PR-609

2010 Alfalfa Report



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Introduction

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 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 11 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 that 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 (nondormant). In general, varieties with lower dormancy ratings are more winter-hardy 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 have also begun to report a winter survival index (WS). It 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 that 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 reddish-brown 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 vellowish-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 still 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 that are 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 many 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 other crop and weed seed. Order seed well in advance of planting time to assure that it will be available when needed.



Table 1	. Temp	eratur	e and r	ainfall a	t Lexir	ngton, k	Kentucl	ky in 20	06, 20	07, 200	8, 2009	, and 20	010.							
		20	06			20	07			20	08			20	09			20	10 ²	
	Tei	np.	Rai	nfall	Ter	mp.	Rai	nfall	Tei	mp.	Rai	nfall	Tei	mp.	Rai	nfall	Tei	mp.	Rai	nfall
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	42	+11	4.77	+1.91	37	+6	2.93	+0.07	32	+2	3.91	+1.05	28	-3	2.45	-0.41	29	-2	2.40	-0.46
FEB	36	+1	2.13	-1.08	27	-8	1.83	-1.38	36	+1	6.11	+2.90	38	+3	2.86	-0.35	29	-6	1.38	-1.83
MAR	44	0	3.05	-1.35	52	+8	1.97	-2.43	44	+1	6.51	+1.91	48	+4	2.19	-2.21	47	+3	1.05	-3.35
APR	59	+4	3.52	-0.36	53	-2	3.87	-0.01	55	0	5.89	+2.01	55	0	4.48	+0.60	59	+4	2.74	-1.14
MAY	62	-2	2.99	-1.48	68	+4	1.45	-3.02	62	-2	4.33	+0.14	64	0	5.05	+0.58	67	+3	7.84	+3.37
JUN	70	-2	1.82	-1.84	74	+2	1.77	-1.89	74	+2	3.59	-0.07	74	+2	5.41	-1.75	76	+4	4.61	+0.95
JUL	76	0	5.13	+0.13	74	-2	6.90	+1.90	76	0	3.41	-1.59	71	-5	5.89	+0.89	78	+2	5.49	+0.49
AUG	76	+1	3.23	-0.70	80	+5	2.56	-1.37	75	0	2.18	-1.75	73	-2	5.38	+1.45	78	+3	1.54	-2.39
SEP	64	-4	9.27	+6.07	72	+4	1.15	-2.05	72	+4	1.42	-1.78	68	0	5.37	+2.17	71	+3	1.14	-2.06
OCT	54	-3	4.88	+2.31	63	+6	5.28	+2.71	57	0	1.53	-1.04	54	-3	4.83	+2.26	59	+2	1.22	-1.35
NOV	47	+2	1.78	-1.61	46	+1	2.86	-0.53	43	-2	2.53	-0.86	49	+4	0.94	-2.45				
DEC	42	+6	2.45	-1.53	40	+4	5.29	+1.31	35	-1	6.03	+2.05	36	0	3.86	-0.12				
Total			45.02	+0.47			37.86	-6.69			47.24	+2.69			48.71	+4.16			29.41	-7.77

¹ DEP is departure from the long-term average.

Description of the Tests

Alfalfa variety tests were established at Lexington (2006 and 2008), Princeton (2008 and 2009), and Bowling Green (2006) as part of the forage variety testing program. Trials were planted in Lexington and Bowling Green in the spring of 2006 but failed due to poor establishment conditions. They were replanted in August of 2006. A trial was planted in Lexington in the spring of 2010 but did not establish well, so it was replanted in August of 2010. The soils at most locations are well suited to alfalfa because they are generally well-drained silt loam soils (Maury, Crider, and Pembroke at Lexington, Princeton, and Bowling Green, respectively).

Plots were 5 by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 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, Princeton, and Bowling Green are presented in Tables 1 through 4.

Yield data (on a dry matter basis) for all tests are reported in Tables 5 through 9. 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 com-

mercially. Yields are given by cutting date for 2010 and as total annual production.

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), which is a measure of the variability of the data, is included for each column of means. Low variability is desirable,

Table 2	2. Temp	erature	and rai	nfall at	Princet	on, Ken	tucky ir	2008,	2009, aı	nd 2010) .	
		20	08			20	09			20	10 ²	
	Tempe	erature	Rai	nfall	Tempe	erature	Rai	nfall	Tempe	erature	Rai	nfall
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	37	+3	2.40	-1.40	33	-1	0.94	-2.86	31	-3	3.06	-0.74
FEB	39	+1	6.76	+2.33	42	+4	3.28	-1.15	33	-5	1.54	-2.89
MAR	48	+1	7.55	+2.61	53	+6	2.89	-2.05	48	+1	3.24	-1.7
APR	58	-1	6.56	+1.76	58	-1	5.35	+0.55	62	3	3.3	-1.54
MAY	65	-2	6.19	+1.23	67	0	6.14	+1.18	69	+2	10.41	+5.45
JUN	78	+3	1.24	-2.61	77	+2	7.97	+4.12	79	4	4.82	0.97
JUL	79	+1	5.12	+0.83	74	-4	7.45	+3.16	80	2	2.73	-1.56
AUG	77	0	0.69	-3.32	75	-2	2.44	-1.60	81	4	2.46	-1.55
SEP	74	+3	0.61	-2.72	71	0	4.61	+1.28	72	1	0.94	-2.39
OCT	60	+1	2.21	-0.84	55	-4	9.08	+6.03	60	+1	0.97	-2.08
NOV	46	-1	2.59	-2.04	52	+5	1.50	-3.13				
DEC	39	0	6.49	+1.95	36	-3	2.73	-2.31				
Total			48.95	-2.18			54.31	+3.22			33.47	-7.99
1 DEP i	s denart	ture fron	n the lor	na-term	average							

DEP is departure from the long-term average.

² 2010 data is for 10 months through October.

² 2010 data is for 10 months through October.

Table 3	3. Temp	eratur	e and r	ainfall a	t Bowl	ing Gre	en, Ke	ntucky	(airpor	t locati	on) in 2	2006, 20	07, 20	08, 200	9, and	2010.				
		20	06			20	07			20	08			20	09			20	10 ²	
	Tei	mp.	Rai	nfall	Ter	mp.	Rai	nfall	Tei	mp.	Rai	nfall	Tei	mp.	Rai	nfall	Tei	mp.	Rai	nfall
	°F	DEP ¹	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	45	+11	4.89	+1.07	39	+5	4.04	+0.22	35	+1	3.56	-0.26	34	0	2.93	-0.89	32	-2	2.98	-0.84
FEB	38	0	2.28	-1.85	34	-4	2.00	-2.13	40	+2	4.05	-0.08	43	+5	3.33	-0.80	34	-4	2.07	-2.06
MAR	49	+3	2.75	-2.35	56	+10	1.34	-3.76	48	+2	5.86	+0.76	51	5	3.08	-2.02	49	3	2.29	-2.81
APR	63	+6	4.51	+0.19	56	-1	3.65	-0.67	57	0	5.41	+1.09	58	+1	4.44	+0.12	62	5	3.21	-1.11
MAY	65	-1	3.63	-1.31	70	+4	3.57	-1.37	66	0	5.38	+0.44	68	+2	6.66	+1.72	69	3	11.00	6.06
JUN	74	-1	2.66	-1.51	76	+1	2.65	-1.52	78	+3	1.20	-2.97	77	+2	7.31	+3.14	80	5	6.24	2.07
JUL	79	+1	3.30	-1.44	78	0	2.02	-2.72	79	+1	5.52	+0.78	75	-3	9.08	+4.34	81	3	4.48	-0.26
AUG	80	+3	5.97	+2.46	85	+8	0.94	-2.57	77	0	0.74	-2.77	76	-1	1.77	-1.74	81	4	5.60	2.09
SEP	67	-3	6.78	+3.06	75	+5	1.89	-1.83	73	+3	1.58	-2.14	72	+2	5.73	+2.01	73	3	1.14	-2.58
OCT	56	-2	4.01	+0.99	64	+6	8.38	+5.36	59	+1	3.75	+0.73	57	-1	7.60	+4.58	61	3	1.85	-1.17
NOV	49	+3	3.07	-1.36	48	+2	3.95	-0.48	46	0	1.71	-2.72	51	5	0.88	-3.55				
DEC	43	+5	3.54	-1.49	43	+5	7.1	+2.07	39	+1	6.12	+1.09	39	1	3.86	-1.17				
Total			47.39	-3.54			41.53	-9.40			44.58	-6.05			56.67	+5.74			40.86	-0.61

