

1992 Kentucky Alfalfa Variety Test Report

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Introduction

Alfalfa (*Medicago sativa*) is historically 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. In 1990, 320,000 acres of alfalfa were produced in Kentucky, averaging 3.4 tons of dry matter yield per acre. At \$75 per ton, the value of this alfalfa to Kentucky farmers would be \$81.6 million. Variety selection should be the first step in establishing a stand of alfalfa because it can make the difference between selling 5 tons of hay per acre per year or 8 tons at \$75 per ton or it can make the difference between harvesting at stand for five or more years or losing it in the second year or even at establishment.

This report provides current yield data on varieties in the Kentucky Alfalfa Variety Trials as well as guidelines for selecting alfalfa varieties.

Considerations in Selecting an Alfalfa Variety

When choosing a variety, many factors must be considered. A desirable alfalfa variety will be winter hardy, resistant to diseases, certified, locally adapted, and persistent, in addition to high-yielding.

Winter Hardiness. Each variety has been assigned a fall dormancy rating ranging from 1 (very dormant) to 8 (non-dormant). Varieties with lower dormancy ratings are slower to start growing in the spring and stop growing sooner in the fall. Generally alfalfa should have a fall dormancy rating of 2-5 to perform well in Kentucky. Ratings of 6 and above are not hardy enough for Kentucky conditions.

Disease Resistance. In Kentucky, producers should use varieties that have at least an "MR" (moderate resistance) rating to four major diseases of alfalfa: Phytophthora root rot (PRR), anthracnose (An), bacterial wilt (BW) and fusarium wilt (FW).

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 topgrowth of infected plants appears stunted and yellow.

Anthracnose, also 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 that 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.

Other Diseases and Pests. Tests are currently under way to measure the effect of Aphanomyces root rot (ARR) on alfalfa yields in Kentucky. This disease is known to affect new seedlings but it is still unclear how ARR affects established alfalfa, and what impact, if any, this disease will have on alfalfa production in Kentucky.

Finally, there is no varietal resistance to Sclerotinia crown and stem rot and, although confusing claims exist, at this time no varieties have true genetic resistance to the alfalfa weevil and potato leafhopper. Purported resistance to potato leafhopper is actually resistance to yellowing, commonly called "hopper burn". Incorporating resistance to these and other pests of alfalfa is the goal of alfalfa breeders nationwide.

Certified Seed. Certified seed is your assurance of getting high quality, genetically true seed. All certified seed must come from fields that have passed requirements for field history and previous cropping. These fields are inspected twice and must conform to isolation regulations to prevent cross-pollination by other varieties. All certified seed must meet standards for germination, purity and freedom from contamination with other crop seed, weed seed and inert material. When purchasing seed be sure to look at the label, it will have all this information. The test date, which is related to germination, must be within the previous nine months.

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

Description of the Tests

Alfalfa variety tests were established at Lexington (1990 & 1991), Bowling Green (1990 & 1992), and Princeton (1990). The soils at all locations are well-suited to alfalfa in that they are well-drained silt loams (Maury, Pembroke and Crider at Lexington, Bowling Green and Princeton, respectively). Plots are 4 x 15 feet in a randomized complete block design with four replications. In each test, 20 pounds of seed per acre were planted into a prepared seedbed using a disk drill. Current management recommendations for Kentucky for soil fertility and weed and insect control were employed in all tests. Plots were harvested with a sickle-type forage plot harvester. First cuttings in the seedling year are delayed to allow the alfalfa to completely reach maturity as indicated by full bloom, which generally occurs about 80 days after seeding. Otherwise, harvests were taken when the alfalfa was in the bud to early-flower stage. Fresh weights were measured in the field and occasional subsamples were taken and weighed and oven dried and reweighed to determine percent dry matter.

Results

Weather data for Lexington, Bowling Green, and Princeton are presented in Table 1. A freeze occurred across the state in early April. Otherwise, temperatures at Lexington were below normal throughout the growing season while precipitation was above normal; at Bowling Green, temperatures were inconsistently above or below normal from April to September while precipitation was pretty much below normal for the entire season; and Princeton's temperatures were above normal for most of the growing season but precipitation was below normal from April to June and above normal from July to September. At all locations, September temperatures were exceptionally cool and October precipitation was well below normal.

Yield data (on an oven-dry basis) for all tests are reported in Tables 2-6. These tables list the varieties in order from highest to lowest total production (for the life of the test). Yields are given by cutting for 1992 and by year for each year of production.

