PR-853

2024 Alfalfa Report

Agricultural Experiment Station

G.L. Olson, S.R. Smith, J. C. Henning, and C.D. Teutsch, Plant and Soil Sciences

Introduction

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

This report provides yield data on alfalfa varieties included in current yield trials in Kentucky as well as guidelines for selecting alfalfa varieties. Tables 17 and 18 (Roundup Ready varieties) show a summary of all alfalfa varieties tested in Kentucky during the past 18 years. The UK Forage Extension website (https://forages.ca.uky.edu) 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 (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. Fall dormancy can lead to reduced annual yields compared to less-dormant varieties. Generally, alfalfa varieties with FD ratings of 3 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) or highly resistant (HR) 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. Ideally, choose varieties resistant to Aphanomyces Race 1 and Race 2 or varieties with multiple race resistance.

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 is a fungal disease that 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 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. Producers who have experienced stand losses at the seedling stage in their fields are advised to choose varieties with resistance to both Aphanomyces Race 1 and Race 2 or varieties with multiple race resistance. Ask your local seed supplier for more information or download the complete disease and insect ratings for all U.S. varieties at www.alfalfa.org/pdf/2023_Alfalfa_Variety_Leaflet.pdf. The Alfalfa Analyst publication also provides good information on diagnosing disease and insect damage. Download from alfalfa.org under the publications tab.

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.

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

The current alfalfa variety tests shown in this report were established at Lexington (2019, 2020, 2021, 2022, 2023, and 2024) and Princeton (2022 and 2023) as part of the forage variety testing program. The summary reports also contain past years results from alfalfa tests in Princeton and Quicksand as well as Lexington. The soils in Lexington (Maury), Princeton (Crider) and Quicksand (Nolan) are well drained silt loams and are well suited for alfalfa production.

Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 feet by 15 feet. In each test, 20 pounds of seed per acre were planted into a prepared seedbed using a disk drill. All seed was either planted pre-inoculated with rhizobia bacteria inoculum or inoculum was added before seeding. With pre-inoculated seed, the seeding rate was adjusted to account for the weight of any seed coatings. 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 (P, K, Boron, and lime based on regular soil tests), 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. Roundup was applied for weed control in the Roundup Ready trials.

Results and Discussion

Weather data for Lexington and Princton are presented in tables 1 and 2. Yield data (on a dry matter basis) for all tests are reported in tables 3 through 14. 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 2024 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), 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.

Tables 15 and 16 (Roundup Ready varieties) show information about proprietors, fall dormancy and disease resistance for all the varieties included in the tests discussed in this report. Varieties are listed in alphabetical order.

Tables 17 and 18 (Roundup Ready varieties) are summaries of yield data from 2006 to 2024 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 tables 17 and 18, 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. See footnotes in tables 17 and 18 to determine which yearly report should be referenced.

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 website (https://forages.ca.uky.edu).

- 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)
- Alfalfa Hay: Quality Makes the Difference (AGR-137)
- Fertilizer Management in Alfalfa (AGR-210)
- "Emergency" Inoculation for Poorly Nodulated Legumes (PPFS-AG-F-04)
- Common Alfalfa Seedling Diseases and Disorders (PPFS-AG-F-03)
- Managing Diseases of Alfalfa (PPFS-AG-F-09)
- Managing Legume-Induced Bloat in Cattle (ID-186)
- 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/Alfalfa-Analyst.pdf
- Alfalfa Variety Ratings, Winter Survival, Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties: www.alfalfa.org/varietyLeaflet.php
- Grazing Alfalfa: Economic and Sustainable Use of a High Value Crop: www.alfalfa.org/GrazingAlfalfaFinal.pdf
- Alfalfa for Beef Cows: www.alfalfa.org/AlfalfaForBeefCows.pdf
- Alfalfa: The High Quality Hay for Horses: www.alfalf.org/publications.php

About the Authors

G.L. Olson is a research specialist, S.R. Smith and J.C. Henning are Extension professors and forage specialists, and C.D. Teutsch is an associate Extension professor and forage specialist.

Table 1. Temperature and rainfall at Lexington, Kentucky, in 2019, 2020, 2021, 2022, 2023, and 2024.

	2019				2020				2021				2022				2023				2024[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	°F	DEP	IN	DEP
JAN	33	+2	4.11	+1.25	40	+9	3.72	+0.86	34	+3	4.51	+1.65	29	-2	4.93	+2.07	44	+13	6.28	+3.42	32	+1	5.50	+2.60
FEB	42	+7	7.64	+4.43	38	+3	5.14	+1.93	31	-4	4.60	+1.39	38	+3	7.69	+4.48	47	+12	3.73	+0.52	44	+9	3.90	+0.70
MAR	43	-1	3.49	-0.91	51	+7	3.79	-0.61	50	+6	5.12	+0.72	49	+5	4.27	-0.13	48	+4	4.45	+0.05	49	+5	3.50	-0.90
APR	54	+4	4.76	+0.88	52	-3	4.92	+1.04	54	-1	2.72	-1.16	55	0	3.71	-0.17	58	+3	2.36	-1.52	58	+3	3.90	0.00
MAY	69	+5	4.49	+0.02	62	-2	5.69	+1.22	62	-2	4.34	-0.13	69	+5	3.84	-0.63	65	+1	2.53	-1.94	67	+3	4.60	+0.10
JUN	73	+1	6.13	+2.47	72	0	2.56	-1.10	73	+1	6.26	+2.60	76	+4	2.10	-1.56	72	0	6.75	+3.09	74	+2	2.40	-1.30
JUL	79	+3	3.30	-1.70	79	+3	3.23	-1.77	75	-1	5.90	+0.90	80	+4	6.46	+1.46	78	+2	5.32	+0.32	77	+1	2.50	-2.50
AUG	77	+2	2.42	-1.51	75	0	3.41	-0.52	76	+1	6.16	+2.23	77	+2	4.27	+0.34	76	+1	2.40	-1.53	75	0	3.30	-0.60
SEP	77	+9	0.18	-3.02	68	0	4.43	-+0.83	69	+1	3.03	-0.17	70	+2	1.50	-1.70	71	+3	0.99	-2.21	70	+2	6.20	+3.00
OCT	61	+4	7.55	+5.58	57	0	4.98	+2.41	62	+5	4.64	+2.10	57	0	0.96	-1.61	61	+4	2.30	-0.27	58	+1	0.30	-2.30
NOV	41	-4	5.39	+2.00	49	+4	2.18	-1.21	43	-2	2.13	-1.26	49	+4	2.10	-1.29	49	+4	1.70	-1.69				
DEC	43	+7	5.74	+1.76	36	0	2.27	-1.71	47	+11	4.41	+0.43	40	+4	3.46	-0.52	44	+8	2.41	-1.57				
Total			55.20	+10.65			45.92	+1.37			53.85	+9.30			45.29	+0.74			41.22	-3.33			36.10	-1.10

[1] DEP is departure from the long-term average.
[2] 2024 data is for ten months through October.

