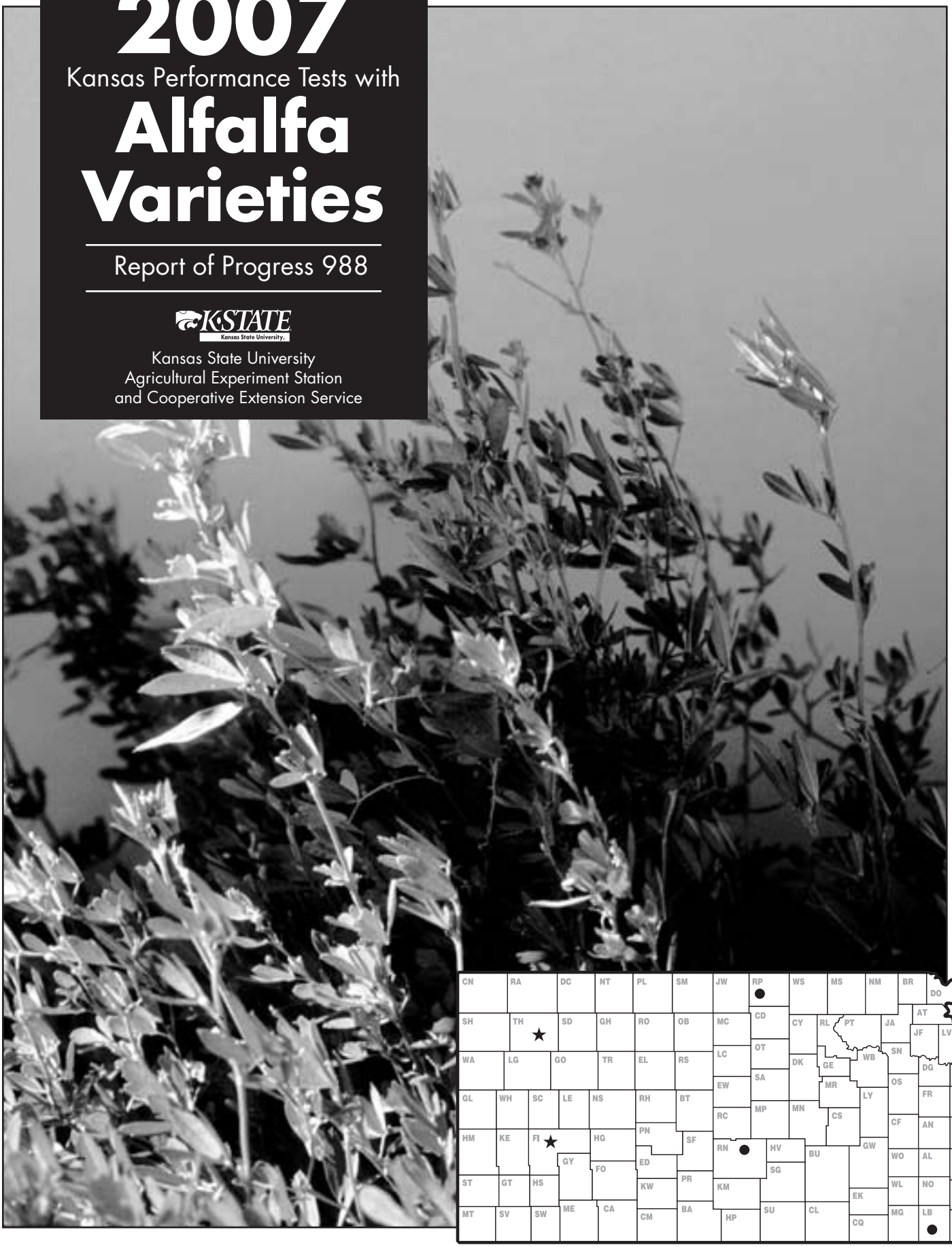
2007

Kansas Performance Tests with

Alfalfa Varieties

Report of Progress 988

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



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2007 Performance Tests

Entrants in 2007 Kansas Alfalfa Performance Tests.

