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### Entrants in 2004 Kansas Alfalfa Performance Tests.

AgVenture Seeds, Inc. (AV) Kentland, IN 888-999-0859 agventure.com	Donley Seed Co. (Donley) New Albany, IN 812-941-9822	Monsanto Seed (Monsanto) St. Louis, MO 800-833-5252 monsanto.com	Sharp Bros. Seed Company (Sharp) Healy, KS 800-462-8483 sharpseed.com
Allied Seed Cooperative (Allied) Tangent, OR 866-445-3107 alliedseed.com	Garst Seed Co. (Garst) Slater, IA 800-831-6630 garstseed.com	Mycogen Seeds (Mycogen) Indianapolis, IN 1-800-MYCOGEN mycogen.com	Star Seed, Inc. (Star) Beloit, KS 800-782-7611 gostarseed.com
America's Alfalfa (America's Alfalfa) Princeton, IL 800-873-2532 americasalfalfa.com	Great Plains Research Co. (Great Plains) Apex, NC 919-362-1583 greatplainsresearch.com	NC+ Hybrids (NC+) Lincoln, NE 800-279-7999 nc-plus.com	Syngenta Seeds, Inc. (NK) Golden Valley, MN 763-593-7324 nk-us.com
Bio-Plant Research (BioPlant) Camp Point, IL 800-593-7708	Hyttest Seeds (Hyttest) Shiremantown, PA 717-737-4529	PGI Alfalfa, Inc. (PGI) Oxnard, CA 866-744-5710	Taylor Seed Farms, Inc. (Taylor) White Cloud, KS 800-742-7473 taylorseedfarms.com
Channel Bio Corp. (Channel) Kentland, IN 800-369-8218 channelbio.com	J.C. Robinson Seed Co. (Golden Harvest) Waterloo, NE 800-228-9906 goldenharvestseeds.com	Pioneer, A DuPont Co. (Pioneer) Amarillo, TX 800-258-5604 pioneer.com	United Suppliers Inc. (US Seeds) Eldora, IA 877-714-4503 uniteds.com
CroPlan Genetics (CroPlan Genetics) Shoreview, MN 651-765-5713 croplangenetics.com	J.R. Simplot Company (Simplot) Boise, ID 208-672-2732 simplot.com	Power Seeds, Inc. (Power) Fraserville, Ontario Can 705-944-5600	W-L Research, Inc. (W-L Research) Madison, WI 608-240-0630
Dairyland Seed Co. (Dairyland) West Bend, WI 800-236-0163 dairylandseed.com	Midwest Seed Genetics (Midwest Seed) Carroll, IA 800-369-8218 midwestseed.com	Producers Hybrids (Producers) Battle Creek, NE 402-675-2975 producershybrids.com	

## 2004 PERFORMANCE TESTS

### Objectives and Procedures

The Kansas Agricultural Experiment Station established an official alfalfa testing program in 1980 to provide Kansas growers with unbiased performance comparisons of alfalfa varieties marketed in the state. Each year, private companies are asked to enter varieties voluntarily at the locations slated for establishment that year. Announcements and entry forms are mailed to private companies in June for entry in fall-seeded tests. Companies enter varieties of their choice and pay entry fees to cover part of the costs of conducting the tests. Most tests are planted in mid-August or September, but the Southeast Kansas test usually is planted in the spring. Individual tests are conducted for a minimum of 3 years. New tests typically are established during the final production year of the previous test, or more frequently if there is enough interest.

Descriptive information is presented with the results for each test. This information, including soil type, establishment methods, fertilization, pest control, irrigation, harvest dates, and growing conditions unique to that location, can help explain test and/or variety performance.

Forage yields were estimated by harvesting four replications of each variety with a plot harvester. The amount of forage produced from a specific area (35-80 ft<sup>2</sup>) was weighed, and a subsample was taken to determine moisture content. This information was used to convert the plot weights to tons of dry matter per acre for each cutting, the season total, and the total for each previous season, as presented in Tables 1 through 7. The forage yield over the lifetime of a particular test is presented as the total tons of dry matter produced per acre, as the total tons of 15% moisture hay, and as a percentage of the test average.

Each table is separated into three sections. The first lists released cultivars that are generally available on the seed market or soon will be. The second section includes experimental cultivars that were entered in the test before being released for sale. These experimental lines often represent an earlier generation of seed than that used for the released cultivars. The third section includes summary statistics unique to that test.

At the bottom of each column, the Least Significant Difference (LSD) is listed at the 0.05 and 0.20 levels. These values indicate how large a difference is needed to be confident that one variety is superior to another. Differences between varieties that are equal to or greater than the 0.05 LSD have only a 1 in 20 chance of being due to chance or error. Differences equal to or greater than the 0.20 LSD have a 1 in 5 chance of being caused by chance or error.

The Coefficient of Variability (CV) provides an estimate of the consistency of the results of a particular test. In these tests, CVs less than 10% generally indicate reliable, uniform data, whereas CVs of 10 to 15% are not uncommon and generally indicate that the data are acceptable for rough comparisons. Tests with CVs greater than 15% may still be useful, but variety comparisons lack precision.

