PR-643

UNIVERSITY OF KENTUCKY College of Agriculture

2012 Alfalfa Report

G.L. Olson, S.R. Smith, and G.D. Lacefield, Plant and Soil Sciences

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 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 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 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 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

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

	2007			2008			2009			2010			2011			2012[2]		
	Temp		Rainfall	Temp		Rainfall	Temp		Rainfall	Temp		Rainfall	Temp		Rainfall	Temp		Rainfall
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	37	+6	2.93	+0.07	32	+2	3.91	+1.05	28	-3	2.45	-0.41	29	-2	2.40	-0.46	29	-2	2.10	-0.76	38	+7	4.80	+1.94
FEB	27	-8	1.83	-1.38	36	+1	6.11	+2.90	38	+3	2.86	-0.35	29	-6	1.38	-1.83	39	+4	6.34	+3.13	40	+5	5.39	+2.18
MAR	52	+8	1.97	-2.43	44	+1	6.51	+1.91	48	+4	2.19	-2.21	47	+3	1.05	-3.35	47	+3	4.76	+0.36	56	+12	5.64	+1.24
APR	53	-2	3.87	-0.01	55	0	5.89	+2.01	55	0	4.48	+0.60	59	+4	2.74	-1.14	58	+3	12.36	+8.48	56	+1	3.26	-0.62
MAY	68	+4	1.45	-3.02	62	-2	4.33	+0.14	64	0	5.05	+0.58	67	+3	7.84	+3.37	64	0	6.72	+2.25	69	+5	4.02	-0.45
JUN	74	+2	1.77	-1.89	74	+2	3.59	-0.07	74	+2	5.41	-1.75	76	+4	4.61	+0.95	74	+2	2.61	-1.05	73	+1	2.42	-1.24
JUL	74	-2	6.90	+1.90	76	0	3.41	-1.59	71	-5	5.89	+0.89	78	+2	5.49	+0.49	80	+4	6.29	1.29	81	+5	2.50	-2.50
AUG	80	+5	2.56	-1.37	75	0	2.18	-1.75	73	-2	5.38	+1.45	78	+3	1.54	-2.39	75	0	2.89	-1.04	75	0	1.68	-2.25
SEP	72	+4	1.15	-2.05	72	+4	1.42	-1.78	68	0	5.37	+2.17	71	+3	1.14	-2.06	66	-2	5.52	+2.32	67	-1	6.40	+3.20
OCT	63	+6	5.28	+2.71	57	0	1.53	-1.04	54	-3	4.83	+2.26	59	+2	1.22	-1.35	55	-2	4.10	+1.53	55	-2	2.00	-0.57
NOV	46	+1	2.86	-0.53	43	-2	2.53	-0.86	49	+4	0.94	-2.45	47	+2	4.58	+1.19	50	+5	9.53	+6.14				
DEC	40	+4	5.29	+1.31	35	-1	6.03	+2.05	36	0	3.86	-0.12	28	-8	2.15	-1.93	41	+5	5.58	+1.60				
Total			37.86	-6.69			47.24	+2.69			48.71	+4.16			36.14	-8.41			68.80	+24.25			38.11	+0.93

[1] DEP is departure from the long-term average.
[2] 2012 data is for ten months through October.

and the eventual death of infected plants. Roots infected with bacterial wilt often have a 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 and 2011) and Princeton (2008, 2009, and 2011) as part of the forage variety testing program. Two trials were planted in the spring of 2012 in Lexington but did not establish well so they were replanted in August of 2012. The soils at most locations 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 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 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 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 commercially. Yields are given by cutting date for 2012 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

Table 2. Temperature and rainfall at Princeton, Kentucky, in2008, 2009, 2010, 2011, and 2012.

	2008				2009				2010				2011				2012[2]			
	Temp		Rainfall		Temp		Rainfall		Temp		Rainfall		Temp		Rainfall		Temp		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	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	32	-2	2.35	-1.45	40	+6	3.01	-0.79
FEB	39	+1	6.76	+2.33	42	+4	3.28	-1.15	33	-5	1.54	-2.89	40	+2	5.71	+1.28	54	+6	1.73	-2.70
MAR	48	+1	7.55	+2.61	53	+6	2.89	-2.05	48	+1	3.24	-1.70	50	+3	5.54	+0.60	60	+13	3.27	-1.67
APR	58	-1	6.56	+1.76	58	-1	5.35	+0.55	62	3	3.3	-1.54	61	+2	16.15	+11.35	60	+1	0.62	-4.18
MAY	65	-2	6.19	+1.23	67	0	6.14	+1.18	69	+2	10.41	+5.45	66	-1	7.22	+2.26	71	+4	1.36	-3.60
JUN	78	+3	1.24	-2.61	77	+2	7.97	+4.12	79	4	4.82	0.97	77	+2	4.60	+0.75	74	-5	2.38	-1.47
JUL	79	+1	5.12	+0.83	74	-4	7.45	+3.16	80	2	2.73	-1.56	81	+3	2.98	-1.31	83	+5	1.40	-2.89
AUG	77	0	0.69	-3.32	75	-2	2.44	-1.60	81	4	2.46	-1.55	77	0	3.95	-0.06	77	0	4.27	+0.26
SEP	74	+3	0.61	-2.72	71	0	4.61	+1.28	72	1	0.94	-2.39	68	-3	3.86	+0.53	69	-2	5.45	+1.82
OCT	60	+1	2.21	-0.84	55	-4	9.08	+6.03	60	+1	0.97	-2.08	57	-2	1.35	-1.70	57	-2	2.94	-0.11
NOV	46	-1	2.59	-2.04	52	+5	1.50	-3.13	49	+2	3.98	-1.65	51	+4	9.12	+4.49				
DEC	39	0	6.49	+1.95	36	-3	2.73	-2.31	32	-7	1.57	-3.47	42	+3	6.13	+1.09				
Total			48.95	-2.18			54.31	+3.22			39.02	-12.11			68.96	+17.83			26.13	-15.33

[1] DEP is departure from the long-term average.
[2] 2012 data is for ten months through October.