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

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

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

Dairyland Seed Co.
(Dairyland)
West Bend, WI
800-236-0163
dairylandseed.com

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

Garst Seed Co.
(Garst)
Greensburg, KS
620-546-5955
garstseed.com

Great Plains Research Co.
(Cimarron USA)
Apex, NC
800-874-7945
CimarronUSA.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
800-365-9804
www.nc-plus.com

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

Pioneer Hi-Bred, Intl., Inc.
(Pioneer Brand)
Johnston, IA
800-247-6803

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

W-L Research, Inc.
(W-L)
Madison, WI
608-295-3566

Contribution No. 08-191-S from the Kansas Agricultural Experiment Station.

2007 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 three 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 to 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 5. 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% still may 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 specific situations.

Tables 1 through 5 contain updated yield data from individual tests currently in progress. First-season yields for a spring-planted test often are more variable than yields in subsequent years. Season totals are important, but yield distribution during the season might 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 6 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 (NAAIC). 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 6 for brand identification.

Table 1. Southeast Kansas, Mound Valley Alfalfa Performance Test, Seeded April 14, 2005.

Joe Moyer, agronomist

Southeast Ag. Research Center, Mound Valley, Parsons silty clay loam

15 lb. seed/acre

Plots 5'x20'; 3'x20' harvested

20-50-200 lb/a of N-P-K in March

The extremely wet spring conditions reduced stands of some plots in the fourth rep by early June, so it was abandoned. By the end of August, growth had slowed because moisture was limited.

	Forage Yield										
	tons/acre										
	Dry Matter										
	2007									Total, 15%	Total, % of
NAME	4-12	6-6	7-16	8-27	11-1	2007	2006	2005	Total	Moist.	Mean
RELEASED CULTIVARS											
FSG505	1.19	1.64	1.40	0.61	0.82	5.67	2.13	4.51	12.31	14.48	107
FSG408DP	1.12	1.67	1.28	0.68	0.82	5.58	1.87	4.27	11.73	13.80	102
6530	1.12	1.76	1.44	0.60	0.76	5.68	1.88	4.14	11.69	13.76	102
Cimarron VL400	1.21	1.62	1.36	0.59	0.83	5.61	1.83	4.19	11.62	13.67	101
Good as Gold II	1.14	1.54	1.02	0.55	0.75	5.00	2.08	4.46	11.54	13.57	100
WL 357 HQ	1.14	1.49	1.16	0.60	0.85	5.24	1.89	4.28	11.41	13.43	99
Kanza	1.06	1.44	1.20	0.60	0.74	5.04	1.89	4.46	11.39	13.40	99
6420	1.17	1.70	1.03	0.53	0.78	5.22	1.95	4.09	11.26	13.25	98
Perry	1.14	1.55	1.03	0.54	0.75	5.02	1.95	4.13	11.10	13.06	97
Integrity	1.09	1.63	1.23	0.60	0.73	5.28	1.82	3.89	10.99	12.93	96
EXPERIMENTAL STRAINS											
AA112E	1.12	1.63	1.47	0.73	0.76	5.71	1.95	4.21	11.87	13.97	103
CW 15030	1.13	1.67	1.21	0.50	0.67	5.18	2.00	4.14	11.31	13.31	98
AA108E	1.15	1.65	1.47	0.53	0.68	5.48	1.73	3.88	11.10	13.06	97
SUMMARY STATISTICS											
Average	1.14	1.61	1.25	0.59	0.77	5.36	1.92	4.20	11.49	13.51	100
LSD (0.05)	0.09	0.33	0.32	0.15	0.22	0.47	0.20	0.33	0.61	0.72	5
LSD (0.20)	0.06	0.21	0.20	0.10	0.14	0.30	0.13	0.21	0.39	0.46	3
CV (%)	4.25	10.71	13.29	13.71	14.68	5.96	7.11	5.53	3.64	3.64	4
MCV (%)	7.16	18.04	22.39	23.11	24.73	8.70	10.20	7.93	5.31	5.31	5

Table 2. North Central Kansas, Belleville Alfalfa Performance Test, Seeded September 1, 2004.