The Mean Coefficient of Variability (MCV) is similar to the CV in that it serves as an indicator of test precision. The MCV is calculated by dividing the 0.05 LSD by the test mean (average) and multiplying by 100. The MCV reveals the percentage difference required to detect differences between varieties with 95% confidence. Many alfalfa breeders and testers agree that tests with MCV values greater than 10% are of little benefit.

### Variety Characterization

For variety selection, producers should consider the performance of a variety in each of the current tests in which it appears, its performance over time and locations relative to familiar or check varieties, and the disease and insect resistance characteristics that are potentially important in their situation.

Tables 1 through 7 contain updated yield data from individual tests currently in progress. First-season yields for a spring-planted test are often more variable than yields in subsequent years. Season totals are important, but yield distribution during the season may differ among varieties. Examine yields from individual cuttings to determine if differences in yield distribution exist. Yield totals over many years provide the best measure of variety performance over time.

Table 8 provides disease and insect-resistance ratings. These ratings were obtained primarily from the annual "Winter Survival, Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties" pamphlet published by the National Alfalfa Alliance. That report summarizes information submitted by developers of alfalfa varieties as part of the variety registration process. The Association of Official Seed Certifying Agencies (AOSCA) National Alfalfa Variety Review Board (NAVRB) reviewed the ratings before they were published. Companies submitting varieties for the tests provided ratings for some unregistered varieties.

**Table 1. Northeast Kansas, Topeka Alfalfa Performance Test, Seeded September 9, 2003.**

Kansas River Valley Experiment Field, Eudora silt loam					A light infestation of alfalfa weevils was present before the first cutting, but no control measures were required. Rainfall distribution was favorable throughout the growing season.					
18 lb. seed/acre										
Plots 3'x20'; 3'x20' harvested										
36-92-216 lb/a of N-P-K before planting										
<b>Forage Yield</b>										
<b>tons/acre</b>										
<b>Dry Matter</b>										
<b>NAME</b>	<b>2004</b>				<b>2004</b>	<b>Total</b>	<b>Total, 15% Moist.</b>	<b>Total, % of Mean</b>		
	<b>5-6</b>	<b>6-9</b>	<b>7-14</b>	<b>9-2</b>						
<b>RELEASED CULTIVARS</b>										
Power 4.2	2.01	1.89	1.64	1.67	7.21	7.21	8.48	105		
Notice II	2.09	1.79	1.60	1.70	7.18	7.18	8.45	105		
6400HT	1.98	1.83	1.65	1.64	7.10	7.10	8.35	104		
Perry	2.01	1.77	1.56	1.64	6.98	6.98	8.22	102		
4A421	1.82	1.80	1.58	1.70	6.90	6.90	8.12	101		
Phirst	1.88	1.77	1.52	1.69	6.86	6.86	8.07	100		
6530	1.78	1.79	1.57	1.63	6.76	6.76	7.96	99		
Reward II	1.77	1.73	1.51	1.75	6.75	6.75	7.95	99		
WL 357 HQ	1.90	1.74	1.52	1.54	6.71	6.71	7.89	98		
Journey 204 Hybrid Alfalfa	1.81	1.79	1.49	1.61	6.70	6.70	7.88	98		
HybriForce-420/wet	1.80	1.78	1.55	1.58	6.70	6.70	7.88	98		
Kanza	1.84	1.73	1.50	1.60	6.67	6.67	7.85	97		
<b>SUMMARY STATISTICS</b>										
Average	1.86	1.78	1.56	1.65	6.85	6.85	8.06	100		
LSD(0.05)	0.28	NS	NS	NS	NS	NS	NS	NS		
LSD(0.20)	0.18	0.10	0.09	0.10	0.47	0.47	0.55	7		
CV(%)	10.46	6.26	5.94	6.32	3.86	3.86	3.86	4		
MCV(%)	15.02	NS	NS	NS	NS	NS	NS	NS		

**Table 2. Southeast Kansas, Mound Valley Alfalfa Performance Test, Seeded May 9, 2001.**

Southeast Ag. Research Center, Parsons silty clay loam  
 15 lb. seed/acre  
 Plots 5'x30'; 3'x20' harvested  
 20-50-200 lb/a of N-P-K on March 10, 2004

Spring rains delayed the first cutting slightly. The third cutting was accelerated because of a blister beetle infestation. Dry weather inhibited regrowth after the fourth harvest.

