+5	9.53	+6.14	43	-5	1.81	-0.65				
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	37.86 -6.69 47.24 +2.69	69.9-	69.9-	69.9-	47.24 +2.69	47.24 +2.69	47.24 +2.69	+2.69			4		-4.16		(*)	_	-8.41			58.80	+24.25			49.49	+4.94		4,	27.08	+14.90





yellowish-brown discoloration of the inner woody cylinder of the taproot. Fusarium infection can be recognized by brown-to-red streaks in the inner woody cylinder of the taproot.

Aphanomyces root rot is another fungal disease associated with poorly drained soils or excessive rainfall. Affected seedlings will be stunted but remain upright, unlike those with symptoms of damping off. In established plants, root symptoms are not as well defined as those for phytophthora root rot, but brown lesions on the taproot indicate where lateral roots were destroyed. This disease can be associated with phytophthora root rot, and together they may form a root disease complex. Aphanomyces root rot is known to affect new seedings in Kentucky, but it is unclear how it affects established alfalfa. In years with overly cool and wet spring weather, alfalfa stands have suffered great damage due to aphanomyces when planted with varieties susceptible to this disease.

Certain alfalfa varieties are reported to have resistance to sclerotinia crown and stem rot; however, research at the University of Kentucky has shown that some of these varieties have only limited resistance when conditions are ideal for disease development. Therefore, the best prevention against sclerotinia is to plant by mid-August if fall seeding or plant in the spring. If seeding in the fall, sclerotinia-resistant varieties can provide additional insurance.

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, such as those that are reported in this publication or others like it. Other information on the label will include the test date. which must be within the previous nine months, the level of germination, and the percentage of other crop and weed seed. Order seed well in advance of planting time to assure it will be available when needed.

Description of the Tests

Alfalfa variety tests were established at Lexington (2006, 2008, 2011 and 2012) and Princeton (2009, 2011 and 2013) as part of the forage variety testing program. A conventional alfalfa trial was sown at Princeton in the spring of 2013 but did not establish well so was replanted in the fall of 2013. The soils are well suited to alfalfa because they are generally well drained silt loam soils (Maury and Crider at Lexington and Princeton, respectively).

Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 feet by 15 feet. In each test, 20 pounds of seed per acre were planted into a prepared seedbed using a disk drill. Plots were harvested with a sickle-type forage plot harvester. First cuttings in the seeding year were delayed to allow alfalfa to reach maturity, indicated by full bloom. Otherwise, harvests were taken when the alfalfa was in the bud to early flower stage. Fresh weight samples were taken at each harvest to calculate percentage of dry matter production. Management of all tests for establishment, fertility, pest control, and harvest management was according to Kentucky Cooperative Extension recommendations. Pests (weeds and insects) were controlled so that they would not limit yield or persistence.

Results and Discussion

Weather data for Lexington and Princeton are presented in tables 1 and 2.

Yield data (on a dry-matter basis) for all tests are reported in tables 3 through 10, and Table 13. Stated yields are adjusted for percentage of weeds; therefore, the value listed is for the crop only. Varieties are listed in order from highest to lowest total production (for the life of the test). Experimental varieties are listed separately at the bottom of the tables and are not available commercially. Yields are given by cutting date for 2013 and as total annual production.

	all	DEP	-0.79	-2.70	-1.67	-4.18	-3.60	-1.47	-2.89	+0.26	+1.82	-0.11
	Rainfall	Z	3.01	1.73	3.27	0.62	1.36	2.38	1.40	4.27	5.45	2.94
2012	Q	DEP	9+	9+	+13	+1	+4	-5	+5	0	-2	-2
	Temp	.	40	54	09	09	71	74	83	77	69	57
	fall	DEP	-1.45	+1.28	+0.60	+11.35	+2.26	+0.75	-1.31	-0.06	+0.53	-1.70
-	Rainfall	Z	2.35	5.71	5.54	16.15	7.22	4.60	2.98	3.95	3.86	1.35
2011	du	DEP	-2	+2	+3	+2	-1	+2	+3	0	-3	-2
	Temp	.	32	40	20	61	99	77	81	77	89	22
	ıfall	DEP	-0.74	-2.89	-1.70	-1.54	+5.45	0.97	-1.56	-1.55	-2.39	-2.08
2010	Rainfall	Z	3.06	1.54	3.24	3.3	10.41	4.82	2.73	2.46	0.94	26'0
20	Temp	DEP	-3	5-	+1	3	+2	4	7	4	1	+1
	Ter	.	31	33	48	62	69	79	80	81	72	09
	ıfall	DEP	-2.86	-1.15	-2.05	+0.55	+1.18	+4.12	+3.16	-1.60	+1.28	+6.03
2009	Rainfal	Z	0.94	3.28	2.89	5.35	6.14	7.97	7.45	2.44	4.61	9.08
20	Temp	DEP	-1	+4	9+	-1	0	+2	4-	-2	0	4-
	Tel	.	33	42	53	58	29	77	74	75	71	52
	Rainfall	DEP	-1.40	+2.33	+2.61	+1.76	+1.23	-2.61	+0.83	-3.32	-2.72	-0.84
2008	Rair	Z	2.40	92.9	7.55	6.56	6.19	1.24	5.12	0.69	0.61	2.21
20	Temp	DEP1	+3	+1	+	-1	-2	+3	+1	0	+3	+1
	Te	.	37	39	48	28	9	78	6/	77	74	09
			JAN	FEB	MAR	APR	MAY	NOC	JUL	AUG	SEP	OCT

Table 2. Temperature and rainfall at Princeton, Kentucky in 2008, 2009, 2010, 2011, 2012, and 2013.

+0.15

75

75

74

50.71

-0.27

4.77

9+

45

+4.49

9.12

51

-3.47

3.98

7 7

32

2.73

1.50

45

52 36

-2.04 +1.95

6.49

0

39

Rainfall

39

Statistical analyses were performed on all alfalfa yield data (including experimentals) to determine if the apparent differences are due to variety. Varieties not significantly different from the highest numerical value in a column are marked with an asterisk (*). To determine if two varieties are statistically different, compare the difference between the two varieties to the Least Significant Difference (LSD) at the bottom of the column. If the difference is equal to or greater than the LSD, the varieties are truly different when grown under the conditions at a given location. The Coefficient of Variation (CV), a measure of the variability of the data, is included for each column of means. Low variability is desirable; increased variability within a study results in higher CVs and larger LSDs.

Table 11 summarizes information about fall dormancy, disease resistance, and yield performance across years and locations for all the varieties included in the tests discussed in this report. Varieties are listed in alphabetical order with the experimental varieties at the bottom. Remember that experimental varieties are not available for farm use; commercial varieties can be purchased through dealerships. In Table 11, open blocks indicate the variety was not in that particular test (labeled at the top of the column); an X means the variety was in the test but yielded significantly less than the top-yielding variety. A single asterisk (*) means the variety was not significantly different from the top-yielding variety based on the 0.05 LSD. It is best to choose a variety that has performed well over several years and locations as indicated by the asterisks.

Table 12 is a summary of yield data from 2000 to 2013 of commercial varieties that have been entered in the 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. Direct statistical comparisons of varieties cannot be made using the summary Table 12, 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 stable performance; others may have performed 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. See the Table 12 footnote to determine to which yearly report to refer.