Table 2. Temperature and rainfall at Princeton, Kentucky, in 2022, 2023, and 2024.

	2022				2023				2024[2]			
	Temp.		Rainfall		Temp.		Rainfall		Temp.		Rainfall	
	°F	DEP[1]	IN	DEP	°F	DEP	IN	DEP	°F	DEP	IN	DEP
JAN	32	-2	5.04	+1.24	43	+9	5.11	+1.31	33	-1	6.42	+2.62
FEB	39	+1	7.44	+3.01	46	+8	3.27	-1.16	47	+9	1.68	-2.75
MAR	51	+4	4.85	-0.09	48	+1	6.89	+1.95	52	+5	1.40	-3.54
APR	56	-2	6.41	+1.61	57	-2	2.14	-2.66	61	+2	3.44	-1.36
MAY	68	+1	2.54	-2.42	67	0	4.47	-0.49	70	+3	8.92	+3.96
JUN	75	0	3.46	-1.39	72	-3	1.59	-2.26	75	0	4.36	+0.51
JUL	80	+2	4.75	+0.46	77	-1	11.23	6.94	77	-1	3.56	-0.73
AUG	76	-1	5.85	+1.84	75	-1	8.87	+4.86	76	-1	0.40	-3.61
SEP	69	-2	0.32	-3.01	71	0	2.77	-0.56	72	+1	6.57	+3.24
OCT	57	-2	1.19	-1.86	59	0	3.82	+0.77	62	+3	0.43	-2.62
NOV	47	0	1.45	-3.18	49	+2	1.26	-3.37				
DEC	38	-1	3.95	-1.09	43	+4	1.73	-3.31				
Total			46.25	-4.88			53.15	+2.02			37.18	-4.28

[1] DEP is departure from the long-term average.
[2] 2024 data is for ten months through October.

Table 3. Dry matter yields, seedling vigor, and stand persistence of alfalfa varieties sown April 2, 2019, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] May 3, 2019	Percent Stand												Yield (tons/acre)											
			2019		2020		2021		2022		2023		2024		2019	2020	2021	2022	2023	2024						6-year Total
			May 3	Oct 11	Mar 17	Sep 24	Mar 24	Sep 30	Mar 22	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	Total	Total	Total	May 8	Jun 10	Jul 11	Aug 13	Sep[3]	Total	
Commercial Varieites-Available for Farm Use																										
Rebound 6XT	4	4.9	100	100	99	97	97	97	97	96	96	96	96	91	1.30	4.18	6.68	7.34	7.29	1.24	1.42	1.11	1.09	–	4.86	31.65*
GA-497HD	5	4.9	100	100	99	96	96	97	97	95	95	95	94	90	0.98	4.30	6.70	6.92	6.46	1.32	1.24	0.83	0.84	–	4.22	29.59*
FSG415BR	4	5.0	100	100	100	98	98	98	98	97	97	96	94	90	1.29	4.02	7.00	6.68	6.50	1.21	1.34	0.76	0.78	–	4.10	29.59*
WL 349HQ	5	4.6	99	99	99	96	98	98	98	95	95	94	95	89	0.94	3.91	6.74	6.49	6.57	1.14	1.28	0.86	0.93	–	4.21	28.86*
GA-535	5	4.8	98	98	98	94	94	94	96	95	95	90	85	69	1.41	4.39	7.08	6.35	5.98	0.93	1.04	0.58	0.66	–	3.22	28.43*
Ameristand 403TPlus	4	4.5	100	99	99	95	95	95	96	95	95	94	92	78	1.51	4.31	6.98	6.25	5.65	0.98	1.02	0.53	0.66	–	3.19	27.89*
Charger	5	4.4	99	98	98	95	96	96	96	95	95	94	90	85	1.10	4.30	6.75	6.01	5.79	0.95	1.05	0.66	0.74	–	3.39	27.35*
Paola	5	5.0	100	100	99	91	93	93	92	91	92	87	74	63	1.47	4.21	5.95	5.83	5.53	0.74	0.70	0.34	0.42	–	2.19	25.18
55V50	5	5.0	100	100	100	95	96	96	96	93	93	76	70	53	1.26	3.60	6.54	5.73	4.86	0.83	0.89	0.41	0.51	–	2.64	24.65
Saranac AR (certifies)	4	4.5	99	100	99	87	86	84	83	81	81	76	48	38	1.27	3.97	5.88	5.22	4.60	0.65	0.60	0.32	0.42	–	1.99	22.93
Triade	5	4.9	100	100	97	89	89	87	86	81	79	64	39	35	1.08	3.94	5.54	5.08	4.22	0.41	0.38	0.21	0.19	–	1.19	21.05
Alfagraze	2	4.1	99	99	98	74	78	78	87	84	84	70	56	40	0.96	3.38	5.53	4.44	3.80	0.43	0.47	0.13	0.21	–	1.24	19.34
Mean		4.7	99	99	99	92	93	93	93	91	91	86	78	68	1.21	4.04	6.45	6.03	5.60	0.90	0.95	0.56	0.62		3.04	26.37
CV,%		4.9	1	1	2	7	5	6	4	7	7	13	22	25	23.72	15.30	11.60	14.47	18.04	31.24	28.07	43.45	42.48		32.82	13.87
LSD,0.05		0.3	1	1	3	9	6	8	6	9	9	16	24	25	0.41	0.89	1.08	1.25	1.45	0.41	0.38	0.35	0.38		1.43	5.26

