

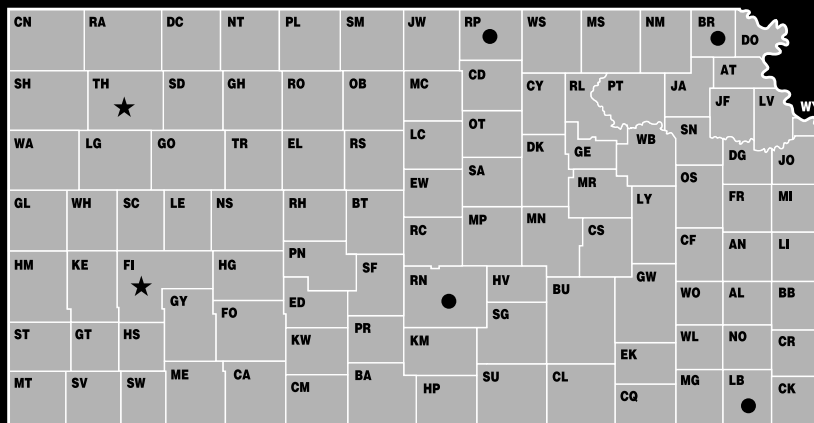
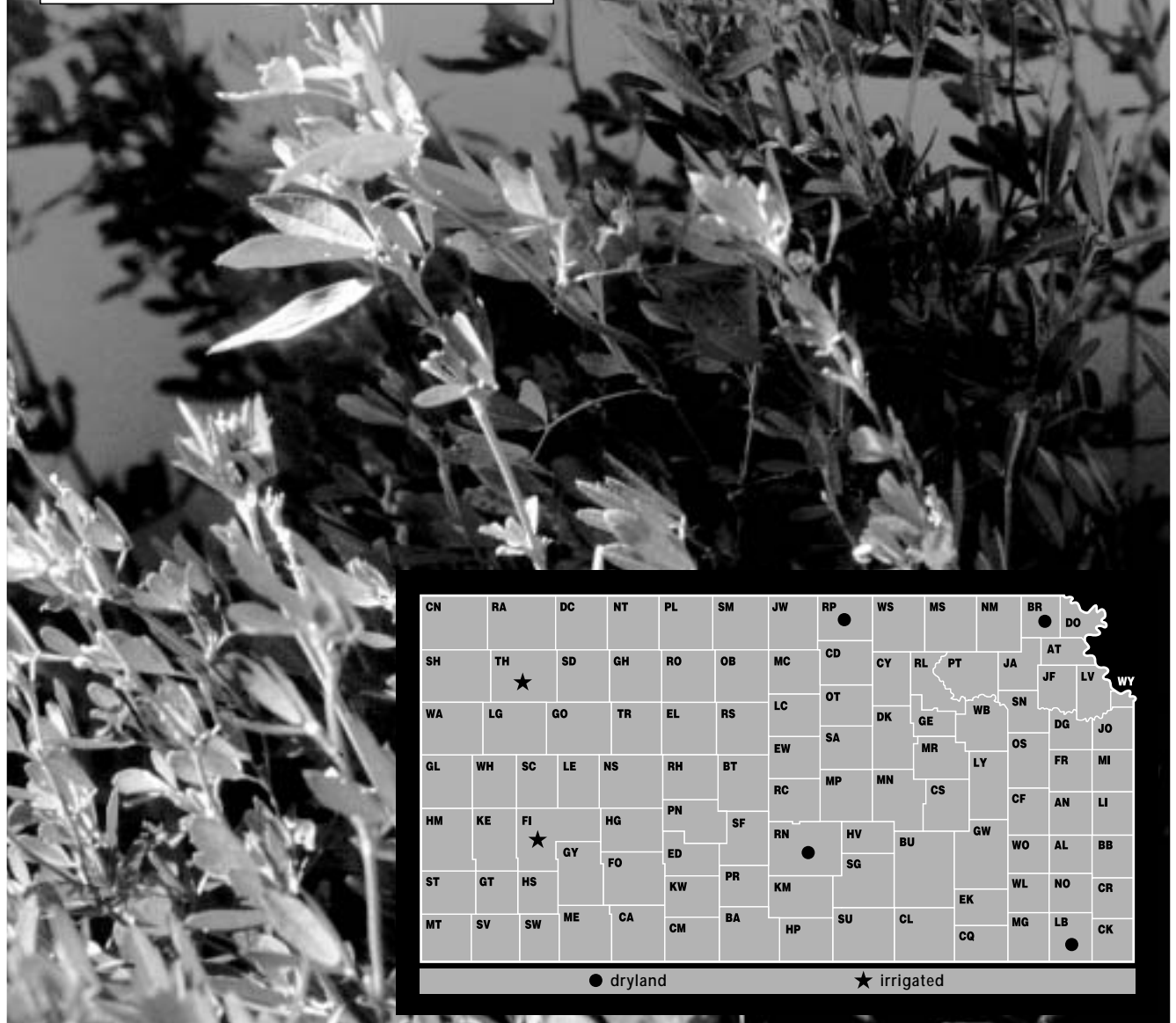
# 2002

KANSAS PERFORMANCE TESTS WITH

# ALFALFA VARIETIES

REPORT OF PROGRESS 904

Kansas State University  
Agricultural Experiment Station  
and Cooperative Extension Service



● dryland

★ irrigated

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### Entrants in 2002 Kansas Alfalfa Performance Tests.

