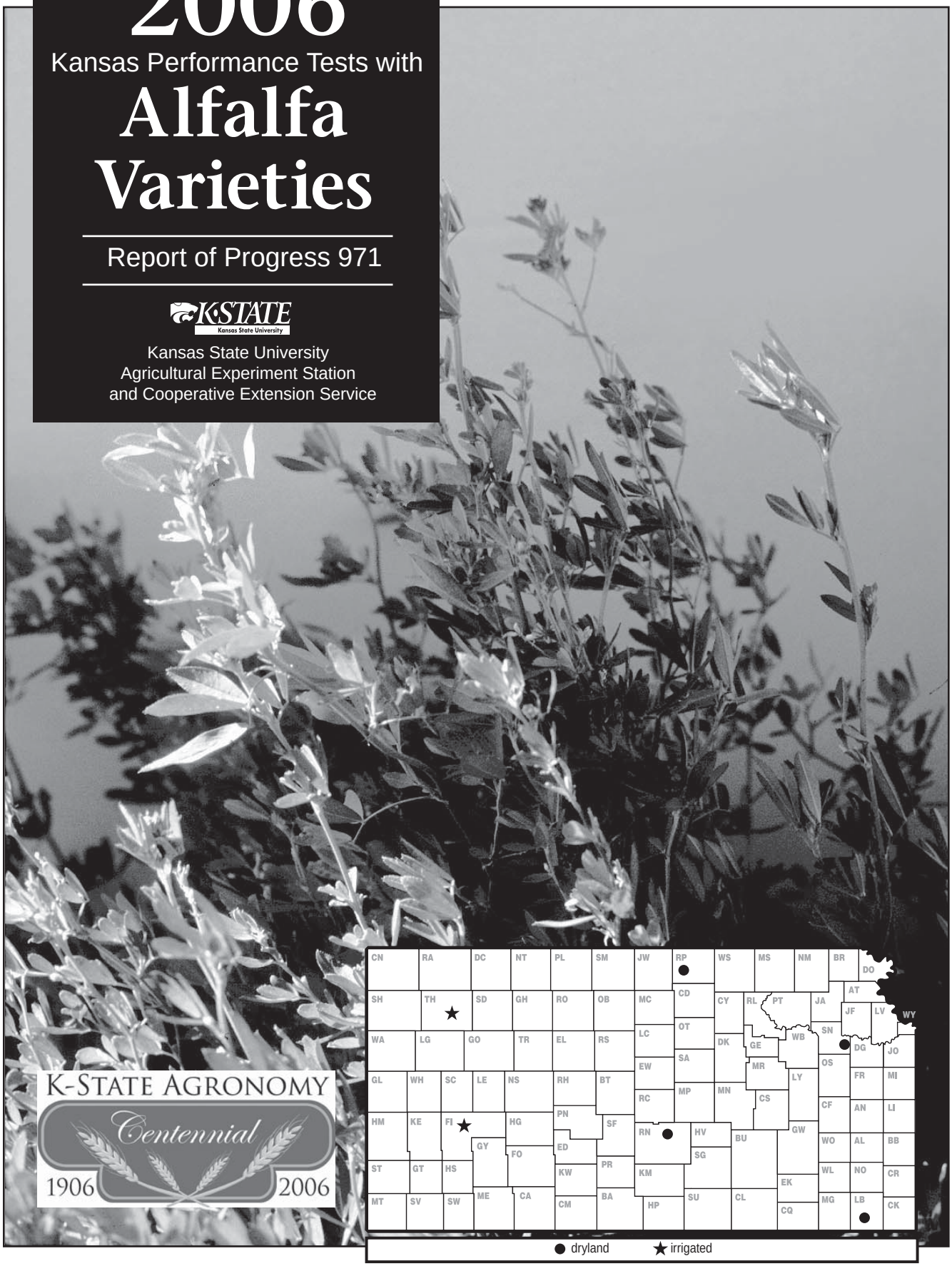
2006

Kansas Performance Tests with Alfalfa Varieties

Report of Progress 971

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



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2006 Performance Tests

Entrants in 2006 Kansas Alfalfa Performance Tests.