Statistical analyses were performed on all alfalfa yield data to determine if the apparent differences are truly due to variety or just due to chance. The highest yielding variety in each column is marked with two asterisks (**). Those varieties not significantly different from the highest yielding variety are marked with one asterisk (*). To determine if two varieties are truly different, compare the difference between the two varieties to the Least Significant Difference (L.S.D.) at the bottom of the column. If the difference is equal to or greater than the L.S.D., the varieties are truly different when grown under the conditions at a given location. The Coefficient of Variation (C.V.), which is a measure of the variability of the data, is included for each column of means. Low variability is desirable and increased variability within a study results in higher C.V.'s and larger L.S.D.'s.

Discussion

In spite of the April freeze, which frosted back topgrowth at all locations, five cuttings were made from each established test in 1992. Due to the cool September and dry October, regrowth after the September harvest of all tests was not measurable and therefore no post-freezedown cuttings were made.

Yields of the 1990 seeding at Lexington declined visibly during 1992 due to a complex of crown rot organisms. Regrowth after the July 14 harvest was poor leading to further stand decline due to weed infestation. To promote maximum recovery, no harvest was taken between July 14 and September 10. In spite of the long harvest interval, stands of several varieties were rated visually as having less than 50% ground cover on September 29 (Table 2). Generally, those varieties with higher percent ground cover on September 29 were also the higher yielding varieties for the year, indicating that the crown rot fungi were probably affecting performance of varieties earlier than mid-summer when stand decline was observed. The reason for the sudden onset of crown rot fungi is unclear. However, the stresses of stand age along with late spring frosts could have weakened the stand allowing infection by crown rot fungi.

The Bowling Green tests are on soils that are naturally infested with both *Phytophthora* and *Aphanomyces* root rot pathogens. In contrast, the Lexington and

Princeton tests are on soils that are not infested with detectable levels of either pathogen. Performance of varieties common to all locations is being monitored to determine what effect these two pathogens have on yield and stand life. At present, it is not known whether ARR in particular has a negative effect on alfalfa plants and yield after establishment.

Table 7 summarizes information about proprietors, distributors, fall dormancy, disease resistance, and yield performance across years and locations for all the varieties currently included in the Kentucky Alfalfa Variety Tests. In this table, shaded areas indicate that the variety was not in that particular test (labelled at the top of the column) while clear blocks mean that the variety was in the test. Some varieties, such as Aggressor, Buffalo, Saranac AR and Wampr, have been sown in every test; others, however, such as 2833, DK-135, Legend, and Zenith, have been included in only one test. A double Asterisk (**) indicates that the variety was the highest yielding variety in the test for that year. A single asterisk (*) means that the variety was not significantly different from the highest yielding variety. It is best to choose a variety that has performed well over several years and locations as indicated by the asterisks. Make sure seed of the variety is properly labelled and will be available when needed.

Summary

Consistent production of high yields of alfalfa is the result of good variety selection along with the implementation of good management techniques. Soil fertility should be maintained at recommended levels based on soil tests, and pests such as weeds, alfalfa weevil, and potato leafhopper should be controlled using the appropriate cultural and/or chemical methods. Harvesting at the appropriate stage of maturity will produce three cuttings in the seedling year and four to five cuttings annually thereafter in Kentucky before mid-September. For further information about alfalfa management, refer to the University of Kentucky Extension publications listed in Table 8. These publications are available at the local county extension office.

TABLE 1. TEMPERATURE AND RAINFALL IN LEXINGTON, BOWLING GREEN, AND PRINCETON DURING 1992.

MONTH	LEXINGTON				BOWLING GREEN				PRINCETON			
	TEMPERATURE		RAINFALL		TEMPERATURE		RAINFALL		TEMPERATURE		RAINFALL	
	F	DEP.	INCHES	DEP.	F	DEP.	INCHES	DEP.	F	DEP.	INCHES	DEP.
JAN	35.4	1.0	3.63	0.06	37.8	3.9	2.27	-2.32	38.6	4.3	1.95	-2.58
FEB	41.4	3.2	1.95	-1.31	43.9	6.5	2.79	-1.19	46.3	8.0	3.16	-0.75
MAR	45.8	-1.4	4.85	0.02	48.3	2.0	5.99	0.47	49.7	2.5	5.94	0.89
APR	58.4	-0.1	2.11	-1.90	60.2	2.8	1.19	-2.99	61.5	3.0	1.57	-3.04
MAY	62.0	-4.5	4.68	0.45	64.0	-2.3	4.68	0.52	64.7	-1.9	3.37	-0.88
JUN	71.8	-2.7	7.72	3.47	74.2	-0.2	3.97	-0.56	74.7	0.1	3.13	-0.25
JUL	76.0	-2.1	10.29	5.34	79.4	1.2	3.29	-1.04	79.1	1.0	7.27	3.37
AUG	76.1	-0.8	4.72	0.76	78.5	1.6	2.19	-1.14	78.2	1.3	6.79	3.19
SEP	65.4	-5.1	3.54	0.26	66.7	-3.7	4.03	0.85	66.7	-3.8	4.51	1.21
OCT	60.0	1.0	0.65	-1.61	61.4	3.4	1.96	-0.86	62.2	3.2	1.96	-0.49

TEMPERATURES ARE IN DEGREES FAHRENHEIT.