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Allied Seed Cooperative Angola IN 800-813-5025	Garst/AgriPro Seed Slater IA 877-247-4776 garstseed.com	Monsanto Seed DeKalb IL 815-758-9323 farmsource.com	Sharp Bros Seed Company Healy KS 620-398-2231 sharpseed.com
America's Alfalfa Princeton IL 815-875-6426 americasalfalfa.com	Great Plains Research Apex NC 919-362-1583 greatplainsresearch.com	Mycogen Seed Wamego KS 785-456-2724 mycogen.com	Star Seed Co. Beloit KS 800-782-7611 starseed1.com
CroPlan Genetics Arden Hills MN 800-851-8110 croplangenetics.com	JC Robinson Seed Co Waterloo NE 402-289-0265 goldenharvestseeds.com	NC+ Hybrids Lincoln NE 402-467-2517 nc-plus.com	Syngenta Seeds, Inc. Ames IA 800-258-0498 syngenta.com
Dairyland Research Clinton WI 608-676-2237 dairylandseed.com	MBS Inc Story City IA 800-247-3967	Pioneer Hi-Bred Intl Inc Johnston IA 515-334-6645 pioneer.com	United Suppliers Inc Eldora IA 877-714-4503 uniteds.com
Donley Seed Co. New Albany IN 812-941-9822	Midwest Seed Genetics Americus KS 620-443-5353	Producers Hybrids Battle Creek NE 402-675-2975 producershybrids.com	W-L Research Inc Evansville WI 608-882-4100 wlresearch.com

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## 2002 PERFORMANCE TESTS

### Objectives and Procedures

The Kansas Agricultural Experiment Station established an official alfalfa performance-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; however, 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.

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 1-6. 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, CV's below 10% generally indicate reliable, uniform data, whereas CV's of 10-15% are not uncommon and generally indicate that the data are acceptable for rough comparisons. Tests with CV's over 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 percent 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 where 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 1-6 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 vary 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.

The appendix provides additional descriptive information such as fall dormancy, disease resistance, and insect resistance ratings. These ratings were obtained primarily from the annual 'Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties' pamphlet published by the Alfalfa Council. 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.

Fall dormancy values are based on the fall canopy height measured in Minnesota. Dormancy values generally are related to the speed of regrowth. The rapid regrowth types have higher values, and the slower regrowth types have lower values.