¹ DEP is departure from the long-term average.

² 2010 data is for 10 months through October.

and increased variability within a study results in higher CVs and larger LSDs.

Table 10 summarizes information about fall dormancy, disease resistance, and yield performance across years and locations for all the varieties currently 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 10, open blocks indicate that the variety was not in that particular test (labeled at the top of the column); an X means that the variety was in the test but yielded significantly less than the top-vielding variety. A single asterisk (*) means that 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 11 is a summary of yield data from 1995 to 2010 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 11, 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. See footnote in Table 11 to determine which yearly report to refer to.

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 and are listed in the "Publications" section of the UK Forage website, www.uky.edu/Ag/ Forage:

- AGR-76—Alfalfa: The Queen of the Forage Crops
- AGR-64—Establishing Forage Crops
- AGR-90—Inoculation of Forage Legumes
- AGR-18—Grain and Forage Crop Guide for Kentucky
- AGR-1—Lime and Fertilizer Recommendations
- AGR-148—Weed Control Strategies for Alfalfa and Other Forage Legume Crops
- ENT-17—Insect Management Recommendations for Field Crops and Livestock
- PPA-10D—Kentucky Plant Disease

Table 4. Temperature and rainfall at the Western Kentucky	/ University Farm at Bowling Green,
Kentucky in 2008, 2009, and 2010. ¹	

		20	08			20	09			201	10 ²	
	Tempe	rature	Rai	nfall	Tempe	rature	Raiı	nfall	Tempe	rature	Raiı	nfall
	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	34		4.11		32		5.86		30		3.17	
FEB	39		3.83		41		4.25		32		2.44	
MAR	47		6.45		50		3.20		47		2.33	
APR	56		5.05		56		4.45		60		3.47	
MAY	64		5.36		66		4.77		69		11.82	
JUN	76		1.73		75		5.12		79		3.89	
JUL	76		5.73		73		7.58		80		3.84	
AUG	75		0.64		74		1.99		79		4.45	
SEP	72		1.97		70		7.29		71		1.41	
OCT	58		4.24		55		6.11		59		1.67	
NOV	44		1.65		49		0.93					
DEC	38		6.74		37		3.92					
Total			47.50				55.47				35.49	

Weather Station established in 2007 so no long term average data exists. Check Table 3 for comparison.

² 2010 data is for 10 months through October.

- Management Guide for Forage Legumes
- AGR-137—Alfalfa Hay: Quality Makes the Difference
- PPFS-AG-F-04—"Emergency" Inoculation for Poorly Nodulated Legumes
- Growing Alfalfa in the South, a publication of the National Alfalfa & Forage Alliance, http://www.alfalfa.org/pdf/alfalfainthesouth.pdf

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Table 5. Dry matter yields, seeding vigor, and stand persist	er yleids, seedi	obiv bii	r, and sta	nd persi	Per	Percent Stand	ence of alialia varieties sown August 14, 2000 at Lexington, Neffucky. Percent Stand	NOW I	gust 14,	7000 81	exilist.	וי וופוויה	r y	Yiel	Yield (tons/acre)	(cre)			
	Seedling Vigor ¹	2006	2007	07	2008	80	2009	60	2010	10	2007	2008	2009			2010			4-vear
Variety	Oct 17, 2006 Oct 17	Oct 17	Mar 26 Oct 11	Oct 11	Mar 27	Oct 13	Mar 24	Oct 7	Mar 29	Oct 15	Total	Total	Total	May 10	Jun 10	Jul 16	Aug 13	Total ²	Total
Commercial Varieties—Available for Farm Use	ties—Available	e for Far	m Use																
Expedition	5.0	66	86	86	66	66	100	100	66	97	3.98	4.28	6.32	2.24	1.39	1.39	0.64	99.5	20.24*
L447HD	4.8	9/	96	62	95	6	62	86	6	92	4.26	4.19	5.69	2.05	1.31	1.37	09.0	5.33	19.47*
Perform	5.0	100	86	86	26	86	86	86	26	6	4.12	3.99	5.62	2.14	1.34	1.22	0.63	5.33	19.07*
WL355RR	4.8	86	96	96	95	95	95	66	96	94	3.90	3.90	5.83	1.92	1.24	1.42	0.61	5.19	18.82*
DKA 41-18RR	4.3	66	86	86	86	66	86	100	6	96	4.06	3.95	5.62	1.91	1.31	1.33	0.62	5.17	18.79*
LegenDairy 5.0	2.0	100	95	62	94	96	96	96	66	92	3.53	3.79	5.75	1.94	1.25	1.37	9.65	5.21	18.27
Phoenix	4.8	66	86	86	86	100	86	26	6	95	3.64	3.89	5.66	1.95	1.24	1.20	0.58	4.97	18.16
Withstand	4.8	100	6	86	26	66	66	66	86	92	3.50	3.72	5.87	1.94	1.28	1.20	0.55	4.97	18.06
Ameristand 403T	5.0	100	86	86	66	66	66	86	96	92	3.69	3.74	5.57	1.86	1.29	1.13	0.63	4.91	17.92
WL343HQ	4.3	66	100	100	100	100	100	100	66	98	3.69	3.92	5.34	1.75	1.18	1.36	0.68	4.96	17.91
Radiant-AM	5.0	100	97	96	6	86	96	96	96	95	3.79	3.73	5.48	1.89	1.20	1.21	0.54	4.85	17.84
Saranac AR	4.8	100	96	96	95	94	95	93	93	91	3.46	3.48	4.95	1.74	1.07	1.12	0.47	4.40	16.30
Buffalo	5.0	66	66	98	66	66	66	97	94	93	3.67	3.63	4.69	1.54	1.02	1.04	0.48	4.07	16.06
Experimental Varieties	ieties																		
DS617	5.0	66	6	26	96	86	86	66	86	6	3.82	4.03	5.84	1.96	1.28	1.33	0.64	5.21	18.91*
Mean	4.8	92.6	97.3	97.2	6.96	97.8.	97.5	97.6	96.7	95.1	3.79	3.87	5.59	1.92	1.24	1.26	0.59	5.02	18.27
CV,%	7.6	12.3	2.7	2.8	4.1	2.9	3.1	2.5	3.0	3.5	9.36	10.68	7.87	15.46	11.22	15.52	11.29	9.30	89.9
LSD, 0.05	0.5	17.2	3.8	3.9	5.7	4.1	4.3	3.5	4.2	4.8	0.51	0.59	0.63	0.34	0.20	0.26	0.10	0.67	1.74
1Vigor score based on a scale of 1 to 5, with 5 being the most vig 2 Due to very dry weather there was not enough growth for a fai *Not significantly different from the highest numerical value in a	d on a scale of 1 veather there wadifferent from the	to 5, with as not en	ough gro	the most wth for a	vigorous se fall harvest n the colur	gorous seedling growth. Il harvest. the column, based on th	gorous seedling growth. Il harvest. the colump, based on the 0.0515D	75 1 50 0											