DEP. IS DEPARTURE FROM THE 30-YEAR AVERAGE FOR THAT LOCATION.

**TABLE 2. DRY MATTER YIELDS (TONS/ACRE) AND PERCENT STAND RATINGS
OF ALFALFA VARIETIES SOWN 18 MAY 1990 AT LEXINGTON, KENTUCKY.**

VARIETY	1990	1991	1992 HARVESTS			1992	3-YR	STAND
	TOTAL	TOTAL	MAY11	JUN16	JUL14	TOTAL	TOTAL	SEP29
GARST630	2.66*	8.40*	1.47*	1.20*	0.44*	3.11*	14.17**	75.00**
DK-135	2.71*	8.45**	1.32*	1.10*	0.30	2.72*	13.88*	50.00
IMPACT	2.73*	8.21*	1.38*	1.14*	0.42*	2.94*	13.88*	68.75*
WAMPR	2.79**	8.19*	1.36*	1.17*	0.37	2.90*	13.87*	62.50*
ARROW	2.68*	8.16*	1.30	1.11*	0.42*	2.83*	13.67*	68.75*
DAWN	2.62*	7.69*	1.54**	1.24**	0.46*	3.24**	13.55*	68.75*
DART	2.62*	7.96*	1.35*	1.18*	0.42*	2.95*	13.52*	68.75*
AGGRESSOR	2.79**	7.51	1.34*	1.13*	0.58**	3.05*	13.35*	68.75*
MAJESTIC	2.60*	7.75*	1.29	1.14*	0.43*	2.86*	13.21	68.75*
B-54	2.62*	7.67*	1.34*	1.18*	0.39	2.91*	13.20	62.50*
APOLLO-SUPREME	2.76*	7.56	1.29	1.04	0.43*	2.76*	13.08	62.50*
TOP-TON	2.53*	7.77*	1.31	1.12*	0.34	2.77*	13.07	56.25*
BUFFALO	2.61*	7.65*	1.30	1.01	0.43*	2.75*	13.00	50.00
RESISTAR	2.51*	7.86*	1.27	1.04	0.31	2.62	12.99	43.75
ASSET	2.69*	7.45	1.31	1.09*	0.36	2.76*	12.89	62.50*
5472	2.69*	7.50	1.25	1.12*	0.33	2.70	12.88	56.25*
CIMARRON-VR	2.73*	7.79*	1.13	0.95	0.25	2.32	12.84	50.00
ALFAGRAZE	2.57*	7.31	1.48*	1.07*	0.39	2.94*	12.82	75.00**
ANSTAR	2.67*	7.66*	1.15	0.99	0.33	2.47	12.80	31.25
5373	2.60*	7.53	1.26	1.02	0.35	2.63	12.76	56.25*
SABRE	2.55*	7.42	1.35*	1.07*	0.34	2.77*	12.74	56.25*
EXCALIBUR	2.64*	7.71*	1.17	1.02	0.17	2.37	12.71	43.75
BELMONT	2.63*	7.45	1.21	1.06	0.30	2.58	12.65	50.00
WL320	2.70*	7.35	1.19	0.99	0.41*	2.58	12.64	56.25*
VOYAGER	2.57*	7.48	1.24	0.97	0.32	2.53	12.58	62.50*
WL317	2.68*	7.36	1.22	1.00	0.30	2.53	12.57	43.75
2852	2.71*	7.47	1.11	0.97	0.22	2.30	12.48	37.50
83T27	2.63*	7.40	1.14	0.95	0.34	2.44	12.47	50.00
SARANAC-AR	2.78*	7.13	1.18	0.86	0.16	2.19	12.10	31.25
89-128	2.75*	6.83	1.10	0.96	0.37	2.43	12.00	62.50*
WL225	2.56*	7.06	1.18	0.84	0.28	2.30	11.92	62.50*
LIBERTY	2.72*	6.90	1.06	0.91	0.27	2.24	11.86	43.75
VS481	2.50*	6.87	0.97	0.87	0.24	2.08	11.45	43.75
HAYMARK	2.36	6.70	1.05	0.85	0.17	2.08	11.14	43.75
MULTIKING-I	2.38	6.56	1.00	0.90	0.24	2.15	11.08	50.00
MEAN	2.64	7.54	1.25	1.04	0.34	2.62	12.80	55.54
C.V., %	8.80	7.78	13.31	13.28	37.11	14.63	7.62	26.36
L.S.D., 0.05	0.33	0.82	0.23	0.19	0.18	0.54	0.89	20.53

1990 TOTAL INCLUDES 2 HARVESTS DATED AUG03 AND SEP11.

1991 TOTAL INCLUDES 5 HARVESTS DATED MAY15, JUN18, JUL23, AUG27, AND OCT29.

**HIGHEST YIELDING VARIETY IN THE COLUMN.

* NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY.

