

Alfalfa Variety Testing

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Introduction

New varieties of alfalfa are released by commercial breeding companies each year. The Iowa State University forage breeding program, in conjunction with the Iowa Crop Improvement Association, tests commercially available varieties at five locations in Iowa, including at the McNay Research Farm. Funding to conduct these tests is provided by entrants who pay a fee to have their varieties included. Our tests provide an unbiased comparison among cultivars deemed to be adapted to particular regions of the state by the companies.

Materials and Methods

Variety trials were planted in April 1997 and 1999 with a drill at a rate of 18 lb/A. Each variety was replicated four times in a randomized complete block design. Plot size was 3' x 12'. The tests were harvested three times in the establishment year, and four times in subsequent years using a sickle bar harvester. Fertility was maintained according to ISU soil test recommendations. The test was not sprayed for potato leafhoppers.

Results and Discussion

Forage yields (in tons of dry matter per acre) were lower in 2000 than in 1999 (Table 1); the 1999 test yielded less than the 1997 test (Tables 1 and 2). When choosing varieties, several traits are important, including high yield, maintenance of yielding ability through the later years of a trial, and disease resistance. More complete information on the alfalfa variety trials, including seed sources and disease resistance profiles are available in ISU Extension Bulletin AG-84 or online at:

<http://www.public.iastate.edu/~brummer/extension.html>.

Acknowledgments

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Table 1. Alfalfa variety test yields.

Variety	Yield (tons dry matter/acre)				
	1997	1998	1999	2000	Avg ^a
WL324	1.73	6.97	7.42	6.62	7.01
Depend +EV	1.70	7.09	7.08	6.76	6.98
Choice	1.59	7.00	7.18	6.61	6.93
5312	1.50	6.62	7.07	7.09	6.93
Feast	1.57	6.69	7.27	6.81	6.92
DK140	1.62	6.97	7.09	6.70	6.92
Demand	1.45	6.48	7.12	7.07	6.89
5454	1.48	6.51	7.10	6.98	6.86
2444	1.68	6.48	7.35	6.65	6.83
WL325HQ	1.70	6.84	7.31	6.30	6.82
620	1.60	6.62	6.74	7.02	6.80
DK141	1.69	6.47	7.24	6.57	6.76
AmeriGraze					
401+Z	1.57	6.73	6.99	6.39	6.70
TMFGeneration	1.65	6.81	7.01	6.29	6.70
DK127	1.56	6.79	6.80	6.52	6.70
Innovator +Z	1.69	6.23	6.91	6.89	6.68
Complete	1.33	6.59	6.73	6.37	6.56
DK142	1.48	6.63	6.51	6.41	6.52
DK143	1.47	6.37	6.72	6.22	6.44
645	1.51	6.00	6.93	6.33	6.42
5347LH	1.61	6.45	6.70	5.98	6.38
Interceptor	1.35	6.39	6.39	6.02	6.27
Vernal	1.41	5.80	6.36	6.37	6.18
AmeriGuard					
301	1.45	6.23	6.45	5.79	6.16
Mean	1.55	6.58	6.94	6.54	6.69
LSD(5%)	0.25	0.66	0.67	0.69	0.34

^aAverage of 1998, 1999, and 2000 only.

Table 2. Alfalfa variety test yields.

Variety	Yield (tons dry matter/acre)	
		2000
DK131HG		6.05
53Q60		6.01
54H69		5.88
TMF4464		5.87
TMF4355LH		5.70
Vernal		5.65
6310		5.62
5454		5.45
Mean		5.78
LSD(5%)		0.56