ABI Alfalfa
(ABI)
Ames, IA
515-292-2432
abialfalfa.com

AgriPro Seed
(AgriPro)
Slater, IA
877-247-4776
agripro.com

Allied Seed
(Allied)
Macon, MO
660-385-6690
alliedseed.com

Bio-Plant Research
(Bio-Plant)
Camp Point, IL
800-593-7708

Cal/West Seeds
(Cal/West)
West Salem, WI
608-786-1554

Channel Bio Corp.
(Midwest Seed)
Kentland, IN
800-369-8218
channelbio.com

CroPlan Genetics
(CroPlan Genetics)
St. Paul, MN
800-851-8810

Dairyland Research
(Dairyland)
West Bend, WI
608-676-2237
dairylandseed.com

Forage Genetics Inc
(Croplan/NK)
Boone, IA
515-432-9115

Foundation Seed Division
(NE AES & USDA)
Lincoln, NE
877-229-1363
402-624-8038

Garst Seed Co.
(Garst)
Greensburg, KS
620-723-2454
garstseed.com

Great Plains Research Co.
(Cimarron USA)
Apex, NC
800-874-7945
CimarronUSA.com

Hytest Seeds
(Hytest)
Fort Dodge, IA
717-737-4529

J.C. Robinson Seed Co.
(Golden Harvest)
Waterloo, NE
800-228-9906
goldenharvestseeds.com

J.R. Simplot Company
(Simplot)
Boise, ID
208-672-2732
simplot.com

Johnston Seed Co
(Johnston)
Enid, OK
580-233-5800

KSU - Foundation Seed
(KS AES & USDA)
Manhattan, KS
785-532-6115

Monsanto Seed
(Monsanto)
St. Louis, MO
800-335-2676

Mycogen Seeds
(Mycogen)
Indianapolis, IN
317-337-7568

NC+ Hybrids
(NC+)
Lincoln, NE
800-279-7999
nc-plus.com

PGI Alfalfa, Inc.
(PGI)
Woodland, CA
866-744-5710

Pioneer Hi-Bred, Intl., Inc.
(Pioneer Brand)
Johnston, IA
8800-247-6803

Power Seeds, Inc.
(Power)
Fraserville, Ontario Can
705-944-5600

Sharp Bros. Seed Company
(Sharp)
Healy, KS
800-462-8483
sharpseed.com

Star Seed, Inc.
(Star)
Osborne, KS
785-346-5447
gostarseed.com

Syngenta Seeds, Inc.
(NK)
Golden Valley, MN
763-593-7324
nk-us.com

Taylor Seed Farms, Inc.
(Taylor)
White Cloud, KS
800-742-7473
taylorseedfarms.com

W-L Research, Inc.
(W-L)
Madison, WI
608-240-0630

Contribution No. 07-139-S from the Kansas Agricultural Experiment Station.

2006 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^2) 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 8. 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 6 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 7 provides winter survival, disease and insect-resistance, multi-foliolate expression, and continuous grazing tolerance ratings for released varieties. 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. Experimental varieties are also listed in Table 7 for brand identification.

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

Kansas River Valley Experiment Field, Eudora silt loam
18 lb. seed/acre
Plots 3'x20'; 3'x20' harvested
36-92-216 lb/a of N-P-K before planting

Some yield reduction because of gopher infestations. Very little regrowth between 2nd and 3rd cuttings from the dry weather.

	Forage Yield									
	tons/acre									
	Dry Matter									
	2006									
NAME	5-17	6-20	7-25	9-28	2006	2005	2004	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS										
Notice II	1.91	1.57	1.23	1.39	6.11	6.77	7.18	20.06	23.60	104
Perry	1.89	1.46	1.07	1.30	5.73	6.91	6.98	19.62	23.08	102
6400HT	1.88	1.30	1.15	1.38	5.70	6.70	7.10	19.50	22.94	102
Reward II	1.91	1.52	1.22	1.28	5.93	6.75	6.75	19.43	22.85	101
HybriForce-420/wet	2.25	1.48	1.20	0.94	5.87	6.68	6.70	19.25	22.64	100
Kanza	1.73	1.43	1.21	1.39	5.77	6.70	6.67	19.14	22.51	100
Phirst	1.87	1.16	1.11	1.41	5.55	6.67	6.86	19.08	22.45	99
Journey 204 Hybrid Alfalfa	1.81	1.48	1.08	1.18	5.54	6.83	6.70	19.07	22.44	99
6530	1.83	1.48	1.00	1.27	5.58	6.63	6.76	18.98	22.33	99
Power 4.2	1.77	1.23	1.17	0.89	5.07	6.69	7.21	18.97	22.31	99
WL 357 HQ	2.02	1.43	1.06	1.31	5.82	6.41	6.71	18.94	22.28	99
4A421	1.63	1.36	1.26	0.85	5.11	6.66	6.90	18.67	21.96	97
SUMMARY STATISTICS										
Average	1.88	1.41	1.15	1.22	5.65	6.70	6.85	19.20	22.59	100
LSD (0.05)	0.45	0.58	0.42	0.51	0.99	0.39	0.38	1.13	1.33	6
LSD(0.20)	0.29	0.37	0.27	0.33	0.63	0.25	0.24	0.73	0.85	4
CV (%)	16.68	28.55	25.54	29.04	12.14	4.09	3.86	4.09	4.09	4
MCV(%)	24.00	41.07	36.75	41.78	17.47	5.89	5.55	5.88	5.88	6