TABLE 3. DRY MATTER YIELDS (TONS/ACRE) OF ALFALFA VARIETIES SOWN
11 APR 1991 AT LEXINGTON, KENTUCKY.

VARIETY	1991	1992 HARVESTS					1992	2-YR
	TOTAL	MAY11	JUN15	JUL14	AUG13	SEP17	TOTAL	TOTAL
2833	2.68*	1.47**	2.26**	1.06**	0.79*	1.13	6.70**	9.39**
A9004	2.52*	1.34*	1.77	0.93*	0.84*	1.17	6.05*	8.57*
UN-72	2.68*	1.20	1.82	0.93*	0.76*	1.10	5.81	8.50*
WL320	2.64*	0.97	1.62	1.01*	0.82*	1.37**	5.79	8.44*
APOLLO-SUPREME	2.76*	1.19	1.49	1.04*	0.79*	1.17	5.67	8.43*
ABI-9043	2.57*	1.18	1.53	1.05*	0.88*	1.21*	5.84	8.41*
AP-8843	2.64*	1.14	1.62	1.00*	0.75*	1.23*	5.73	8.37*
LEGACY	2.62*	1.09	1.80	0.95*	0.72*	1.13	5.68	8.30
CROWN-II	2.37*	1.32*	1.79	0.95*	0.71	1.10	5.87	8.24
GARST645	2.22	1.22	1.55	0.99*	1.04*	1.19*	5.98*	8.21
DK-125	2.51*	1.22	1.61	0.81	0.85*	1.07	5.56	8.06
WAMPR	2.57*	1.16	1.62	0.93*	0.60	1.10	5.41	7.97
AGGRESSOR	2.57*	0.97	1.43	0.97*	0.84*	1.18	5.39	7.96
VENTURE	2.49*	1.11	1.40	0.91*	0.93*	1.11	5.47	7.96
AGRIMATE	2.77**	1.19	1.46	0.76	0.71	0.99	5.11	7.88
DAWN	2.47*	1.12	1.58	0.95*	0.59	1.14	5.39	7.86
BUFFALO	2.41*	1.15	1.43	0.81	0.81*	1.13	5.33	7.75
LIBERTY	2.70*	1.12	1.52	0.77	0.58	0.97	4.95	7.65
WL322HQ	2.18	1.06	1.45	0.95*	0.87*	1.12	5.45	7.64
AS-BD	2.37*	1.04	1.67	0.85	0.60	1.06	5.22	7.60
AS-G	2.33*	1.07	1.46	0.88	0.76*	0.97	5.15	7.48
TERMINATOR	2.23	0.95	1.64	0.89	0.65	1.10	5.22	7.45
WL317	2.44*	0.99	1.45	0.82	0.62	1.11	4.99	7.43
SARANAC-AR	2.28*	1.06	1.48	0.75	0.54	0.95	4.78	7.05
MEAN	2.50	1.14	1.60	0.91	0.75	1.17	5.52	8.02
C.V., %	14.90	12.23	13.68	13.20	30.74	11.80	10.59	9.36
L.S.D., 0.05	0.52	0.20	0.31	0.17	0.33	0.19	0.82	1.06

1991 TOTAL INCLUDES 4 HARVESTS DATED JUL01, AUG05, SEP09, AND OCT31.

**HIGHEST YIELDING VARIETY IN THE COLUMN.

* NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY.