NAME	Forage Yield									Total, 15% Moist.	Total, % of Mean
	tons/acre										
	Dry Matter										
	2004				2004	2003	2002	2001	Total		
5-10	6-8	7-12	8-8								
<b>RELEASED CULTIVARS</b>											
6420	2.32	1.13	1.32	1.04	5.81	5.23	5.36	1.21	17.61	20.72	107
HybriForce-400	2.15	1.12	1.40	1.05	5.72	5.08	5.42	1.34	17.56	20.65	107
Dagger+EV	1.97	1.07	1.21	0.91	5.16	5.19	5.08	1.29	16.72	19.67	101
Perry	2.29	1.02	1.37	0.99	5.67	4.83	5.03	1.07	16.60	19.53	101
5-Star	1.98	1.14	1.18	1.05	5.35	5.07	4.89	1.17	16.48	19.39	100
WL 327	2.07	1.12	1.24	0.98	5.40	5.26	4.70	1.12	16.48	19.38	100
Rebound 4.2	2.09	1.10	1.31	0.92	5.41	5.11	4.80	1.02	16.34	19.23	99
400SCL	2.05	0.98	1.23	0.90	5.15	5.12	4.94	1.04	16.25	19.12	99
Pioneer 54V54	2.04	1.04	1.17	0.98	5.23	4.96	5.04	1.01	16.24	19.11	99
WL 342	2.20	1.00	1.21	0.96	5.37	4.99	4.77	1.08	16.21	19.07	98
Pawnee	1.76	1.04	1.25	0.86	4.91	5.14	4.98	1.13	16.16	19.01	98
350	1.85	0.96	1.30	0.97	5.09	4.86	4.82	1.12	15.89	18.70	96
Kanza	1.75	1.06	1.26	1.02	5.10	4.83	4.70	1.25	15.88	18.68	96
<b>SUMMARY STATISTICS</b>											
Average	2.04	1.06	1.27	0.97	5.34	5.04	4.96	1.14	16.48	19.38	100
LSD(0.05)	0.26	NS	NS	NS	0.71	0.27	NS	0.15	1.66	1.96	10
LSD(0.20)	0.17	0.08	0.12	0.09	0.46	0.21	0.32	0.09	1.07	1.26	6
CV(%)	8.90	8.68	9.80	8.68	4.74	4.45	6.94	8.96	3.00	3.00	3
MCV(%)	12.77	NS	NS	NS	13.30	5.32	NS	12.85	10.09	10.09	10

**Table 3. North Central Kansas, Belleville Alfalfa Performance Test, Seeded August 22, 2001.**

NAME	Forage Yield								Total, 15% Moist.	Total, % of Mean
	tons/acre									
	Dry Matter									
	2004				2004	2003	2002	Total		
5-20	6-14	7-14	8-11							
<b>RELEASED CULTIVARS</b>										
Abundance	2.50	1.64	1.51	0.37	6.02	5.53	4.16	15.71	18.48	107
Dagger+EV	2.51	1.60	1.71	0.40	6.22	5.35	3.81	15.38	18.09	105
645-II	2.41	1.48	1.35	0.38	5.61	5.58	4.16	15.35	18.06	105
GH 750	2.33	1.24	1.54	0.31	5.41	5.81	3.88	15.10	17.76	103
Feast+EV	2.54	1.26	1.49	0.33	5.62	5.32	4.07	15.01	17.66	103
DKA42-15	2.51	1.34	1.49	0.39	5.72	5.37	3.88	14.97	17.62	102
Pawnee	2.28	1.40	1.47	0.39	5.54	4.95	4.48	14.97	17.61	102
US A4230	2.41	1.32	1.54	0.34	5.61	5.44	3.91	14.96	17.60	102
A 30-06	2.44	1.25	1.44	0.38	5.51	5.45	3.98	14.94	17.58	102
Journey 204 Hybrid Alfalfa	2.53	1.40	1.58	0.39	5.91	5.21	3.81	14.93	17.56	102
Pioneer 54Q53	2.49	1.31	1.63	0.40	5.84	5.29	3.79	14.92	17.55	102
Macon	2.45	1.53	1.48	0.37	5.82	5.31	3.74	14.87	17.50	102
6410	2.41	1.29	1.44	0.34	5.48	5.35	3.92	14.75	17.36	101
Enhancer	2.27	1.22	1.43	0.38	5.31	5.38	3.94	14.63	17.22	100
Abilene+Z	2.54	1.25	1.51	0.35	5.66	5.02	3.94	14.62	17.19	100
Perry	2.62	1.37	1.39	0.41	5.79	5.68	3.13	14.60	17.18	100
FK421	2.53	1.23	1.45	0.27	5.48	5.35	3.77	14.60	17.17	100
Lightning II	2.30	1.22	1.42	0.41	5.34	5.35	3.86	14.55	17.12	100
Geneva	2.44	1.30	1.35	0.39	5.48	5.05	3.86	14.39	16.93	98
Ameristand 403T	2.42	1.36	1.28	0.25	5.31	5.04	3.91	14.26	16.77	97
HybriForce-400	2.30	1.27	1.30	0.40	5.26	4.85	4.09	14.20	16.71	97
Reliance	2.32	1.42	1.44	0.35	5.53	4.56	3.94	14.03	16.50	96
Kanza	2.50	1.61	1.46	0.35	5.92	4.40	3.17	13.49	15.87	92
<b>EXPERIMENTAL STRAINS</b>										
ZC9840A	2.62	1.55	1.55	0.36	6.07	6.02	4.16	16.25	19.12	111
ZG9941	2.62	1.18	1.55	0.33	5.68	5.31	3.81	14.80	17.41	101
ZC9851A	2.65	1.37	1.52	0.39	5.94	4.74	4.07	14.75	17.35	101
ZG9840	2.47	1.27	1.37	0.27	5.38	5.39	3.95	14.72	17.32	101
ZC9940A	2.63	1.25	1.40	0.37	5.65	4.98	3.78	14.41	16.96	99
ZC9950A	2.54	1.24	1.43	0.33	5.53	5.20	3.65	14.38	16.92	98
4M72	2.25	1.09	1.43	0.41	5.19	5.36	3.74	14.29	16.81	98
ZC9941A	2.52	1.19	1.32	0.42	5.44	4.92	3.88	14.24	16.76	97
ZC9841A	2.42	1.26	1.36	0.42	5.46	4.94	3.70	14.10	16.59	96
5M87	2.26	1.21	1.52	0.36	5.34	5.27	3.47	14.08	16.56	96
ZC9942A	2.47	1.26	1.32	0.27	5.31	4.96	3.73	14.00	16.48	96
ZC9842A	2.42	1.35	1.38	0.38	5.53	4.78	3.35	13.66	16.07	93
ZC9953A	2.20	1.15	1.43	0.31	5.08	4.51	3.85	13.44	15.82	92
<b>SUMMARY STATISTICS</b>										
Average	2.45	1.32	1.45	0.36	5.58	5.20	3.84	14.62	17.20	100
LSD(0.05)	0.27	0.17	0.21	NS	0.77	0.43	0.41	1.70	2.00	12
LSD(0.20)	0.17	0.11	0.14	0.07	0.50	0.34	0.27	1.11	1.30	8
CV(%)	7.76	9.42	10.44	22.61	5.10	7.08	7.62	3.75	3.75	4
MCV(%)	10.88	13.21	14.63	NS	13.75	8.31	10.68	11.62	11.62	12