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* 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 April 3, 2020, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] June 3, 2020	Percent Stand										Yield (tons/acre)										5-year Total
			2020		2021		2022		2023		2024		2020	2021	2022	2023	2024						
			June 3	Sep 24	Mar 24	Sep 29	Mar 22	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	Total	Total	May 8	Jun 10	Jul 11	Aug13	Sep[3]	Total	
Commercial Varieites-Available for Farm Use																							
Alfabar	3	4.1	97	96	96	96	96	95	94	94	94	94	2.53	7.46	7.67	8.23	1.85	1.61	1.01	1.10	–	5.57	31.46*
FSG-415BR	4	4.9	100	100	99	99	99	98	98	98	97	97	2.56	7.70	7.72	7.81	1.73	1.49	0.84	1.11	–	5.17	30.97*
MVS4220Q	4	4.8	100	99	99	99	99	98	98	98	98	98	2.15	7.86	7.50	7.82	1.61	1.39	0.94	1.08	–	5.03	30.35*
GA-497HD	5	4.8	98	97	98	98	97	95	95	96	96	96	2.45	7.25	7.56	7.60	1.70	1.38	1.00	1.14	–	5.23	30.09*
GA-535	5	4.8	98	97	98	98	98	98	98	98	98	97	2.31	7.02	7.22	8.01	1.67	1.50	0.99	1.07	–	5.22	29.78*
GA-409	4	4.6	100	100	100	100	98	96	96	96	95	95	2.47	6.59	7.14	7.80	1.54	1.55	1.05	1.09	–	5.22	29.22*
FSG-527	5	4.3	97	98	98	98	98	98	98	98	98	97	1.95	7.21	6.85	7.34	1.57	1.34	0.88	1.02	–	4.81	28.16
Ameristand 403TPlus	4	4.3	99	98	97	97	97	97	97	95	94	94	2.21	6.93	7.15	7.24	1.51	1.30	0.83	0.98	–	4.61	28.14
Paola	5	4.8	99	98	98	99	99	97	97	97	93	93	2.38	7.20	6.88	6.70	1.33	1.11	0.82	1.02	–	4.29	27.44
Saranac AR(certified)	4	4.5	100	96	96	96	95	94	94	91	90	89	2.23	6.85	6.65	6.76	1.36	1.07	0.74	0.89	–	4.05	26.55
Triade	5	5.0	100	100	100	100	99	98	98	95	94	93	2.34	6.99	6.67	6.26	1.18	1.07	0.77	1.04	–	4.06	26.33
Alfagraze	2	4.1	96	94	94	94	94	94	94	94	94	94	2.32	6.11	6.08	6.67	1.41	1.22	0.69	0.95	–	4.27	25.45
Mean		4.6	99	98	98	98	97	96	96	96	95	95	2.33	7.10	7.09	7.35	1.54	1.34	0.88	1.04		4.80	28.66
CV,%		9.5	2	2	2	2	2	2	2	3	3	3	11.28	8.75	8.75	9.53	15.24	11.73	12.75	11.63		10.99	7.41
LSD,0.05		0.6	3	3	3	3	3	3	3	4	4	4	0.38	0.89	0.89	1.01	0.34	0.23	0.16	0.17		0.26	3.06

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 5. Dry matter yields, seedling vigor, and stand persistence of Roundup Ready alfalfa varieties sown May 15, 2020, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] June 11, 2020	Percent Stand										Yield (tons/acre)										5-year Total
			2020		2021		2022		2023		2024		2020	2021	2022	2023	2024						
			Jun 11	Sep 24	Mar 24	Sep 29	Mar 22	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	Total	Total	May 8	Jun 10	Jul 13	Aug 14	Sep[3]	Total	
Commercial Varieites-Available for Farm Use																							
438 RR	4	5	100	100	100	100	100	100	98	96	95	94	1.74	8.43	6.42	6.22	1.70	1.40	0.92	0.94	–	4.96	27.77*
Ameristand 405T RR	4	5	100	100	100	100	100	100	98	97	95	95	1.91	7.95	5.88	5.45	1.50	1.22	0.85	0.86	–	4.44	25.63*
Alfagraze 300 RR	3	5	100	100	100	100	100	100	99	98	96	96	1.60	8.16	5.62	5.17	1.54	1.25	0.70	0.82	–	4.31	24.86*
Ameristand 433T RR	3	5	100	100	100	100	100	100	99	97	96	96	1.58	7.70	5.26	4.91	1.49	1.24	0.74	0.76	–	4.23	23.68*
Mean			100	100	100	100	100	100	98	97	96	65	1.68	7.99	5.69	5.33	1.55	1.27	0.79	0.82		4.44	25.12
CV,%			0	0	0	0	0	0	2	3	3	3	13.60	10.34	19.72	20.20	16.04	11.95	16.69	17.62		13.21	14.29
LSD,0.05			0	0	0	0	0	0	3	4	4	4	0.33	1.18	1.60	1.54	0.35	0.22	0.19	0.21		0.84	5.13

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 6. Dry matter yields, seedling vigor, and stand persistence of alfalfa varieties sown April 5, 2021, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] June 1, 2021	Percent Stand								Yield (tons/acre)									4-year Total
			2021		2022		2023		2024		2021	2022	2023	2024						
			Jun 1	Sep 29	Mar 22	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	Total	May 8	Jun 10	Jul 11	Aug 13	Sep[3]	Total	
Commercial Varities-Available for Farm Use																				
HighFive	5	4.5	99	98	96	96	96	95	94	92	2.18	4.38	6.06	1.71	1.54	0.74	0.84	–	4.82	17.44*
54VQ52	4	5.0	99	99	95	95	95	94	92	89	2.20	4.42	5.79	1.44	1.49	0.62	0.73	–	4.28	16.69*
54Q29	4	4.8	100	98	97	95	92	93	91	87	1.97	4.04	5.81	1.46	1.46	0.59	0.78	–	4.28	16.10*
54Q16	4	4.9	98	96	95	94	92	91	91	88	1.95	3.99	5.38	1.40	1.40	0.59	0.85	–	4.24	15.57
Ameristand 403T Plus	4	4.1	97	97	95	93	92	89	86	85	2.00	4.18	5.37	1.38	1.32	0.49	0.77	–	3.96	15.50*
FSG450	4	4.8	96	92	91	90	89	87	87	77	1.98	4.05	5.65	1.19	1.26	0.64	0.66	–	3.75	15.44*
Signature	4	4.5	98	96	92	91	90	91	89	87	1.95	3.97	5.43	1.22	1.18	0.62	0.80	–	3.82	15.17*
GA-497HD	5	4.9	100	98	97	95	93	92	92	86	1.99	4.00	5.28	1.22	1.32	0.57	0.73	–	3.84	15.10*
Mariner V	4	4.4	96	96	95	91	89	74	81	79	2.12	3.84	5.23	1.38	1.31	0.53	0.68	–	3.91	15.09*
55H96	5	4.3	96	96	95	91	90	86	88	83	2.08	3.72	5.00	1.31	1.32	0.49	0.61	–	3.74	14.54*
Alfagraze	2	4.3	94	93	93	92	93	90	91	86	2.02	3.85	5.20	1.39	1.13	0.40	0.54	–	3.46	14.53*
Saranac AR (certified)	4	4.5	98	96	93	90	84	79	73	73	1.97	3.42	4.41	1.02	0.93	0.34	0.49	–	2.78	12.58
Mean		4.6	98	96	94	93	91	88	88	84	2.03	3.99	5.38	1.34	1.31	0.55	0.71		3.91	15.31
CV,%		11.5	2	3	4	5	5	9	9	11	15.78	19.16	15.04	18.58	13.95	21.15	17.91		14.52	14.57
LSD,0.05		0.8	3	4	5	6	7	11	11	14	0.46	1.10	1.16	0.36	0.26	0.17	0.18		0.82	3.21