**TABLE 4. DRY MATTER YIELDS (TONS/ACRE) OF ALFALFA VARIETIES SOWN
13 APR 1990 AT BOWLING GREEN, KENTUCKY.**

VARIETY	1990	1991	1992 HARVESTS					1992	3-YR
	TOTAL	TOTAL	MAY14	JUN17	JUL15	AUG10	SEP11	TOTAL	TOTAL
AGGRESSOR	4.93*	7.24*	1.14*	1.37*	1.30*	0.52*	0.71*	5.05*	17.22**
MAGNUM-III	4.57*	7.30**	1.15*	1.27*	1.40**	0.63**	0.74**	5.19*	17.06*
DART	4.80*	6.96*	1.22*	1.32*	1.26	0.52*	0.73*	5.05*	16.81*
ASSET	5.09**	7.19*	1.01	1.16	1.18	0.55*	0.62	4.51	16.79*
ALFAGRAZE	4.50*	7.20*	1.30**	1.24	1.30*	0.57*	0.66*	5.07*	16.77*
WL225	4.93*	7.16*	0.98	1.27*	1.18	0.53*	0.64	4.61	16.70*
CROCKETT	4.78*	7.09*	0.98	1.27*	1.22	0.56*	0.65*	4.69	16.56*
B-54	4.86*	6.71	1.16*	1.38**	1.17	0.56*	0.70*	4.98*	16.55*
GARST630	4.50*	7.18*	1.02	1.23	1.31*	0.56*	0.74**	4.85*	16.53*
DAWN	4.43	6.79*	1.23*	1.37*	1.31*	0.59*	0.72*	5.21**	16.43*
MAJESTIC	4.69*	6.90*	1.17*	1.31*	1.21	0.41	0.65*	4.75	16.35*
5472	4.31	7.08*	1.16*	1.22	1.28*	0.57*	0.68*	4.90*	16.29*
APOLLO-SUPREME	4.55*	6.98*	1.06	1.20	1.23	0.55*	0.69*	4.73	16.26*
5373	4.54*	6.76*	1.10	1.32*	1.22	0.54*	0.71*	4.89*	16.18*
WL320	4.87*	6.98*	0.85	1.18*	1.14	0.50	0.65*	4.32	16.17*
SABRE	4.72*	6.76*	1.04	1.34*	1.16	0.52*	0.63	4.69	16.17*
ARROW	4.17	7.03*	1.21*	1.26*	1.21	0.50	0.63	4.80	16.00
89-128	4.49*	7.01*	0.88	1.24	1.16	0.51*	0.72*	4.50	15.99
CIMARRON-VR	4.95*	6.66	0.94	1.21	1.07	0.47	0.62	4.31	15.92
2852	4.79*	6.95*	0.80	1.12	1.11	0.44	0.64	4.11	15.85
VS633	4.52*	7.02*	0.82	1.23	1.09	0.51*	0.60	4.25	15.80
WAMPR	4.19	6.94*	1.01	1.23	1.19	0.53*	0.66*	4.63	15.77
WL317	4.58*	6.82*	0.87	1.17	1.17	0.49	0.62	4.32	15.71
BELMONT	4.43	6.60	0.99	1.27	1.13	0.49	0.65*	4.53	15.56
HAYMARK	4.64*	6.46	0.83	1.23	1.16	0.38	0.59	4.19	15.29
RESISTAR	4.04	6.66	1.02	1.30*	1.14	0.51*	0.58	4.56	15.25
LIBERTY	4.27	6.73	1.01	1.10	1.02	0.57*	0.54	4.24	15.24
ANSTAR	4.36	6.48	1.05	1.18	1.01	0.47	0.61	4.33	15.17
EXCALIBUR	4.79*	6.66	0.66	1.12	0.98	0.35	0.45	3.56	15.01
SARANAC-AR	4.42	6.55	0.87	1.19	0.95	0.44	0.54	4.00	14.97
MULTIKING-I	3.70	6.22	1.00	1.23	1.17	0.50	0.59	4.49	14.41
BUFFALO	3.88	6.26	0.88	1.11	1.14	0.51*	0.62	4.26	14.39
MEAN	4.54	6.85	1.01	1.24	1.17	0.51	0.64	4.58	15.97
C.V., %	9.81	5.94	12.30	7.49	8.65	17.57	10.83	5.91	5.36
L.S.D., 0.05	0.63	0.57	0.17	0.13	0.14	0.13	0.10	0.38	1.20

1990 TOTAL INCLUDES 4 HARVESTS DATED JUN26, AUG10, SEP06, AND OCT30.

1991 TOTAL INCLUDES 6 HARVESTS DATED MAY02, JUN05, JUL11, AUG16, SEP12, AND OCT30.

**HIGHEST YIELDING VARIETY IN THE COLUMN.

* NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY.