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 10 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 10, 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 11 is a summary of yield data from 2000 to 2012 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 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 11 footnote to determine to which yearly report to refer.

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)
- 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/alfalfa-management-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

G.L. Olson is a research specialist and S.R. Smith and G.D. Lacefield are extension professors in Forages.

Table 3. Dry matter yields, seedling vigor, and stand persistence of alfalfa varieties sown September 14, 2011, at Lexington, Kentucky.

Variety	Seedling Vigor[1] Oct 11, 2011	Percent Stand 2011 Oct 11	Percent Stand 2012 Mar 21	Percent Stand 2012 Oct 11	Yield (tons/acre) 2012 Apr 19	May 24	Jun 22	Aug 1	Sep 19	Total
Commercial Varieties—Available for Farm Use										
TripleTrust 500	3.9	100	100	100	1.39	1.34	0.62	0.29	0.29	3.94*
WL 363HQ	4.4	100	100	100	1.48	1.26	0.58	0.28	0.32	3.92*
Ameristand 403T	4.0	100	100	99	1.32	1.27	0.60	0.28	0.33	3.80*
Syngenta 6422Q	4.5	100	100	100	1.29	1.25	0.65	0.28	0.31	3.78*
Arc (certified)	4.5	100	100	100	1.30	1.23	0.54	0.31	0.35	3.73*
Kingfisher 4020	3.8	100	100	99	1.22	1.25	0.63	0.30	0.31	3.72*
55V48	4.6	100	100	100	1.36	1.17	0.56	0.29	0.32	3.70*
Saranac AR (certified)	4.0	100	100	100	1.38	1.16	0.52	0.26	0.29	3.61*
Rebound 6.0	4.9	100	100	100	1.25	1.20	0.65	0.22	0.28	3.60*
54Q32	4.1	100	100	100	1.23	1.22	0.51	0.25	0.26	3.47*
53H92	4.1	100	100	100	1.30	1.13	0.51	0.27	0.24	3.45*
Buffalo	4.8	100	100	100	1.27	1.00	0.48	0.25	0.25	3.25
Mean	4.3	100	100	100	1.31	1.21	0.57	0.27	0.29	3.66
CV,%	13.5	0	0	1	11.97	10.02	16.50	28.88	22.29	10.97
LSD,0.05	0.8	0	0	1	0.23	0.17	0.14	0.11	0.09	0.58

[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, seedling vigor, and stand persistence of alfalfa varieties sown August 14, 2006, at Lexington, Kentucky.

	Seedling	Percent Stand													Yield *(tons/acre)*											
	Vigor[1]	2006	2007		2008		2009		2010		2011		2012							2012						
Variety	Oct 17, 2006	Oct 17	Mar 26	Oct 11	Mar 27	Oct 13	Mar 24	Oct 7	Mar 29	Oct 15	Mar 21	Oct 10	Mar 21	Oct 11	2007 Total	2008 Total	2009 Total	2010 Total	2011 Total	Apr 19	May 24	Jun 22	Aug 1	Sep 19	Total	6-year Total
Commercial Varieties—Available for Farm Use																										
Expedition	5.0	99	98	98	99	99	100	100	99	97	97	90	96	94	3.98	4.28	6.32	5.66	4.74	1.10	1.06	0.64	0.33	0.27	3.40	28.38*
PerForm	5.0	100	98	98	97	98	98	98	97	97	96	90	89	88	4.12	3.99	5.62	5.33	4.60	1.20	1.00	0.57	0.29	0.28	3.32	26.99*
L447HD	4.8	76	96	95	95	97	97	98	97	95	92	87	88	86	4.26	4.19	5.69	5.33	4.28	1.18	0.93	0.51	0.31	0.26	3.18	26.93*
DKA41-18 RR	4.3	99	98	98	98	99	98	100	97	96	95	90	91	92	4.06	3.95	5.62	5.17	4.47	1.16	0.98	0.61	0.33	0.28	3.37	26.62*
WL 355 RR	4.8	98	96	96	95	95	95	99	96	94	91	88	91	90	3.90	3.90	5.83	5.19	4.34	0.96	0.95	0.50	0.32	0.25	2.98	26.15*
WL 343HQ	4.3	99	100	100	100	100	100	100	99	98	97	92	94	91	3.69	3.92	5.34	4.96	4.45	1.00	0.98	0.61	0.33	0.25	3.18	25.54
Phoenix	4.8	99	98	98	98	100	98	97	97	95	95	91	87	86	3.64	3.89	5.66	4.97	4.55	0.92	0.84	0.46	0.29	0.29	2.79	25.50
Ameristand 403T	5.0	100	98	98	99	99	99	98	96	95	93	89	91	91	3.69	3.74	5.57	4.91	4.44	1.04	0.92	0.50	0.28	0.27	3.02	25.37
Withstand	4.8	100	97	98	97	99	99	99	98	95	90	86	89	87	3.50	3.72	5.87	4.97	4.31	1.01	0.90	0.48	0.31	0.26	2.97	25.34
LegenDairy 5.0	5.0	100	95	95	94	96	96	96	99	95	87	83	88	88	3.53	3.79	5.75	5.21	4.15	0.85	0.89	0.49	0.29	0.23	2.75	25.17
Radiant-AM	5.0	100	97	96	97	98	96	96	96	95	92	91	88	85	3.79	3.73	5.48	4.85	4.16	1.03	0.88	0.48	0.27	0.25	2.91	24.91
Saranac AR (certified)	4.8	100	96	96	95	94	92	93	93	91	89	80	78	78	3.46	3.48	4.95	4.40	3.79	0.80	0.67	0.36	0.23	0.20	2.26	22.35
Buffalo	5.0	99	99	98	99	99	99	97	94	93	88	85	63	65	3.67	3.63	4.69	4.07	3.75	0.82	0.69	0.33	0.25	0.29	2.39	22.19
Experimental Varieties																										
DS617	5.0	99	97	97	96	98	98	99	98	97	96	86	86	86	3.82	4.03	5.84	5.21	4.59	1.10	0.91	0.50	0.33	0.26	3.10	26.60*
Mean	4.8	98	97	97	97	98	98	98	97	95	93	88	87	87	3.79	3.87	5.59	5.02	4.33	1.01	0.90	0.50	0.30	0.26	2.97	25.58
CV,%	7.6	12	3	3	4	3	3	3	3	4	7	7	6	6	9.36	10.68	7.87	9.30	9.48	16.99	11.09	14.97	21.69	24.21	11.41	6.74
LSD,0.05	0.8	17	4	4	6	4	4	4	4	5	9	9	8	8	0.51	0.59	0.63	0.67	0.59	0.25	0.14	0.11	0.09	0.09	0.19	2.47