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Dry matter yields, seedling vigor, and stand persistence of Roundup Ready alfalfa varieties sown April 5, 2021, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] June 1, 2021	Percent Stand								Yield (tons/acre)									4-year Total
			2021		2022		2023		2024		2021	2022	2023	2024						
			Jun 1	Sep 29	Mar 22	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	Total	May 8	Jun 10	Jul 11	Aug 13	Sep[3]	Total	
Commercial Varities-Available for Farm Use																				
54VR10 RR	4	4.9	99	99	99	98	98	98	98	97	2.43	5.56	6.54	1.84	1.50	0.68	0.78	–	4.81	19.34*
Ameristand 433T RR	3	4.6	98	98	98	96	97	96	96	93	2.25	5.27	5.96	1.62	1.28	0.56	0.63	–	4.08	17.56
Ameristand 405T RR	4	4.6	99	99	97	97	96	94	94	93	2.25	5.05	5.77	1.65	1.42	0.59	0.75	–	4.41	17.48
438 RR	4	4.6	99	98	96	96	95	95	95	94	2.24	4.65	5.49	1.58	1.38	0.56	0.71	–	4.22	16.61
Alfagraze 300 RR	3	4.6	98	97	96	96	96	96	95	91	2.10	4.52	5.27	1.46	1.26	0.43	0.61	–	3.77	15.66
Mean		4.7	98	98	97	97	96	96	95	93	2.25	5.01	5.81	1.63	1.37	0.56	0.70		4.26	17.33
CV,%		9.2	1	1	2	2	2	2	2	3	11.42	6.13	8.88	7.97	7.63	18.83	9.33		7.64	6.45
LSD,0.05		0.7	2	2	4	3	3	2	3	4	0.40	0.47	0.79	0.20	0.16	0.16	0.10		0.50	1.72

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* 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 sown August 19, 2022, at Lexington, Kentucky.

Variety	FD[1]	Percent Stand					Yield (tons/acre)							2-year Total
		2022	2023		2024		2023	2024						
		Nov 19	Mar 9	Oct 4	Mar 12	Sep 16	Total	May 10	Jun 10	Jul 11	Aug 13	Sep[2]	Total	
Commercial Varieties-Available for Farm Use														
54VQ52	4	99	99	99	99	99	5.34	2.20	1.37	0.83	0.83	–	5.23	10.57*
54Q16	4	98	98	98	99	99	5.02	2.01	1.37	0.82	0.82	–	5.02	10.04*
54Q29	4	98	97	97	97	98	5.10	2.04	1.32	0.78	0.80	–	4.94	10.04*
Alfagraze	2	95	96	97	98	97	5.35	2.03	1.29	0.62	0.74	–	4.68	10.03*
HighFive	5	96	95	96	97	97	5.04	2.01	1.29	0.73	0.83	–	4.86	9.90*
55H96	5	97	96	97	97	97	4.80	2.17	1.37	0.70	0.82	–	5.07	9.87*
MarinerV	4	98	96	97	97	97	4.95	1.97	1.35	0.75	0.84	–	4.91	9.86*
GA-497HD	5	98	97	98	98	98	4.94	1.97	1.28	0.73	0.88	–	4.86	9.80*
Saranac AR (certified)	4	98	97	97	96	95	5.11	1.85	1.19	0.72	0.70	–	4.46	9.58*
Signature	4	98	98	98	98	98	4.77	1.72	1.32	0.85	0.81	–	4.70	9.47*
FSG450	4	98	98	98	99	98	4.76	1.67	1.29	0.83	0.86	–	4.65	9.42*
Ameristand 403T Plus	4	98	98	97	97	97	5.07	1.84	1.06	0.67	0.73	–	4.30	9.37*
Mean		98	97	97	97	97	5.02	1.96	1.29	0.75	0.81		4.81	9.83
CV,%		3	3	2	2	2	9.55	11.89	13.96	15.70	12.09		10.19	8.83
LSD,0.05		4	4	3	3	3	0.69	0.33	0.26	0.17	0.14		0.71	1.25

[1] FD=Fall Dormancy.
[2] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* 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 4, 2022, at Lexington, Kentucky.

Variety	FD[1]	Percent Stand						Yield (tons/acre)								
		2022		2023		2024		2022	2023	2024						3-year Total
		Jul 20	Sep 22	Mar 9	Oct 4	Mar 12	Sep 16	Total	Total	May 10	Jun 10	Jul 12	Aug 13	Sep[2]	Total	
Commercial Varieties-Available for Farm Use																
54VR10 RR	4	88	90	90	91	91	91	2.03	6.53	1.97	1.37	0.88	0.86	–	5.08	13.64*
438 RR	4	96	96	96	96	95	95	1.98	6.45	1.84	1.23	0.85	0.84	–	4.77	13.20*
Ameristand 433T RR	3	91	89	91	91	90	90	1.88	6.37	1.83	1.36	0.72	0.77	–	4.69	12.95*
Ameristand 405T RR	4	80	83	90	90	89	89	1.78	6.10	1.71	1.18	0.76	0.84	–	4.50	12.37
Alfagraze 300 RR	3	84	86	89	89	89	89	1.83	6.11	1.70	1.15	0.74	0.81	–	4.41	12.35
Mean		88	89	91	92	91	91	1.90	6.32	1.82	1.28	0.78	0.82		4.69	12.91
CV,%		8	8	6	5	5	5	7.85	6.04	13.48	14.74	9.72	7.18		8.72	6.07
LSD,0.05		10	10	8	6	7	7	0.21	0.54	0.35	0.27	0.11	0.08		0.58	1.11