**TABLE 5. DRY MATTER YIELDS (TONS/ACRE) OF ALFALFA VARIETIES
SOWN 14 APR 1992 AT BOWLING GREEN, KENTUCKY.**

VARIETY	1992 HARVESTS			1992
	JUL15	AUG10	SEP11	TOTAL
APOLLO-SUPREME	3.15**	0.83*	0.82*	4.80**
LEGACY	2.86*	0.73*	0.88**	4.47*
MULTISTAR	2.81*	0.73*	0.85*	4.39*
89-30	2.99*	0.60*	0.78*	4.37*
MAGNUM-III	2.77*	0.76*	0.82*	4.36*
SARANAC-AR	2.90*	0.67*	0.75	4.33*
MULTIKING-I	2.91*	0.66*	0.73	4.30*
5373	2.64*	0.77*	0.83*	4.24*
CIMARRON-VR	2.70*	0.71*	0.81*	4.22*
2852	2.62*	0.71*	0.82*	4.15*
DK133	2.59*	0.73*	0.80*	4.12*
WEBFOOT-MPR	2.59*	0.69*	0.78*	4.06*
AGGRESSOR	2.37*	0.84**	0.82*	4.03*
ZENITH	2.57*	0.68*	0.78*	4.03*
STINE-9227	2.44*	0.68*	0.75	3.87
DOMINATOR	2.42*	0.66*	0.76	3.83
DAWN	2.56*	0.53	0.73	3.83
CF-EDGE	2.33*	0.67*	0.78*	3.78
CROWN-II	2.25	0.76*	0.75	3.76
RESISTAR	2.40*	0.63	0.71	3.75
WL322HQ	2.49*	0.59	0.62	3.70
ASSET	1.98	0.80*	0.83*	3.61
GARST630	1.98	0.79*	0.83*	3.60
A9008	2.01	0.78*	0.81*	3.60
ARC	2.26	0.60	0.69	3.55
FORTRESS	2.17	0.64	0.73	3.54
TRIDENT	2.03	0.72*	0.76	3.51
WAMPR	1.87	0.79*	0.83*	3.48
DART	1.95	0.75*	0.75	3.45
BUFFALO	2.11	0.61	0.68	3.40
5454	1.88	0.72*	0.79*	3.39
MEAN	2.43	0.70	0.77	3.92
C.V., %	24.28	18.92	10.18	14.92
L.S.D., 0.05	0.83	0.19	0.11	0.82

**HIGHEST YIELDING VARIETY IN THE COLUMN.

* NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY.

TABLE 6. DRY MATTER YIELDS (TONS/ACRE) OF ALFALFA VARIETIES
SOWN 22 AUG 1990 AT PRINCETON, KENTUCKY.

VARIETY	1991	1992 HARVESTS					1992	2-YR
	TOTAL	MAY14	JUN18	JUL16	AUG13	SEP10	TOTAL	TOTAL
RESISTAR	5.61**	1.20**	1.42*	1.13*	0.47*	0.40*	4.63**	10.24**
ASSET	5.38*	1.12*	1.47**	1.10*	0.39	0.39*	4.48*	9.86*
5472	5.14*	1.01*	1.35*	1.15*	0.49*	0.42*	4.41*	9.55*
GARST630	5.09*	0.99*	1.34*	1.15*	0.50**	0.48**	4.46*	9.55*
2852	4.98*	1.11*	1.34*	1.20**	0.46*	0.39*	4.49*	9.46*
WAMPR	5.00*	1.11*	1.40*	1.07*	0.44*	0.43*	4.44*	9.45*
ARROW	5.10*	1.04*	1.36*	1.10*	0.45*	0.40*	4.34*	9.44*
CIMARRON-VR	5.16*	1.01*	1.31*	1.12*	0.45*	0.36	4.24*	9.40*
ANSTAR	5.08*	1.11*	1.26*	1.13*	0.45*	0.36	4.32*	9.39*
AGGRESSOR	4.96*	0.99*	1.33*	1.16*	0.46*	0.45*	4.40*	9.36*
MAJESTIC	4.96*	1.02*	1.32*	1.02*	0.40	0.36	4.13*	9.09*
WL317	4.60	1.00*	1.28*	1.18*	0.50**	0.40*	4.36*	8.96*
WL225	4.96*	0.92	1.31*	1.01*	0.41	0.33	3.98*	8.94*
ALFAGRAZE	4.29	1.14*	1.39*	1.14*	0.46*	0.37*	4.50*	8.79*
5373	4.79*	0.89	1.28*	0.98	0.45*	0.39*	3.98*	8.77*
DART	4.71	0.98*	1.29*	1.02*	0.42	0.35	4.05*	8.76*
BUFFALO	4.67	0.95*	1.18	1.05*	0.46*	0.42*	4.08*	8.75*
DAWN	4.71	0.91	1.28*	1.06*	0.46*	0.32	4.03*	8.75*
HAYMARK	4.89*	0.82	1.22	1.04*	0.40	0.27	3.74	8.63
APOLLO-SUPREME	4.61	0.80	1.31*	1.05*	0.43*	0.40*	3.99*	8.60
SARANAC-AR	4.68	0.91	1.22	1.04*	0.36	0.26	3.80	8.48
WL320	4.77	0.68	1.13	1.04*	0.46*	0.32	3.63	8.40
83T27	4.33	0.81	1.24	1.07*	0.42	0.41*	3.95*	8.28
LEGEND	4.48	0.89	1.25	0.94	0.39	0.24	3.71	8.19
B-54	4.32	0.95*	1.26*	0.93	0.43*	0.31	3.87*	8.19
LIBERTY	4.15	0.97*	1.22	1.08*	0.41	0.32	4.01*	8.15
BELMONT	4.50	0.82	1.12	0.94	0.40	0.35	3.63	8.13
EXCALIBUR	4.55	0.67	1.06	0.91	0.35	0.19	3.17	7.72
SABRE	3.64	0.78	1.11	0.93	0.32	0.26	3.40	7.04
MEAN	4.76	0.95	1.28	1.06	0.43	0.36	4.08	8.84
C.V., %	12.44	20.92	13.49	14.76	12.86	23.64	14.01	12.26
L.S.D., 0.05	0.83	0.28	0.22	0.22	0.08	0.12	0.80	1.52