Table 2. Southeast Kansas, Mound Valley Alfalfa Performance Test, Seeded April 14, 2005.

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

Dry, dry, dry. Very little weevil damage observed.

	Forage Yield tons/acre Dry Matter							
	2006							
NAME	5-15	6-14	7-18	2006	2005	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS								
FSG505	1.20	0.64	0.29	2.13	4.51	6.64	7.81	108
Good as Gold II	1.20	0.59	0.30	2.08	4.46	6.54	7.69	107
Kanza	1.10	0.51	0.27	1.89	4.46	6.35	7.47	104
WL 357 HQ	1.11	0.50	0.29	1.89	4.28	6.18	7.27	101
FSG408DP	1.13	0.50	0.24	1.87	4.27	6.14	7.23	100
Perry	1.22	0.51	0.22	1.95	4.13	6.08	7.16	99
6420	1.15	0.53	0.27	1.95	4.09	6.04	7.11	99
6530	1.14	0.53	0.21	1.88	4.14	6.02	7.08	98
Cimarron VL400	1.16	0.47	0.19	1.83	4.19	6.01	7.07	98
Integrity	1.15	0.45	0.22	1.82	3.89	5.71	6.71	93
EXPERIMENTAL STRAINS								
AA112E	1.17	0.55	0.23	1.95	4.21	6.16	7.25	101
CW 15030	1.13	0.59	0.27	2.00	4.14	6.13	7.21	100
AA108E	1.11	0.42	0.21	1.73	3.88	5.62	6.61	92
SUMMARY STATISTICS								
Average	1.15	0.52	0.25	1.92	4.20	6.12	7.21	100
LSD (0.05)	0.12	0.15	0.06	0.20	0.33	0.39	0.46	6
LSD(0.20)	0.08	0.09	0.04	0.13	0.21	0.25	0.29	4
CV (%)	7.14	19.46	15.89	7.11	5.53	4.40	4.40	4
MCV(%)	10.25	27.91	22.78	10.20	7.93	6.32	6.32	6

Table 3. North Central Kansas, Belleville Alfalfa Performance Test, Seeded September 1, 2004.

North Central Kansas Exp. Field, Crete silt loam
20 lb. seed/acre
Plots 5'x15'; 3'x15' harvested
11-50-0 lb/a of N-P-K applied in February and after first cutting

Very little regrowth between 2nd and 3rd cuttings because of dry weather, but yields improved after late August rains.