Barney Gordon, agronomist
North Central Kansas Exp. Field, Belleville, Crete silt loam
20 lb. seed/acre
Plots 5'x15'; 3'x15' harvested
11-52-0 lb/a of N-P-K in February

First cutting was lost due to the freeze on April 6, 7, and 8. Regrowth was very slow after the freeze.

	Forage Yield								
	tons/acre								
	Dry Matter								
	2007								
NAME	6-11	7-13	8-14	2007	2006	2005	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS									
Good as Gold II	2.67	1.81	1.50	5.99	4.92	6.83	17.74	20.87	108
DKA42-15	2.59	1.64	1.29	5.52	4.73	6.73	16.97	19.97	103
Reward II	2.73	1.62	1.26	5.61	4.71	6.66	16.97	19.96	103
WL 335 HQ	2.59	1.60	1.22	5.42	4.70	6.67	16.79	19.75	102
6415	2.42	1.59	1.28	5.29	4.54	6.75	16.57	19.50	101
HybriForce-420/wet	2.58	1.66	1.19	5.44	4.41	6.67	16.52	19.43	101
Pioneer 54V46	2.48	1.61	1.20	5.29	4.51	6.68	16.48	19.39	100
6400HT	2.61	1.65	1.19	5.46	4.31	6.65	16.42	19.32	100
Genoa	2.44	1.69	1.21	5.34	4.53	6.46	16.33	19.21	99
Kanza	2.32	1.64	1.38	5.34	4.52	6.24	16.10	18.94	98
DKA50-18	2.50	1.65	1.28	5.43	4.37	6.22	16.02	18.84	98
WL 357 HQ	2.45	1.64	1.48	5.56	4.11	6.12	15.79	18.58	96
EXPERIMENTAL STRAINS									
DS361HY	2.40	1.53	1.32	5.24	4.56	6.34	16.14	18.99	98
DS362HY	2.48	1.43	1.24	5.14	4.50	6.47	16.11	18.95	98
DS416	2.56	1.47	1.12	5.15	4.23	6.58	15.95	18.76	97
DS415	2.20	1.42	1.39	5.00	4.26	6.52	15.79	18.57	96
SUMMARY STATISTICS									
Average	2.50	1.60	1.28	5.39	4.49	6.54	16.42	19.31	100
LSD (0.05)	0.36	0.29	0.28	0.54	0.31	0.30	0.69	0.82	4
LSD (0.20)	0.23	0.18	0.18	0.35	0.20	0.19	0.45	0.53	3
CV (%)	10.21	12.54	15.42	7.06	4.85	3.23	2.96	2.96	3
MCV (%)	14.55	17.85	21.96	10.06	6.91	4.60	4.22	4.22	4

Table 3. South Central Kansas, Hutchinson Alfalfa Performance Test, Seeded September 1, 2004.

Bill Heer, agronomist

South Central Kansas Exp. Field, Hutchinson, Ost silt loam

10 lb. seed/acre

Plots 5'x24', 3'x18' harvested

75-40-0 lb/a of N-P-K before planting

First cutting was lost to freeze in April. Regrowth and cuttings were delayed by wet weather in May and June, and yields were further injured by hot, dry weather ending in September.