1991 TOTAL INCLUDES 5 HARVESTS DATED MAY02, JUN06, JUL10, AUG14, AND SEP11.

**HIGHEST YIELDING VARIETY IN THE COLUMN.

* NOT SIGNIFICANTLY DIFFERENT FROM THE HIGHEST YIELDING VARIETY.

Table 7. Characterization and performance across years and locations of alfalfa varieties 1992 Kentucky Alfalfa Variety Tests J.C. Henning, L.M. Lauriault, L.G. Brown, G.D. Lacefield P.C. Vincelli, and J.C. Parr - The University of Kentucky and Western Kentucky University Cooperating -			Variety Characteristics ¹					Lexington					Bowling Green ²				Princeton		
			Disease					1990 ⁴			1991		1990			1992	1990		
			Variety	Proprietor	Kentucky Distributor	FD ⁵	BW	FW	AN	PRR	90 ⁶	91	92	91	92	92	91	92	92
2833	Ciba-Geigy	Ciba-Geigy	3	HR	HR	HR	HR				*	**							
2852	Ciba-Geigy	Bardstown Mill/D.Arnold	4	HR	R	MR	R	*						*	*		*	*	*
5373	Pioneer	Pioneer	4	HR	HR	HR	MR	*						*	*	*	*	*	*
5454	Pioneer	Pioneer	4	R	HR	HR	HR												
5472	Pioneer	Pioneer	4	HR	HR	MR	MR	*							*	*		*	*
83T27	W-L Research	Geo. W. Hill, Louisville	5	R	R	MR	R	*											*
89-128	W-L Research	Geo. W. Hill, Louisville	5	R	HR	HR	HR	*						*	*				
89-30	W-L Research	Geo. W. Hill, Louisville	4	HR	HR	HR	HR									*			
A9004	FFR	Southern States	3	HR	HR	HR	HR				*	*							
A9008	FFR	Southern States	4	HR	HR	R	HR												
ABI-9043	ABI	Experimental	4	R	R	R	R				*								
Aggressor	America's Alfalfa	Scott Seed Co.	4	HR	HR	R	R	**		*	*			*	*	*	*	*	*
Agri-Mate	Union Seed Co.	ConAgra	4	R	R	HR	HR				**								
AlfaGraze	America's Alfalfa	Scott Seed/Southern States	2	MR	R	MR	LR	*		*				*	*	*			*
Anstar	FFR	Southern States	4	R	MR	R	-	*	*								*	*	*
AP-8843	ABI	Experimental	4	HR	HR	HR	HR				*								
Apollo Supreme	America's Alfalfa	Scott Seed Co.	4	HR	HR	R	R	*		*	*			*	*		**		*
Arc	Public	-	4	LR	MR	HR	-												
Arrow	America's Alfalfa	Scott Seed Co.	3	HR	HR	MR	HR	*	*	*					*			*	*
AS-BD	Allied Seed	Experimental	-	-	-	-	-				*								
AS-G	Allied Seed	Experimental	-	-	-	-	-				*								
Asset	Vista	Allied Seed Coop.	4	HR	R	R	HR	*		*				**	*			*	*
B-54	Allied Seed	Allied Seed Coop.	4	-	-	-	R	*	*	*				*		*			*
Belmont	Great Plains	Green Seed Co.	4	HR	HR	HR	R	*											
Buffalo	Public	-	4	R	MR	S	S	*	*	*	*								*
Cimarron VR	Great Plains	Green Seed Co.	5	HR	HR	R	R	*	*					*		*		*	*
CF Edge	Caverndale Farms	Caverndale Farms	4	R	R	HR	R												
Crockett	Northrup King	Northrup King	5	HR	MR	HR	R							*	*				
Crown II	Cargill	Cargill	3	HR	HR	HR	HR				*								
Dart	AgriPro	AgriPro	3	HR	HR	R	HR	*	*	*				*	*	*			*
Dawn	AgriPro	AgriPro	3	R	HR	R	R	*	*	**	*				*	**			*