Table 3. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown August 14, 2006, at Lexington, Kentucky

	Seed-							Percent Stand	t Stan	-											Yie	Yield (tons/acre)	(acre)					
	Vigor	2006		2007	2008	8(2009	6	2010	L	2011	2	2012	20	2013	2007	2008	2009	2010	2011	2012			20	2013			
Variety	Oct 17, 2006	0ct 17	Mar 26	11 11	Mar 27	13 I	Mar C	Oct M	Mar 0c	Oct Mar 15 21	ar Oct 1 10	t Mar 21	1 Oct	Mar 22	Sep 20	Total	Total	Total	Total	Total	Total	May 13	Jun 12	Jul 12	Aug 12	Sep 16	Total	7-year Total
Commercial Varieties—Available for Farm Use	eties—Av	ailable	for Fe	arm Us	ē.																							
Expedition	5.0	66	86	86	66	66	100	100	99 97	7 97	7 90	96	94	81	53	3.98	4.28	6.32	99.5	4.74	3.40	1.46	1.29	1.04	0.73	0.75	5.27	33.66*
DKA41-18RR	4.3	66	86	86	86	66	98	100	97 96	96 95	5 90	91	92	80	49	4.06	3.95	5.62	5.17	4.47	3.37	1.43	1.35	1.03	0.72	0.77	5.30	31.92*
PerForm	5.0	100	86	86	6	86	86	6 86	97 97	96 2	90	88	88	79	99	4.12	3.99	5.62	5.33	4.60	3.32	1.45	1.09	0.95	0.67	99.0	4.83	31.83*
L447HD	4.8	9/	96	95	95	6	6	6 86	97 95	5 92	2 87	88	98	65	40	4.26	4.19	5.69	5.33	4.28	3.18	1.44	1.11	0.78	0.65	0.67	4.66	31.59*
WL 355RR	4.8	86	96	96	95	95	95	66	6 96	94 91	1 88	91	90	63	48	3.90	3.90	5.83	5.19	4.34	2.98	1.32	1.18	0.95	99.0	0.73	4.86	31.01*
WL 343HQ	4.3	66	100	100	100	100	100	100	66	98 97	7 92	94	91	75	51	3.69	3.92	5.34	4.96	4.45	3.18	1.34	1.24	96.0	0.68	0.70	4.91	30.45
Withstand	4.8	100	6	86	6	66	66	6 66	6 86	95 90	98 0	88	87	99	41	3.50	3.72	2.87	4.97	4.31	2.97	1.33	1.16	0.87	0.58	0.67	4.60	29.94
Ameristand 403T	5.0	100	86	86	66	66	66	6 86	6 96	95 93	3 89	91	91	78	61	3.69	3.74	5.57	4.91	4.44	3.02	1.32	0.92	0.89	69.0	0.65	4.48	29.85
LegenDairy 5.0	5.0	100	95	95	94	96	96	6 96	66	95 87	7 83	88	88	71	22	3.53	3.79	5.75	5.21	4.15	2.75	1.29	1.21	0.92	0.61	09.0	4.63	29.80
Phoenix	4.8	66	86	86	86	100	86	97 9	97 9	95 95	5 91	87	86	70	46	3.64	3.89	5.66	4.97	4.55	2.79	1.25	1.01	0.80	0.56	0.54	4.16	29.66
Radiant-AM	5.0	100	6	96	6	86	96	6 96	6 96	95 92	2 91	88	85	63	41	3.79	3.73	5.48	4.85	4.16	2.91	1.18	1.04	0.86	0.63	0.64	4.36	29.27
Buffalo	5.0	66	66	86	66	66	66	6 26	94 93	93 88	8 85	63	65	48	40	3.67	3.63	4.69	4.07	3.75	2.39	1.19	1.03	0.74	0.44	0.42	3.82	26.01
Saranac AR (certified)	4.8	100	96	96	95	94	92	93 9	93 91	1 89	08 6	78	78	49	39	3.46	3.48	4.95	4.40	3.79	2.26	1.06	0.88	0.65	0.49	0.50	3.59	25.94
Experimental Varieties	rieties																											
DS617	5.0	66	97	97	96	86	86	66	98 97	96 /	98 9	86	86	70	48	3.82	4.03	5.84	5.21	4.59	3.10	1.48	1.12	0.84	09:0	0.56	4.60	31.21
Mean	4.8	86	97	97	97	86	86	98	97 95	5 93	3 88	87	87	69	48	3.79	3.87	5.59	5.02	4.33	2.97	1.32	1.12	0.88	0.62	0.63	4.58	30.15
CV,%	9.7	12	m	e	4	m	m	m	3 4	1	_	9	9	16	16	9:36	10.68	7.87	9.3	9.48	11.41	11.22	14.42	15.96	15.09	15.06	11.96	7.07
LSD,0.05	0.5	17	4	4	9	4	4	4	4 5	5 9	6	8	∞	16	11	0.51	0.59	0.63	0.67	0.59	0.49	0.21	0.23	0.2	0.13	0.16	0.78	3.05
1 Missor cross based on a coale of 1 to 5 with 5 being the most vices of 1 to 5	Jess c do k	, of 1 +.	A Fivit	h 5 ho:	4+ 24	m 0c+ 1	1000	I cood	יים מוני	rowth h																		

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD

Table 4. Dry matter yields and stand persistence of alfalfa varieties sown April 8, 2008, at Lexington, Kentucky.

					Pe	Percent Stand	pu									_	Yield (tons/acre)	s/acre)					
	2008	2009	60	20	2010	2011	11	2012	12	2013		2008	2009	2010	2011	2012			2013	3			6-vear
Variety	Oct 21	Oct 21 Mar 24 Oct 7	0ct 7	Mar 29	Mar 29 Oct 15	Mar 21 Oct	Oct 10	Mar 22 Oct 11	_	Mar 22 Sep 20		Total	Total	Total	Total	Total	May 13	Jun 12	Jul 11 /	Aug 12	Sep 13	Total	Total
Commercial Varieties—Available for Farm Use	s—Avail	able for I	Farm Us	е																			
DKA50-18	84	74	68	88	84	78	70	73	75	59	70	0.87	5.55	5.84	4.59	2.90	1.22	1.12	0.74	0.54	0.56	4.17	23.92*
WL 343HQ	91	93	94	95	91	87	83	98	81	40	30	89.0	5.51	5.33	4.77	3.06	1.18	1.19	0.83	9.65	99.0	4.52	23.88*
FSG 528SF	88	93	93	93	68	98	79	83	80	36	29	0.72	5.54	5.81	4.52	2.82	1.11	0.94	0.65	0.48	0.59	3.77	23.19*
6552	85	84	84	87	98	83	9/	62	9/	33	23	0.77	5.17	99.5	4.62	2.88	1.08	1.00	0.74	0.48	0.55	3.85	22.95*
6417	8	88	68	68	84	83	73	80	78	34	24	0.73	5.30	5.65	4.76	2.85	0.94	96.0	0.73	0.45	0.46	3.56	22.86*
WL 363HQ	90	68	06	91	68	83	74	8/	78	30	18	0.52	5.12	2.67	4.61	3.02	0.99	1.02	0.75	0.47	0.56	3.79	22.74*
A5225	88	85	98	98	84	80	70	74	73	59	23	0.59	5.38	5.57	4.49	2.99	0.92	1.04	29.0	0.49	0.58	3.70	22.72*
Rebound 5.0	84	84	88	88	82	80	70	73	71	33	23	0.73	5.34	5.59	4.43	2.68	1.12	0.95	89.0	0.46	0.54	3.75	22.52*
DKA43-13	84	83	68	88	87	81	73	8/	78	33	24	0.58	5.39	5.29	4.69	2.85	06.0	0.92	0.62	0.46	0.55	3.45	22.24*
PGI 459	93	06	93	94	88	68	74	81	78	36	21	0.53	5.18	5.47	4.47	2.84	1.03	0.92	9.76	0.42	0.50	3.63	22.11
Phoenix	91	89	90	90	89	88	75	75	74	33	29	0.57	5.36	5.48	4.42	2.69	1.00	0.93	0.72	0.43	0.49	3.58	22.10
Anchormate	96	96	95	95	94	91	84	83	80	40	34	0.74	4.98	5.46	4.28	2.79	1.12	0.87	0.72	0.42	0.36	3.50	21.73
A4440	88	68	91	88	98	98	78	08	9/	35	33	9.02	4.95	5.62	4.32	2.55	1.02	0.89	0.73	0.46	0.47	3.58	21.67
Genoa	73	89	79	80	78	89	99	69	63	56	70	0.61	5.25	5.34	4.37	2.72	0.81	0.87	0.64	0.45	0.50	3.27	21.56
Ameristand 403T	70	65	73	73	75	74	99	64	59	25	23	09.0	4.68	5.24	4.06	2.31	98.0	0.71	09.0	0.37	0.36	2.91	19.80
Withstand	9/	78	9/	9/	75	69	55	28	20	20	16	0.52	4.79	5.02	3.73	2.41	0.85	0.82	0.63	0.30	0.46	3.06	19.53
Saranac AR (certified)	88	85	85	88	88	81	71	58	58	23	13	0.73	4.54	5.05	3.77	2.17	0.81	69.0	0.46	0.22	0.28	2.47	18.72
Buffalo	88	90	90	89	84	80	09	59	20	18	9	89.0	4.77	4.91	3.41	1.77	0.65	0.57	0.33	0.17	0.23	1.95	17.50
Mean	98	84	87	88	85	81	72	74	71	31	23	99.0	5.16	5.44	4.35	2.68	0.98	0.91	0.67	0.43	0.48	3.47	21.76
%\\O	10	11	7	9	6	6	14	12	11	19	20	35.01	8.80	6.41	98.8	8.89	16.29	14.54	16.16	16.73	21.14	11.42	5.86
LSD,0.05	12	13	8	7	7	10	14	12	11	8	9	0.33	0.64	0.50	0.55	0.34	0.23	0.19	0.15	0.10	0.15	0.56	1.87