	Forage Yield								
	tons/acre								
	Dry Matter								
	2007								
NAME	5-31	7-14	8-15	2007	2006	2005	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS									
Good as Gold II	1.66	1.74	0.89	4.29	1.06	4.53	9.88	11.62	108
WL 335 HQ	1.68	1.90	1.05	4.63	1.06	4.16	9.85	11.59	108
FSG408DP	1.58	1.84	0.90	4.33	0.98	4.21	9.52	11.20	104
Perry	1.60	1.92	1.01	4.53	0.91	4.00	9.45	11.11	104
6400HT	1.58	1.71	0.82	4.11	0.84	4.26	9.20	10.82	101
DKA50-18	1.45	1.79	0.94	4.18	0.84	3.96	8.98	10.56	98
Kanza	1.54	1.81	0.86	4.20	0.75	4.00	8.95	10.53	98
Jade III	1.51	1.80	0.66	3.97	0.78	4.17	8.92	10.50	98
Genoa	1.60	1.84	0.83	4.27	0.71	3.92	8.90	10.47	98
6420	1.56	1.73	0.66	3.95	0.86	4.08	8.89	10.45	97
WL 357 HQ	1.57	1.70	0.87	4.14	0.65	4.06	8.86	10.42	97
FSG406	1.47	1.76	0.75	3.98	0.80	3.99	8.76	10.31	96
HybriForce-420/wet	1.29	2.02	0.85	4.15	0.67	3.91	8.73	10.27	96
FSG505	1.39	1.74	0.81	3.94	0.74	3.80	8.47	9.96	93
DKA42-15	1.38	1.61	0.68	3.67	0.83	3.87	8.37	9.85	92
FSG351	1.41	1.73	0.71	3.84	0.68	3.73	8.25	9.71	90
EXPERIMENTAL STRAINS									
405	1.78	1.97	1.07	4.82	1.05	4.45	10.32	12.14	113
CW 15030	1.43	1.92	0.80	4.15	0.99	3.98	9.12	10.73	100
406	1.69	1.84	0.92	4.45	0.84	3.73	9.02	10.61	99
404	1.70	1.72	0.62	4.05	0.71	4.17	8.93	10.51	98
407	1.47	1.86	0.66	3.99	0.81	3.82	8.61	10.13	94
SUMMARY STATISTICS									
Average	1.54	1.81	0.90	4.25	0.84	4.04	9.12	10.73	100
LSD (0.05)	0.24	0.27	1.06	1.12	0.27	0.37	1.21	1.43	13
LSD (0.20)	0.15	0.17	0.18	0.73	0.18	0.24	0.79	0.92	9
CV (%)	10.92	10.46	23.42	18.65	23.25	6.52	9.40	9.40	9
MCV (%)	15.44	14.79	33.13	26.38	32.89	9.21	13.29	13.29	13

Table 4. Northwest Kansas, Colby Alfalfa Performance Test, Seeded August 24, 2006.

Pat Evans, agronomist

Northwest Research-Extension Center, Colby, Keith silt loam

18 lb. seed/acre

Plots 3'x20'; 3'x17' harvested

14-46-0 lb/a of N-P-K before planting

Growing conditions were normal with no insect problems.

	Forage Yield tons/acre Dry Matter 2007						
NAME	6-4	7-6	8-6	9-13	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS							
Hybri+421	3.42	2.48	1.68	1.42	8.99	10.58	107
Pioneer 54Q25	3.03	2.47	1.76	1.60	8.87	10.44	105
Kanza	2.85	2.51	1.82	1.45	8.62	10.14	102
Pioneer 54V09	3.12	2.27	1.76	1.45	8.59	10.11	102
Mountaineer 2.0	3.10	2.38	1.75	1.34	8.57	10.08	102
4A421	2.96	2.40	1.80	1.41	8.57	10.08	102
Rebound 5.0	3.24	2.17	1.66	1.50	8.56	10.07	102
DKA41-18RR	2.95	2.41	1.63	1.47	8.47	9.96	101
Pioneer 54V46	3.17	2.26	1.62	1.34	8.38	9.86	100
WL 343 HQ	2.88	2.14	1.83	1.40	8.25	9.70	98
Jade III	2.71	2.39	1.71	1.33	8.14	9.57	97
WL 355 RR	2.82	2.12	1.69	1.51	8.13	9.57	97
6400HT	3.11	2.14	1.74	1.14	8.13	9.56	97
4G418RR	2.82	2.15	1.69	1.40	8.07	9.49	96
Perry	2.47	2.15	1.72	1.51	7.85	9.23	93
SUMMARY STATISTICS							
Average	2.98	2.30	1.72	1.42	8.41	9.90	100
LSD (0.05)	0.73	0.42	0.30	0.25	0.93	1.10	11
LSD (0.20)	0.47	0.27	0.19	0.16	0.60	0.71	7
CV (%)	17.26	12.93	12.28	12.26	7.77	7.77	8
MCV (%)	24.63	18.44	17.52	17.49	11.08	11.08	11

Table 5. Southwest Kansas, Garden City Alfalfa Performance Test, Seeded August 30, 2006.