	Forage Yield								
	tons/acre								
	Dry Matter								
	2006							Total, 15%	Total, % of
NAME	5-11	6-12	7-28	9-12	2006	2005	Total	Moist.	Mean
RELEASED CULTIVARS									
Good as Gold II	2.01	1.01	0.61	1.30	4.92	6.83	11.75	13.83	107
DKA42-15	2.00	0.98	0.54	1.21	4.73	6.73	11.46	13.48	104
WL 335 HQ	1.95	1.05	0.56	1.14	4.70	6.67	11.37	13.38	103
Reward II	2.03	1.00	0.45	1.22	4.71	6.66	11.36	13.37	103
6415	1.89	1.10	0.49	1.06	4.54	6.75	11.28	13.27	102
Pioneer 54V46	1.92	1.06	0.52	1.02	4.51	6.68	11.19	13.17	101
HybriForce-420/wet	1.97	1.01	0.42	1.01	4.41	6.67	11.08	13.04	100
Genoa	1.85	1.14	0.49	1.04	4.53	6.46	10.99	12.93	100
6400HT	1.96	0.96	0.40	1.00	4.31	6.65	10.96	12.90	99
Kanza	1.80	1.07	0.53	1.12	4.52	6.24	10.76	12.66	98
DKA50-18	1.82	1.10	0.45	1.00	4.37	6.22	10.59	12.46	96
WL 357 HQ	1.73	0.96	0.40	1.03	4.11	6.12	10.23	12.04	93
EXPERIMENTAL STRAINS									
DS362HY	1.98	0.98	0.45	1.10	4.50	6.47	10.97	12.90	99
DS361HY	2.06	0.96	0.43	1.11	4.56	6.34	10.90	12.82	99
DS416	2.04	0.88	0.35	0.97	4.23	6.58	10.81	12.71	98
DS415	1.91	0.76	0.43	1.16	4.26	6.52	10.78	12.69	98
SUMMARY STATISTICS									
Average	1.93	1.00	0.47	1.09	4.49	6.54	11.03	12.98	100
LSD (0.05)	0.14	0.18	0.12	0.18	0.31	0.30	0.43	0.51	4
LSD(0.20)	0.09	0.12	1.69	0.11	0.20	0.19	0.28	0.33	3
CV (%)	5.11	12.57	17.85	11.27	4.85	3.23	2.75	2.75	3
MCV(%)	7.28	17.90	25.43	16.05	6.91	4.60	3.92	3.92	4

Table 4. South Central Kansas, Hutchinson Alfalfa Performance Test, Seeded September 1, 2004.

South Central Experiment Field, Ost silt loam
10 lb. seed/acre
Plots 5'x24', 3'x18' harvested
75-40-0 lb/a of N-P-K before planting

Extended hot and dry weather greatly reduced yields.

	Forage Yield						
	tons/acre						
	Dry Matter						
	2006						
NAME	5-12	6-8	2006	2005	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS							
Good as Gold II	0.51	0.55	1.06	4.53	5.59	6.57	115
WL 335 HQ	0.41	0.65	1.06	4.16	5.22	6.15	107
FSG408DP	0.43	0.55	0.98	4.21	5.19	6.11	107
6400HT	0.36	0.48	0.84	4.26	5.09	5.99	105
Jade III	0.37	0.41	0.78	4.17	4.95	5.83	102
6420	0.42	0.44	0.86	4.08	4.94	5.81	101
Perry	0.38	0.53	0.91	4.00	4.91	5.78	101
DKA50-18	0.34	0.50	0.84	3.96	4.80	5.65	98
FSG406	0.39	0.41	0.80	3.99	4.79	5.63	98
Kanza	0.40	0.35	0.75	4.00	4.75	5.59	97
WL 357 HQ	0.26	0.39	0.65	4.06	4.72	5.55	97
DKA42-15	0.35	0.47	0.83	3.87	4.70	5.53	96
Genoa	0.34	0.37	0.71	3.92	4.64	5.45	95
HybriForce-420/wet	0.34	0.33	0.67	3.91	4.58	5.39	94
FSG505	0.32	0.41	0.74	3.80	4.53	5.33	93
FSG351	0.30	0.38	0.68	3.73	4.41	5.19	90
EXPERIMENTAL STRAINS							
405	0.49	0.57	1.05	4.45	5.50	6.47	113
CW 15030	0.38	0.61	0.99	3.98	4.97	5.84	102
404	0.39	0.32	0.71	4.17	4.88	5.74	100
407	0.39	0.42	0.81	3.82	4.63	5.44	95
406	0.39	0.45	0.84	3.73	4.58	5.38	94
SUMMARY STATISTICS							
Average	0.38	0.46	0.84	4.04	4.87	5.73	100
LSD (0.05)	0.13	0.24	0.27	0.37	0.46	0.54	9
LSD(0.20)	0.08	0.16	0.18	0.24	0.30	0.35	6
CV (%)	24.10	37.62	23.25	6.52	6.71	6.71	7
MCV(%)	34.08	53.21	32.89	9.21	9.49	9.49	9

Table 5. Northwest Kansas, Colby Alfalfa Performance Test, Seeded August 29, 2003.

Northwest Research-Extension Center, Keith silt loam
18 lb. seed/acre
Plots 3'x20'; 3'x17' harvested
16-55-0 lb/a of N-P-K before planting

Hot, dry weather from the end of May until the end of August slowed growth and reduced yields.