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

	Percent Stand									Yield *(tons/acre)*										
	2008	2009		2010		2011		2012		2008	2009	2010	2011	2012						5-year
Variety	Oct 21	Mar 24	Oct 7	Mar 29	Oct 15	Mar 21	Oct 10	Mar 21	Oct 11	Total	Total	Total	Total	Apr 19	May 24	Jun 22	Aug 1	Sep 19	Total	Total
Commercial Varieties—Available for Farm Use																				
DKA 50-18	84	74	89	88	84	78	70	73	75	0.87	5.55	5.84	4.59	1.14	0.94	0.52	0.14	0.16	2.90	19.76*
FSG 528SF	89	93	93	93	89	86	79	83	80	0.72	5.54	5.81	4.52	1.11	0.95	0.44	0.19	0.14	2.82	19.41*
WL 343HQ	91	93	94	95	91	87	83	86	81	0.68	5.51	5.33	4.77	1.20	1.04	0.51	0.17	0.14	3.06	19.35*
Garst 6417	90	88	89	89	84	83	73	80	78	0.73	5.30	5.65	4.76	1.08	0.96	0.48	0.19	0.14	2.85	19.30*
Garst 6552	85	84	84	87	86	83	76	79	76	0.77	5.17	5.66	4.62	1.04	1.05	0.50	0.16	0.12	2.88	19.10*
A5225	88	85	86	86	84	80	70	74	73	0.59	5.38	5.57	4.49	1.11	1.04	0.49	0.20	0.15	2.99	19.02*
WL 363HQ	90	89	90	91	89	83	74	78	78	0.52	5.12	5.67	4.61	1.11	1.04	0.53	0.19	0.15	3.02	18.95*
DKA 43-13	84	83	89	88	87	81	73	78	78	0.58	5.39	5.29	4.69	0.99	0.96	0.55	0.18	0.16	2.85	18.79*
Rebound 5.0	84	84	88	88	82	80	70	73	71	0.73	5.34	5.59	4.43	1.03	0.95	0.41	0.14	0.15	2.68	18.77*
Phoenix	91	89	90	90	89	88	75	75	74	0.57	5.36	5.48	4.42	0.99	0.99	0.40	0.15	0.16	2.69	18.53*
PGI 459	93	90	93	94	89	89	74	81	78	0.53	5.18	5.47	4.47	0.96	0.99	0.55	0.20	0.14	2.84	18.48*
Genoa	73	68	79	80	78	68	66	69	63	0.61	5.25	5.34	4.37	1.08	0.93	0.44	0.15	0.12	2.72	18.30*
Anchormate	96	96	95	95	94	91	84	83	80	0.74	4.98	5.46	4.28	1.12	0.99	0.39	0.16	0.14	2.79	18.24*
A4440	88	89	91	89	86	86	78	80	76	0.65	4.95	5.62	4.32	1.09	0.86	0.34	0.13	0.14	2.55	18.10
Ameristand 403T	70	65	73	73	75	74	66	64	59	0.60	4.68	5.24	4.06	0.99	0.78	0.31	0.11	0.12	2.31	16.89
Withstand	76	78	76	76	75	69	55	58	50	0.52	4.79	5.02	3.73	0.94	0.87	0.36	0.13	0.12	2.41	16.47
Saranac AR (certified)	88	85	85	88	88	81	71	58	58	0.73	4.54	5.05	3.77	0.83	0.81	0.29	0.12	0.12	2.17	16.25
Buffalo	89	90	90	89	84	80	60	59	50	0.68	4.77	4.91	3.41	0.63	0.69	0.23	0.12	0.10	1.77	15.54
Mean	86	84	87	88	85	81	72	74	71	0.66	5.16	5.44	4.35	1.02	0.94	0.43	0.16	0.14	2.68	18.29
CV,%	10	11	7	6	6	9	14	12	11	35.01	8.80	6.41	8.86	15.12	13.17	17.48	21.69	23.63	8.89	6.09
LSD,0.05	12	13	8	7	7	10	14	12	11	0.33	0.64	0.50	0.55	0.22	0.17	0.11	0.05	0.05	0.34	1.58

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

Table 6. Dry matter yields and stand persistence of alfalfa varieties sown April 17, 2008, at Princeton, Kentucky.