[1] FD=Fall Dormancy.
[2] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Dry matter yields, seedling vigor, and stand persistence of alfalfa varieties sown April 4, 2023, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] May 16, 2023	Percent Stand				Yield (tons/acre)							2-year Total
			2023		2024		2023	2024						
			May 16	Oct 4	Mar 12	Sep 16	Total	May 10	Jun 10	Jul 11	Aug 13	Sep[3]	Total	
Commercial Varieties-Available for Farm Use														
MVS4220Q	4	5.0	100	100	100	100	2.50	2.14	2.27	1.00	0.97	–	6.38	8.88*
Ameristand 428TQ	4	4.8	100	100	100	100	2.81	1.91	2.11	0.95	0.97	–	5.95	8.76*
Saranac AR (certified)	4	4.4	100	100	100	100	2.71	2.03	2.14	0.85	0.91	–	5.94	8.65*
Alfabar	3	4.1	99	100	100	100	2.62	2.05	2.18	0.81	0.86	–	5.90	8.52*
GA-535	5	4.9	100	100	100	100	2.55	1.86	1.97	1.03	1.06	–	5.92	8.47*
GA-497HD	5	4.8	100	100	100	100	2.68	1.82	1.96	0.96	0.99	–	5.73	8.41*
GA-409	4	4.6	100	100	100	100	2.70	1.95	2.03	0.82	0.90	–	5.70	8.40*
Mariner V	4	4.6	100	100	100	100	2.51	1.95	2.09	0.82	0.92	–	5.79	8.30*
FSG-527	5	4.9	100	100	100	100	2.52	1.68	1.81	0.86	0.97	–	5.33	7.84*
WL3521HQ	5	4.9	100	100	100	100	2.25	1.52	1.64	0.82	0.83	–	4.81	7.06
Mean		4.7	100	100	100	100	2.59	1.88	2.02	0.89	0.94		5.73	8.31
CV,%		6.4	0	0	0	0	8.44	12.75	12.66	17.42	10.87		10.91	8.66
LSD,0.05		0.4	1	0	0	0	0.32	0.36	0.38	0.23	0.15		0.92	1.06

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 11. Dry matter yields, seedling vigor, and stand persistence of Roundup Ready alfalfa varieties sown April 4, 2023, at Lexington, Kentucky.

Variety	FD[1]	Seedling Vigor[2] May 16, 2023	Percent Stand				Yield (tons/acre)							
			2023		2024		2023	2024						2-year Total
			May 16	Oct 4	Mar 12	Sep 16	Total	May 10	Jun 10	Jul 11	Aug 13	Sep[3]	Total	
Commercial Varieties-Available for Farm Use														
438 RR	4	4.6	100	100	100	100	3.08	1.99	1.79	1.26	1.08	–	6.12	9.20*
54VR10 RR	4	4.9	100	100	100	100	3.01	1.92	1.89	1.15	1.05	–	6.01	9.02*
WL3546HQ RR	5	4.4	100	100	100	100	2.67	2.16	1.70	1.30	1.11	–	6.27	8.94*
WL375HVX RR	5	4.5	99	100	100	100	2.58	2.14	1.65	1.26	1.07	–	6.12	8.69*
Ameristand 423TQ RR	4	4.8	100	100	100	100	2.62	1.90	1.70	1.26	1.10	–	5.96	8.58*
Ameristand 481HVX RR	4	4.4	100	100	100	100	2.40	1.99	1.58	1.12	1.00	–	5.69	8.09
Mean		4.6	100	100	100	100	2.73	2.02	1.72	1.23	1.07		6.03	8.75
CV,%		8.8	1	0	0	0	14.02	13.80	10.55	8.70	7.75		7.52	8.21
LSD,0.05		0.6	1	1	0	0	0.58	0.42	0.27	0.16	0.12		0.68	1.08

[1] FD=Fall Dormancy.
[2] Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.
[3] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 12. Dry matter yields and stand persistence of Roundup Ready alfalfa varieties sown March 29, 2024, at Lexington, Kentucky.

Variety	FD[1]	Percent Stand		Yield (tons/acre)			
		2024		2024			
		Jun 4	Sep 16	Jun 25	Aug 20	Sep[2]	Total
Commercial Varieties-Available for Farm Use							
Ameristand 423TQ RR	4	93	93	0.74	0.83	–	1.57*
WL 3546HQ RR	5	92	92	0.71	0.78	–	1.50*
438 RR	4	87	87	0.64	0.78	–	1.42*
54VR10 RR	4	87	87	0.68	0.68	–	1.37*
WL 375HVX RR	5	88	90	0.61	0.71	–	1.32*
Ameristand 481HVX RR	4	88	87	0.60	0.71	–	1.31*
Mean		89	89	0.67	0.75		1.42
CV,%		6	6	22.36	21.55		20.54
LSD,0.05		9	8	0.22	0.24		0.44

[1] FD=Fall Dormancy.
[2] There was no September harvest in 2024 due to below-normal precipitation in July, August, and early September, resulting in insufficient regrowth.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 13. Dry matter yields, seedling vigor, and stand persistence of alfalfa varieties sown April 28, 2022, at Princeton, Kentucky.