**Table 1. Northeast Kansas, Powhattan Alfalfa Performance Test, Seeded August 1998.**

NAME	Forage Yield						00-02 Total, 15% Moist.	00-02 Total, % of Mean
	tons/acre							
	Dry Matter							
	2002			2001	2000	00-02		
5-30	6-26	Total	Total	Total	Total			
<b>RELEASED CULTIVARS</b>								
Pioneer 53V08	3.64	2.01	5.65	6.73	3.84	16.22	19.08	104
DK 142	3.52	2.25	5.77	6.49	3.85	16.11	18.95	103
WL 325 HQ	3.47	1.90	5.37	6.67	3.94	15.98	18.80	102
Amerigraze 401+Z	3.63	1.98	5.60	6.66	3.69	15.95	18.76	102
Dagger+EV	3.49	1.83	5.32	6.55	4.05	15.92	18.73	102
WL 232 HQ	3.51	1.74	5.25	6.68	3.98	15.91	18.72	102
DK 141	3.25	1.67	4.91	6.85	4.04	15.80	18.59	101
Geneva	3.52	1.78	5.30	6.44	4.03	15.77	18.55	101
Pioneer 54H55	3.52	1.80	5.32	6.42	4.01	15.75	18.53	101
Magnum V	3.26	1.91	5.17	6.79	3.74	15.70	18.47	100
ABT350	3.52	1.73	5.24	6.74	3.67	15.65	18.41	100
Yielder	3.17	2.10	5.27	6.58	3.78	15.63	18.39	100
WL 324	3.55	1.80	5.34	6.39	3.86	15.59	18.34	100
Gold Plus	3.52	1.67	5.19	6.37	3.96	15.52	18.26	99
Emperor	3.47	1.84	5.31	6.37	3.78	15.46	18.19	99
Ace	3.43	1.82	5.25	6.30	3.91	15.46	18.19	99
Cimarron 3i	3.47	1.67	5.14	6.53	3.76	15.43	18.15	99
Spur	3.55	1.60	5.15	6.31	3.97	15.43	18.15	99
Depend+EV	3.37	1.71	5.08	6.44	3.87	15.39	18.11	98
ProGro	3.14	1.87	5.00	6.45	3.86	15.31	18.01	98
Affinity+Z	3.53	1.87	5.39	6.29	3.62	15.30	18.00	98
TMF 4464	3.06	1.69	4.75	6.77	3.75	15.27	17.96	98
Perry	3.43	2.01	5.44	6.28	3.55	15.27	17.96	98
Kanza	3.19	1.74	4.94	6.08	3.72	14.74	17.34	94
<b>EXPERIMENTAL STRAINS</b>								
C304	3.64	1.94	5.57	6.59	4.10	16.26	19.13	104
ZC9751A	3.37	2.10	5.48	6.64	4.09	16.21	19.07	104
C230	3.49	2.04	5.53	6.75	3.88	16.16	19.01	103
4G70	3.64	1.58	5.22	6.49	4.11	15.82	18.61	101
ZH9731H	3.62	1.82	5.44	6.54	3.67	15.65	18.41	100
ZC9741A	3.75	1.71	5.46	6.33	3.79	15.58	18.33	99
ZC9740A	3.51	1.78	5.29	6.30	3.76	15.35	18.06	98
<b>SUMMARY STATISTICS</b>								
Average	3.46	1.84	5.29	6.51	3.86	15.66	18.42	100
LSD(0.05)	0.34	0.34	0.48	0.39	0.23	1.15	1.35	7
LSD(0.20)	0.22	0.22	0.31	0.39	0.12	0.75	0.88	5
CV(%)	7.03	13.24	6.44	4.32	5.14	3.12	3.12	3
MCV(%)	9.83	18.48	9.07	4.32	5.96	7.34	7.34	7

**LOCATION:** Northeast Kansas  
**Site:** Cornbelt Experiment Field  
**County:** Brown  
**Town:** Powhattan  
**Soil:** Grundy silty clay loam  
**ESTABLISHMENT:**  
 9/2/98; RCBD, 4 reps  
 Plots 5'x20'; 4'x20' harvested  
 15 lb. seed/acre

**2002 FERTILIZATION:**  
 None in 2002.  
**2002 PEST CONTROL:**  
 None needed.

**2002 CONDITIONS:**  
 Below-normal rainfall from July to the end of the season limited regrowth, preventing more than 2 cuttings.

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

NAME	Forage Yield								01-02 Total, % of Mean
	tons/acre								
	Dry Matter					2001 Total	01-02 Total	Total, 15% Moist.	
	2002				Total				
5-7	6-18	7-17	8-22	Total					
<b>RELEASED CULTIVARS</b>									
HybriForce-400	1.97	1.84	0.93	0.68	5.42	1.34	6.76	7.95	111
6420	1.74	1.91	1.01	0.71	5.36	1.21	6.57	7.73	108
Dagger+EV	1.69	1.88	0.84	0.67	5.08	1.29	6.37	7.49	104
Pawnee	1.60	1.79	0.85	0.74	4.98	1.13	6.11	7.19	100
Perry	1.71	1.70	0.93	0.69	5.03	1.07	6.09	7.16	100
5-Star	1.57	1.74	0.96	0.62	4.89	1.17	6.06	7.13	99
Pioneer 54V54	1.72	1.79	0.92	0.62	5.04	1.01	6.05	7.12	99
400SCL	1.66	1.79	0.91	0.57	4.94	1.04	5.98	7.04	98
350	1.63	1.68	0.90	0.61	4.82	1.12	5.94	6.99	97
Kanza	1.52	1.72	0.88	0.59	4.70	1.25	5.94	6.99	97
WL 342	1.63	1.79	0.72	0.64	4.77	1.08	5.85	6.88	96
Rebound 4.2	1.58	1.72	0.95	0.55	4.80	1.02	5.82	6.85	95
WL 327	1.39	1.69	0.96	0.66	4.70	1.12	5.82	6.85	95
<b>SUMMARY STATISTICS</b>									
Average	1.65	1.77	0.90	0.64	4.96	1.14	6.10	7.18	100
LSD(0.05)	0.22	NS	NS	NS	NS	0.15	0.53	0.62	9
LSD(0.20)	0.14	NS	NS	NS	0.32	0.09	0.34	0.40	6
CV(%)	9.28	8.08	14.13	20.28	6.94	8.96	6.08	6.08	6
MCV(%)	13.31	NS	NS	NS	NS	12.85	8.71	8.71	9