	Forage Yield									
	tons/acre									
	Dry Matter									
	2006								Total,	Total,
NAME	5-26	6-26	7-24	8-21	2006	2005	2004	Total	15% Moist.	% of Mean
RELEASED CULTIVARS										
Pioneer 54V46	3.20	1.43	1.54	1.15	7.32	9.64	8.17	25.13	29.56	105
Kanza	3.07	1.55	1.66	1.32	7.61	9.47	7.77	24.85	29.24	104
FSG505	2.83	1.52	1.56	1.35	7.27	9.69	7.84	24.80	29.17	103
Phirst	2.75	1.25	1.70	1.06	6.75	9.60	8.22	24.57	28.90	102
WL 357 HQ	2.82	1.44	1.74	1.22	7.22	9.41	7.93	24.55	28.89	102
Expedition	3.27	1.38	1.56	1.34	7.54	9.11	7.88	24.53	28.86	102
Jade III	3.34	1.29	1.52	1.08	7.23	9.38	7.69	24.30	28.59	101
Pioneer 54Q25	2.86	1.34	1.60	1.04	6.84	9.29	8.17	24.30	28.59	101
FSG406	3.08	1.31	1.64	1.08	7.10	9.41	7.77	24.28	28.57	101
631	3.00	1.25	1.49	1.12	6.86	9.96	7.43	24.26	28.54	101
Arapaho	2.72	1.29	1.54	1.05	6.60	9.41	8.00	24.01	28.24	100
HybriForce-420/wet	3.26	1.23	1.47	1.13	7.08	9.08	7.65	23.81	28.01	99
Abundance	3.00	1.28	1.47	1.10	6.85	9.28	7.65	23.78	27.97	99
FSG351	2.62	1.32	1.50	1.09	6.54	9.25	7.96	23.74	27.93	99
Journey 204 Hybrid Alfalfa	3.07	1.19	1.47	1.01	6.73	9.18	7.83	23.74	27.93	99
Notice II	2.69	1.40	1.57	1.14	6.79	8.88	7.96	23.63	27.80	99
Regal	2.62	1.21	1.44	1.02	6.28	9.30	7.82	23.40	27.53	98
6400HT	2.53	1.21	1.41	0.98	6.13	9.44	7.69	23.26	27.37	97
Maximizer	2.70	1.25	1.48	1.09	6.53	9.12	7.48	23.13	27.21	96
Perry	2.78	1.23	1.38	1.04	6.43	9.16	7.44	23.04	27.10	96
Evermore	2.49	1.13	1.52	1.06	6.19	9.25	7.44	22.89	26.93	95
EXPERIMENTAL STRAINS										
CL2000	2.84	1.32	1.39	1.09	6.65	9.10	7.62	23.36	27.49	97
SUMMARY STATISTICS										
Average	2.89	1.31	1.53	1.12	6.84	9.34	7.79	23.97	28.20	100
LSD (0.05)	0.70	0.22	0.23	0.23	0.81	0.60	0.77	1.27	1.49	5
LSD(0.20)	0.46	0.14	0.15	0.15	0.52	0.39	0.84	0.82	0.97	3
CV (%)	17.26	12.09	10.73	14.26	8.34	4.56	6.99	3.74	3.74	4
MCV(%)	24.39	17.08	15.17	20.16	11.79	6.44	9.87	5.28	5.28	5

Table 6. Southwest Kansas, Garden City Alfalfa Performance Test, Seeded September 3, 2002.

Southwest Research-Extension Center, Keith silt loam
20 lb. seed/acre
Plots 3'x20'; 3'x20' harvested
22-104-0 lb/a of N-P-K before planting

Very dry winter from January through late March. Optimum growth for the fifth cutting was delayed by cooler-than-normal temperatures. Some gopher damage reported.