Table 6. Dry matter yields, seedling vigor, and	ields, seedling v	igor, and	stand p	ersistenc	e of alfal	stand persistence of alfalfa varieties sown August 24, 2006 at Bowling Green, Kentucky.	es sown	August 2	24, 2006	at Bowli	ng Greer	, Kentuc	ķ.				
	Coodling			Per	Percent Stand	pu						Yiek	Yield (tons/acre)	cre)			
	Vigor ¹	2006	2007	07	2008	80	2009	2010	2007	2008	2009			2010			4-vear
Variety	Oct 30, 2006	Oct 30	Mar 16	Oct 29	Apr 14	Oct 31	Nov 4	Oct 13	Total	Total	Total	May 19	Jun 16	Jul 22	Aug 19	Total ²	Total
Commercial Varieties—Available for Farm Use	—Available for	Farm Use															
Withstand	4.8	66	100	66	66	96	95	98	1.62	3.51	4.77	1.71	1.12	0.59	0.46	3.88	13.78*
LegenDairy 5.0	4.8	100	100	86	86	96	92	95	1.03	3.33	5.04	1.72	1.24	0.50	0.45	3.90	13.29*
Rebound 5.0	4.5	100	100	98	66	6	93	92	1.28	3.35	4.72	1.58	1.19	0.48	0.43	3.67	13.02*
Escalade	5.0	100	66	86	96	86	63	98	1.17	3.25	4.65	1.63	1.24	0.47	0.42	3.76	12.82*
6415	5.0	100	100	100	26	66	94	84	1.05	3.23	4.54	1.79	1.26	0.46	0.42	3.92	12.74*
TripleTrust 450	5.0	100	66	66	66	100	97	91	1.19	3.26	4.66	1.64	1.22	0.36	0.38	3.60	12.70*
Phirst	4.8	100	66	86	6	6	92	85	0.98	3.34	4.67	1.60	1.07	0.34	0.39	3.40	12.39*
Integrity	5.0	100	100	100	100	66	92	79	1.16	3.25	4.50	1.60	1.09	0.34	0.33	3.36	12.27*
Dynagro Everlast	5.0	100	100	66	86	86	96	79	1.10	3.19	4.39	1.54	1.15	0.38	0.42	3.49	12.16*
Evermore	4.8	100	100	66	100	6	78	73	1.33	3.43	4.26	1.43	0.97	0.37	0.37	3.13	12.15*
WL348AP	4.8	66	100	86	100	96	88	80	1.14	3.40	4.07	1.56	1.10	0.32	0.36	3.34	11.96
Phoenix	4.8	66	66	98	96	94	81	75	1.06	3.19	4.14	1.44	1.01	0.42	0.36	3.22	11.62
Saranac AR (certified)	4.5	100	100	86	26	95	9/	64	0.89	2.98	4.04	1.39	0.95	0.26	0.26	2.87	10.79
Enforcer	4.0	26	96	26	92	83	89	64	0.98	2.76	3.45	1.25	0.92	0.32	0.29	2.79	9.97
Buffalo	4.3	100	66	66	86	92	75	89	1.01	2.70	3.51	1.22	0.83	0.25	0.22	2.52	9.74
Experimental Varieties	Se																
MP04	4.8	100	100	100	100	66	94	85	1.23	3.41	4.82	1.53	1.11	0.38	0.35	3.38	12.84*
AA109E	4.5	66	100	100	66	86	95	89	1.09	3.28	4.60	1.64	1.20	0.46	0.41	3.71	12.67*
Mean	4.7	99.5	99.2	98.6	97.8	96.1	88.1	80.5	1.14	3.23	4.40	1.54	1.10	0.39	0.37	3.41	12.17
CV,%	9.4	1.6	1.0	1.8	3.7	5.3	13.2	14.6	26.19	8.48	12.50	13.27	17.04	18.10	19.13	17.63	10.20
LSD, 0.05	9.0	2.3	1.4	3.5	5.1	7.3	16.6	16.8	0.42	0.39	0.78	0.29	0.27	0.10	0.10	0.61	1.77
11/120, 200, 200, 200, 200, 200, 200, 200,	riod 7 dtim 7 of 1 to clear	+h E ho	m 04+ 20	, co: + + + + + + + + + + + + + + + + + + +	Ile coolin		4+										

¹Vigor score based on a scale of 1 to 5, with 5 being the most vigorous seedling growth.
²Due to very dry weather there was not enough growth for a fall harvest.
^{*}Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Dry matter yiel	lds and sta	and persis	tence of	alfalfa var	ieties sov	n April 8	2008 at	Lexington	, Kentuck	y.			
		Pe	rcent Sta	nd					Yield (to	ns/acre)			
	2008	20	09	20	10	2008	2009			2010			3-year
Variety	Oct 21	Mar 24	Oct 7	Mar 29	Oct 15	Total	Total	May 10	Jun 10	Jul 14	Aug 13	Total ¹	Total
Commercial Varieties—	-Available	for Farm	Use										-
DKA 50-18	84	74	89	88	84	0.87	5.55	2.12	1.30	1.61	0.81	5.84	12.26*
FSG 528SF	89	93	93	93	89	0.72	5.54	2.16	1.35	1.54	0.77	5.81	12.07*
Garst 6417	90	88	89	89	84	0.73	5.30	2.04	1.36	1.53	0.72	5.65	11.68*
Rebound 5.0	84	84	88	88	82	0.73	5.34	2.01	1.41	1.51	0.65	5.59	11.66*
Garst 6552	85	84	84	87	86	0.77	5.17	1.96	1.30	1.57	0.83	5.66	11.60*
A5225	88	85	86	86	84	0.59	5.38	2.02	1.29	1.49	0.78	5.57	11.54*
WL 343HQ	91	93	94	95	91	0.68	5.51	1.93	1.20	1.43	0.77	5.33	11.52*
Phoenix	91	89	90	90	89	0.57	5.36	2.13	1.26	1.42	0.67	5.48	11.41*
WL 363HQ	90	89	90	91	89	0.52	5.12	1.94	1.26	1.66	0.82	5.67	11.32*
DKA 43-13	84	83	89	88	87	0.58	5.39	1.64	1.21	1.57	0.87	5.29	11.26*
A4440	88	89	91	89	86	0.65	4.95	2.08	1.30	1.48	0.75	5.62	11.23*
Genoa	73	68	79	80	78	0.61	5.25	2.00	1.22	1.42	0.70	5.34	11.21*
PGI 459	93	90	93	94	89	0.53	5.18	1.94	1.25	1.53	0.75	5.47	11.18*
Anchormate	96	96	95	95	94	0.74	4.98	2.14	1.34	1.35	0.62	5.46	11.17*
Ameristand 403T	70	65	73	73	75	0.60	4.68	1.87	1.29	1.42	0.67	5.24	10.52
Buffalo	89	90	90	89	84	0.68	4.77	1.75	1.15	1.39	0.62	4.91	10.36
Withstand	76	78	76	76	75	0.52	4.79	1.86	1.25	1.34	0.57	5.02	10.32
Saranac AR (certified)	88	85	85	88	88	0.73	4.54	2.06	1.23	1.20	0.56	5.05	10.32
Mean	85.9	84.4	87.3	87.5	85.1	0.66	5.16	1.98	1.27	1.47	0.72	5.44	11.26
CV,%	9.9	10.5	6.8	5.9	5.9	35.01	8.80	10.84	11.70	12.89	10.13	6.41	7.63
LSD, 0.05	12.1	12.5	8.4	7.3	7.2	0.33	0.64	0.30	0.21	0.27	0.10	0.50	1.22