^{*}Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 5. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown September 14, 2011, at Lexington, Kentucky.

	Seedling Vigor		Pe	Percent Stand	pu					Yield (to	Yield (tons/acre)			
	Oct. 11.	2011	20	2012	20	2013	2012			20	2013			2-vear
Variety	2011	Oct 11	Mar 21 Oct 11	Oct 11	Mar 20	Mar 20 Sep 26	Total	May 13	Jun 12	Jul 12	Aug 12	Sep 16	Total	Total
Commercial Varieties—A	Available for Farm Use	Farm Use												
64220	4.5	100	100	100	100	100	3.78	1.67	2.07	2.05	1.32	1.04	8.15	11.93*
TripleTrust 500	3.9	100	100	100	100	100	3.94	1.90	1.93	1.86	1.19	1.00	7.88	11.81*
WL 363HQ	4.4	100	100	100	100	100	3.92	1.70	1.90	1.93	1.14	96.0	7.65	11.57*
Rebound 6.0	4.9	100	100	100	100	100	3.60	1.73	1.85	2.01	1.32	0.98	7.90	11.49*
55V48	4.6	100	100	100	100	100	3.70	1.70	1.97	2.00	1.17	0.93	7.77	11.47*
Kingfisher 4020	3.8	100	100	66	100	100	3.72	1.68	1.85	1.91	1.21	0.93	7.58	11.30*
Ameristanstand 403T	4.0	100	100	66	100	100	3.80	1.75	1.87	1.64	1.16	0.92	7.34	11.13*
54Q32	4.1	100	100	100	100	100	3.47	1.58	1.85	1.84	1.07	1.00	7.34	10.82
53H92	4.1	100	100	100	100	100	3.45	1.69	1.76	1.73	1.14	0.89	7.22	10.67
Saranac AR (certified)	4.0	100	100	100	100	26	3.61	1.64	1.70	1.60	1.08	0.84	6.85	10.47
Arc (certified)	4.5	100	100	100	100	26	3.73	1.84	1.45	1.45	0.99	0.84	6.57	10.31
Buffalo	4.8	100	100	100	100	95	3.25	1.75	1.61	1.49	0.97	0.75	6.57	9.82
Mean	4.3	100	100	100	100	66	3.66	1.72	1.82	1.79	1.15	0.93	7.40	11.07
CV,%	13.5	0	0	-		_	10.97	8.92	7.73	8.11	8.65	8.90	4.85	6.18
LSD,0.05	0.8	0	0	1	1	2	0.58	0.22	0.20	0.21	0.14	0.12	0.52	0.98
											4			

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth. *Not significantly different from the highest numerical value in the column, based on the 0.05 L5D.

Table 6. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown August 9, 2012, at Lexington, Kentucky.

	Seedling Vigor ¹	Р	ercent Stan	ıd				Yield (to	ons/acre)			
	Sept. 27,	2012	20	13	2012				2013			
Variety	2012	Sep 27	Mar 20	Sep 26	Nov 16	May 13	Jun 12	Jul 12	Aug 12	Sep 16	Total	Total ²
Commercial Variet	ies—Available	e for Farm U	Jse									
55V50	5.0	100	100	100	1.15	2.01	1.57	1.21	1.07	1.05	6.91	8.06*
Phoenix	4.8	98	99	97	1.11	2.00	1.56	1.13	1.03	1.08	6.81	7.91*
Evermore	4.8	100	100	100	1.00	2.01	1.58	1.18	0.99	0.95	6.71	7.71*
4030	4.5	99	100	99	1.04	1.78	1.40	1.19	1.12	1.02	6.52	7.56*
Caliber	4.3	98	100	100	1.06	1.91	1.49	1.08	0.97	1.03	6.48	7.54*
Ameristand 403T	5.0	100	100	100	1.12	1.92	1.51	1.01	1.00	0.93	6.37	7.50*
Radiance HD	4.5	99	100	100	1.04	1.81	1.43	1.15	1.08	0.98	6.45	7.49*
GA-505	5.0	100	100	99	1.23	1.75	1.38	1.06	1.03	0.96	6.18	7.40*
Saranac AR (certified)	4.8	100	100	96	1.21	1.78	1.41	1.00	0.96	0.91	6.05	7.27
Withstand	4.8	100	100	100	0.93	1.79	1.39	1.05	1.00	1.04	6.27	7.20
Arc (certified)	4.9	100	100	96	1.25	1.73	1.35	0.83	0.89	0.82	5.62	6.87
Experimental Varie	eties							,				
CW 085028	5.0	100	100	100	1.00	1.77	1.40	1.29	1.01	0.92	6.39	7.39*
CW 065030	4.8	100	100	100	1.11	1.68	1.33	1.15	0.98	0.95	6.09	7.20
GA-ALFG-1	5.0	100	99	97	1.24	1.60	1.24	0.84	0.88	0.89	5.44	6.68
Mean	4.8	99	100	99	1.11	1.82	1.43	1.08	1.00	0.97	6.31	7.41
CV,%	6.2	1	1	2	14.82	8.12	8.19	7.41	9.43	10.84	6.93	7.28
LSD,0.05	0.4	2	1	3	0.23	0.21	0.17	0.11	0.14	0.15	0.63	0.77

 ¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 2 This total includes the late fall 2012 harvest plus the 2013 harvests.
 *Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Dry matter yields, seedling vigor and stand persistence of Roundup Ready alfalfa varieties sown August 9, 2012, at Lexington, Kentucky.