	Forage Yield											
	tons/acre											
	Dry Matter											
	2006										Total, 15%	Total, % of
NAME	5-25	6-29	7-28	8-29	10-24	2006	2005	2004	2003	Total	Moist.	Mean
RELEASED CULTIVARS												
WL 327	2.77	2.73	1.82	1.44	0.96	9.72	11.90	10.11	9.35	41.08	48.33	105
HybriForce-400	2.89	2.71	1.99	1.51	0.88	9.97	12.01	9.43	9.11	40.52	47.67	104
4A421	2.61	2.60	1.97	1.50	0.95	9.63	12.35	9.49	9.00	40.46	47.60	103
Abundance	2.78	2.63	1.86	1.42	0.87	9.55	11.97	9.58	9.00	40.11	47.19	102
Hytest 410	2.46	2.51	1.95	1.50	0.99	9.41	12.05	9.60	9.04	40.10	47.17	102
Hytest 520	2.57	2.72	2.09	1.60	0.94	9.93	12.06	9.39	8.68	40.06	47.12	102
WL 342	2.38	2.40	1.87	1.44	0.90	8.98	12.11	9.51	9.14	39.74	46.75	102
Pioneer 54V54	2.72	2.66	1.89	1.47	1.02	9.76	11.72	9.36	8.61	39.45	46.41	101
Dagger+EV	2.55	2.54	1.79	1.42	1.03	9.32	11.80	9.52	8.70	39.34	46.28	100
Journey 204 Hybrid Alfalfa	2.50	2.49	1.80	1.44	0.91	9.13	11.67	9.67	8.75	39.22	46.14	100
Reward II	1.87	2.55	1.85	1.42	0.89	8.57	11.75	9.72	9.17	39.21	46.13	100
GH 750	2.56	1.98	1.83	1.11	0.87	8.35	11.99	9.79	9.03	39.16	46.07	100
Magna 601	2.35	2.62	1.93	1.52	1.00	9.42	12.04	9.27	8.28	39.01	45.89	100
5-Star	2.39	2.45	1.89	1.38	0.94	9.04	11.67	9.42	8.73	38.86	45.71	99
Key	2.62	2.44	1.76	1.37	0.87	9.05	11.13	9.68	8.82	38.68	45.51	99
WL 319 HQ	2.32	2.39	1.79	1.38	0.83	8.71	11.43	9.35	9.11	38.60	45.41	99
Masterpiece	2.49	1.98	1.89	1.46	0.95	8.77	11.70	9.24	8.69	38.39	45.17	98
Feast+EV	2.44	2.42	1.81	0.97	0.86	8.50	11.26	9.24	8.56	37.57	44.19	96
Kanza	2.34	2.43	1.78	1.38	0.84	8.77	11.17	8.33	6.95	35.22	41.43	90
Perry	2.22	2.12	1.47	1.17	0.72	7.69	--	--	--	7.69	9.05	20
EXPERIMENTAL STRAINS												
DS201HYB	3.07	2.84	2.16	1.72	1.06	10.84	12.62	9.98	8.55	42.00	49.41	107
DS218HYB	2.73	2.82	2.15	1.64	1.11	10.45	12.78	10.04	8.57	41.84	49.22	107
DS106HYB	2.84	2.79	2.04	1.57	0.96	10.19	12.49	9.46	9.05	41.18	48.45	105
DS108HYB	2.21	2.86	2.14	1.70	0.92	9.83	12.11	9.96	8.79	40.69	47.87	104
DS9809HYB	2.10	2.87	2.11	1.53	0.95	9.55	12.13	9.81	8.88	40.37	47.50	103
DS107HYB	2.84	2.62	1.91	1.10	0.92	9.40	11.86	9.46	9.13	39.85	46.88	102
Pioneer 55V05	2.67	2.65	1.95	1.52	0.93	9.72	12.15	9.45	8.36	39.68	46.68	101
CW 04030	2.78	2.73	2.12	1.56	1.03	10.21	11.90	9.08	8.49	39.67	46.67	101
CW 04022	2.54	2.01	2.01	1.54	0.96	9.05	12.27	9.45	8.80	39.57	46.55	101
ZC9953A	2.41	2.63	1.91	1.43	0.92	9.29	11.52	9.73	8.95	39.49	46.46	101
GPVL0144	3.25	2.59	1.91	1.44	0.88	10.06	11.52	9.52	8.30	39.40	46.35	101
CW 04027	2.46	2.57	2.02	1.45	0.99	9.49	12.04	9.20	8.46	39.19	46.10	100
CW 14026	2.58	2.63	1.98	1.48	0.70	9.37	12.03	9.32	8.36	39.08	45.97	100
CW 05009	2.35	2.57	2.02	1.54	1.02	9.50	12.20	9.20	8.12	39.02	45.90	100
CW 65086	2.60	2.61	1.86	1.51	0.98	9.55	11.85	9.12	8.43	38.94	45.82	99
FG 40M159A	2.23	2.39	1.84	1.36	0.89	8.72	11.49	8.93	8.53	37.67	44.31	96
Exp 80I	2.59	2.32	1.75	1.29	0.75	8.69	11.03	8.93	8.45	37.09	43.64	95
CW 65085	2.30	2.33	1.77	1.36	0.87	8.63	11.52	8.69	8.12	36.97	43.50	94
CW 94023	2.02	2.38	1.80	1.36	0.94	8.49	11.34	8.85	8.23	36.91	43.43	94
CW 94025	1.99	2.23	1.71	1.28	0.86	8.07	10.99	9.06	8.65	36.77	43.26	94
SUMMARY STATISTICS												
Average	2.51	2.52	1.90	1.43	0.92	9.28	11.84	9.37	8.66	39.15	46.06	100
LSD (0.05)	0.78	0.61	0.26	0.33	0.16	1.09	0.51	0.62	0.30	1.39	1.64	4
LSD(0.20)	0.51	0.39	0.17	0.21	0.10	0.71	0.57	0.40	0.23	0.91	1.07	2
CV (%)	22.22	17.20	9.93	16.45	12.49	8.36	3.06	4.70	2.92	2.54	2.54	3
MCV(%)	31.12	24.09	13.91	23.04	17.50	11.71	4.28	6.59	3.46	3.56	3.56	4