**Table 4. South Central Kansas, Hutchinson Alfalfa Performance Test, Seeded September 1, 2002.**

NAME	Forage Yield								Total, 15% Moist.	Total, % of Mean
	tons/acre									
	Dry Matter									
	2004				2004	2003	Total	Total, 15% Moist.		
5-24	6-21	7-15	8-28							
<b>RELEASED CULTIVARS</b>										
350	2.23	0.77	1.26	1.32	5.58	4.27	9.85	11.59	108	
HybriForce-400	2.36	0.81	1.37	1.24	5.78	3.95	9.73	11.44	107	
Hyttest 410	2.34	0.86	1.17	1.21	5.59	3.99	9.58	11.27	105	
400SCL	2.33	0.80	1.13	1.07	5.33	4.19	9.52	11.20	105	
Journey 204 Hybrid Alfalfa	2.13	0.77	1.14	1.27	5.31	4.10	9.41	11.08	104	
Dagger+EV	2.25	0.79	1.38	1.21	5.63	3.78	9.41	11.08	104	
Perry	2.38	0.67	1.14	1.19	5.39	3.91	9.30	10.94	102	
Reliance	2.00	0.73	1.11	1.19	5.02	4.27	9.29	10.93	102	
Reward II	2.19	0.74	1.19	1.16	5.28	4.00	9.28	10.92	102	
WL 342	2.03	0.73	1.13	1.20	5.09	4.14	9.23	10.86	102	
Pawnee	2.03	0.85	1.19	1.37	5.44	3.78	9.22	10.85	102	
DKA42-15	2.15	0.75	1.30	1.21	5.41	3.80	9.21	10.84	101	
Aspire	2.36	0.84	1.19	1.32	5.70	3.38	9.08	10.69	100	
645-II	2.16	0.72	1.02	1.04	4.94	4.14	9.08	10.68	100	
Rebound 4.2	1.94	0.77	1.26	1.12	5.10	3.88	8.98	10.56	99	
5-Star	1.95	0.84	1.35	1.21	5.34	3.54	8.88	10.45	98	
Macon	1.99	0.74	1.16	1.05	4.93	3.88	8.81	10.36	97	
Key	2.04	0.73	0.95	1.22	4.94	3.61	8.55	10.06	94	
Lightning II	1.56	0.73	1.07	1.18	4.53	3.73	8.26	9.72	91	
Kanza	1.78	0.80	1.11	1.21	4.89	3.31	8.20	9.65	90	
<b>EXPERIMENTAL STRAINS</b>										
CW 83018	2.18	0.85	1.31	1.10	5.44	3.73	9.17	10.79	101	
CW 93018	2.02	0.76	1.19	1.22	5.19	3.78	8.97	10.56	99	
CW 94006	1.75	0.74	1.16	1.18	4.82	3.65	8.47	9.97	93	
CW 94022	1.90	0.72	1.14	1.11	4.87	3.54	8.41	9.90	93	
<b>SUMMARY STATISTICS</b>										
Average	2.08	0.77	1.18	1.19	5.23	3.85	9.08	10.69	100	
LSD(0.05)	0.44	NS	NS	NS	1.14	0.49	1.62	1.90	18	
LSD(0.20)	0.29	NS	NS	NS	0.74	0.32	1.05	1.23	12	
CV(%)	15.04	16.41	17.69	13.22	8.18	8.95	6.06	6.06	6	
MCV(%)	21.22	NS	NS	NS	21.76	12.62	17.81	17.81	18	