	Seedling Vigor ¹	Р	ercent Stan	d				Yield (to	ons/acre)			
	Sep 27,	2012	20	13	2012				2013			
Variety	2012	Sep 27	Mar 20	Sep 26	Nov 16	May 13	Jun 12	Jul 12	Aug 12	Sep 16	Total	Total ²
Commercial Varietie	es—Available	for Farm L	Jse									
Tunica	4.6	100	100	100	0.56	1.33	1.12	1.05	0.79	0.93	5.23	5.79*
Stratica	3.6	94	95	95	0.45	1.10	0.93	1.27	0.82	0.95	5.08	5.53*
Ameristand 405T	4.5	100	100	78	0.56	1.21	1.02	1.12	0.78	0.83	4.97	5.52*
DKA46-16	4.5	99	100	100	0.43	1.14	0.96	1.11	0.91	0.86	4.97	5.39*
WL 372HQ	4.1	100	100	100	0.46	1.03	0.87	1.17	0.89	0.94	4.91	5.37*
6516R	4.8	99	99	99	0.48	1.18	1.00	1.07	0.75	0.88	4.88	5.36*
AphaTron	4.3	100	100	100	0.45	1.16	0.98	1.01	0.71	0.86	4.72	5.17*
Consistency 4.10	4.1	98	98	98	0.45	1.03	0.87	1.10	0.83	0.86	4.70	5.14*
Ameristand 455TQ	4.1	100	100	100	0.45	0.84	0.71	1.18	0.90	0.96	4.60	5.05*
WL 356HQ	4.1	100	100	100	0.51	1.08	0.92	0.93	0.72	0.88	4.53	5.04*
DKA41-18	4.1	98	99	99	0.44	0.89	0.75	1.12	0.88	0.87	4.51	4.96
WL 355	3.9	99	100	78	0.46	0.92	0.78	1.15	0.80	0.84	4.48	4.94
54R02	4.5	94	96	97	0.37	1.04	0.88	1.08	0.74	0.82	4.57	4.93
Ameristand 433T	3.4	92	94	93	0.38	0.93	0.79	1.11	0.78	0.81	4.42	4.80
Alfagraze 300	3.6	97	98	98	0.44	0.93	0.79	0.99	0.67	0.72	4.09	4.53
Mean	4.2	98	98	95	0.46	1.05	0.89	1.10	0.80	0.87	4.71	5.17
CV,%	14.9	2	2	18	24.94	21.02	21.09	9.54	14.87	10.94	16.23	10.56
LSD,0.05	0.9	3	2	24	0.16	0.32	0.27	0.15	0.17	0.14	0.69	0.78

Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
 This total includes the late fall 2012 harvest plus the 2013 harvests.

^{*}Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 8. Dry matter yields and stand persistence of Roundup Ready alfalfa varieties sown April 7, 2011, at Princeton, Kentucky.¹

			Percen	t Stand						Yie	l d (tons/a	icre)			
	20	11	20	12	20	13	2011	2012			20	13			3-year
Variety	Jun 14	Oct 24	Mar 21	Oct 29	Mar 19	Oct 8	Total	Total	May 14	Jun 19	Jul 16	Aug 14	Sep 17	Total	Total
Commercial Varieties	—Availa	ole for Fa	rm Use												
54R02 RR	94	94	96	97	94	91	1.72	4.58	2.24	2.09	1.08	0.96	0.80	7.17	13.48*
Ameristand 405T RR	96	96	97	96	96	94	1.47	3.95	2.01	2.13	1.04	0.95	0.85	6.99	12.41*
Consistency 4.10 RR	99	99	99	99	98	96	1.64	4.26	1.80	2.01	1.07	0.88	0.71	6.46	12.36*
DKA41-18 RR	98	97	96	97	96	94	1.48	4.16	1.89	2.15	1.06	0.89	0.71	6.70	12.34*
WL 355 RR	98	98	97	98	96	96	1.43	4.01	1.81	1.89	1.10	0.86	0.85	6.51	11.95
Alfagraze 300 RR	94	94	93	93	92	89	1.24	3.88	1.68	1.93	0.90	0.84	0.64	6.00	11.12
Experimental Varietie	es														
FG R47M120 RR	94	97	96	97	97	94	1.61	4.30	1.99	2.10	1.16	0.86	0.79	6.90	12.82*
FG R47M312 RR	92	94	94	95	93	93	1.41	4.04	1.80	1.95	1.18	0.92	0.79	6.65	12.10
FG R46M162 RR	98	98	98	94	93	92	1.53	3.92	1.86	1.93	1.04	0.93	0.83	6.60	12.04
FG R47M319 RR	98	98	99	98	95	93	1.59	4.05	1.60	1.82	1.03	0.86	0.79	6.10	11.74
Mean	96	96	96	96	95	93	1.51	4.11	1.87	2.00	1.07	0.90	0.78	6.61	12.24
CV,%	3	3	2	2	2	3	13.66	10.05	15.51	7.57	10.32	10.19	18.76	7.26	6.89
LSD,0.05	4	4	3	3	3	5	0.30	0.60	0.42	0.23	0.16	0.13	0.21	0.70	1.22

¹ This trial was sprayed with Roundup once in 2012 and twice in 2013.

Summary

Consistent production of high yields of alfalfa is the result of good variety selection along with the implementation of good management techniques. For further information about alfalfa management, refer to the following College of Agriculture publications, available at the local county extension office or in the "Publications" section of the UK Forage Web site at www.uky.edu/Ag/Forage.

- Alfalfa: The Queen of the Forage Crops (AGR-76)
- Establishing Forage Crops (AGR-64)
- Inoculation of Forage Legumes (AGR-90)
- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Lime and Fertilizer Recommendations (AGR-1)
- Weed Control Strategies for Alfalfa and Other Forage Legume Crops (AGR-148)
- Insect Management Recommendations for Field Crops and Livestock (ENT-17)
- Kentucky Plant Disease Management Guide for Forage Legumes (PPA-10D)
- Alfalfa Hay: Quality Makes the Difference (AGR-137)
- "Emergency" Inoculation for Poorly Nodulated Legumes (PPFS-AG-F-04)

Table 9. Dry matter yields, seedling vigor and stand persistence of Roundup Ready alfalfa varieties sown April 9, 2013, at Princeton, Kentucky.¹

	Seedling Vigor ²		t Stand 13		•	ns/acre)	
Variety	May 15, 2013	May 15	Oct 8	Jul 16	Aug 14	Sep 17	Total
Commercial Varieties—			OCCO	Julio	Aug 14	эер 17	iotai
AphaTron RR	4.1	98	91	0.84	0.74	1.08	2.67*
428 RR	2.8	96	96	0.84	0.83	0.98	2.66*
Alfagraze 300 RR	2.6	76	86	0.82	0.75	1.08	2.66*
WL 356HQ RR	3.1	96	95	0.87	0.80	0.94	2.61*
Ameristand 405T RR	3.0	96	94	0.76	0.81	1.00	2.57*
Ameristand 455TQ RR	3.9	100	96	0.90	0.66	0.93	2.49*
Ameristand 433T RR	3.1	95	93	0.84	0.66	0.92	2.43*
Tunica RR	3.6	98	95	0.80	0.66	0.96	2.42*
WL 372HQ RR	3.5	98	83	0.82	0.68	0.87	2.38*
Stratica RR	3.0	96	97	0.77	0.71	0.88	2.36*
6516 RR	4.1	99	77	0.79	0.71	0.82	2.32*
DKA46-16 RR	3.8	97	85	0.74	0.70	0.78	2.22*
Mean	3.4	95	91	0.82	0.73	0.94	2.48
CV,%	24.2	12	13	16.18	18.20	23.57	13.40
LSD,0.05	1.0	16	16	0.19	0.19	0.32	0.48

This trial was sprayed with Roundup twice in 2013.