DK-125	Dekalb Plant Gen.	Dekalb Plant Genetics	3	HR	R	HR	R				*									
DK-133	Dekalb Plant Gen.	Dekalb Plant Genetics	4	HR	HR	HR	HR												*	
DK-135	DeKalb Plant Gen.	DeKalb Plant Genetics	3	R	R	MR	MR	*	**	*										
Dominator	ABI	AgriPro	4	HR	HR	HR	HR													
Excalibur	Vista	Agway	4	R	HR	MR	LR	*	*				*							
Fortress	Northrup King	Northrup King	3	R	R	R	HR													
Garst 630	Garst Seed Co.	Garst Seed Co.	3	HR	HR	MR	R	*	*	*			*	*	*			*	*	
Garst 645	Garst Seed Co.	Garst Seed Co.	4	HR	R	HR	HR					*								
Haymark	FFR	Southern States	3	R	HR	HR	R						*					*		
Impact	Peterson Seed	-	3	HR	HR	MR	R	*	*	*										
Legacy	Genesis Group	Green Seed Co.	4	R	R	R	R				*							*		
Legend	Vista	Scott Seed/Allied Seed	4	HR	HR	HR	HR													
Liberty	Public	-	5	S	-	R	S	*			*									*
Magnum III	Dairyland	Dairyland	4	R	R	MR	R						*	**	*	*				
Majestic	Allied Seed	Scott Seed/Allied Seed	4	HR	HR	HR	R	*	*	*			*	*				*	*	
MultiKing I	Northrup King	Northrup King	3	HR	MR	HR	R											*		
Multistar	FFR	Southern States	3	HR	HR	HR	HR											*		
Resistar	FFR	Southern States	4	HR	HR	HR	HR	*	*										**	**
Sabre	Allied Seed	Scott Seed/Allied Seed	4	HR	HR	HR	R	*		*			*	*						
Saranac AR	Public	-	4	MR	R	HR	LR	*			*							*		
Stine 9227	Peterson Seed	-	4	HR	HR	HR	HR													
Terminator	Plant Genetics	Plant Genetics	4	HR	HR	R	R													
Top Ton	Super Crost	Ky. Nutrition Service	4	HR	HR	HR	R	*	*	*										
Trident	ABI	AgriPro	4	R	HR	MR	HR													
Un 72	Union Seed Co.	Union Seed Co.	3	R	R	HR	HR					*								
Venture	ABI	ABI	4	HR	R	HR	HR					*								
Voyager	Bio-Plant Research	Caverndale Farms	4	HR	R	MR	R	*												
VS 481	Vista	Experimental	5	MR	HR	HR	MR	*												
VS 633	Vista	Experimental	4	R	HR	R	R						*	*						
Wampr	FFR	Southern States	4	R	R	R	R	**	*	*	*			*				*	*	
Webfoot MPR	Mich. St. Univ.	Great Lakes Hybrids	3	HR	HR	HR	HR											*		
WL 225	W-L Research	Miles Farm Service	2	HR	HR	MR	HR	*					*	*				*	*	
WL 317	W-L Research	Miles Farm Service	3	HR	HR	R	HR	*			*		*	*						*
WL 320	W-L Research	Miles Farm Service	4	R	HR	MR	R	*			*		*	*						
WL 322 HQ	W-L Research	Miles Farm Service	4	HR	HR	MR	R													
Zenith	Garst Seed Co.	Garst Seed Co.	3	HR	HR	HR	HR											*		

¹ Variety Characteristics

³ Disease Resistance

⁴ Establishment Year

⁵ Fall Dormancy

⁶ Harvest Year

FD Fall Dormancy

S Susceptible

1 Norseman

☐ Variety was not in the test

BW Bacterial Wilt	LR Low Resistance	2 Vernal	** Highest yielding variety in the test for the year
FW Fusarium Wilt	MR Moderate Resistance	3 Ranger	* Not significantly different from the highest yielding variety
An Anthracnose	R Resistance	4 Saranac	
PRR Phytophthora Root Rot	HR High Resistance	5 DuPuits	

² The Bowling Green tests are on soils infested with Phytophthora and Aphanomyces root rot.

Table 8. University of Kentucky agricultural extension publications related to alfalfa management.

<u>Publication</u>	<u>Title</u>
AGR-76	Alfalfa: The queen of the forage crops
AGR-107	Alfalfa: Quality means profits
AGR-64	Establishing forage crops
-----	Seed tags: What they reveal
AGR-90	Inoculation of forage legumes
AGR-18	Grain and forage crop guide for Kentucky
AGR-1	1992-1993 Lime and fertilizer recommendations
AGR-148	Weed control strategies for alfalfa and other forage legume crops
ENT-17 (in)	1993 Insect management recommendations for field crops and livestock
PPA-28	Alfalfa varieties: Relative disease resistance and winter hardiness
AGR-137	Alfalfa hay: Quality makes the difference
ID-97	Grazing alfalfa

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