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AGRONOMY NOTES

SUMMARY OF ALFALFA VARIETY TRIALS IN KENTUCKY (1971-1983)
Roy E. Sigafus

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This note shows comparable yields for 22 out of 100 alfalfa varieties which have been tested in at least three trials at Lexington or Princeton since 1971. Varieties not listed include many taken off the market, varieties known to be unsuited to Kentucky, or those which need further testing.

Yield results from seven separate trials are given in Table 1 as average annual dry matter yields (T/A) and as % relative yield (RY) as compared to Vernal. Vernal was used in each trial as a standard check and on the soils of limestone origin at Lexington and Princeton averaged over 5 tons dry matter per acre per year. Tests were harvested as for hay a minimum of 4 years and in some cases 6 years. As can be seen by the yields reported, several varieties have consistently outyielded Vernal.

Some newer varieties have been bred for high yield potential and can outyield Vernal simply because they start growth earlier in the spring and recover more rapidly after harvest. However, in time, many of these superior varieties may be found unsuited to Kentucky. The climate of Kentucky is less than ideal for alfalfa, but growers have achieved high yield levels. Diseases probably cause the death of more alfalfa plants than all other stresses together. Especially troublesome is a combination of high humidities and high temperatures which favor disease infection. Breeders are incorporating multiple disease resistance in newer alfalfa varieties with some success, including resistance to Bacterial wilt, Anthracnose, Phytophthora root rot, Fusarium wilt, and various foliar diseases. Anthracnose may be the single most damaging disease in Kentucky, but varieties with anthracnose resistance do not always outyield others without it. A fact not commonly understood is that there are several other lethal diseases for which resistance is not presently available, such as Phoma, Phythium, Rhizoctonia, and Schlerotinia.

Yield results in this note should be used only as a starting point in variety selection. There are many on-farm demonstration seedings made by extension workers throughout the state. These side-by-side comparisons and the experience and observations of successful alfalfa producers in the local community may be of more value than good performance in distant variety trials in making a choice for a new seeding.

Since very favorable environmental conditions existed at both Lexington and Princeton from 1980 through 1982, care should be taken in interpreting performance ranking for the two tests seeded in 1980 since these tests were not subjected to excess soil moisture and disease stresses. Although such conditions existed in May and June of 1983, yields for 1983 did not reflect this exposure. Eight varieties seeded in other tests are included in Table 1. Relative yields as % of Vernal are given for the other twelve varieties seeded in only the 1980 trials:

WL-220	107	Cimarron	106	Hi-phy	106	Liberty	106
Riley	106	G-7730	104	Vancor	104	Voris A-77	104
DeKalb-130	103	Phytor	102	Pioneer-555	102	Baker	96

Three additional varieties included only in the 1971 seedings are Kanza 90%, Roamer 79%, and Rambler 78% of Vernal. Roamer and Rambler are creepers and may have yielded better if managed for pasture. These are mentioned because seed companies are starting to promote creepers. Kanza was developed for aphid resistance in Kansas and ranked 22nd at Lexington and 23rd at Princeton in the 30-entry 1971 seeding.

Additional information about alfalfa varieties is available in the annual Alfalfa Variety Trials Progress Report.

Table 1. Average annual yields (T/A) and relative yields (RY)¹ of alfalfa varieties in three or more trials in stands lasting 4 to 6 years — Lexington and Princeton, Ky. (1971-1983)

Location	Lexington		Princeton		Lexington		Lexington		Princeton		Lexington		Princeton	
	1971		1971		1976		1977		1977		1980		1980	
Year Seeded	1975		1974		1981		1982		1982		1983		1983	
Last Yr. Harv.	T/A	RY	T/A	RY	T/A	RY	T/A	RY	T/A	RY	T/A	RY	T/A	RY
Arc					6.42	116	5.78	104	4.95	97				
Saranac AR							5.68	102	5.23	109	6.47	101	6.53	112
Apollo					5.85	106	5.44	98	5.05	105	6.73	105	6.57	113
Olympic					6.18	112	5.69	102	4.90	102				
Weevlchek	4.36	104	4.73	105	6.13	111	5.27	94	5.12	106	6.61	103	6.39	110
Classic							5.56	100	5.06	106	6.32	99	6.39	110
Gladiator							5.50	98	4.99	104	5.91	105	6.33	109
Vanguard					5.97	108	5.50	98	5.02	104				
Iroquois	4.32	102	4.62	103			5.60	100	4.75	99				
Thor	4.23	100	4.60	102	5.97	108	5.18	93	4.78	100				
Williamsburg	4.14	98	4.77	106			5.44	97	4.91	102				
VERNAL	4.24	100	4.51	100	5.52	100	5.59	100	4.80	100	6.40	100	5.81	100
Saranac	4.04	96	4.47	99			5.73	104	4.72	98				
Tempo							5.29	95	5.03	105	5.93	93	6.05	104
Buffalo	3.99	95	4.25	94	5.51	100	5.18	93	4.68	98	6.30	98	6.31	108
Narragansett	4.03	95	4.56	101	5.54	100	5.24	94	4.91	102				
Team	3.79	90	4.93	110			5.21	93	4.82	100				
Agate					5.52	100	5.14	92	4.78	99				
Cody	3.72	88	4.50	100	5.58	101	5.37	96	4.87	101				
Ramsey					5.46	99	5.18	93	4.82	100				
Victoria					5.43	98	5.28	98	4.70	98				
530					5.57	101	5.36	96	4.48	93				

¹ Vernal was used as the standard variety. Yield of all other varieties are expressed as the percentage they yielded as compared to Vernal.