- Growing Alfalfa in the South, a publication of the National Alfalfa & Forage Alliance, www.alfalfa.org/pdf/alfalfainthesouth.pdf
- Alfalfa Management Guide, www. crops.org/files/publications/alfalfamanagement-guide.pdf
- Alfalfa Analyst (ID guide to alfalfa disease and insect damage and soil fertility deficiencies), www.alfalfa.org/ pdf/AlfalfaAnalyst.pdf

About the Authors

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^{*}Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

² Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

^{*}Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown April 17, 2009, at Princeton, Kentucky.

	1							-	· · · · · · · · · · · · · · · · · · ·													
	Seedling					Percent Stand	Stand									Yield	Yield (tons/acre)	re)				
	May 12,	2009	96	2010	10	201	011	2012	2	2013		2009	2010	2011	2012			2013	m			5-vear
Variety	2009	May 12 Oct 28	Oct 28	Mar 18 Oct 12	Oct 12	Apr 8	Oct 24	Mar 14	Oct 29	Mar 19	Oct 8	Total	Total	Total	Total	May 14	Jun 19	Jul 16	Aug 14	Sep 17	Total	Total
Commercial Varieties—Available for Farm Use	5—Availabl	e for Far	m Use																			
WL 363HQ	3.5	96	96	96	86	100	100	66	86	96	94	1.84	3.72	5.24	4.71	1.77	2.15	86.0	92.0	99.0	6.31	21.83*
Radiance HD	2.8	66	96	6	6	86	100	86	86	96	94	1.72	3.85	5.17	4.63	1.79	2.00	1.07	92.0	0.61	6.23	21.60*
Adrenalin	2.8	86	91	91	92	6	86	86	6	96	95	1.74	3.77	5.24	4.51	1.81	2.06	96.0	0.77	0.64	6.24	21.50*
Archer III	3.0	86	6	95	6	100	100	66	100	100	66	1.53	3.57	4.96	4.54	2.21	1.95	1.12	0.85	69.0	6.83	21.42*
Ameristand 407TQ	4.3	100	6	6	6	66	66	86	86	6	96	1.65	3.82	5.10	4.71	1.79	1.83	96.0	0.74	0.64	5.98	21.26*
Rebound 5.0	2.8	95	96	06	93	96	65	95	74	94	06	1.48	3.64	4.86	4.61	1.98	1.87	1.04	92.0	89.0	6.31	20.89*
6422Q	3.3	95	97	97	96	97	66	66	96	96	91	1.63	3.65	4.78	4.50	1.73	1.86	1.07	0.81	89.0	91.9	20.72*
Ameristand 403T	3.3	86	94	94	96	86	95	96	6	95	91	2.09	3.85	4.94	4.11	1.67	1.69	0.73	0.55	0.67	5.30	20.29*
GA505	2.8	66	95	93	93	66	66	86	86	6	26	1.72	3.45	4.98	4.33	1.68	1.91	98.0	0.62	0.62	5.68	20.17*
KingFisher 243	1.3	94	93	92	93	66	86	6	6	96	92	1.44	3.16	4.81	4.50	1.81	1.83	1.13	0.73	99.0	6.17	20.07
Ameristand 403TPlus	3.5	100	95	95	95	86	6	86	96	96	95	1.57	3.61	4.81	4.01	1.74	1.76	0.80	0.63	0.51	5.44	19.44
Saranac AR (certified)	3.3	66	91	06	94	66	65	94	96	93	91	1.60	3.56	4.83	4.39	1.58	1.57	0.71	0.52	0.48	4.85	19.23
Buffalo	3.3	100	91	93	94	94	91	89	94	87	83	1.61	3.42	4.67	3.85	1.57	1.66	0.70	0.47	0.42	4.82	18.38
Experimental Varieties	es																					
BYEXP723	3.8	86	86	6	96	86	86	6	96	95	86	2.16	4.02	2.07	4.59	1.82	1.88	0.87	0.62	69.0	5.89	21.73*
TS 4010/A4535	3.5	100	86	6	6	6	97	96	96	96	94	1.68	3.85	5.18	4.43	1.89	2.05	0.87	0.70	0.53	6.04	21.18*
CW 055023/PGI557	3.8	100	6	96	6	86	66	66	86	6	95	1.43	3.49	4.94	4.53	1.61	1.69	1.02	92.0	89.0	5.76	20.15*
GA-APGC	4.0	86	91	94	6	66	6	6	6	6	95	1.63	3.34	4.85	4.14	1.87	1.79	0.82	0.56	0.50	5.54	19.50
GA-MPX	1.8	96	92	93	96	86	96	86	86	6	96	1.42	3.12	4.38	4.10	1.72	1.96	0.88	0.64	0.63	5.84	18.86
Mean	3.1	86	95	94	95	86	6	6	96	96	94	1.66	3.61	4.93	4.40	1.78	1.86	0.92	89.0	0.61	5.86	20.46
CV,%	37.6	4	5	4	3	2	2	3	11	5	2	24.87	12.72	6.50	7.93	14.72	13.39	20.00	20.19	20.33	13.39	5.89
LSD,0.05	1.7	9	9	9	4	3	3	4	15	9	7	0.59	0.65	0.46	0.50	0.37	0.35	0.26	0.20	0.18	1.03	1.71
1 Vision 2000 100 11 11	- report	and the state of t	Their a	1 - 100 000		in a sille	dans															

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth. *Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 11. Characterization and performance of alfalfa varieties across years and locations.