**Table 5. Northwest Kansas, Colby Alfalfa Performance Test, Seeded August 29, 2001.**

Northwest Res.-Ext. Center, Keith silt loam	Good growing conditions prevailed throughout the summer, with above-normal rainfall and below-normal temperatures. Insects and diseases caused no problems.									
18 lb. seed/acre										
Plots 3'x20'; 3'x17' harvested										
17-60-0 lb/a of N-P-K before planting										
NAME	Forage Yield								Total, 15% Moist.	Total, % of Mean
	tons/acre									
	Dry Matter									
	2004				2004	2003	2002	Total		
6-1	7-12	8-6	9-15							
<b>RELEASED CULTIVARS</b>										
Pioneer 53V08	4.18	2.16	1.26	1.57	9.18	7.67	6.51	23.36	27.48	109
A 30-06	3.57	2.09	1.28	1.48	8.42	7.86	6.77	23.05	27.12	108
Enhancer	3.71	2.13	1.35	1.60	8.79	7.20	6.65	22.64	26.64	106
631	3.84	2.07	1.25	1.47	8.63	7.23	6.73	22.59	26.58	106
Lightning II	3.19	1.86	1.35	1.51	7.91	7.28	6.89	22.08	25.98	103
Kanza	3.63	2.06	1.41	1.66	8.76	6.91	6.05	21.72	25.55	102
Magnum V	3.38	2.05	1.29	1.40	8.12	6.80	6.76	21.68	25.51	102
Target II Plus	3.29	2.04	1.18	1.45	7.96	7.06	6.61	21.63	25.44	101
Reward	3.50	2.19	1.36	1.48	8.53	6.91	6.17	21.61	25.43	101
645-II	3.25	1.94	1.18	1.26	7.63	6.99	6.64	21.26	25.02	100
Geneva	3.27	2.20	1.34	1.47	8.28	6.99	5.94	21.21	24.95	99
Pioneer 54Q53	2.95	1.91	1.24	1.42	7.51	7.25	6.29	21.05	24.77	99
Feast+EV	3.19	1.96	1.19	1.39	7.73	7.15	5.75	20.63	24.27	97
4200	2.93	1.94	1.34	1.46	7.66	6.48	5.95	20.09	23.64	94
Perry	3.17	1.82	1.02	1.23	7.25	6.91	5.18	19.34	22.75	91
<b>EXPERIMENTAL STRAINS</b>										
ZC9842A	3.53	2.03	1.42	1.50	8.48	7.51	6.43	22.42	26.38	105
CW 94008	3.55	2.28	1.30	1.51	8.65	7.35	6.37	22.37	26.32	105
6M71	3.49	2.03	1.41	1.59	8.51	7.31	6.38	22.20	26.12	104
CW 64004	3.51	2.21	1.31	1.46	8.48	7.41	6.19	22.08	25.98	103
ZC9851A	3.63	2.22	1.35	1.47	8.67	7.05	6.28	22.00	25.88	103
5M85	3.38	2.16	1.27	1.55	8.37	7.15	6.24	21.76	25.59	102
ZC9840A	3.39	1.78	1.28	1.33	7.78	7.38	6.50	21.66	25.48	101
ZC9854A	3.52	2.00	1.39	1.44	8.36	6.94	6.22	21.52	25.32	101
5M84	2.89	2.19	1.39	1.51	7.98	7.22	6.32	21.52	25.32	101
ZC9950A	3.06	2.34	1.27	1.49	8.16	6.93	6.35	21.44	25.23	100
CW 75044	3.26	1.89	1.41	1.53	8.09	7.06	6.23	21.38	25.16	100
ZC9940A	3.22	2.04	1.23	1.38	7.87	7.35	6.00	21.22	24.97	99
ZC9841A	3.20	2.11	1.33	1.39	8.03	6.72	6.43	21.18	24.92	99
CW 74040	3.20	2.10	1.30	1.34	7.94	7.14	5.84	20.92	24.61	98
CW 64049	2.69	1.98	1.14	1.49	7.29	6.72	5.80	19.81	23.31	93
CW 64026	2.63	1.80	1.32	1.37	7.11	6.30	6.00	19.41	22.83	91
CW 73029	2.91	1.82	1.18	1.33	7.24	6.67	5.37	19.28	22.68	90
CW 54033	2.40	1.70	1.20	1.28	6.58	6.49	5.57	18.64	21.93	87
<b>SUMMARY STATISTICS</b>										
Average	3.29	2.03	1.29	1.45	8.06	7.07	6.22	21.35	25.12	100
LSD(0.05)	0.76	NS	0.17	0.21	1.54	0.65	0.47	2.68	3.15	13
LSD(0.20)	0.50	NS	0.11	0.14	1.00	0.43	0.31	1.74	2.05	8
CV(%)	16.53	14.08	9.13	10.55	7.99	6.60	5.43	4.04	4.04	4
MCV(%)	23.20	NS	12.82	14.80	19.16	9.26	7.62	12.53	12.53	13