Monty Spangler, agronomist
Southwest Research-Extension Center, Garden City, Keith silt loam
30 lb. seed/acre
Plots 3'x20'; 3'x20' harvested
22-100-0 lb/a of N-P-K after first cutting

Second and third cuttings were delayed by rains. Very hot in July and August with little moisture until early September.

	Forage Yield							
	tons/acre							
	Dry Matter							
	2007							
NAME	5-18	7-2	8-6	9-4	10-16	Total	Total, 15% Moist.	Total, % of Mean
RELEASED CULTIVARS								
Marvel	3.16	3.62	3.17	1.64	1.40	12.99	15.28	105
6415	3.00	3.82	3.18	1.59	1.39	12.96	15.25	105
Rebound 5.0	3.08	3.76	3.14	1.53	1.31	12.82	15.08	104
Pioneer 54V09	2.94	3.77	3.18	1.55	1.29	12.73	14.97	103
FSG505	3.16	3.61	3.00	1.53	1.37	12.66	14.90	103
GH 727	2.98	3.68	2.98	1.59	1.40	12.61	14.84	102
Genoa	3.01	3.66	3.02	1.56	1.37	12.61	14.84	102
Expedition	3.03	3.67	2.98	1.58	1.35	12.59	14.81	102
WL 355 RR	2.88	3.55	3.29	1.56	1.32	12.59	14.81	102
6530	2.84	3.77	3.28	1.47	1.23	12.59	14.81	102
Mariner III	3.10	3.60	3.12	1.48	1.30	12.59	14.81	102
FSG406	2.95	3.67	3.18	1.50	1.28	12.57	14.79	102
WL 357 HQ	2.92	3.56	3.10	1.56	1.40	12.54	14.75	102
4A421	3.01	3.56	3.08	1.54	1.30	12.48	14.69	101
6420	3.27	3.42	3.03	1.47	1.30	12.48	14.68	101
Reward II	3.22	3.71	2.86	1.40	1.28	12.48	14.68	101
Pioneer 54Q25	3.20	3.43	3.06	1.50	1.29	12.47	14.67	101
Pioneer 54V46	3.02	3.65	2.95	1.49	1.31	12.42	14.61	101
Hybri+421	3.06	3.65	2.92	1.49	1.23	12.33	14.51	100
DKA41-18RR	2.84	3.39	3.27	1.49	1.31	12.30	14.46	100
Mountaineer 2.0	2.88	3.72	3.01	1.42	1.25	12.27	14.44	100
4G418RR	2.73	3.54	3.20	1.50	1.31	12.27	14.43	100
FSG408DP	3.16	3.52	2.83	1.40	1.23	12.14	14.28	99
Artesian Sunrise	2.74	3.42	3.01	1.51	1.41	12.08	14.21	98
Cimarron VL400	2.78	3.64	3.06	1.40	1.16	12.03	14.16	98
Escalade	2.88	3.44	2.81	1.51	1.28	11.92	14.02	97
Phoenix	2.76	3.39	2.99	1.40	1.23	11.77	13.85	96
WL 343 HQ	2.72	3.34	2.85	1.51	1.27	11.68	13.74	95
Perry	2.90	3.33	2.90	1.38	1.13	11.63	13.68	94
Kanza	2.89	3.10	2.74	1.54	1.30	11.57	13.61	94
MP04	2.64	3.43	2.78	1.39	1.16	11.39	13.40	92
EXPERIMENTAL STRAINS								
4S419	3.34	3.57	3.34	1.62	1.42	13.30	15.64	108
FG 52M146	2.74	3.60	3.35	1.62	1.42	12.72	14.97	103
msSunstra-614	2.92	3.40	3.11	1.51	1.39	12.32	14.49	100
msSunstra-613	2.90	3.66	2.98	1.45	1.30	12.28	14.44	100
I Chg 04	2.80	3.52	3.03	1.44	1.17	11.95	14.06	97
DS961	2.70	3.10	2.71	1.53	1.44	11.48	13.51	93
DS253	2.63	3.00	2.92	1.49	1.40	11.43	13.45	93
SUMMARY STATISTICS								
Average	2.94	3.53	3.04	1.50	1.31	12.32	14.49	100
LSD (0.05)	0.28	0.30	0.43	0.10	0.08	0.61	0.72	5
LSD (0.20)	0.18	0.20	0.28	0.07	0.05	0.40	0.47	3
CV (%)	6.90	6.08	10.17	4.91	4.49	3.55	3.55	4
MCV (%)	9.67	8.51	14.25	6.88	6.29	4.98	4.98	5