	•		1	7			-							-														,			
			Varie	y Clic	aracte o Bos	Namety Characteristics	. 3			20063	23		-	Lex	Texiligion	_ 8		2011		. 6106	20105		2	0000		Ξ,	2011	_	20115	15	20125
Variety	Proprietor	FD4	Bw	Bw Fw		An PRR APH	APH	07	080	09 10	11	12	13	08 09	_		12 13	+	_	_	13	60	10	10 11 12	13	1	. —	13 1	11 12	13	13
Commercial Varieties	Commercial Varieties—Available for Farm Use	Use																													
4030	Brett Young	4	품	품	H	품	품													*											
428 RR	Allied Seed, L.L.C.	4	H	H	HR	HR	HR																								*
53H92	Pioneer Hi-Bred	3	光	품	H	H	HR											*	×												
54R02 RR	Pioneer Hi-Bred	4	뚶	뚶	뚶	H	뚶						\dashv								×					×	*	*	*	*	
54Q32	Pioneer Hi-Bred	4	光	품	HR	HR	Ж											*	×												
55V48	Pioneer Hi-Bred	2	품	품	H	光	품											*	*												
55V50	Pioneer Hi-Bred	5	H	В	HR	H	HR													*											
6417	NEXGROW	4	뚶	품	품	품	뚶						_	*	*	*	*														
6516R RR	NEXGROW	2	품	1	품	품	품														*										*
6552	NEXGROW	5	뚶	품	품	품	품						_ T	*	*	*	*														
A-4440	Producers Choice	4	품	H	H	¥	품						1	*	*	*	×														
A4535	Producers Choice	4	光	H	R	H	품															*	*	*	*						
A5225	Producers Choice	5	光	품	H	품	~						1	*	*	*	*														
Adrenalin	Brett Young	4	품	품	H	H	품															*	*	*	*						
Alfagraze 300 RR	America's Alfalfa	3	光	æ	H	H	품														×					×	*	*	×	×	*
Ameristand 403T	America's Alfalfa	4	품	품	H	품	품	9x	*	×	*	*	* ×	*	×	×	×	*	×	*		*	*	*	×	*	*	*			
Ameristand 403TPlus	America's Alfalfa	4	뚶	품	光	품	뚶															×	*	*							
Ameristand 405T RR	America's Alfalfa	4	품	H	H	H	품														*				\vdash	×	×	×	*	*	*
Ameristand 407TQ	America's Alfalfa	4	HRT	품	H	품	품															*	*	*	*	×	*	*			
Ameristand 433T RR	America's Alfalfa	3	光	~	8	품	품														×										*
Ameristand 455TQ RR	America's Alfalfa	4	품	H	H	H	HH														*										*
Anchormate	ProSeed Marketing	,	_	,	,	,	'						-	*	*	*	*														
AphaTron	Croplan Genetics	4	품	품	H	품	품						_								*										*
Arc (certified)	Public	4	LR	MR	H		1											*	×	×											
Archer III	America's Alfalfa	5	H	H	HR	H	HR															×	*	*	*						
Buffalo	Public			,	,		'	×	×	×	×	×	* ×	*	×	×	×	×	×			*	*	×	×						
Caliber	Beck's Hybrids	4	품	품	H	품	품													*						*	*	*			
Charger	Beck's Hybrids	5	품	품	H	품	품																			*	*	*			
Consistency 4.10 RR	Croplan Genetics	4	품	품	H	품	품						_								*					*	*	*	*	×	
DKA 41-18 RR	Monsanto	4	H	HR	HR	H	HR	*	*	*	*	*	*								×					×	×	×	*	*	
DKA 43-13	Monsanto	4	H	HR	HR	H	HR							*	×	*	*														
DKA 46-16 RR	Monsanto																				*										*
DKA 50-18	Monsanto	2	垩	품	품	H	뚶						74"	*	*	*	*														
DS 4210	Crop Production	4	뚶	뚶	품	품	품		\dashv	\dashv	_		\dashv	-		\dashv	+	1								*	*	*			
Evermore	Allied Seed, L.L.C.	2	뚶	품	H	H	HR													*											
Expedition	NEXGROW	5	H	H	R	RR	æ	*	*	*	*	*	*																		
FSG 528SF	Lewis Seed	2	光	8	H	器	~							*	*	*	*														
GA 505	Univ. of Georgia	,		,	,	,	'						_							*		*	*	*	×						
Genoa	NEXGROW	4	光	품	품	æ	품							*	*	*	*														
Gunner	Croplan Genetics	5	품	품	H	품	품																			*	*	*			
KingFisher 243	Cal/West Seeds	5	품	품	H	품	품						_									×	×	*	*						
KingFisher 4020	Legacy Seeds, Inc.	4	HR	HR	HR	H	HR											*	×												
Lancer	Allied Seed, L.L.C.	4	품	H	H	H	H																			×	*	*			
L447HD	Legacy Seeds, Inc.	4	품	품	H	품	품	*	*	*	*	*	*																		
																														S	continuea

Table 11. (continued)

		:					-															-				•						
		Var	lety (Cuara	Variety Characteristics	. S	+						-	Lexi	Lexington	_		-			- 1-					`	Princeton	ton	L		Ī	
			Dis	ease	Disease Resisance ²	nce ²	\dashv	-	•	20063	-	-	4		2008	8	ŀ	7	2011	2012	20125	52		2009	ŀ		2011	_	7	20115		20135
Variety	Proprietor	FD ⁴ B				₹	PH 07	7 08	3 09	10	1	12 13	3 08	60	10	1	12 13	3 12	13	13	13	60	9 10	1	12 1	13	11 12	13	1	12	13	13
L449Aph2	Legacy Seeds, Inc.	4 H	HR H	HR H	HR HR	R	R																			*	*	×				
LegenDairy 5.0	Croplan Genetics	3 H	HR H	HR H	HR HR	R H	R	* ×	*	*	*	*																				
PerForm	Dairyland Research	4 H	HH	H H	H H	R H	ж Ж	*	*	*	*	*																				
Phoenix	FFR/Southern States	5 HR		HR	HR HR	- -	^	*	×	×	*	×	*	*	*	*	×			*						*	*	*				
PGI 459	Producers Choice	4 HR		HR H	HR HR	- W	~						×	*	*	*	*															
RadianceHD	Ampac Seed /Cisco	4 HR	\vdash	H	HR HR	R	IR				H									*		*	*	*	*	*	*	*				
Radiant-AM	Ampac Seed	4 HR		HR	HR HR		HR *	*	×	×	*	*																				
Rebound 5.0	Croplan Genetics	4 HR		HH	HR HR	工	æ						*	*	*	*	×					×	*	*	*	*						
Rebound 6.0	Croplan Genetics	4 HR		HH	HH HH	A H	<u>۳</u>											*	*							_	×	*				
Saranac AR (certified)	Public	4 M	MR	R	HR LR	· ~	_	×	×	×	×	×	*	×	×	×	×	*	×	×		*	*	*	*	×	*	×				
Stratica RR	Croplan Genetics	4 Hr		노	HR HR	R H	æ														*											*
64220	NEXGROW	4 HR		HH	HR HR	R H	<u>₩</u>											*	*			*	*	*	*	*						
TripleTrust 500	Central Farm Supply	5 H	H H	H H	H H	ж Н	<u>۳</u>											*	*													
Tonnica RR	Croplan Genetics	5 H		HR	HR HR	R H	R														*											*
Withstand	FFR/Southern States	4 HR		HR H	HR HR	R	В	* ×	*	×	*	*	×	×	×	×	×			×						_	×	×				
WL 343HQ	W-L Research	4 HR	-	HR	HR HR	R	~	* ×	×	×	*	*	*	*	×	*	*	_									_					
WL 354HQ	W-L Research	4 H		_	-	E E	<u>۳</u>	-			\dashv	-														*	*	*				
WL 355 RR	W-L Research	4 HR		H H	HR HR	H	R	*	*	*	*	*									×					_	* ×	*	*	*	*	
WL 356HQ RR	W-L Research	4 HR	-	HR H	HR HR	т	R														*											*
WL 363HQ	W-L Research	5 HR	-	HR	HR HR	エ	H.						×	*	*	*	*	*	*			*	*	*	*	*						
WL 372HQ RR	W-L Research		HR H	H H	HR HR	H	IR														*											*
Experimental Varieties	ies																															
BYEXP 723	Brett Young	4 H	H	光	HR HR	エ	R															*	*	*	*	*						
CW 055023/PGI 557	Producers Choice	5 HR		HR H	HR HR		HR															×	*	*	*	×						
CW 065030	Beck's Hybrids	5 HR	Н	H	HR HR	エ	IR.				H									×												
CW 085028	Cal/West Seeds	5 HR	_	품	- H	~	\dashv	-			\dashv	-								*							_					
DS617	Dairyland Research	4 HR		HR H	HR HR	エ	В	*	*	*	*	*																				
FG R46M162 RR	Forage Genetics	4 HR		HR	HR HR	エ	H.																			_	×	*	*	×	*	
FG R47M120 RR	Forage Genetics	4 HR		HH	HR HR		HR																			*	*	*	*	*	*	
FG R47M312 RR	Forage Genetics	4 HR		또 또	HR HR	Ξ	<u>۳</u>																			^	*	*	×	*	*	
FG R47M319 RR	Forage Genetics	4 H	HR H	HR	HR HR		HR																			_	* ×	*	*	*	×	
GA-ALFG-1	Univ. of Georgia	1			1		\dashv	-			\dashv	-								×							_					
GA-APGC	Univ. of Georgia	1		1	'	-	\dashv	\dashv	_		\dashv	\dashv	\dashv	\Box		+	\dashv	\dashv	_[*	×	*	×	×	\dashv	4		7	1	
GA-MPX	Univ. of Georgia	-		_	-	_	_	_														×	×	×	×	×	_					
TS 4013	Producers Choice	4 H	H H	HH H	H H		HR		_				_		_				_		_					*	*	*	<u> </u>			
1 Variety characteristics	Variaty characteristics ED - fall dormancy Rw - harterial wilt Ew - fisserium wilt An	v - harte	in lein	il+ Ew	- files	zi.	Avilt A		nthrac	a)Ou.	PRR -	- P	thun't	hora	100	↑ AE	Inc H	000	2007	100	- anthrasmoce DBR - nhistoriththora root rot to ADH-anhanomisee root rot Information provided his seed companies	matic	מימימי	popin	by co	2000	2					

Variety characteristics: FD = fall dormancy, Bw = bacterial wilt, Fw = fusarium wilt, An = anthracnose, PRR = phytophthora root rot, APH-aphanomyces root rot. Information provided by seed companies.