	Percent Stand										Yield *(tons/acre)*										
	2008		2009		2010		2011		2012		2008	2009	2010	2011	2012						5-year
Variety	May 21	Oct 30	Apr 17	Oct 28	Mar 18	Oct 12	Apr 8	Oct 24	Mar 21	Oct 29	Total	Total	Total	Total	Apr 18	May 22	Jun 19	Jul 31	Sep 14	Total	Total
Commercial Varieties—Available for Farm Use																					
Genoa	99	97	95	93	95	91	89	93	91	91	0.58	4.19	3.19	3.72	0.84	0.68	0.64	0.23	0.60	2.99	14.67*
USG 681HY	100	93	94	91	93	90	90	90	92	93	0.59	3.99	3.17	3.53	0.65	0.69	0.62	0.22	0.58	2.75	14.03*
FSG 408DP	100	94	95	91	93	88	91	89	92	90	0.51	3.69	3.18	3.59	0.59	0.71	0.57	0.23	0.58	2.69	13.66*
A5225	100	95	96	96	95	88	85	84	86	87	0.57	3.90	3.03	3.22	0.65	0.62	0.57	0.19	0.59	2.61	13.32*
Phoenix	96	91	85	85	85	76	80	76	79	78	0.49	3.64	3.07	2.95	0.60	0.60	0.51	0.19	0.57	2.48	12.63
Withstand	96	89	84	88	88	81	85	85	85	84	0.45	3.52	3.05	3.01	0.69	0.55	0.45	0.19	0.56	2.45	12.48
WL 343HQ	99	90	89	96	93	88	91	91	91	88	0.41	3.39	3.03	3.25	0.55	0.53	0.52	0.19	0.55	2.34	12.42
Ameristand 403T	98	88	83	84	89	79	80	74	81	82	0.56	3.62	2.86	3.04	0.56	0.51	0.48	0.18	0.60	2.33	12.42
Mariner II	98	90	86	86	85	84	79	83	84	83	0.47	3.55	2.85	2.95	0.60	0.54	0.53	0.23	0.59	2.50	12.33
Saranac AR (certified)	99	86	83	79	80	81	81	73	73	75	0.49	2.92	2.82	2.71	0.52	0.46	0.41	0.16	0.53	2.07	11.02
Arc (certified)	98	86	89	78	78	71	66	63	64	68	0.46	3.34	2.73	2.24	0.41	0.48	0.43	0.15	0.51	1.98	10.76
Buffalo	100	91	89	66	68	61	53	53	50	53	0.54	3.16	2.26	1.93	0.38	0.38	0.36	0.13	0.55	1.80	9.69
Experimental Varieties																					
TS 4027	99	88	83	83	80	73	76	78	63	70	0.64	3.66	3.02	3.40	0.68	0.66	0.56	0.20	0.64	2.75	13.47*
CW 24027	99	94	95	96	96	88	79	81	84	81	0.61	4.06	2.99	2.99	0.62	0.63	0.51	0.14	0.59	2.49	13.14
Mean	99	91	89	86	87	81	80	79	79	80	0.53	3.62	2.95	3.04	0.60	0.58	0.51	0.19	0.58	2.45	12.57
CV,%	1	6	9	9	9	13	12	12	18	11	20.82	13.10	9.52	12.67	19.42	20.52	12.75	27.94	11.36	11.31	8.17
LSD,0.05	2	7	11	12	12	15	13	13	20	13	0.16	0.68	0.40	0.55	0.17	0.17	0.09	0.08	0.09	0.40	1.47

*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 alfalfa varieties sown April 17, 2009, at Princeton, Kentucky.

Variety	Seedling Vigor[1] May 12, 2009	Percent Stand								Yield *(tons/acre)*									
		2009		2010		2011		2012		2009 Total	2010 Total	2011 Total	2012						4-year Total
		May 12	Oct 28	Mar 18	Oct 12	Apr 8	Oct 24	Mar 14	Oct 29				Apr 18	May 22	Jun 19	Jul 31	Sep 14	Total	
Commercial Varieties—Available for Farm Use																			
WL 363HQ	3.5	96	96	96	98	100	100	99	98	1.84	3.72	5.24	1.11	1.27	1.22	0.43	0.68	4.71	15.52*
Radiance HD	2.8	99	96	97	97	98	100	98	98	1.72	3.85	5.17	1.13	1.23	1.21	0.35	0.71	4.63	15.37*
Ameristand 407TQ	4.3	100	97	97	97	99	99	98	98	1.65	3.82	5.10	1.17	1.27	1.25	0.34	0.67	4.71	15.28*
Adrenalin	2.8	98	91	91	95	97	98	98	97	1.74	3.77	5.24	1.12	1.20	1.16	0.35	0.68	4.51	15.26*
Ameristand 403T	3.3	98	94	94	96	98	95	96	97	2.09	3.85	4.94	1.03	1.14	0.99	0.35	0.61	4.11	14.99*
Archer III	3.0	98	97	95	97	100	100	99	100	1.53	3.57	4.96	0.99	1.27	1.27	0.35	0.65	4.54	14.60*
Rebound 5.0	2.8	95	96	90	93	96	97	95	74	1.48	3.64	4.86	1.24	1.13	1.21	0.36	0.67	4.61	14.58*
Syngenta 6422Q	3.3	95	97	97	96	97	99	99	96	1.63	3.65	4.78	1.19	1.20	1.21	0.31	0.59	4.50	14.55*
Saranac AR (certified)	3.3	99	91	90	94	99	97	94	96	1.60	3.56	4.83	1.16	1.11	1.08	0.36	0.69	4.39	14.38
Ameristand 403TPlus	3.5	100	95	95	95	98	97	98	96	1.57	3.61	4.81	1.10	0.98	0.99	0.28	0.66	4.01	13.99
KingFisher 243	1.3	94	93	92	93	99	98	97	97	1.44	3.16	4.81	1.06	1.21	1.17	0.36	0.70	4.50	13.91
Buffalo	3.3	100	91	93	94	94	91	89	94	1.61	3.42	4.67	0.97	1.03	0.97	0.26	0.63	3.85	13.56
Experimental Varieties																			
BYEXP 723	3.8	98	98	97	96	98	98	97	96	2.16	4.02	5.07	1.05	1.22	1.21	0.40	0.70	4.59	15.84*
TS 4010/A4535	3.5	100	98	97	97	97	97	96	96	1.68	3.85	5.18	1.15	1.23	1.17	0.26	0.61	4.43	15.15*
GA 505	2.8	99	95	93	93	99	99	98	98	1.72	3.45	4.98	1.02	1.24	1.09	0.35	0.63	4.33	14.49*
CW 055023/PGI 557	3.8	100	97	96	97	98	99	99	98	1.43	3.49	4.94	0.97	1.24	1.26	0.40	0.66	4.53	14.39
GA-APGC	4.0	98	91	94	97	99	97	97	97	1.63	3.34	4.85	1.13	1.08	0.99	0.31	0.63	4.14	13.96
GA-MPX	1.8	96	92	93	96	98	96	98	98	1.42	3.12	4.38	1.02	1.12	1.03	0.28	0.65	4.10	13.02
Mean	3.1	98	95	94	95	98	97	97	96	1.66	3.61	4.93	1.09	1.18	1.14	0.34	0.66	4.40	14.61
CV,%	37.6	4	5	4	3	2	2	3	11	24.87	12.72	6.50	19.62	9.21	8.46	22.51	12.27	7.93	6.96
LSD,0.05	1.7	6	7	6	4	3	3	4	15	0.59	0.65	0.46	0.30	0.15	0.14	0.11	0.11	0.50	1.44