¹Due to very dry weather, there was not enough growth for a fall harvest.

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

Table 8. Dry matter yie	elds and s	tand per	sistence	of alfalfa	varieties	sown Ap	oril 17, 20	008 at Pr	inceton, k	(entucky	•			
			Percen	t Stand						Yield (to	ns/acre)			
	20	08	20	09	20	10	2008	2009			2010			3-year
Variety	May 21	Oct 30	Apr 17	Oct 28	Mar 18	Oct 12	Total	Total	May 18	Jun 16	Jul 22	Aug 19	Total ¹	Total
Commercial Varieties-	—Availab	le for Far	m Use											
Genoa	99	97	95	93	95	91	0.58	4.19	1.29	1.28	0.51	0.10	3.19	7.96*
USG 681HY	100	93	94	91	93	90	0.59	3.99	1.36	1.21	0.50	0.10	3.17	7.74*
A5225	100	95	96	96	95	88	0.57	3.90	1.31	1.16	0.47	0.08	3.03	7.49*
FSG 408DP	100	94	95	91	93	88	0.51	3.69	1.36	1.27	0.46	0.10	3.18	7.38*
Phoenix	96	91	85	85	85	76	0.49	3.64	1.36	1.21	0.43	0.07	3.07	7.20*
Ameristand 403T	98	88	83	84	89	79	0.56	3.62	1.12	1.23	0.43	0.07	2.86	7.05*
Withstand	96	89	84	88	88	81	0.45	3.52	1.37	1.16	0.44	0.09	3.05	7.02
Mariner III	98	90	86	86	85	84	0.47	3.55	1.27	1.08	0.42	0.08	2.85	6.88
WL 343HQ	99	90	89	96	93	88	0.41	3.39	1.30	1.18	0.47	0.08	3.03	6.83
Arc	98	86	89	78	78	71	0.46	3.34	1.25	1.09	0.33	0.06	2.73	6.53
Saranac AR (certified)	99	86	83	79	80	81	0.49	2.92	1.17	1.18	0.37	0.10	2.82	6.23
Buffalo	100	91	89	66	68	61	0.54	3.16	0.99	0.92	0.31	0.05	2.26	5.96
Experimental Varietie	s													
CW 24027	99	94	95	96	96	88	0.61	4.06	1.28	1.14	0.49	0.07	2.99	7.66*
TS 4027	99	88	83	83	80	73	0.64	3.66	1.22	1.21	0.52	0.07	3.02	7.32*
Mean	98.5	90.8	88.8	86.4	86.7	81.3	0.53	3.62	1.26	1.16	0.48	0.08	2.95	7.09
CV,%	1.1	5.7	8.7	9.4	9.3	13.0	20.82	13.10	10.30	11.90	16.54	42.72	9.52	9.02
LSD, 0.05	1.5	7.4	11.0	11.7	11.6	15.1	0.16	0.68	0.19	0.20	0.10	0.05	0.40	0.91

¹ Due to very dry weather, there was not enough growth for a fall harvest. *Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

	Seedling		Percen	t Stand				Yie	ld (tons/a	cre)		
	Vigor ¹	20	09	20	10	2009			2010			2-year
Variety	May 12, 2009	May 12	Oct 28	Mar 18	Oct 12	Total	May 18	Jun 16	Jul 22	Aug 19	Total ²	Total
Commercial Varieties—	-Available for Fa	rm Use		·					•			
Ameristand 403T	3.3	98	94	94	96	2.09	1.47	1.48	0.72	0.18	3.85	5.94*
LS605	2.8	99	96	97	97	1.72	1.58	1.39	0.67	0.20	3.85	5.57*
WL 363HQ	3.5	96	96	96	98	1.84	1.51	1.28	0.69	0.24	3.72	5.57*
Adrenalin	2.8	98	91	91	95	1.74	1.60	1.34	0.62	0.21	3.77	5.50*
Ameristand 407TQ	4.3	100	97	97	97	1.65	1.60	1.43	0.62	0.16	3.82	5.46*
Syngenta 6422Q	3.3	95	97	97	96	1.63	1.36	1.40	0.68	0.21	3.65	5.28*
Ameristand 403TPlus	3.5	100	95	95	95	1.57	1.40	1.45	0.61	0.16	3.61	5.18*
Saranac AR (certified)	3.3	99	91	90	94	1.60	1.48	1.33	0.57	0.19	3.56	5.16*
Rebound 5.0	2.8	95	96	90	93	1.48	1.48	1.30	0.65	0.21	3.64	5.11*
Archer III	3.0	98	97	95	97	1.53	1.45	1.34	0.57	0.21	3.57	5.09*
Buffalo	3.3	100	91	93	94	1.61	1.40	1.25	0.61	0.16	3.42	5.03
KingFisher 243	1.3	94	93	92	93	1.44	1.28	1.20	0.49	0.18	3.16	4.60
Experimental Varieties	1											
BYEXP723	3.8	98	98	97	96	2.16	1.48	1.52	0.81	0.21	4.02	6.18*
TS 4010/A4535	3.5	100	98	97	97	1.68	1.48	1.48	0.71	0.19	3.85	5.53*
GA505	2.8	99	95	93	93	1.72	1.28	1.38	0.61	0.18	3.45	5.18*
GA-APGC	4.0	98	91	94	97	1.63	1.37	1.31	0.50	0.16	3.34	4.97
CW 055023/PGI557	3.8	100	97	96	97	1.43	1.47	1.21	0.60	0.20	3.49	4.92
GA-MPX	1.8	96	92	93	96	1.42	1.28	1.19	0.52	0.13	3.12	4.54
Mean	3.1	97.8	94.6	94.2	95.3	1.66	1.44	1.35	0.62	0.19	3.61	5.27
CV,%	37.6	4.3	4.8	4.1	3.1	24.87	15.82	13.99	22.51	21.22	12.72	15.23
LSD, 0.05	1.7	5.9	6.5	5.5	4.1	0.59	0.32	0.27	0.20	0.06	0.65	1.14

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

² Due to very dry weather, there was not enough growth for a fall harvest.