2 Disease resistance: S = susceptible, LR = low resistance, MR = moderate resistance, HR = high resistance.

3 Establishment year.

4 Fall domancy-check varieties: 1 = Spredor 3, 2 = Vernal, 3 = Ranger, 4 = Saranac, 5 = DuPuits.

5 These are Roundup Ready affaita trials.

5 These are Roundup Ready affaita trials.

6 x in the box indicates the variety was in the test but yielded significantly less than the top-ranked variety in the test.

8 Not significantly different from the top-ranked variety in the test.

Table 12. Summary of Kentucky alfalfa yield trials 2000-2013 (yield shown as a percentage of the mean of the commercial varieties in the test).

			Vari	etychä	Variety Characteristics	tics.			3		_				Princeton	55		_	פוענו		פום	
				Disea	Disease Resistance ³	tance ³		004,5	02	, 40	90	80	01	05	80	60	11	116	03		03	Moon
Varietv	Proprietor	9	Bw	3	An	PRR	APH	5vr ⁸	5vr	5vr	3 2	6vr	4vr	5vr	5vr	5vr	3vr	3vr	3vr	4vr	Τ.	(# trials)
A-4440	Producers Choice	4	壬	뚶	H	£	H					100		66							+	100(2)
A 5225	Producers Choice	5	품	뚶	HR	¥	R					104			107							106(2)
AC Longview	Newfield Seeds	1	光	ı	1	1	ı			83												1
Adrenalin	Brett Young	4	뚶	H	H	뚝	H									105						ı
Alfagraze300 RR	America's Alf.	3	光	æ	H	뚝	HR										86	16				95(2)
Ameristand 403T	America's Alf.	m	뚶	HR	H	뚶	H				66	91	97		100	101	105					101(6)
Ameristand 403T Plus	America's Alf.	4	光	뚶	HR	품	HR									95						1
Ameristand 405T RR	America's Alf.	4	품	HR	HR	¥	HR										06	101				96(2)
Ameristand 407TQ	America's Alf.	4	光	뚶	HR	품	HR									104	103					104(2)
Anchormate	ProSeed Marketing	ı	ı	ı	ı	1	ı					100										1
Arc (certified)	Public	4	LR	MR	HR	1	1	91	96	9/			66	95	98				86			92(7)
Archer III	America's Alf.	5	光	HR	H	품	HR									104						1
Baralfa 53 HR	Barenbrug USA	5	光	~	HR	품	HR							104								
Buffalo	Public	1	1	ı	ı	1	ı		06	82	98	80		95	78	06				81	95	(6)98
Caliber	Beck's Hybrids	4	뚶	H	HR	¥	H										66					1
Charger	Beck's Hybrids	5	壬	H	H	垩	光										103					ı
Consistency 4.10 RR	Croplan Genetics	4	뚶	H	H	뚝	H										105	101				103(2)
DK 140	Monsanto	4	뚝	£	H	¥	H		95				100				3					98(2)
DKA-41-18BR	Moncanto	Α	품	H	H		H				106						95	100				100(3)
DKA 43-13	Monsanto	4	f	£	H H	f	H				3	102					3	2				(2)
DKA 50-18	Moneanto		9	Ħ	9	9	ä					110										
DS4210	Crop Production	9	f	f	H H	f	H					2					86					
Dynagro Everlast	United Agr. Prod.	4	光	壬	H	壬	æ							101						101		101(2)
Enforcer	FFR/Sou. St.	4	光	H	H	£	HR			06										82		86(2)
Escalade	Allied Seeds	5	光	HR	HR	光	H													106		,
Evermore	FFR/Sou. St.	2	光	HR	H	뚝	HR												105	101	103	103(3)
Expedition	NEXGROW	5	光	뚶	æ	RR	R			107	112			96								105(3)
Feast +EV	NEXGROW	3	光	HR	HR	~	H			106									101		96	101(3)
FSG 406	Allied Seeds	4	품	뚶	HR	H	HR												110			1
FSG 408DP	Allied Seeds	4	품	뚶	HR	품	R			105					110							108(2)
FSG 505	Allied Seeds	5	H	뚶	HR	H	В												106		108	107(2)
FSG 528SF	Lewis Seed Co.	5	H	~	HR	H	В					107										ı
GA-505	Univ. of GA	ı	ı	ı	ı	1	ı									86						,
Geneva	NEXGROW	4	H	뚶	HR	H	HR	106	103				104									104(3)
Genoa	NEXGROW	4	H	HR	HR	RR	HR			112		66		86	118							107(4)
GH 744	NEXGROW	4	光	H	HR	뚝	MR		104							1						ı
Gunner	Croplan Genetics	2	光	H	H	壬	품										106					ı
Integrity	PGI Alfalfa	4	壬	H	H	£	¥							1						101		ı
KingFisher 243	Cal/West	2	뚶	뚶	H	뚝	품									86						1
L447HD	Legacy Seeds	4	품	HR	H	뚶	HR				105											ı
L449Aph2	Legacy Seeds	4	품	HR	HR	품	H										96					ı
Lancer	Allied Seeds	4	뚶	H	HR	품	H										103					1
LegenDairy 5.0	Croplan Genetics	3	光	HR	HR	¥	H				66			103						110		104(3)
Mariner III	Allied Seeds	4	H	뚶	HR	¥	HR								66							ı
Mountaineer 2.0	Croplan Gen.	2	뚶	뚶	H	품	H			108												ı
PerForm	Dairyland Research	4	光	壬	H	¥	H				106						1					ı
PGI 459	Producers Choice	4	¥	¥	H H	Ŧ	~					100										

Table 12. (continued)