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

	Percent Stand				Yield *(tons/acre)*							
	2011		2012		2011	2012						2-year
Variety	Jun 14	Oct 24	Mar 21	Oct 29	Total	Apr 18	May 22	Jun 19	Jul 31	Sep 14	Total	Total
Commercial Varieties—Available for Farm Use												
Gunner	96	97	98	98	1.80	1.24	1.35	1.07	0.37	0.74	4.77	6.57*
Charger	95	97	97	98	1.79	1.15	1.32	1.05	0.50	0.74	4.76	6.55*
WL 354HQ	99	100	100	100	2.03	1.01	1.35	1.02	0.39	0.72	4.50	6.53*
Ameristand 403T	96	96	96	96	1.92	1.11	1.33	1.02	0.38	0.72	4.56	6.49*
Lancer	91	95	95	96	1.57	1.30	1.37	1.02	0.39	0.77	4.84	6.41*
Consistency 4.10 RR	99	97	98	97	1.61	1.13	1.30	1.05	0.53	0.76	4.77	6.38*
Phoenix	93	94	94	97	1.82	0.99	1.42	1.03	0.35	0.77	4.56	6.38*
Radiance HD	95	97	97	96	1.67	1.20	1.44	1.02	0.30	0.68	4.63	6.31*
54R02 RR	92	95	97	96	1.57	1.08	1.30	1.06	0.45	0.79	4.69	6.26*
Ameristand 407TQ	96	96	98	95	1.46	1.31	1.39	1.03	0.32	0.70	4.74	6.20*
Caliber	96	97	97	97	1.69	1.14	1.23	1.00	0.32	0.75	4.44	6.13*
Saranac AR (certified)	98	97	96	94	1.48	1.25	1.32	0.90	0.39	0.69	4.55	6.02*
WL 355 RR	96	97	99	98	1.49	1.30	1.24	0.94	0.34	0.70	4.52	6.01*
L-449Aph2	98	99	99	99	1.74	0.89	1.32	1.05	0.34	0.65	4.25	5.99*
DS4210	97	99	98	97	1.62	0.98	1.37	0.97	0.31	0.71	4.34	5.96*
Alfagraze 300 RR	94	94	95	94	1.54	1.26	1.24	0.88	0.27	0.70	4.35	5.89*
Rebound 6.0	98	99	99	99	1.60	0.94	1.33	0.97	0.34	0.63	4.20	5.80*
DKA41-18 RR	96	97	97	97	1.55	1.03	1.23	0.92	0.32	0.71	4.21	5.77*
Withstand	95	93	93	93	1.50	0.97	1.21	0.93	0.31	0.72	4.14	5.65
Ameristand 405T RR	99	98	100	99	1.47	1.08	1.10	0.82	0.31	0.67	3.99	5.46
Experimental Varieties												
TS4013	99	98	98	98	1.88	1.32	1.35	0.93	0.34	0.73	4.67	6.55*
FG R47M120 RR	92	95	98	98	1.61	1.34	1.29	0.99	0.50	0.71	4.83	6.44*
FG R47M319 RR	97	98	99	98	1.54	1.12	1.34	0.96	0.28	0.74	4.44	5.98*
FG R47M312 RR	95	97	97	97	1.47	0.97	1.30	0.99	0.34	0.72	4.32	5.78*
FG R46M162 RR	98	95	96	96	1.41	1.09	1.20	0.89	0.34	0.72	4.24	5.65
Mean	96	97	97	97	1.63	1.13	1.31	0.98	0.36	0.72	4.49	6.13
CV,%	3	4	3	4	18.58	18.89	11.63	10.02	30.42	10.13	9.19	10.03
LSD,0.05	5	5	4	4	0.43	0.30	0.21	0.14	0.15	0.10	0.58	0.87

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

Table 9. Dry matter yields and stand persistence of Roundup Ready alfalfa varieties sown April 7, 2011, at Princeton, Kentucky.[1]

	Percent Stand				Yield *(tons/acre)*							
	2011		2012		2011	2012						2-year
Variety	Jun 14	Oct 24	Mar 21	Oct 29	Total	Apr 18	May 22	Jun 19	Jul 31	Sep 14	Total	Total
Commercial Varieties—Available for Farm Use												
54R02 RR	94	94	96	97	1.72	1.19	1.40	0.88	0.28	0.83	4.58	6.30*
Consistency 4.10 RR	99	99	99	99	1.64	1.16	1.23	0.83	0.25	0.78	4.26	5.90*
DKA41-18 RR	98	97	96	97	1.48	1.17	1.29	0.74	0.20	0.76	4.16	5.64*
WL 355 RR	98	98	97	98	1.43	1.17	1.23	0.75	0.18	0.69	4.01	5.44
Ameristand 405T RR	96	96	97	96	1.47	1.03	1.24	0.74	0.15	0.77	3.95	5.42
Alfagraze 300 RR	94	94	93	93	1.24	1.03	1.18	0.72	0.25	0.71	3.88	5.12
Experimental Varieties												
FG R47M120 RR	94	97	96	97	1.61	1.27	1.24	0.78	0.26	0.75	4.30	5.91*
FG R47M319 RR	98	98	99	98	1.59	1.07	1.31	0.75	0.19	0.74	4.05	5.64*
FG R47M312 RR	92	94	94	95	1.41	1.07	1.24	0.79	0.20	0.74	4.04	5.45
FG R46M162 RR	98	98	98	94	1.53	0.98	1.26	0.77	0.21	0.69	3.92	5.44
Mean	96	96	96	96	1.51	1.11	1.26	0.78	0.22	0.74	4.11	5.63
CV,%	3	3	2	2	13.66	25.10	10.55	11.51	31.36	10.85	10.05	8.53
LSD,0.05	4	4	3	3	0.30	0.41	0.19	0.13	0.10	0.12	0.60	0.70

[1] This trial was sprayed once with Roundup in 2012.
*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Characterization and performance of alfalfa varieties across years and locations.