Table 7. 2006 Performance Test entries, with disease and insect resistance ratings for released varieties.*

Brand Name	WS	BW	VW	FW	AN	PRR	SAA	PA	BAA	SN	APH1	APH2	SRKN	NRKN	PL	MLE	GT
ABI																	
AA108E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AA112E	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-
Allied																	
CW 15030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Evermore	2	H	H	H	H	H	H	R	-	R	H	-	-	M	-	-	-
FSG351	2	H	R	H	R	H	R	H	R	R	R	-	-	H	-	-	-
FSG406	1	H	H	H	H	H	-	R	-	R	H	-	-	R	-	H	-
FSG408DP	2	H	R	H	H	H	-	R	-	R	R	-	-	H	-	-	-
FSG505	2	H	H	H	H	H	R	R	-	R	H	-	-	R	-	-	-
BioPlant																	
Phirst	2	H	R	H	H	H	R	R	-	R	R	-	-	H	-	-	-
Cal/West																	
CW 04022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 04027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 04030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 05009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 14026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 65085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 65086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 94023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW 94025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel																	
Notice II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cimarron USA																	
Cimarron VL400	-	R	R	H	H	H	H	H	R	R	R	-	S	-	-	-	-
CroPlan Genetics																	
5-Star	3	R	R	H	R	R	R	R	R	R	R	-	-	-	-	-	-
Dairyland																	
Arapaho	2	H	R	H	R	H	-	M	-	R	R	-	-	H	-	-	-
DS106HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS107HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS108HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS201HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS218HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS361HY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS362HY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS9809HYB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HybriForce-400	2	H	R	H	R	H	H	R	M	R	M	-	-	H	-	-	-
HybriForce-420/wet	2	H	R	H	R	H	R	R	-	H	R	-	-	H	-	-	-
Magna 601	3	R	M	H	R	H	H	R	-	R	M	-	R	R	-	-	-
Forage Genetics																	
FG 40M159A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Garst																	
631	2	H	R	H	R	H	R	H	M	R	M	-	-	-	-	-	-
6400HT	2	H	H	H	H	H	-	H	-	-	H	-	-	-	-	-	Y
6415	1	H	H	H	H	H	R	R	-	-	H	-	-	-	-	H	-
6420	2	H	R	H	R	H	R	R	-	R	R	-	-	H	-	-	-
6530	-	H	H	H	H	H	-	H	-	R	H	M	-	-	-	-	-
Dagger+EV	-	H	H	H	H	H	M	H	M	R	H	-	-	L	-	-	-
Feast+EV	2	H	H	H	R	H	-	M	-	-	H	-	-	-	-	-	-
ZC9953A	-											-			-	-	-
Golden Harvest																	
GH 750	-	H	H	H	H	H	R	R	-	M	H	-	-	-	-	-	-
Great Plains																	
CL2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GPVL0144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Key	-	H	H	H	H	H	H	H	M	M	M	-	M	-	-	-	-
Regal	-	H	R	H	R	H	R	H	-	H	M	-	M	-	-	-	-
Hytest																	
Hytest 410	-	H	H	H	H	H	H	M	-	R	H	-	-	-	-	-	-
Hytest 520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Johnston																	
Good as Gold II	-	H	R	H	R	H	-	R	-	M	M	-	-	H	-	-	-
KS AES & USDA																	
Kanza	-	R	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-
Monsanto																	
DKA42-15	1	H	H	H	H	H	R	H	-	R	H	-	-	-	-	H	-
DKA50-18	2	H	H	H	H	H	R	R	-	R	H	-	-	-	-	H	-
msSUNSTRA/Dairyland																	
404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mycogen																	
4A421	-	H	H	H	H	H	H	H	-	-	H	-	-	M	-	-	-
NC+																	
Jade III	2	H	R	H	H	H	R	R	R	R	R	-	-	H	-	-	-
NE AES & USDA																	
Perry	-	R	-	-	L	-	M	R	-	-	-	-	-	-	M	-	-
NK																	
Expedition	3	R	H	H	H	H	R	-	-	R	H	-	-	R	-	-	-
Genoa	1	H	H	H	H	H	-	R	-	R	H	-	-	-	-	-	-
PGI																	
Integrity	-	H	H	H	H	H	-	-	-	-	H	R	-	-	-	-	Y
Reward II	2	H	R	H	R	H	R	R	R	R	R	-	-	H	-	-	-