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

	tion and performance of					eristi					-1					D.:				Day	اi	~ 6"	
		Vā				sisan			20	<u>Lex</u> 063	cing		2008	!		2008	ncet	_	009	BO	-	g Gr 006	eeı
Variety	Proprietor	FD ⁴					APH	07		09	10	_	09			09	10	09		07		09	1
	–Available for Farm Use	1																					- ا
6415	Garst Seed Co.	4	HR	HR	HR	HR	HR													x ⁵	*	*	-3
6417	Garst Seed Co.	4	HR	HR	HR	HR	HR					*	*	*						^			+
6552	Garst Seed Co.	5	HR	HR	HR	HR	HR					*	*	*									+
A-4440	Producers Choice	4	HR	HR	HR	HR	HR					*	*	*									+
	+	-	_	_		_						*	*	*	*	*	*					 	+
A5225	Producers Choice	5	HR	HR	HR	HR	R					,	^		^			*	*			├	+
Adrenalin	Brett Young	4	HR	HR	HR	HR	HR		*			*			*	*	*	*	*			₩	+
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR	Х	*	Х	Х	*	х	Х	*	*	*					<u> </u>	\perp
Ameristand 403TPlus	America's Alfalfa	4	HR	HR	HR	HR	HR											Х	*			<u> </u>	╄
Ameristand 407TQ	America's Alfalfa	4	HRT	HR	HR	HR	HR											*	*			<u> </u>	╀
Anchormate	ProSeed Marketing	-	-	-	-	-	-					*	*	*								<u> </u>	L
Arc (certified)	Public	4	LR	MR	HR	-	-								Х	Х	Х						L
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR											х	*				
Buffalo	Public	-	-	-	-	-	-	х	х	х	х	*	х	х	*	х	х	*	*	х	х	х	
DKA 41-18RR	Monsanto	4	HR	HR	HR	HR	HR	*	*	*	*												Т
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR					*	*	Х									T
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR					*	*	*									T
Dynagro Everlast	United Agri. Products	3.8	HR	HR	HR	HR	R													х	*	*	T
Enforcer	FFR/Southern States	4	HR	HR	HR	HR	HR						$\vdash \vdash$							Х	х	х	
Escalade	Allied Seed, LLC	5	HR	HR	R	HR	R												\vdash	X	*	*	
Evermore	FFR/Southern States	5	HR	HR	HR	HR	HR													*	*	*	1
	Syngenta Seeds	5		HR	_	RR	R	*	*	*	*												t
Expedition	+ / - /	_	HR	_	R				-"						*	*	*					-	+
FSG 408DP	Lewis Seed Company	4	HR	HR	HR	HR	R					*	*	*	,	L ^						₩	+
FSG 528SF	Lewis Seed Company	5	HR	R	HR	RR	R															₩	╀
Genoa	Syngenta Seeds	4	HR	HR	HR	RR	HR					*	*	*	*	*	*					Ь	┸
Integrity	PGI Alfalfa, Inc.	4	HR	HR	HR	HR	HR													Х	*	*	L
KingFisher 243	Cal/West Seeds	5	HR	HR	HR	HR	HR											Х	Х				
L447HD	Legacy Seeds, Inc.	4	HR	HR	HR	HR	HR	*	*	*	*												
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR	х	*	*	*									х	*	*	
LS 605	Legacy Seeds, Inc.	4	HR	HR	HR	HR	HR											*	*				
Mariner III	Allied Seed, LLC	4	HR	HR	HR	HR	HR								х	*	*						T
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR	*	*	*	*												T
Phirst	UniSouth Genetics, Inc.	4	HR	HR	HR	HR	R													х	*	*	
Phoenix	FFR/Southern States	5	HR	HR	HR	HR	R	х	*	х	х	*	*	*	*	*	*			X	*	х	1
PGI 459	Producers Choice	4	HR	HR	HR	HR	R			<u> </u>	<u> </u>	х	*	*						_		 ^	ť
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR					*	*	*				х	*	*	*	*	+
	<u> </u>	4		HR	HR		-	*	*									^				\vdash	+
Radiant-AM	Ampac Seed Company	_	HR	_		HR	HR	_		Х	Х	*			*		*	*	*			 	+
Saranac AR (certified)	Public	4	MR	R	HR	LR	-	Х	Х	Х	Х	*	х	Х	*	Х	*			Х	Х	Х	- 2
Syngenta 6422Q	Syngenta Seeds	4	HR	HR	HR	HR	HR											*	*			<u> </u>	\bot
TripleTrust 450	ABI Alfalfa, Inc.	5	HR	HR	HR	HR	HR													Х	*	*	
USG 681HY	UniSouth Genetics, Inc.	6		HR	_	HR	-								*	*	*		<u> </u>			<u> </u>	\perp
Withstand	FFR/Southern States	4	HR	-	HR	HR	HR	х	*	*	х	х	х	Χ	Х	*	*			*	*	*	
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR	х	*	х	х	*	*	х	х	х	*						
WL 348AP	W-L Research	4	HR	HR	HR	HR	HR													х	*	х	
WL 355RR	W-L Research	4	HR	HR	HR	HR	HR	*	*	*	*												T
WL 363HQ	W-L Research	5	HR			HR	HR					х	*	*				*	*				T
Experimental Varieties																			1				_
AA109E	ABI Alfalfa, Inc.																			Х	*	*	Т
BYEXP 723	Brett Young	4	HR	HR	HR	HR	HR											*	*	^			+
		5		HR				\vdash					$\vdash \vdash$			\vdash			*			\vdash	+
CW 055023/PGI 557	Producers Choice	_	HR	_		HR	HR		_				$\vdash \vdash \vdash$		*	*	*	Х	Ĥ	-			+
CW 24027	Cal/West Seeds	4	HR	HR	HR	HR	HR		ļ.,.						*	*	*					<u> </u>	+
DS617	Dairyland Research	4	HR	HR	HR	HR	HR	*	*	*	*					<u> </u>			<u> </u>			Ь—	1
GA 505	Univ. of Georgia																	*	*			<u> </u>	\perp
GA-APGC	Univ. of Georgia																	*	х			$oxed{oxed}$	\perp
GA-MPX	Univ. of Georgia				L				L	L	L		╚		L			Х	Х		L	L	Ţ
MP04	Cimarron USA	5	HR	HR	HR	HR	R													*	*	*	Ť
TS 4010/A4535	Producers Choice																	*	*				T
	Target Seed, LLC	-	-	HR	_	HR	R	_	_			-	\vdash		*	*	*	-		-	_	\leftarrow	+

 ¹ Variety characteristics: FD=fall dormancy, Bw=bacterial wilt, Fw=fusarium wilt, An=anthracnose, PRR=phytophthora root rot, APH-aphanomyces root rot. Information provided by seed companies.
 2 Disease resistance: S=susceptible, LR=low resistance, MR=moderate resistance, R=resistance, HR=high resistance.
 3 Establishment year.
 4 Fall dormancy-check varieties: 1=Spredor 3, 2=Vernal, 3=Ranger, 4=Saranac, 5=DuPuits.
 5 x in the box indicates the variety was in the test but yielded significantly less than the top-ranked variety in the test. Open boxes indicate the variety was not in the test.
 * Not significantly different from the top-ranked variety in the test.