Variety	Proprietor	Variety Characteristics[1]					
			Disease Resisance[2]				
		FD[3]	Bw	Fw	An	PRR	APH
Commercial Varieties—Available for Farm Use							
53H92	Pioneer Hi-Bred	3	HR	HR	HR	HR	HR
54R02 RR	Pioneer Hi-Bred	4	HR	HR	HR	HR	HR
54Q32	Pioneer Hi-Bred	4	HR	HR	HR	HR	R
55V48	Pioneer Hi-Bred	5	HR	HR	HR	HR	HR
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
Alfagraze 300 RR	America's Alfalfa						
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR
Ameristand 403TPlus	America's Alfalfa	4	HR	HR	HR	HR	HR
Ameristand 405T RR	America's Alfalfa	4	HR	HR	HR	HR	HR
Ameristand 407TQ	America's Alfalfa	4	HRT	HR	HR	HR	HR
Anchormate	ProSeed Marketing	-	-	-	-	-	-
Arc (certified)	Public	4	LR	MR	HR	-	-
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR
Buffalo	Public	-	-	-	-	-	-
Caliber	Beck's Hybrids	4	HR	HR	HR	HR	HR
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR
Consistency 4.10 RR	Croplan Genetics	4	HR	HR	HR	HR	HR
DKA 41-18 RR	Monsanto	4	HR	HR	HR	HR	HR
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR
DS 4210	Crop Production	4	HR	HR	HR	HR	HR
Expedition	Syngenta Seeds	5	HR	HR	R	RR	R
FSG 408DP	Lewis Seed	4	HR	HR	HR	HR	R
FSG 528SF	Lewis Seed	5	HR	R	HR	RR	R
Genoa	Syngenta Seeds	4	HR	HR	HR	RR	HR
Gunner	Croplan Genetics	5	HR	HR	HR	HR	HR
KingFisher 243	Cal/West Seeds	5	HR	HR	HR	HR	HR
KingFisher 4020	Legacy Seeds, Inc.	4	HR	HR	HR	HR	HR
Lancer	Allied Seed, L.L.C.	4	HR	HR	HR	HR	HR
L447HD	Legacy Seeds, Inc.	4	HR	HR	HR	HR	HR
L449Aph2	Legacy Seeds, Inc.	4	HR	HR	HR	HR	HR
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR
Mariner III	Allied Seed, L.L.C.	4	HR	HR	HR	HR	HR
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR
Phoenix	FFR/Southern States	5	HR	HR	HR	HR	R
PGI 459	Producers Choice	4	HR	HR	HR	HR	R
RadianceHD	Ampac Seed /Cisco	4	HR	HR	HR	HR	HR
Radiant-AM	Ampac Seed	4	HR	HR	HR	HR	HR
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR
Saranac AR (certified)	Public	4	MR	R	HR	LR	-
Syngenta 6422Q	Syngenta Seeds	4	HR	HR	HR	HR	HR
TripleTrust 500	Central Farm Supply	5	HR	HR	HR	HR	HR
USG 681HY	UniSouth Genetics	6	HR	HR	R	HR	-
Withstand	FFR/Southern States	4	HR	HR	HR	HR	HR
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR
WL 354HQ	W-L Research	4	HR	HR	HR	HR	HR
WL 355 RR	W-L Research	4	HR	HR	HR	HR	HR
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR
Experimental Varieties							
BYEXP 723	Brett Young	4	HR	HR	HR	HR	HR
CW 055023/PGI 557	Producers Choice	5	HR	HR	HR	HR	HR
CW 24027	Cal/West Seeds	4	HR	HR	HR	HR	HR
DS617	Dairyland Research	4	HR	HR	HR	HR	HR
FG R46M162 RR	Forage Genetics	4	HR	HR	HR	HR	HR
FG R47M120 RR	Forage Genetics	4	HR	HR	HR	HR	HR
FG R47M312 RR	Forage Genetics	4	HR	HR	HR	HR	HR
FG R47M319 RR	Forage Genetics	4	HR	HR	HR	HR	HR
GA 505	Univ. of Georgia						
GA-APGC	Univ. of Georgia						
GA-MPX	Univ. of Georgia						
TS 4010/A4535	Producers Choice						
TS 4013	Producers Choice	4	HR	HR	HR	HR	HR
TS4027	Target Seed, LLC	4	HR	HR	HR	HR	R

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

Continued on next page.

Table 10. Continued.