Variety	FD[1]	Seedling Vigor[2] Jun 1, 2022	Percent Stand				Yield (tons/acre)						
			2022		2023	2024	2022	2023	2024				3-year Total
			Jun 1	Nov 9	Oct 20	Nov 4	Total	Total	May 22	Jul 2	Aug 21	Total	
Commercial Varieties-Available for Farm Use													
54VQ52	4	5.0	100	96	98	98	1.73	6.78	1.44	2.40	1.50	5.34	13.85*
Ameristand 403T Plus	4	4.5	100	95	93	88	1.51	6.71	1.61	2.12	1.43	5.16	13.38*
High Five	5	4.9	100	95	98	97	1.43	6.33	1.62	2.29	1.43	5.34	13.11*
54Q29	4	4.6	98	97	97	96	1.42	6.32	1.71	2.33	1.32	5.35	13.10*
Mariner V	4	4.6	99	90	92	91	1.33	6.16	1.81	1.94	1.36	5.10	12.60*
Saranac AR (certified)	4	4.6	100	90	86	74	1.44	6.58	1.31	1.85	1.29	4.46	12.48*
54Q16	4	5.0	100	94	94	94	1.29	6.22	1.72	1.88	1.31	4.91	12.43*
Alfagraze	2	4.8	99	92	92	89	1.45	6.28	1.42	2.02	1.25	4.69	12.42*
55H96	5	4.6	100	91	89	94	1.55	5.62	1.52	2.25	1.36	5.13	12.31*
GA-497 HD	5	5.0	100	94	90	92	1.30	5.88	1.65	1.88	1.31	4.84	12.02*
FSG 450	4	4.8	99	93	94	88	1.34	5.98	1.34	1.66	1.28	4.28	11.60
Signature	4	4.8	99	88	82	76	1.15	5.40	1.41	1.56	1.15	4.11	10.66
Mean		4.8	99	93	92	90	1.41	6.19	1.55	2.01	1.33	4.89	12.50
CV,%		6.4	1	6	7	12	16.02	12.80	21.54	16.38	19.86	15.34	11.55
LSD,0.05		0.4	1	8	9	15	0.33	1.14	0.48	0.47	0.38	1.08	2.08

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

Table 14. Dry matter yields and stand persistence of alfalfa varieties sown September 13, 2023, at Princeton, Kentucky.

Variety	FD[1]	Percent Stand		Yield (tons/acre)			
		2023	2024	2024			
		Oct 20	Nov 1	May 22	Jul 2	Aug 21	Total
Commercial Varieties-Available for Farm Use							
Alfagraze	2	97	99	2.55	2.18	2.58	7.30*
Saranac AR (certified)	4	95	99	2.47	2.16	2.62	7.25*
Ameristand 428TQ	4	95	99	2.42	2.28	2.50	7.20*
WL3521HQ	5	99	99	2.63	2.21	1.94	6.79*
FSG-527	5	95	99	2.41	2.21	2.05	6.67
GA-497 HD	5	97	99	2.35	2.04	2.12	6.52
Mean		96	99	2.47	2.18	2.30	6.95
CV,%		2	1	6.07	15.27	12.13	5.14
LSD,0.05		2	2	0.23	0.50	0.42	0.54

[1] FD=Fall Dormancy.
* Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 15. Characterization and proprietors of alfalfa varieties in current trials in Kentucky.

Variety	Proprietor	Variety Characteristics[1]						
			Disease Resistance[2]					
		FD[3]	Bw	Fw	An	PRR	APH1	APH2
Commercial Varieties-Available for Farm Use								
Alfabar	Barenbrug	3	HR	HR	HR	HR	HR/R	-
Alfagraze	America's Alfalfa	2	MR	R	MR	R	-	-
Ameristand 403TPlus	America's Alfalfa	4	HR	HR	HR	HR	HR	R
Ameristand 428TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	HR
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR	-
FSG 415BR	Farm Science Genetics	4	HR	HR	HR	HR	HR	-
FSG 450	Allied Seed, L.L.C.	4	HR	HR	HR	HR	HR	HR
FSG 527	Farm Science Genetics	5	HR	HR	HR	HR	HR	R
GA-409	Pref. Alfalfa Genetics	4	HR	HR	HR	HR	HR	HR
GA-497HD	Pref. Alfalfa Genetics	5	HR	HR	HR	HR	HR	-
GA-535	Pref. Alfalfa Genetics	5	HR	HR	HR	HR	HR	-
High Five	Allied Seed, L.L.C.	5	HR	HR	HR	HR	HR	HR
MVS4220Q	MountainView Seeds	4	HR	HR	HR	HR	HR	HR
Mariner V	Allied Seed, L.L.C.	4	HR	HR	HR	HR	HR	HR
Paola	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR
Rebound 6XT	Croplan Genetics	4	HR	HR	HR	HR	HR	HR
Saranac AR (certified)	Public	4	MR	R	HR	LR	-	-
Signature	Allied Seed, L.L.C.	4	HR	HR	HR	HR	HR	HR
Triade	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR
WL-349HQ	W-L Research	4	HR	HR	HR	HR	HR	HR
WL 365HQ	W-L Research	5	HR	HR	HR	HR	HR	-
WL 3521HQ	W-L Research	5	HR	HR	HR	HR	HR	HR
54Q16	Pioneer	4	HR	HR	HR	HR	HR	HR
54Q29	Pioneer	4	HR	HR	HR	HR	R	R
54VQ52	Pioneer	4	HR	R	HR	HR	HR	HR
55H96	Pioneer	5	HR	HR	HR	HR	HR	HR
55V50	Pioneer	5	HR	R	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 (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2023_Alfalfa_Variety_Leaflet.pdf).
[3] Fall dormancy-check varieties: 1=Spredor 3, 2=Vernal, 3=Ranger, 4=Saranac, 5=DuPuits.

Table 16. Characterization and proprietors of Roundup Ready alfalfa varieites in current trials in Kentucky.

Variety	Proprietor	Variety Characteristics[1]						
			Disease Resistance[2]					
		FD[3]	Bw	Fw	An	PRR	APH1	APH2
Commercial Varieties-Available for Farm Use								
Alfagraze 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	–
Ameristand 405T RR	America's Alfalfa	4	HR	HR	HR	HR	HR	MR
Ameristand 423TQ RR	America's Alfalfa	4	HR	HR	HR	HR	HR	HR
Ameristand 433T RR	America's Alfalfa	3	HR	R	R	HR	HR	–
Ameristand 481HVX	America's Alfalfa	4	HR	HR	HR	HR	HR	HR
WL3546HQ	W-L Research	5	HR	HR	HR	HR	HR	HR
WL 375HVX	W-L Research	5	HR	HR	HR	HR	HR	HR
438 RR	Allied Seed	4	HR	HR	HR	HR	HR	–
54VR10 RR	Pioneer	4	HR	HR	R	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 (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2023_Alfalfa_Variety_Leaflet.pdf).
[3] Fall dormancy-check varieties: 1=Spredor 3, 2=Vernal, 3=Ranger, 4=Saranac, 5=DuPuits.