Particular Par	Table 11. Summary	Table 11. Summary of Kentucky Alfalfa Vield Trials 1995-2010 (yield shown as a percentage of the mean of the commercial varieties in the test)	d Tria	als 19	95-2	010 (y	rield s	nwor	as a be	rcent	age of	then	nean	ofthe	COM	merci	al var	eties	in ţ	e test)		-					-	
Properties of the control of the c				Varie	Ę Ş	haract	eristic	Ls				Lexi	nato	_					Princ	eton		ă	owline	g Gre	en ²	Ede Shal	_ u	
Properties Charles Propert				Ľ	Disea	Se Re	sistan	Fe ³	954,5	\vdash	97	66	8	02	\vdash	\vdash	+	Н	0	1 05	\vdash	0,	86	03	90	-	T	Jean6
Producest Choice A HB	Variety	Proprietor	윤	æ	¥	An	PRR	APH	+	-	6yr		_	+	-	-	_	-	-	+-	-	-		_			_	trials)
Production Charlet Charlet Charlet Shelf RP	A-4440	Producers Choice	4	HR	-	-	H	HR				-						-	-			-	-	-				100(2)
4.2.2. America 5.4.1.6. 5. HG	A 5225	Producers Choice	2	품	\vdash		뚶	~								_	03				10,	~					Ì	103(2)
W. V. Research 2. H. H. Rip R IR	Abilene +Z	America's Alf.	2	품	-	$\overline{}$	뚶	~					66					-	94								Ì	102(2)
SCI. Will Research 3 HIR HR	ABT 205	W-L Research	7	품	-	-	뚶	~			100						-01	7(99(2)
National Control Con	ABT 350	W-L Research	3	H	-		품	품											8				105			101	_	101(3)
Newfield Seeds of All Milk Milk Milk Milk Milk Milk Milk Mi	ABT 400SCL	W-L Research	4	H	\dashv	-	뚶	품										_	02				102					102(2)
Name Name And Secretical Secr	ABT 405	W-L Research	4	H	-	\rightarrow	품	~		101	101						_	80				101					`	103(4)
Section of Manufacturing Section of Manufacturin	AC Longview	Newfield Seeds	1	품	1	1	1	1							83													1
Reservoired Authority A	Affinity+Z	ABI Alfalfa	4	HR			H	R			66							_	01			104	_				_	101(3)
Total Annel Cost All Mark Religions (A) Liber Cost All Mark Religions (A) Liber Cost All Mark Religions (A) Cost Annel Cost All Mark Religions (A) Cost All Mar	Alfagraze	America's Alf.	7	MR	_	MR	~	1		66																97		98(2)
and dozy-t Americas AME	AmeriGraze 401+Z	America's Alf.	4	H	-	-	뚶	~		102			66				-	_	6							102	<u> </u>	101(5)
and DOX-LAG Annel Coxell Annel Coxell </td <td>AmeriStand 403T</td> <td>America's Alf.</td> <td>m</td> <td>H</td> <td>-</td> <td></td> <td>품</td> <td>품</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>\vdash</td> <td>93</td> <td></td> <td>6</td> <td>7</td> <td>96</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>96(4)</td>	AmeriStand 403T	America's Alf.	m	H	-		품	품								\vdash	93		6	7	96							96(4)
Provised Marketing	Ameriguard 302+Z	America's Alf.	m	H	\vdash	\vdash	품	품				103																ı
Signed A IR R IR I	Anchormate	ProSeed Marketing	1	1	1	1	1	1									66											1
Hele Dellick Barenburg	Apollo	America's Alf.	4	æ	~	~	~	1	80	108												96						95(3)
33HR Barenbuog 5 HR	Arc (certified)	Public	4	LR	\vdash	-	'	'	86	101	87	66	91	96	9/		01	\vdash				-		86		94	<u> </u>	94(16)
Handle Barenbroad Handle	Baralfa 53HR	Barenbrug	2	H	\vdash	\vdash	품	품												10	4							1
Public 1 <td>Baralfa 54</td> <td>Barenbrug</td> <td>1</td> <td>~</td> <td>품</td> <td>\vdash</td> <td>품</td> <td>뚶</td> <td></td> <td>96</td> <td></td> <td></td> <td>66</td> <td></td> <td>98(2)</td>	Baralfa 54	Barenbrug	1	~	품	\vdash	품	뚶															96			66		98(2)
FFRIÇOU. St. 4 HR	Buffalo	Public	1	1		-	'	'						8	82	⊢	32			95	⊢	\vdash	⊢		8	⊢	H	(6)68
n 3i Great Plains 4 HR	Choice	FFR/Sou. St.	4	품	_	~	뚶	~	110		104						-	90				103	-			103	Ì	104(6)
Control Figure Cont	Cimarron 3i	Great Plains	4	품	\vdash	\vdash	뚶	뚶			100												66			96		98(3)
13 He H	Cimarron SR	Great Plains	4	H	\vdash	-	품	MR				103						-	10								_	102(2)
4 He Number of the Nu	Cimarron VR	Great Plains	2	HR	_	_	æ	MR			66																	1
HEV	Demand	ABI Alfalfa	3	HR			H	R														66						-
Monsanto 4 HR HR R 101 102 102 102 103	Depend+EV	ABI Alfalfa	-	1	1	ı	ı	_														104						ı
40 Monsanto 4 HR HR <t< td=""><td>DK 127</td><td>Monsanto</td><td>m</td><td>품</td><td>_</td><td>\vdash</td><td>품</td><td> </td><td>111</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>102</td><td>-</td><td></td><td></td><td></td><td></td><td>107(2)</td></t<>	DK 127	Monsanto	m	품	_	\vdash	품		111													102	-					107(2)
4Q Monsanto 3 HR HR <t< td=""><td>DK 133</td><td>Monsanto</td><td>4</td><td>품</td><td>\vdash</td><td>\vdash</td><td>뚶</td><td>~</td><td>106</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>104</td><td>L</td><td></td><td></td><td></td><td></td><td>105(2)</td></t<>	DK 133	Monsanto	4	품	\vdash	\vdash	뚶	~	106													104	L					105(2)
Monsanto 4 HR HR <t< td=""><td>DK 131HQ</td><td>Monsanto</td><td>3</td><td>HR</td><td>-</td><td>-</td><td>품</td><td>R</td><td></td><td></td><td></td><td>105</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td></t<>	DK 131HQ	Monsanto	3	HR	-	-	품	R				105																_
Monsanto 4 HR HR <t< td=""><td>DK 140</td><td>Monsanto</td><td>4</td><td>HR</td><td>_</td><td></td><td>H</td><td>H</td><td></td><td></td><td>104</td><td></td><td></td><td>92</td><td></td><td></td><td></td><td>1</td><td>-</td><td>00</td><td></td><td></td><td>103</td><td></td><td></td><td>103</td><td>_</td><td>101(6)</td></t<>	DK 140	Monsanto	4	HR	_		H	H			104			92				1	-	00			103			103	_	101(6)
138RA Monsanto 4 HR	DK 141	Monsanto	4	품	\rightarrow	-	뚲	품			66							0,	8				103				`	100(3)
13 Monsanto 4 HR HR <t< td=""><td>DKA-41-18RR</td><td>Monsanto</td><td>4</td><td>품</td><td>\dashv</td><td>-</td><td>뚲</td><td>뚲</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\rightarrow</td><td></td><td>_</td><td>_</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>ı</td></t<>	DKA-41-18RR	Monsanto	4	품	\dashv	-	뚲	뚲								\rightarrow		_	_	_								ı
18 Monsanto 5 HR HR <t< td=""><td>DKA 43-13</td><td>Monsanto</td><td>4</td><td>품</td><td>\rightarrow</td><td>\rightarrow</td><td>뚲</td><td>뚬</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>-</td><td>_</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>ı</td></t<>	DKA 43-13	Monsanto	4	품	\rightarrow	\rightarrow	뚲	뚬									8	-	_	_								ı
tor America's Alf. 4 HR	DKA 50-18	Monsanto	2	뚶	-	-	뚶	뚶									60											1
Ferefast United Agr. Prod. 4 HR HR<	Dominator	America's Alf.	4	품	\rightarrow	-	뚶	뚶	102																			ı
Fey Mail Affailfa and Abil Alfailfa and Abil Abil Abil Abil Abil Abil Abil Abil	Dynagro Everlast	United Agr. Prod.	4	품	-	_	뚶	~											_	10	_				101		_	101(2)
FFR/Sou. St. 4 HR	Emperor	ABI Alfalfa	4	HR			H	H															102			93		98(2)
e Allied Seeds 5 HR	Enforcer	FFR/Sou. St.	4	HR	_	_	HR	HR							06										82			86(2)
e FFK/Sou. St. 5 HR	Escalade	Allied Seeds	2	HR	_	_	HR	HR																	106			_
r II Allied Seeds 4 HR	Evermore	FFR/Sou. St.	2	HR	_	_	품	품																105				103(3)
on Syngenta 5 HR HR R R R 101 111 96 <th< td=""><td>Excalibur II</td><td>Allied Seeds</td><td>4</td><td>HR</td><td>-</td><td>-</td><td>H</td><td>В</td><td>107</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td></th<>	Excalibur II	Allied Seeds	4	HR	-	-	H	В	107																			-
SV Garst Seeds 3 HR	Expedition	Syngenta	2	품	\vdash	Н	æ	~	Ш	Ш				П	\vdash	11	\vdash	\dashv	\vdash	96		Н					H	105(3)
Nome Garst Seeds 3 HR	Feast	Garst Seeds	٣	품	-	-	품	~		101							_	01										101(2)
Donley Seed 4 HR HR HR HR HR - 99 96 97 97 98 9 99 Allied Seeds 4 HR	Feast +EV	Garst Seeds	Μ	품	\rightarrow	\rightarrow	~	뚶			J				106									101			-	101(3)
Syngenta 3 R R HR - 99 96 96 97 98 98 99 Allied Seeds 4 HR	FK 421	Donley Seed	4	품	\rightarrow	\rightarrow	뚶	품									+		=	_	4	_					+	1
Allied Seeds 4 HR HR HR HR R R R R R R R R R R R R R	Fortress	Syngenta	m	<u>س</u>	\rightarrow	-	뚲	'		66	96						0,	7		+	4	88				66	+	98(5)
Allied Seeds 4 HR HR HR HR R R 105 100	FSG 406	Allied Seeds	4	품	-	-	뚬	뚬	\perp				T	T	T	+	+	+	+	\dashv	4	4	4	110		\dagger	+	1
	FSG 408DP	Allied Seeds	4	품	-	-	뚶	~					٦	٦	105	\exists	-	\dashv	\dashv	4	<u></u>		_			7	-	1