Table 6. 2007 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalade	-	H	R	R	R	H	MR	R	-	-	R	-	-	-	-	-	-
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	-	-	-
Mariner III	2	H	H	H	H	H	-	R	-	R	H	R	-	H	-	-	-
Marvel	2	H	H	H	H	H	R	R	-	-	H	-	-	-	-	H	-
Phoenix	4	H	H	H	H	H	-	H	-	H	R	-	-	MR	-	-	-
Cimarron USA																	
Cimarron VL400	-	R	R	H	H	H	H	H	R	R	R	-	S	-	-	-	-
I Chg 04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croplan Genetics																	
Artesian Sunrise	-	M	R	R	H	H	H	H	R	R	-	-	-	R	-	H	-
Mountaineer 2.0	2	H	R	H	H	H	R	H	-	H	R	-	-	R	-	H	-
Rebound 5.0	2	H	H	H	H	H	-	R	-	-	H	-	-	-	-	H	-
Dairyland Seed																	
DS253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS361HY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS362HY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HybriForce-420/wet	2	H	R	H	R	H	R	R	-	H	R	-	-	H	-	-	-
msSunstra-613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
msSunstra-614	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forage Genetics																	
FG 52M146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Garst																	
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	-	-	-	-	-
Golden Harvest																	
GH 727	1	H	H	H	H	H	-	R	-	R	H	-	-	-	-	H	
Johnston																	
Good as Gold II	-	H	R	H	R	H	-	R	-	M	M	-	-	H	-	-	-
KS AES & USDA																	
Kanza	-	R	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-
Monsanto																	
DKA41-18RR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-
4G418RR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4S419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NC+																	
Hybri+421	2	H	R	H	H	H	R	R	-	R	R	-	-	H	-	-	-
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	-	-	-
Pioneer																	
54Q25	-	H	H	H	H	H	R	R	-	H	R	-	-	H	-	-	-
54V09	-	H	H	R	H	H	R	H	-	H	R	MR	-	H	-	-	-
54V46	-	R	H	H	H	H	R	R	L	M	H	R	-	H	-	-	-
W-L Research																	
WL 335 HQ	1	H	H	H	H	H	R	H	-	M	H	-	-	-	-	H	-
WL 343 HQ	1	H	H	H	H	H	-	H	-	R	H	-	-	-	-	H	
WL 355 RR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WL 357 HQ	2	H	H	H	H	H	-	H	-	-	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
GT = Continuous grazing tolerance, Y/N

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

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	

For those interested in accessing crop performance testing information electronically, visit our World Wide Web site. Most of the information contained in this publication, plus more, 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.

I understand that all results from Kansas Crop Performance Tests belong to the University and the public and shall be controlled by the University so as to produce the greatest benefit to the public. Performance data may be used in the following ways: 1) Tables may be reproduced in their entirety provided the source is referenced and data are not manipulated or reinterpreted; 2) Advertising statements by an individual company about the performance of its entries may be made as long as they are accurate statements about the data as published, with no reference to other companies' names or cultivars. In both cases, the following must be included with the reprint or ad citing the appropriate publication number and title: "See the official Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report of Progress 988 '2007 Kansas Performance Tests with Alfalfa Varieties,' or the Kansas Crop Performance Test Web site, ***http://kscroptests.agron.ksu.edu***, for details. Endorsement or recommendation by Kansas State University is not implied."

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