Table 17. Summary of Kentucky alfalfa yield trials 2006-2024 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	Variety Characteristics[1]							Lexington											Princeton						Mean[5] (# trials)
			Disease Resistance[2]						08[3,4]	11	12	15	16	17	18	19	20	21	22	05	08	09	11	13	22	
		FD	Bw	Fw	An	PRR	APH1	APH2	6yr[6]	6yr	6yr	5yr	6yr	6yr	5yr	6yr	5yr	4yr	2yr	5yr	5yr	6yr	4yr	3yr	3yr	
A-4440	Producers Choice	4	HR	HR	HR	HR	HR	HR	100											99						100(2)
A 5225	Producers Choice	5	HR	HR	HR	HR	R	R	104												107					106(2)
Adrenalin	Brett Young Seeds	4	HR	HR	HR	HR	HR	–														104				–
Alfabar	Barenbrug USA	3	HR	HR	HR	HR	HR/R	–									110									–
Alfagraze	America's Alfalfa	3	HR	HR	HR	HR	HR	–								73	89	95	102						99	92(5)
Ameristand 403T	America's Alfalfa	4	HR	HR	HR	HR	HR	R	91	102	94										100	101	107	99		99(7)
Ameristand 403T Plus	America's Alfalfa	4	HR	HR	HR	HR	HR	R				104	102	107	112	106	98	101	95			94			107	103(10)
Ameristand 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	R														103	104			104(2)
Ameristand 427TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	HR				109														–
Anchormate	ProSeed Marketing	–	–	–	–	–	–	–	100																	–
Arc (certified)	Public	4	LR	MR	HR	–	–	–		93	92									95	86			95		92(5)
Archer III	America's Alfalfa	5	HR	HR	HR	HR	HR	–														106				–
Baralfa 53HR	Barenbrug USA	5	HR	R	HR	HR	HR	–												104						–
Buffalo	Public	–	–	–	–	–	–	–	80	89		85								95	78	87		91		86(7)
Bulldog-505	Univ. of GA	5	–	HR	–	R	–	–			103		93	91								96		103		97(5)
Caliber	Beck's Hybrids	4	HR	HR	HR	HR	HR	–			99	105	99	105									99			101(5)
Charger	Beck's Hybrids	5	HR	HR	HR	HR	HR	–								104							106			105(2)
Contender	Beck's Hybrids	5	HR	HR	HR	HR	HR	–				101	103	101												101(3)
DKA 43-13	Monsanto	4	HR	HR	HR	HR	HR	–	102																	–
DKA 50-18	Monsanto	5	HR	HR	HR	HR	HR	–	110																	–
DG4210	Crop Production	4	HR	HR	HR	HR	HR	–															101	103		102(2)
Dynagro Everlast	United Agr. Prod.	4	HR	HR	HR	HR	R	–												101						–
Evermore	Southern States	5	HR	HR	HR	HR	HR	–			100		102	107												103(3)
Expedition	NEXGROW	5	HR	HR	R	RR	R	–												96						–
Fierce	Beck's Hybrids	4	HR	HR	HR	HR	HR	–				102		107												104(2)
FSG 403LR	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	–																102		–
FSG 408DP	Allied Seeds	4	HR	HR	HR	HR	R	–													110					–
FSG 415BR	Allied Seeds	4	HR	HR	HR	HR	HR	–					103			112	108									108(3)
FSG 424	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	–																109		–
FSG 426	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	HR				103														–
FSG 450	Farm Sci. Genetics	4	HR	HR	HR	HR	HR	HR										101	96						93	97(3))
FSG 524	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	–																96		–
FSG 527	Farm Sci. Genetics	5	HR	HR	HR	HR	HR	–									98									–
FSG 528SF	Lewis Seed Co.	5	HR	R	HR	HR	R	–	107																	–
GA-409	Pref. Alf. Genetics	4	HR	HR	HR	HR	HR	–									102									–
GA-497HD	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	–					104			112	105	99	100						96	103(6)
GA-535	Pref. Alf. Genetics	5	HR	HR	HR	HR	HR	–								108	104									106(2)
Genoa	NEXGROW	4	HR	HR	HR	HR	HR	–	99											98	118					105(3)
Gunner	Croplan Genetics	5	HR	HR	HR	HR	HR	–															103			–
HighFive	Allied Seeds	5	HR	HR	HR	HR	HR	HR										114	101						105	107(3)
MVS4220Q	Mountain View Seeds	4	HR	HR	HR	HR	HR	–									106									–
KingFisher 243	Cal/West	5	HR	HR	HR	HR	HR	–														98				–
Kingfisher 4020	Byron Seeds	4	HR	HR	HR	HR	HR	–		101																–
L449Aph2	Legacy Seeds	4	HR	HR	HR	HR	HR	HR															97			–
L455HD	Legacy Seeds	4	HR	HR	HR	HR	HR	–																102		–
Lancer	Allied Seeds	4	HR	HR	HR	HR	HR	–															101			–
LegenDairy 5.0	Croplan Genetics	3	HR	HR	HR	HR	HR	–												103						–
Mariner III	Allied Seeds	4	HR	HR	HR	HR	HR	R													99					–
Mariner V	Allied Seeds	4	HR	HR	HR	HR	HR	HR										99	100						101	100(3)

(continued)

Table 17. (continued)