																					_				9	_	
			Variety Charact	Š	aracte	eristics1	٠,	_			Lexi	Lexington	_					Princ	Princeton		-	Bowling Green ²	ng Gre	en ²	Shale	. u	
				iseas	se Res	Disease Resistance ³	e ³	954,5	97	97	66	8	22	40	90	80	97 6	0 66	01 05	5 08	0	98	03	90	86	_	Mean
Variety	Proprietor	윤	B	Ŗ	An	PRR APH	APH	6yr ⁷	5yr	6yr	_	-	+-	-	-	+-	+-	-	+	-	-	-	-	_		$\overline{}$	(# trials)
FSG 505	Allied Seeds	2	H	품	H	H	æ				-	-	_	-	_	-	_	-	-	-	_	-	-				107(2)
FSG 528SF	Lewis Seed Co.	2	HR	R	HR	HR	В								•	107											1
Gem	FFR/Sou. St.	4	HR	HR	HR	HR	S			100						<u> </u>	86		H		101	1			105		101(4)
Geneva	Syngenta	4	HR	Ή	H	HR	HR				П	106	103	П	H	Н		99 10	104	Н	Н	101			102		103(6)
Genoa	Syngenta	4	HR	Ή	H	RR	H						\rightarrow	112	•	100			6	98 108	<u></u>						105(4)
GH 744	Golden Harvest	4	H	품	H	품	MR						104														ı
Goldplus	PGI Alfalfa	4	H	품	Ŧ	품	~															98					1
Grazeking	FFR/Sou. St.	2	MR	품	품	~	S		100																102		101(2)
Haygrazer	Great Plains	4	HR	HR	R	В	MR		102																100		101(2)
HybridForce 400	Dairyland	4	HR	HR	R	HR	MR									_	H		106								1
Imperial	America's Alf.	m	HR	품	H	HR	R									_			_	_	104	4					ı
Innovator+Z	America's Alf.	m	품	품	품	품	~														101	L					ı
Integrity	PGI Alfalfa	4	HR	품	H	HR	HR																	101			ı
L447HD	Legacy Seeds	4	HR	품	HR	HR	HR								107												1
Legacy	Green Seed	4	R	~	æ	~	~	88													96						92(2)
LegenDairy 5.0	Croplan Genetics	٣	H	품	품	품	품							Ė	100				~	103				110			104(3)
LH4	Pioneer	٣	품	품	품	~	~				66																1
Magnum V	Dairyland	4	품	품	~	품	품					4															ı
Magnum V-wet	Dairyland	3	HH	H	В	HR	MR					105															ı
Mariner III	Allied Seeds	4	HR	H	HR	HR	HR													94	4						
Mountaineer 2.0	Croplan Gen.	2	H	품	H	품	품						-	108													ı
Multiqueen	Cal/West	4	H	품	H	품	æ	103																			1
Pasture Plus	MBS	3	H	품	Ж	품	MR															108	~				1
Pegasus	FFR/Sou. St.	4	품	뚝	품	뚶	~					1	1	1	1	\dashv	+	O)	95	\dashv	\dashv						1
PerForm	Dairyland Research	4	뚶	뚝	뚶	뚶	뚶				1	1	\dagger	7	105	\dashv	\dashv	\dashv	\dashv	\dashv	\dashv	4	4			1	1
PGI 459	Producers Choice	4	뚶	뚝	HR	H	~				1	1	\dagger	\forall	\forall	66	+	\dashv	+	\dashv	-	4	_				
Phirst	UniSouth Genetics	4	품	품	품	뚶	~				1		1	\rightarrow	\rightarrow	\dashv		1	=	105		_	_	102			104(2)
Phoenix	FFR/Sou. St.	2	품	품	품	뚶	~					1		113	100	101	1		1	98	<u></u>			96			102(5)
ProGro	PGI Alfalfa	4	H	품	æ	품	MR					1	1	1	1	\dashv	+	+	\dashv	+	_	95	4				1
Radiant-AM	Ampac Seed	4 4	¥ :	¥ :	¥ :	¥ :	¥ :							\dagger	88	2								5			1
Dogal	Cropiali dellettos	1 u	£ 3	£ 3	£ 0	£ 9	Y D					\dagger		\dagger	\dagger	<u> </u>	\dagger	+	+	-	+	_	103	3		5	(2)00
Reward	PGI Alfalfa	7 4	f	£	۵ ء	í í	MB						t	t		\dagger	+	86	+	+	+	\perp	3			<u></u>	72/27
Reward II	PGI Alfalfa	4	f	f	- ~	f	~											+	99	103			94			103	100(4)
Rushmore	Syngenta	4	품	품	품	품	품	108				95				_	103				66	_					101(4)
Saranac AR (certified)	Public	4	MR	~	품	LR		103	66	95	96	93	87	77	68	92	93	2	92 95	5 85	5 101	1 90	66	68	101	95	93(19)
Spredor 3	Syngenta	-	HR	품	Ж	MR	S		92																101		98(2)
Stampede	Allied Seeds	m	HR	~	Ж	HR	æ		95																106		101(2)
Stellar	W-L Research	4	품	품	HR	HR	LR															94					1
Summer Gold	Beck's Hybrids	4	H	품	HR	HR	HR							107													
Supercuts	ABI Alfalfa	4	Ή	품	Ħ	품	S	104											_		103	8					104(2)
TMF Generation	Mycogen Seeds	4	품	품	품	품	~														103	3					ı
TMF 4355LH	Mycogen Seeds	m	품	~	품	품	~				100	7		1			1	+			_						ı
TMF 4464	Mycogen Seeds	4	H	품	Ħ	품	~					1	1	1	1	\dashv	-	86	\dashv	+	_	4	4				1
Triple Crown	FFR/Sou. St.	4	품	품	¥	품	품					102		+	1	+	+	=	100	+	+	4	_				101(2)
TripleTrust 450	ABI Alfalfa	2	Ŧ	Ï	ï	9	9	_		_						_	_	_	100	2	_	_					103(2)
		,	=	É	-	Ĕ	Ę			I		1	†	\dagger	\dagger		†	+		2	+	+	4	202			100(4)