*WS = Winter survival, 1 = superior
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
APH1 = Aphanomyces root rot race 1
APH2 = Aphanomyces root rot race 2
SRKN = Southern root knot nematode
NRKN = Northern root knot nematode
PL = Potato leafhopper
MLE = Multi-foliolate expression

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

GT = Continuous grazing tolerance, Y/N

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	

Table 7. 2006 Performance Test entries, with disease and insect resistance ratings for released varieties.*

Brand Name	WS	BW	VW	FW	AN	PRR	SAA	PA	BAA	SN	APH1	APH2	SRKN	NRKN	PL	MLE	GT
Pioneer																	
54Q25	-	H	H	H	H	H	R	R	-	H	R	-	-	H	-	-	-
54V46	-	R	H	H	H	H	R	R	L	M	H	R	-	H	-	-	-
54V54	-	H	H	H	H	H	R	-	-	L	M	-	-	-	-	-	-
55V05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power																	
Power 4.2	-	H	R	H	H	H	R	R	-	H	H	-	-	R	-	H	-
Sharp																	
Abundance	2	H	R	H	R	H	R	R	M	R	R	-	-	H	-	-	-
Journey 204 Hybrid Alfalfa	-	H	R	H	H	H	R	R	-	R	R	-	-	H	-	-	-
Simplot																	
Masterpiece	3	H	R	H	H	H	R	-	R	H	R	-	-	R	-	M	-
Star																	
Exp 80I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taylor																	
Maximizer	1	H	H	H	H	H	R	-	-	R	H	-	-	-	-	H	-
W-L Research																	
WL 319 HQ	1	H	H	H	H	H	R	H	-	M	H	-	-	-	-	H	-
WL 327	-	H	R	H	H	H	R	R	H	R	H	-	-	-	-	-	-
WL 335 HQ	1	H	H	H	H	H	R	H	-	M	H	-	-	-	-	H	-
WL 342	1	H	H	H	H	H	H	H	-	R	H	-	-	-	-	H	-
WL 357 HQ	2	H	H	H	H	H	-	H	-	-	H	-	-	-	-	-	-

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For those interested in accessing crop performance testing information electronically, visit our World Wide Web site. Most of the information contained in this publication is available for viewing or downloading.

The URL is ***http://kscroptests.agron.ksu.edu***

Excerpts from the
University Research Policy Agreement with Cooperating Seed Companies

Permission is hereby given to Kansas State University to test varieties and/or hybrids designated on the attached entry forms in the manner indicated in the test announcements. I certify that seed submitted for testing is a true sample of the seed being offered for sale.

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Contributors

Main Station, Manhattan
Jane Lingenfelser, Assistant Agronomist (Senior Author)
Kraig Roozeboom, Assistant Professor

Research Centers
Pat Evans, Colby
Joseph Moyer, Mound Valley
Monty Spangler, Garden City

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

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