Variety	Proprietor	Variety Characteristics[1]							Lexington											Princeton						Mean[5] (# trials)
			Disease Resistance[2]						08[3,4]	11	12	15	16	17	18	19	20	21	22	05	08	09	11	13	22	
		FD	Bw	Fw	An	PRR	APH1	APH2	6yr[6]	6yr	6yr	5yr	6yr	6yr	5yr	6yr	5yr	4yr	2yr	5yr	5yr	6yr	4yr	3yr	3yr	
Optimus	Brett Young Seeds	–	HR	HR	HR	HR	HR	–																98		–
Paola	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR								96	96									96(2)
PGI 459	Producers Choice	4	HR	HR	HR	HR	R	R	102																	–
Phirst	UniSouth Genetics	4	HR	HR	HR	HR	R	–												105						–
Phoenix	Southern States	5	HR	HR	HR	HR	R	–	102		105										101		94			101(4)
Radiance HD	Ampac Seed/Cisco	4	HR	HR	HR	HR	HR	–			101											105	103			103(3)
Rebound 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR	–	103													103				103(2)
Rebound 6.0	Croplan Genetics	4	HR	HR	HR	HR	HR	HR		104													101			103(2)
Rebound 6XT	Croplan Genetics	4	HR	HR	HR	HR	HR	HR					107			120										114(2)
Reward II	PGI Alfalfa	4	HR	HR	R	HR	R	–												103						–
Saranac AR (certified)	Public	4	MR	R	HR	LR	–	–	86	91	97	92	88	83	88	87	93	82	97	95	88	92	82	97	100	90(17)
Signature	Allied Seeds	4	HR	HR	HR	HR	HR	HR										99	96						85	93(3)
Triade	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	HR								80	92									86(2)
TripleTrust 450	ABI Alfalfa	5	HR	HR	HR	HR	HR	–												100						–
TripleTrust 500	Central Farm Supply	5	HR	HR	HR	HR	HR	–		108																–
USG 681HY	UniSouth Genetics	6	HR	HR	HR	HR	–	–													113					–
Vernal	Public	2	R	MR	–	–	–	–												95						–
Withstand	Southern States	4	HR	HR	HR	HR	HR	HR	90		96										100		87			93(4)
WL 343HQ	W-L Research	4	HR	HR	HR	HR	HR	–	110												100					105(2)
WL 349HQ	W-L Research	4	HR	HR	HR	HR	HR	HR								109										–
WL 354HQ	W-L Research	4	HR	HR	HR	HR	HR	HR															115			–
WL 357HQ	W-L Research	5	HR	HR	HR	HR	HR	–												106						–
WL 363HQ	W-L Research	5	HR	HR	HR	HR	HR	–	105	103												105				104(3)
WL 365HQ	W-L Research	5	HR	HR	HR	HR	HR	–					99													–
4030	Brett Young Seeds	4	HR	HR	HR	HR	HR	R			104															–
53H92	Pioneer	3	HR	HR	HR	HR	HR	R		95																–
54Q16	Pioneer	4	HR	HR	HR	HR	HR	HR										102	102						99	101(3)
54Q29	Pioneer	4	HR	HR	HR	HR	R	R										105	102						105	104(3)
54Q32	Pioneer	4	HR	HR	HR	HR	HR	–		99																–
54VQ52	Pioneer	4	HR	R	HR	HR	HR	HR										109	108						111	109(3)
55H96	Pioneer	5	HR	HR	HR	HR	HR	HR										95	100						98	98(3)
55V48	Pioneer	5	HR	HR	HR	HR	HR	R		102																–
55V50	Pioneer	5	HR	R	Hr	HR	HR	HR			110					93								105		104(3)
6415	NEXGROW	4	HR	HR	HR	HR	HR	–												103						–
6417	NEXGROW	4	HR	HR	HR	HR	HR	HR	105																	–
6422Q	NEXGROW	4	HR	HR	HR	HR	HR	–		112												102				107(2)
6552	NEXGROW	5	HR	HR	HR	HR	HR	–	105																	–

[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 (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2024_Alfalfa_Variety_Leafllet.pdf).
[3] Year trial was established.
[4] 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 the spring of 2008 was harvested for six years, so the final yield report would be "2013 Alfalfa Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

Table 18. Summary of Kentucky Roundup Ready alfalfa yield trials 2011-2024 (yield shown as a percentage of the mean of the commercial varieties in the test).

Variety	Proprietor	Variety Characteristics[1]							Lexington						Princeton			Quicksand	Mean[5] (# trials)
			Disease Resistance[2]						12[3,4]	15	16	20	21	22	11	13	15	14	
		FD	Bw	Fw	An	PRR	APH1	APH2	6yr[6]	6yr	5-yr	5-yr	4yr	3yr	5yr	4yr	2yr	2yr	
Alfagraze 300 RR	America's Alfalfa	3	HR	R	HR	HR	HR	–	95	96	100	99	90	96	93	99	93		96(9)
Alfagraze 600 RR	America's Alfalfa	6		R	HR	R	R	–		97							85	93	92(3)
Ameristand 405T RR	America's Alfalfa	4	HR	HR	HR	HR	HR	MR	100	100	89	102	101	96	97	100	98	93	98(10)
Ameristand 433T RR	America's Alfalfa	3	HR	R	R	HR	HR	–	92	98	100	94	101	100		95	96	107	98(9)
Ameristand 445TQ RR	America's Alfalfa	4	HR	HR	HR	HR	HR	–	105	104						100			103(3)
AphaTron RR	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	99							98			99(2)
Consistency 4.10 RR	Croplan Genetics	4	HR	HR	HR	HR	HR	–	101						102				102(2)
DKA-41-18 RR	Monsanto	4	HR	HR	HR	HR	HR	–	100						101		100		100(3)
DKA 44-16 RR	Monsanto	4	HR	HR	HR	HR	HR	–	104							100			102(2)
Stratica RR	Croplan Genetics	4	HR	HR	HR	HR	HR	–	97		105					96			99(3)
Tonnica RR	Crop Genetics	5	HR	HR	HR	HR	HR	–	105							101			103(2)
WL 355 RR	W-L Research	4	HR	HR	HR	HR	HR	–	99						102		110		104(3)
WL 356HQ RR	W-L Research	5	HR	HR	HR	HR	HR	HR	100	99						96			98(3)
WL 372HQ RR	W-L Research	5	HR	HR	HR	HR	HR	–	102							106			104(2)
428 RR	Allied Seed	4	HR	HR	HR	HR	HR	–		100	100					104		111	104(4)
438 RR	Allied Seed	4	HR	HR	HR	HR	HR	–				111	96	102					103(3)
54R02 RR	Pioneer	4	HR	HR	HR	HR	HR	–	97	107	96				104		102	97	101(6)
54VR10 RR	Pioneer	4	HR	HR	R	HR	HR						112	106					109(2)
55VR06 RR	Pioneer	5	HR	R	HR	HR	HR	MR		95								99	97(2)
55VR08 RR	Pioneer	5	–	HR	HR	HR	HR	HR		103	111						110		108(3)
6516R RR	NEXGROW	5	HR	–	HR	HR	HR	–	106							109			108(2)

[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 (more detailed disease and insect resistance ratings at www.alfalfa.org/pdf/2024_Alfalfa_Variety_Leaflet.pdf).
[3] Year trial was established.
[4] 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 Princeton trial planted in the spring of 2011 was harvested for five years, so the final yield report would be "2015 Alfalfa Report" archived in the UK Forage website (https://forages.ca.uky.edu).
[5] Mean only presented when respective variety was included in two or more trials.
[6] Number of years of data.

Notes

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