Ls 1 In de hold HQ			*0;**07																			;	,	2	Eden Shale		
y Ius 1 green and 2HQ 9HQ			משוועי	Variety Characteristics ¹	racte	ISTICS	_				Lexin	Lexington				_	_	Princeton	ton		B	Bowling Green²	See			_	
y Ilus 1 green and 2HQ 9HQ			٥	isease	Disease Resistance ³	stance	_	954,5	26	6	66	00	02 04	4 06	90	8 97	6	9	02	80	96	86	03		86	T	Mean ⁶
lus 1 green and 2HQ 9HQ	Proprietor	윤	B	Ψ	An	An PRR APH	_	6yr7	5yr	6yr 4	4yr 5	5yr 5	5yr 5yr	/r 4yr	r 3yr	r 5yr	r 4yr	r 4yr	5yr	3yr	7yr	7yr	3yr	4yr	5yr 4	4yr (#	(# trials)
green and 2HQ 9HQ	Forage Genetics	4	HR	HR	HR	HR	В				1	106															-
	Public	7	æ	MR	ı	ı	1					<u>υ</u>	93						95			91			96		94(4)
	ABI Alfalfa	3	품	HR	품	품	В		Ė	104		_				103	~								101	_	103(3)
	FFR/Sou. St.	4	뚶	뚶	뚶	뚲	Ŧ							66	9 92	<u></u>				95				114			100(4)
	W-L Research	7	뚶	뚶	뚶	뚲	<u>۳</u>														104						ı
	W-L Research	3	뚶	품	뚶	뚲	HR					Ĕ	108														ı
	W-L Research	4	뚶	품	뚶	품	~	103																			1
WL 324 W	W-L Research	3	뚶	품	뚶	뚲	HR														106						1
WL 325HQ W	W-L Research	3	품	H	뚶	품	~		Ė	103							101	_			66					_	101(3)
WL 326GZ W	W-L Research	4	뚶	품	뚶	뚲	H		66							97						86			66		98(4)
WL 327 W	W-L Research	4	뚶	품	뚶	뚲	H					É	105				100									_	103(2)
WL 332SR W	W-L Research	4	뚶	뚶	뚶	뚲	뚲									93											1
WL 338SR W	W-L Research	4	뚶	품	뚶	뚲	HR					Ĕ	101														ı
WL 342 W	W-L Research	4	품	HR	품	품	HR											102									1
WL 343HQ W	W-L Research	4	품	H	품	품	품							86	3 102	2				93							98(3)
WL 348AP W	W-L Research	4	H	HR	H	H	HR																	66			1
	W-L Research	4	뚶	-	뚶	품	뚲						\Box	106	9												ı
WL 357HQ W	W-L Research	2	뚶	품	뚶	뚶	H						123	2	\dashv				106				101		_	106	109(4)
363HQ	W-L Research	2	뚶	\rightarrow	뚶	뚲	뚲	\dashv	\dashv	+	+	\dashv	\dashv	\dashv	101	_											ı
	Cal/West	m	뚶	품	뚶	품	۳	94							-												ı
4m76 FI	FFR/Sou. St.	4.7	품	H	~	품	Ж					_	116														ı
	Croplan Gen.	5	~	H	~	~	۳																97		0,	66	98(2)
5246 Pi	Pioneer	2	~	~	뚶	품	æ										86										ı
5312 Pt	Public	æ	뚶	품	뚶	뚲	HR				-	103															ı
53H81 Pi	Pioneer	3	H	HR	H	Ж	HR				_	102															-
53Q60 PP	Pioneer	3	H	Я	품	H	В										100										1
	Pioneer	4	æ	H	품	H	LR	96	П				\vdash	-	\Box												ı
54H69 Pi	Pioneer	4	H	HR	H	HR	В				66																ı
54V46 Pi	Pioneer	4	æ	품	H	H	æ																			66	ı
54V54 Pi	Pioneer	4	H	HR	H	HR	HR				_	6 86	94				104	4 105								_	100(4)
54V56 Pi	Pioneer	_	_	-	-	-	_																98				_
630 G	Garst Seeds	3	H	HR	MR	Ж	_	88																			-
631 G	Garst Seeds	4	H	В	품	æ	HR			107						106	2				106					_	106(3)
6400HT G	Garst Seeds	4	H	HR	품	H	HR						108	8(96			_	103(2)
6415 G	Garst Seeds	4	Ή	HR	H	H	H						H						103					105		_	104(2)
6417 G	Garst Seeds	4	H	HR	H	H	HR								104	4											ı
6420 G	Garst Seeds	4	품	æ	품	~	품					Ť	106														1
645 G	Garst Seeds	4	뚶	~	뚶	품	MR														103						1
6530 G	Garst Seeds	5	뚶	H	뚶	품	뚲																95				,
6552 Garst Seeds 5 HR HR HR HR HR HR HR HR HR	Garst Seeds	2	Ή	HR	H	H	H								103	m											ı

van. v. ring actions. 1. — an administry, b.w.—adviction wit, rw=losanium wit, Ant=anytopinthora foot fot, Arth-apnanomyces foot fot. Information provided by seed companies.

I be seed test is on soil infested with phytophthora and aphanomyces root fots.

I be seed that is on soil infested with phytophthora and aphanomyces root fots.

We have trial was established.

Vear trial was established.

Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Lexington trial planted in 1995 was harvested for six years, so the final yield report would be "2000 Alfalfa Report" archived in the KY for year of each specific variety was included in two or more trials.

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