	Lexington												Princeton											
	2006[4]						2008					2011	2008					2009				2011		2011	
Variety	**07**	**08**	**09**	**10**	**11**	**12**	**08**	**09**	**10**	**11**	**12**	**12**	**08**	**09**	**10**	**11**	**12**	**09**	**10**	**11**	**12**	**11**	**12**	**11**	**12**
Commercial Varieties—Available for Farm Use																									
53H92												*													
54R02 RR																						x	*	*	*
54Q32												*													
55V48												*													
6417							*	*	*	*	*														
6552							*	*	*	*	*														
A-4440							*	*	*	*	x														
A5225							*	*	*	*	*		*	*	*	*	*								
Adrenalin																		*	*	*	*				
Alfagraze 300 RR																						x	*	x	x
Ameristand 403T	x[5]	*	x	x	*	x	*	x	x	x	x	*	*	*	*	x	x	*	*	*	x	*	*		
Ameristand 403TPlus																		x	*	*	x				
Ameristand 405T RR																						x	x	*	x
Ameristand 407TQ																		*	*	*	*	x	*		
Anchormate							*	*	*	*	*														
Arc (certified)												*	x	x	x	x	x								
Archer III																		x	*	*	*				
Buffalo	x	x	x	x	x	x	*	x	x	x	x	x	*	x	x	x	x	*	*	x	x				
Caliber																						*	*		
Charger																						*	*		
Consistency 4.10 RR																						*	*	*	*
DKA 41-18 RR	*	*	*	*	*	*																x	x	*	*
DKA 43-13							*	*	x	*	*														
DKA 50-18							*	*	*	*	*														
DS 4210																						*	*		
Expedition	*	*	*	*	*	*																			
FSG 408DP													*	*	*	*	*								
FSG 528SF							*	*	*	*	*														
Genoa							*	*	*	*	*		*	*	*	*	*								
Gunner																						*	*		
KingFisher 243																		x	x	*	*				
KingFisher 4020												*													
Lancer																						x	*		
L447HD	*	*	*	*	*	x																			
L449Aph2																						*	x		
LegenDairy 5.0	x	*	*	*	*	x																			
Mariner III													x	*	*	x	x								
PerForm	*	*	*	*	*	*																			
Phoenix	x	*	x	x	*	x	*	*	*	*	x		*	*	*	x	x					*	*		
PGI 459							x	*	*	*	*														
RadianceHD																		*	*	*	*	*	*		
Radiant-AM	*	*	x	x	*	x																			
Rebound 5.0							*	*	*	*	x							x	*	*	*				
Rebound 6.0												*										x	x		
Saranac AR (certified)	x	x	x	x	x	x	*	x	x	x	x	*	*	x	*	x	x	*	*	*	*	x	*		
Syngenta 6422Q												*						*	*	*	*				
TripleTrust 500												*													
USG 681HY													*	*	*	*	*								
Withstand	x	*	*	x	*	x	x	x	x	x	x		x	*	*	x	x					x	x		
WL 343HQ	x	*	x	x	*	x	*	*	x	*	*		x	x	*	*	x								
WL 354HQ																						*	*		
WL 355 RR	*	*	*	*	*	x																x	*	*	*
WL 363HQ							x	*	*	*	*	*						*	*	*	*				
Experimental Varieties																									
BYEXP 723																		*	*	*	*				
CW 055023/PGI 557																		x	*	*	*				
CW 24027													*	*	*	x	x								
DS617	*	*	*	*	*	x																			
FG R46M162 RR																						x	x	*	x
FG R47M120 RR																						*	*	*	*
FG R47M312 RR																						x	*	x	*
FG R47M319 RR																						x	*	*	*
GA 505																		*	*	*	*				
GA-APGC																		*	x	*	x				
GA-MPX																		x	x	x	x				
TS 4010/A4535																		*	*	*	*				
TS 4013																						*	*		
TS4027													*	*	*	*	*								

[4] Establishment year.
[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.

Table 11. Summary of Kentucky alfalfa yield trials 2000-2012 (yield shown as a percentage of the mean of the commercial varieties in the test).

		Variety Characteristics[1]					
			Disease Resistance[2]				
Variety	Proprietor	FD	Bw	Fw	An	PRR	APH
A-4440	Producers Choice	4	HR	HR	HR	HR	HR
A 5225	Producers Choice	5	HR	HR	HR	HR	R
Abilene +Z	America's Alf.	5	HR	HR	HR	HR	R
AC Longview	Newfield Seeds	–	HR	–	–	–	–
Adrenalin	Brett Young	4	HR	HR	HR	HR	HR
AmeriGraze 401+Z	America's Alf.	4	HR	HR	HR	HR	R
Ameristand 403T	America's Alf.	3	HR	HR	HR	HR	HR
Ameristand 403T Plus	America's Alf.	4	HR	HR	HR	HR	HR
Ameristand 407TQ	America's Alf.	4	HR	HR	HR	HR	HR
Anchormate	ProSeed Marketing	–	–	–	–	–	–
Arc (certified)	Public	4	LR	MR	HR	–	–
Archer III	America's Alf.	5	HR	HR	HR	HR	HR
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR
Buffalo	Public	–	–	–	–	–	–
DK 140	Monsanto	4	HR	HR	HR	HR	HR
DKA-41-18RR	Monsanto	4	HR	HR	HR	HR	HR
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R
Enforcer	FFR/Sou. St.	4	HR	HR	HR	HR	HR
Escalade	Allied Seeds	5	HR	HR	HR	HR	HR
Evermore	FFR/Sou. St.	5	HR	HR	HR	HR	HR
Expedition	Syngenta Seeds	5	HR	HR	R	RR	R
Feast +EV	Garst Seeds	3	HR	HR	HR	R	HR
Fortress	Syngenta	3	R	R	R	HR	–
FSG 406	Allied Seeds	4	HR	HR	HR	HR	HR
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R
FSG 505	Allied Seeds	5	HR	HR	HR	HR	R
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R
Geneva	Syngenta	4	HR	HR	HR	HR	HR
Genoa	Syngenta	4	HR	HR	HR	RR	HR
GH 744	Golden Harvest	4	HR	HR	HR	HR	MR
HybridForce 400	Dairyland	4	HR	HR	R	HR	MR
Integrity	PGI Alfalfa	4	HR	HR	HR	HR	HR
KingFisher 243	Cal/West	5	HR	HR	HR	HR	HR
L447HD	Legacy Seeds	4	HR	HR	HR	HR	HR
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR
Magnum V	Dairyland	4	HR	HR	R	HR	HR
Magnum V-wet	Dairyland	3	HR	HR	R	HR	MR
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR
Mountaineer 2.0	Croplan Gen.	5	HR	HR	HR	HR	HR
Pegasus	FFR/Sou. St.	4	HR	HR	HR	HR	R
PerForm	Dairyland Research	4	HR	HR	HR	HR	HR
PGI 459	Producers Choice	4	HR	HR	HR	HR	R
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R
Phoenix	FFR/Sou. St.	5	HR	HR	HR	HR	R
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR
Radiant-AM	Ampac Seed	4	HR	HR	HR	HR	HR
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR
Regal	Great Plains	5	HR	HR	R	HR	MR
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R
Rushmore	Syngenta Seeds	4	HR	HR	HR	HR	HR
Saranac AR (certified)	Public	4	MR	R	HR	LR	–
Summer Gold	Beck's Hybrids	4	HR	HR	HR	HR	HR
Syngenta 6422Q	Syngenta Seeds	4	HR	HR	HR	HR	HR
Triple Crown	FFR/Sou. St.	4	HR	HR	HR	HR	HR
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	–
ValuePlus 1	Forage Genetics	4	HR	HR	HR	HR	R
Vernal	Public	2	R	MR	–	–	–
Withstand	FFR/Sou. St.	4	HR	HR	HR	HR	HR
WL 319HQ	W-L Research	3	HR	HR	HR	HR	HR
WL 327	W-L Research	4	HR	HR	HR	HR	HR
WL 338SR	W-L Research	4	HR	HR	HR	HR	HR
WL 342	W-L Research	4	HR	HR	HR	HR	HR
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR
WL 348AP	W-L Research	4	HR	HR	HR	HR	HR
WL 355RR	W-L Research	4	HR	HR	HR	HR	HR
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR
4m76	FFR/Sou. St.	4.7	HR	HR	R	HR	R
5-star	Croplan Gen.	5	R	HR	R	R	R
5312	Public	3	HR	HR	HR	HR	HR
53H81	Pioneer	3	HR	HR	HR	R	HR
54V46	Pioneer	4	R	HR	HR	HR	R
54V54	Pioneer	4	HR	HR	HR	HR	HR
54V56	Pioneer	–	–	–	–	–	–
6400HT	Garst Seeds	4	HR	HR	HR	HR	HR
6415	Garst Seeds	4	HR	HR	HR	HR	HR
6417	Garst Seeds	4	HR	HR	HR	HR	HR
6420	Garst Seeds	4	HR	R	HR	R	HR
6530	Garst Seeds	5	HR	HR	HR	HR	HR
6552	Garst Seeds	5	HR	HR	HR	HR	HR