**Table 6. Northwest Kansas, Colby Alfalfa Performance Test, Seeded August 29, 2003.**

Northwest Research-Extension Center, Keith silt loam	Good growing conditions prevailed throughout the summer, with above-normal rainfall and below-normal temperatures. Insects and diseases caused no problems.								
18 lb. seed/acre									
Plots 3'x20'; 3'x17' harvested									
16-55-0 lb/a of N-P-K before planting									
	Forage Yield								
	tons/acre								
	Dry Matter								
	2004								
NAME	6-2	7-13	8-9	9-16	2004	Total	Total, 15% Moist.	Total, % of Mean	
<b>RELEASED CULTIVARS</b>									
Phirst	3.62	1.96	1.50	1.14	8.22	8.22	9.66	105	
Pioneer 54Q25	3.47	2.07	1.46	1.18	8.17	8.17	9.61	105	
Pioneer 54V46	3.23	2.07	1.59	1.28	8.17	8.17	9.61	105	
Arapaho	3.62	1.88	1.35	1.14	8.00	8.00	9.41	103	
Notice II	3.16	2.11	1.39	1.29	7.96	7.96	9.36	102	
WL 357 HQ	3.56	1.85	1.42	1.09	7.93	7.93	9.33	102	
Expedition	3.27	2.03	1.47	1.10	7.88	7.88	9.27	101	
Journey 204 Hybrid Alfalfa	3.34	1.84	1.52	1.13	7.83	7.83	9.21	101	
Regal	3.29	1.94	1.33	1.25	7.82	7.82	9.20	100	
Kanza	3.14	2.03	1.45	1.16	7.77	7.77	9.14	100	
Jade III	3.29	1.85	1.44	1.11	7.69	7.69	9.05	99	
6400HT	3.47	1.79	1.42	1.01	7.69	7.69	9.05	99	
HybriForce-420/wet	3.46	1.75	1.31	1.12	7.65	7.65	9.00	98	
Abundance	3.34	1.87	1.29	1.15	7.65	7.65	9.00	98	
Maximizer	3.20	1.83	1.35	1.11	7.48	7.48	8.80	96	
Evermore	2.84	2.08	1.46	1.07	7.44	7.44	8.76	96	
Perry	3.27	1.84	1.33	1.01	7.44	7.44	8.76	96	
631	2.83	2.02	1.42	1.16	7.43	7.43	8.74	95	
<b>EXPERIMENTAL STRAINS</b>									
FSG351	3.38	1.89	1.50	1.19	7.96	7.96	9.37	102	
FSG505	3.42	1.81	1.46	1.16	7.84	7.84	9.23	101	
FSG406	3.23	1.95	1.45	1.14	7.77	7.77	9.14	100	
CL2000	3.21	1.95	1.27	1.20	7.62	7.62	8.97	98	
<b>SUMMARY STATISTICS</b>									
Average	3.30	1.93	1.42	1.14	7.79	7.79	9.17	100	
LSD(0.05)	NS	NS	0.18	0.13	NS	NS	NS	NS	
LSD(0.20)	NS	NS	0.12	0.08	0.84	0.84	0.99	11	
CV(%)	14.12	12.04	9.20	7.78	6.99	6.99	6.99	7	
MCV(%)	NS	NS	13.01	11.00	NS	NS	NS	NS	