			Varie	ety Cha	Variety Characteristics ¹	tics1			Le	Lexington				_	Princeton	ء		- B	Bowling Green ²	Eden	
				Disea	Disease Resistance ³	tance ³		004,5	05	, 40	90	08	01	05 0	08		11 1.	116 03	90		Mean ⁷
Variety	Proprietor	9	Bw	¥	An	PRR	APH	5yr ⁸	5yr	5yr			<u> </u>	-		-	3yr 3yr			-	(# trials)
Phirst	UniSouth Genetics	4	H	HR	H	H	æ						-	105					102		104(2)
Phoenix	FFR/Sou. St.	2	H	H	HR	HR	R			113	99 1	102		1	101	_	101		96		102(6)
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR								1	105	101				103(2)
Radiant-AM	Ampac Seed	4	¥	HR	H	H	HR				97										ı
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR				1	103			1	102			108	_	104(3)
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR										6				1
Regal	Great Plains	5	HR	HR	В	HR	MR											103	3	94	99(2)
Reward II	PGI Alfalfa	4	HR	HR	R	HR	В					6	99 1	103				94		103	100(4)
Saranac AR (certified)	Public	4	MR	~	HR	LR	1	93	87	77	85	86 9	92 9	95 8	88	94	95	66	89	95	90(13)
Summer Gold	Beck's Hybrids	4	H	HR	H	HR	HR			107											1
64220	NEXGROW	4	¥	HR	H	H	HR								-	101					ı
TripleTrust 450	ABI Alfalfa	2	¥	H	H	H	HR						1	100					105		103(2)
USG 681HY	UniSouth Genetics	9	H	HR	H	HR	1							-	113						1
Vernal	Public	2	æ	MR	ı	ı	ı		93				0.	95							94(2)
Withstand	FFR/Sou. St.	4	¥	H	H	H	HR				100	06		-	100		93		114		99(5)
WL 319HQ	W-L Research	3	H	HR	H	H	HR		108												ı
WL 327	W-L Research	4	HR	HR	HR	HR	HR		105						_						ı
WL 338SR	W-L Research	4	H	HR	H	H	HR		101												ı
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR				101	110		1	100						104(3)
WL 348AP	W-L Research	4	HR	HR	HR	HR	HR								_				66		ı
WL 354HQ	W-L Research	4	HR	H	HR	HR	HR									_	107				ı
WL 355RR	W-L Research	4	¥	HR	H	H	HR				103					_	100 97	7			100(3)
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR			123			1	106	_			101		106	109(4)
WL 363HQ	W-L Research	2	H	HR	H	H	HR				_	105			-	106					106(2)
4m76	FFR/Sou. St.	4.7	HR	HR	В	HR	В		116												-
5-star	Croplan Gen.	2	В	HR	В	В	В											97		66	98(2)
54R02 RR	Pioneer	4	H	HR	H	H	HR									_	104	110			107(7)
54V46	Pioneer	4	В	HR	HR	HR	В													66	-
54V54	Pioneer	4	HR	HR	HR	HR	HR	86	94			1	105								99(3)
54V56	Pioneer	I	ı	ı	ı	ı	ı											98			ı
6400HT	NEXGROW	4	HR	HR	HR	HR	HR			108								96			102(2)
6415	NEXGROW	4	H	HR	H	H	HR						1	103					105		104(2)
6417	NEXGROW	4	HR	HR	HR	HR	HR				1	105									1
6420	NEXGROW	4	HR	В	HR	R	HR		106												-
6530	NEXGROW	5	HR	HR	HR	HR	HR											92			ı
6552	NEXGROW	2	¥	Ħ	¥	¥	HR				_	105									1
1 Variety characteristics:	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.	bacterial	wilt, Fw	= fusar	ium wilt.	An = an	thracnos	e. PRR =	phytoph	thora ro	ot rot, API	H-aphanc	mvces	oot rot.	nformal	ion pro	vided by	seed com	panies.		

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, R = high resistance.
 4 Year trial was established
 5 Use of 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 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.

Table 13. Dry matter yields and stand persistence of alfalfa varieties [including Roundup Ready (RR)] sown April 7, 2011, at Princeton, Kentucky.

			Percen	t Stand						Yiel	d (tons/c	icre)			
	20	11	20	12	20	13	2011	2012				13			3-year
Variety	Jun 14	Oct 24	Mar 21	Oct 29	Mar 19	Oct 8	Total	Total	May 14	Jun 19	Jul 16	Aug 14	Sep 17	Total	Total
Commercial Varieties—	Available	for Farm	ı Use												
WL 354HQ	99	100	100	100	98	93	2.03	4.50	1.85	1.96	1.34	1.09	1.02	7.27	13.79*
Gunner	96	97	98	98	96	69	1.80	4.77	1.77	2.02	1.23	1.06	0.97	7.05	13.62*
Consistency 4.10 RR	99	97	98	97	98	83	1.61	4.77	1.75	2.03	1.30	1.08	0.97	7.12	13.50*
Ameristand 403T	96	96	96	96	94	91	1.92	4.56	1.80	2.03	1.21	0.97	0.96	6.97	13.46*
54R02 RR	92	95	97	96	94	85	1.57	4.69	2.06	1.92	1.24	1.07	0.89	7.18	13.44*
Charger	95	97	97	98	97	84	1.79	4.76	1.63	1.88	1.24	1.03	0.99	6.76	13.32*
Ameristand 407TQ	96	96	98	95	94	83	1.46	4.74	1.79	1.96	1.33	1.00	0.98	7.06	13.27*
Lancer	91	95	95	96	95	80	1.57	4.84	1.80	1.97	1.15	1.03	0.90	6.83	13.24*
Phoenix	93	94	94	97	93	76	1.82	4.56	1.67	1.87	1.24	1.06	0.85	6.69	13.06*
Radiance HD	95	97	97	96	95	90	1.67	4.63	1.73	1.84	1.18	1.04	0.91	6.71	13.01*
WL 355 RR	96	97	99	98	96	85	1.49	4.52	1.82	1.95	1.21	1.01	0.87	6.86	12.87*
Caliber	96	97	97	97	93	79	1.69	4.44	1.66	1.90	1.21	0.95	0.96	6.68	12.81*
DS4210	97	99	98	97	97	89	1.62	4.34	1.63	1.78	1.34	1.02	0.92	6.69	12.65*
Alfagraze 300 RR	94	94	95	94	91	84	1.54	4.35	1.83	1.90	1.20	0.93	0.87	6.73	12.62*
Rebound 6.0	98	99	99	99	98	86	1.60	4.20	1.72	1.77	1.17	1.05	0.97	6.67	12.47
L-449Aph2	98	99	99	99	97	92	1.74	4.25	1.69	1.69	1.15	0.93	0.87	6.34	12.32
DKA41-18 RR	96	97	97	97	94	86	1.55	4.21	1.72	1.76	1.13	0.96	0.94	6.52	12.28
Saranac AR (certified)	98	97	96	94	90	43	1.48	4.55	1.79	1.90	1.03	0.83	0.64	6.19	12.21
Withstand	95	93	93	93	92	61	1.50	4.14	1.60	1.96	1.15	0.90	0.76	6.37	12.01
Ameristand 405T RR	99	98	100	99	98	94	1.47	3.99	1.59	1.44	1.21	1.01	0.87	6.12	11.58
Experimental Varieties															
FG R47M120 RR	92	95	98	98	96	89	1.61	4.83	1.83	1.99	1.36	1.01	0.94	7.13	13.58*
TS4013	99	98	98	98	97	86	1.88	4.67	1.97	1.91	1.18	1.03	0.87	6.95	13.50*
FG R47M312 RR	95	97	97	97	97	93	1.47	4.32	1.77	1.89	1.32	1.05	0.99	7.03	12.81*
FG R47M319 RR	97	98	99	98	97	93	1.54	4.44	1.57	1.85	1.24	1.03	0.94	6.64	12.62*
FG R46M162 RR	98	95	96	96	96	89	1.41	4.24	1.80	1.88	1.29	1.05	0.82	6.84	12.49
Mean	96	97	97	97	95	83	1.63	4.49	1.75	1.88	1.23	1.01	0.91	6.78	12.90
CV,%	3	3	3	3	4	14	18.58	9.19	14.28	13.84	9.58	11.54	14.50	7.45	7.14
LSD,0.05	5	5	4	4	5	17	0.43	0.58	0.35	0.37	0.17	0.16	0.19	0.71	1.30

^{*}Not significantly different from the highest numerical value in the column, base on the 0.05 LSD.