[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.

Use this summary table as a guide in making variety decisions, but refer to specific yearly reports to determine statistical differences in forage yield between varieties. To find actual yields, look in the yearly report for the final year of each specific test. For example, the Lexington trial planted in 2002 was harvested for five years, so the final yield report would be "2006 Alfalfa Report" archived in the KY Forage Web site at <www.uky.edu/Ag/Forage>.

Continued on next page.

Table 11. Continued.

	Lexington					Princeton				Bowling Green[3]		Eden Shale	
	00[4]	02	04	06	08	01	05	08	09	03	06	03	Mean[5]
Variety	5yr[6]	5yr	5yr	6yr	5yr	4yr	5yr	5yr	4yr	3yr	4yr	4yr	*(# trials)*
A-4440					99		99						100(2)
A 5225					104			107					106(2)
Abilene +Z	99												–
AC Longview			83										–
Adrenalin									104				–
AmeriGraze 401+Z	99												–
Ameristand 403T				100	92	97		100	102				100(5)
Ameristand 403T Plus									95				–
Ameristand 407TQ									104				–
Anchormate					100								–
Arc (certified)	91	96	76			99	95	86		98			92(7)
Archer III									100				–
Baralfa 53HR							104						–
Buffalo		90	82	87	85		95	78	92		81	95	87(9)
DK 140		95				100							98(2)
DKA-41-18RR				104									–
DKA 43-13					103								–
DKA 50-18					108								–
Dynagro Everlast							101				101		101(2)
Enforcer			90								82		86(2)
Escalade											106		–
Evermore										105	101	103	103(3)
Expedition			107	111			96						105(3)
Feast +EV			106							101		96	101(3)
Fortress													–
FSG 406										110			–
FSG 408DP			105					110					108(2)
FSG 505										106		108	107(2)
FSG 528SF					106								–
Geneva	106	103				104							104(3)
Genoa			112		100		98	118					107(4)
GH 744		104											–
HybridForce 400						106							–
Integrity											101		–
KingFisher 243									95				–
L447HD				106									–
LegenDairy 5.0				99			103				110		104(3)
Magnum V	104												–
Magnum V-wet	105												–
Mariner III								99					–
Mountaineer 2.0			108										–
Pegasus						95							–
PerForm				106									–
PGI 459					101								–
Phirst							105				102		104(2)
Phoenix			113	100	101			101			96		104(5)
Radiance HD									105				–
Radiant-AM				98									–
Rebound 5.0					103				99		108		103(3)
Regal										103		94	99(2)
Reward II						99	103			94		103	100(4)
Rushmore	95												–
Saranac AR (certified)	93	87	77	88	89	92	95	88	98	99	89	95	91(12)
Summer Gold			107										–
Syngenta 6422Q									99				–
Triple Crown	102					100							101(2)
TripleTrust 450							100				105		103(2)
USG 681HY								113					–
ValuePlus 1	106												–
Vernal		93					95						94(2)
Withstand				99	90			100			114		101(4)
WL 319HQ		108											–
WL 327		105											–
WL 338SR		101											–
WL 342						102							–
WL 343HQ				100	106			100					102(3)
WL 348AP											99		–
WL 355RR				103									–
WL 357HQ			123				106			101		106	109(4)
WL 363HQ					104				106				105(2)
4m76		116											–
5-star										97		99	98(2)
5312	103												–
53H81	102												–
54V46												99	–
54V54	98	94				105							99(3)
54V56										98			–
6400HT			108							96			102(2)
6415							103				105		104(2)
6417					106								–
6420		106											–
6530										92			–
6552					104								–

[3] The Bowling Green test is on soil infested with phytophthora and aphanomyces root rots.
[4] Year trial was established.
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

12-2012