**Table 7. Southwest Kansas, Garden City Alfalfa Performance Test, Seeded September 3, 2002.**

NAME	Forage Yield							Total, 15% Moist.	Total, % of Mean
	tons/acre								
	Dry Matter								
	2004				2004	2003	Total		
5-20	6-29	8-20	9-16						
<b>RELEASED CULTIVARS</b>									
WL 327	4.02	2.20	1.93	1.97	10.11	9.35	19.46	22.90	108
Reward II	3.82	2.11	1.88	1.91	9.72	9.17	18.89	22.23	105
GH 750	3.94	2.13	1.85	1.87	9.79	9.03	18.82	22.14	104
WL 342	3.69	2.09	1.89	1.84	9.51	9.14	18.65	21.94	103
Hyttest 410	3.74	2.04	1.90	1.92	9.60	9.04	18.64	21.93	103
Abundance	3.66	2.10	1.87	1.95	9.58	9.00	18.58	21.86	103
HybriForce-400	3.68	2.05	1.80	1.90	9.43	9.11	18.54	21.81	103
Key	3.87	2.19	1.77	1.86	9.68	8.82	18.50	21.77	103
4A421	3.63	2.13	1.92	1.82	9.49	9.00	18.49	21.75	103
WL 319 HQ	3.65	2.10	1.84	1.77	9.35	9.11	18.46	21.72	102
Journey 204 Hybrid Alfalfa	3.73	2.14	1.86	1.94	9.67	8.75	18.42	21.67	102
Dagger+EV	3.71	2.09	1.84	1.89	9.52	8.70	18.22	21.43	101
5-Star	3.61	2.13	1.89	1.79	9.42	8.73	18.15	21.36	101
Hyttest 520	3.54	2.08	1.93	1.85	9.39	8.68	18.07	21.26	100
Pioneer 54V54	3.65	2.08	1.82	1.80	9.36	8.61	17.97	21.14	100
Masterpiece	3.54	2.07	1.78	1.85	9.24	8.69	17.93	21.09	99
Feast+EV	3.67	2.04	1.72	1.80	9.24	8.56	17.80	20.94	99
Magna 601	3.39	2.02	1.92	1.93	9.27	8.28	17.55	20.65	97
Kanza	3.08	1.83	1.66	1.76	8.33	6.95	15.28	17.97	85
<b>EXPERIMENTAL STRAINS</b>									
DS108HYB	4.02	2.15	1.87	1.92	9.96	8.79	18.75	22.06	104
DS9809HYB	3.89	2.15	1.88	1.89	9.81	8.88	18.69	21.99	104
ZC9953A	3.86	2.13	1.84	1.91	9.73	8.95	18.68	21.98	104
DS218HYB	3.77	2.17	2.02	2.08	10.04	8.57	18.61	21.90	103
DS107HYB	3.62	2.10	1.84	1.91	9.46	9.13	18.59	21.88	103
DS201HYB	3.74	2.16	2.01	2.07	9.98	8.55	18.53	21.80	103
DS106HYB	3.42	2.14	1.89	2.01	9.46	9.05	18.51	21.77	103
CW 04022	3.51	2.15	1.90	1.90	9.45	8.80	18.25	21.47	101
GPVL0144	3.77	2.08	1.78	1.88	9.52	8.30	17.82	20.96	99
Pioneer 55V05	3.51	2.12	1.88	1.94	9.45	8.36	17.81	20.95	99
CW 94025	3.44	2.01	1.80	1.80	9.06	8.65	17.71	20.83	98
CW 14026	3.50	2.06	1.90	1.87	9.32	8.36	17.68	20.80	98
CW 04027	3.49	2.02	1.83	1.85	9.20	8.46	17.66	20.77	98
CW 04030	3.48	1.97	1.81	1.83	9.08	8.49	17.57	20.67	97
CW 65086	3.32	2.00	1.86	1.94	9.12	8.43	17.55	20.65	97
FG 40M159A	3.42	2.00	1.81	1.69	8.93	8.53	17.46	20.54	97
Exp 80I	3.50	1.95	1.69	1.79	8.93	8.45	17.38	20.45	96
CW 05009	3.27	2.04	1.91	1.98	9.20	8.12	17.32	20.37	96
CW 94023	3.40	1.95	1.78	1.72	8.85	8.23	17.08	20.09	95
CW 65085	3.28	1.96	1.70	1.75	8.69	8.12	16.81	19.78	93
<b>SUMMARY STATISTICS</b>									
Average	3.60	2.06	1.84	1.87	9.37	8.66	18.03	21.21	100
LSD(0.05)	0.54	0.16	0.14	0.20	1.04	0.30	1.40	1.65	8
LSD(0.20)	0.35	0.10	0.09	0.13	0.68	0.23	0.91	1.07	5
CV(%)	10.79	5.52	5.43	7.72	4.70	2.92	2.80	2.80	3
MCV(%)	15.11	7.73	7.60	10.81	11.15	3.46	7.77	7.77	8

**Table 8. Varieties in 2004 Kansas Alfalfa Performance Tests, with disease and insect resistance ratings.\***

Brand Name	P S B A R R											Brand Name	P S B A R R														
	B	V	F	A	R	A	P	A	S	P	K		K	P	B	V	F	A	R	A	P	A	S	P	K	K	P
	W	W	W	N	R	A	A	A	N	H	N	N	L		W	W	W	N	R	A	A	A	N	H	N	N	L
<b>Allied</b>														<b>Midwest Seed</b>													
350	H	H	H	H	H	R	R	-	-	H	-	-	-	Pawnee	H	H	H	H	H	M	H	L	M	H	-	L	L
400SCL	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>Monsanto</b>													
Evermore	H	H	H	H	H	H	R	-	R	H	-	M	M	Aspire	M	R	H	H	H	H	H	R	H	-	-	-	-
Macon	H	H	H	H	H	R	R	-	M	H	-	-	-	DKA42-15	H	H	H	H	H	R	H	-	R	H	-	-	-
Reliance	H	H	H	H	H	R	-	-	M	R	-	-	-	<b>Mycogen</b>													
<b>America's Alfalfa</b>														4A421	H	H	H	H	H	H	H	-	-	H	-	M	M
Abilene+Z	H	H	H	H	H	M	H	M	R	R	-	-	-	<b>NC+</b>													
Ameristand 403T	H	H	H	H	H	M	R	-	M	H	-	-	-	Jade III	H	R	H	H	H	R	R	R	R	R	-	H	H
<b>AV</b>														<b>NK</b>													
4200	-	-	-	-	-	-	-	-	-	-	-	-	-	Expedition	R	H	H	H	H	R	-	-	R	H	-	R	R
<b>BioPlant</b>														Geneva	H	H	H	H	H	R	H	L	R	H	-	-	-
Phirst	H	R	H	H	H	R	R	-	R	R	-	H	H	<b>PGI</b>													
<b>Channel</b>														A 30-06	H	H	H	H	H	-	R	-	-	H	-	-	-
Notice II	-	-	-	-	-	-	-	-	-	-	-	-	-	Reward	H	R	H	R	H	R	H	M	M	M	-	-	-
<b>CroPlan Genetics</b>														Reward II	H	R	H	R	H	R	R	R	R	R	-	H	H
5-Star	R	R	H	R	R	R	R	R	R	R	-	-	-	<b>Pioneer</b>													
Rebound 4.2	H	H	H	H	H	R	R	-	M	H	-	-	-	53V08	H	H	H	H	H	R	H	M	H	L	-	H	H
<b>Dairyland</b>														54Q25	H	H	H	H	H	R	R	-	H	R	-	H	H
Arapaho	H	R	H	R	H	-	M	-	R	R	-	H	H	54Q53	H	H	R	R	H	M	M	-	H	M	-	H	H
HybriForce-400	H	R	H	R	H	H	R	M	R	M	-	H	H	54V46	R	H	H	H	H	R	M	L	M	R	-	H	H
HybriForce-420/wet	H	R	H	R	H	R	R	-	H	R	-	H	H	54V54	H	H	H	H	H	R	-	-	L	M	-	-	-
Magna 601	R	M	H	R	H	H	R	-	R	M	R	R	R	<b>Power</b>													
Magnum V	H	R	H	R	H	R	R	M	R	M	-	M	M	Power 4.2	H	R	H	R	H	R	R	-	H	H	-	R	R
<b>Donley</b>														<b>Producers</b>													
FK421	H	H	H	H	H	-	R	-	-	H	-	-	-	Target II Plus	H	R	H	R	H	M	R	M	R	M	-	M	M
<b>Garst</b>														<b>Sharp</b>													
631	H	R	H	R	H	R	H	M	R	M	-	-	-	Abundance	H	R	H	R	H	R	R	M	R	R	-	H	H
6400HT	H	H	H	H	H	-	H	-	-	H	-	-	-	Enhancer	H	R	H	R	H	R	R	M	M	M	-	M	M
6410	H	H	H	H	H	R	R	-	-	H	-	-	-	Journey 204 Hybrid	H	R	H	H	H	R	R	-	R	R	-	H	H
6420	H	R	H	R	H	R	R	-	R	R	-	H	H	<b>Simplot</b>													
645-II	H	H	H	H	H	-	R	-	-	H	-	-	-	Masterpiece	H	R	H	H	H	R	-	R	H	R	-	R	R
6530	H	H	H	H	H	-	H	-	R	H	-	-	-	<b>Star</b>													
Dagger+EV	H	H	H	H	H	M	H	M	R	H	-	L	L	Lightning II	H	R	H	H	H	H	M	-	M	H	-	-	-
Feast+EV	H	H	H	R	H	-	M	-	-	H	-	-	-	<b>Taylor</b>													
<b>Golden Harvest</b>														Maximizer	H	H	H	H	H	R	-	-	R	H	-	-	-
GH 750	H	H	H	H	H	R	R	-	M	H	-	-	-	<b>US Seeds</b>													
<b>Great Plains</b>														US A4230	H	H	H	H	H	R	R	-	R	H	-	-	-
Key	H	H	H	H	H	H	H	M	M	M	M	-	-	<b>W-L Research</b>													
Regal	H	R	H	R	H	R	H	-	H	M	M	-	-	WL 319 HQ	H	H	H	H	H	R	H	-	M	H	-	-	-
<b>Hyttest</b>														WL 327	H	R	H	H	H	R	R	H	R	H	-	-	-
Hyttest 410	H	H	H	H	H	H	M	-	R	H	-	-	-	WL 342	H	H	H	H	H	H	H	-	R	H	-	-	-
Hyttest 520	-	-	-	-	-	-	-	-	-	-	-	-	-	WL 357 HQ	H	H	H	H	H	-	H	-	-	H	-	-	-

\*BW = Bacterial wilt  
 VW = Verticillium wilt  
 FW = Fusarium wilt  
 AN = Anthracnose race 1  
 PRR = Phytophthora root rot  
 SAA = Spotted alfalfa aphid  
 PA = Pea aphid

BAA = Blue alfalfa aphid  
 SN = Stem nematode  
 APH = Aphanomyces root rot race 1  
 SRKN = Southern root knot nematode  
 NRKN = Northern root knot nematode  
 PL = Potato leafhopper

Pest resistance ratings:

Code	Resistance class	% Resistant plants
S	Susceptible	0-5%
L	Low Resistance	6-14%
M	Moderate Resistance	15-30%
R	Resistance	31-50%
H	High Resistance	>50%
-	Not adequately tested	

Disease and insect resistance ratings are from the National Alfalfa Alliance, NAAIC descriptions, or from developers of the varieties.

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The URL is <http://www.ksu.edu/kscpt>.

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## CONTRIBUTORS

### MAIN STATION, MANHATTAN

Kraig Roozeboom, Agronomist  
(Senior Author)

### RESEARCH CENTERS

Pat Evans, Colby  
Joseph Moyer, Mound Valley  
Merle Witt, Garden City

### EXPERIMENT FIELDS

Barney Gordon, Belleville  
William Heer, Hutchinson  
Larry Maddux, Topeka

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