<p><b>LOCATION:</b> Southeast Kansas  <b>Site:</b> Southeast Ag. Research Center  <b>County:</b> Labette  <b>Town:</b> Mound Valley  <b>Soil:</b> Parsons silty clay loam</p> <p><b>ESTABLISHMENT:</b>                      5/9/01; RCBD, 4 reps                      Plots 5'x30'; 3'x20' harvested                      15 lb. seed/acre</p>	<p><b>2002 FERTILIZATION:</b>                      20-50-200 lb/a of N-P2O5-K2O on February 22.</p> <p><b>2002 PEST CONTROL:</b>                      Sprayed with Lorsban to control weevil on April 17. Poast applied on July 5 to control grass infestation.</p>	<p><b>2002 CONDITIONS:</b>                      Dry conditions in July and August lowered yields from later cuttings and prevented a fifth cutting. Blister beetles invaded the plots in late July.</p>
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**Table 3. North Central Kansas, Belleville Alfalfa Performance Test, Seeded Sept. 2001.**

NAME	Forage Yield				Total, 15% Moist.	2002 Total, % of Mean
	tons/acre					
	Dry Matter					
	2002					
	5-19	6-25	8-10	Total		
<b>Released Cultivars</b>						
Pawnee	2.82	1.56	0.10	4.48	5.27	117
645-II	2.63	1.45	0.08	4.16	4.89	108
Abundance	2.63	1.45	0.08	4.16	4.89	108
HybriForce-400	2.59	1.43	0.07	4.09	4.81	107
Feast+EV	2.57	1.42	0.08	4.07	4.79	106
Reliance	2.49	1.37	0.08	3.94	4.64	103
Abilene+Z	2.50	1.38	0.06	3.94	4.64	103
Enhancer	2.47	1.37	0.10	3.94	4.64	103
6410	2.48	1.37	0.07	3.92	4.61	102
Ameristand 403T	2.46	1.36	0.09	3.91	4.60	102
US A4230	2.47	1.37	0.07	3.91	4.60	102
GH 750	2.46	1.35	0.07	3.88	4.56	101
DKA42-15	2.45	1.36	0.07	3.88	4.56	101
Geneva	2.44	1.35	0.07	3.86	4.54	101
Lightning II	2.44	1.34	0.08	3.86	4.54	101
Dagger+EV	2.39	1.32	0.10	3.81	4.48	99
Journey 204 Hybrid Alfalfa	2.41	1.33	0.07	3.81	4.48	99
Pioneer 54Q53	2.39	1.32	0.08	3.79	4.46	99
FK421	2.38	1.32	0.07	3.77	4.44	98
Macon	2.37	1.31	0.06	3.74	4.40	97
Kanza	2.01	1.11	0.05	3.17	3.73	83
Perry	1.98	1.10	0.05	3.13	3.68	82
<b>Experimental Strains</b>						
ZC9840A	2.62	1.45	0.09	4.16	4.89	108
ZC9851A	2.57	1.42	0.08	4.07	4.79	106
A 30-6	2.51	1.39	0.08	3.98	4.68	104
ZG9840	2.50	1.38	0.07	3.95	4.65	103
ZC9941A	2.45	1.35	0.08	3.88	4.56	101
ZC9953A	2.44	1.35	0.06	3.85	4.53	100
ZG9941	2.41	1.33	0.07	3.81	4.48	99
ZC9940A	2.39	1.32	0.07	3.78	4.45	98
4M72	2.37	1.31	0.06	3.74	4.40	97
ZC9942A	2.37	1.30	0.06	3.73	4.39	97
ZC9841A	2.34	1.29	0.07	3.70	4.35	96
ZC9950A	2.31	1.28	0.06	3.65	4.29	95
5M87	2.19	1.21	0.07	3.47	4.08	90
ZC9842A	2.12	1.17	0.06	3.35	3.94	87
<b>Summary Statistics</b>						
Average	2.43	1.34	0.07	3.84	4.52	100
LSD(0.05)	0.26	0.14	0.03	0.41	0.48	11
LSD(0.20)	0.17	0.09	0.01	0.27	0.32	7
CV(%)	7.56	7.55	25.05	7.62	7.62	8
MCV(%)	10.70	10.45	42.86	10.68	10.68	11

**LOCATION:** North Central Kansas  
**Site:** North Central Kansas Exp. Field  
**County:** Republic  
**Town:** Belleville  
**Soil:** Crete silt loam

**ESTABLISHMENT:**  
 8/22/01; RCBD, 4 reps  
 Plots 5'x15'; 3'x15' harvested  
 18 lb. seed/acre

**2002 FERTILIZATION:**  
 36-92-0 applied April 15, 2002.  
**2002 PEST CONTROL:**  
 None needed.

**2002 CONDITIONS:**  
 Rainfall was well below normal for most of the summer, preventing a fourth cutting. Recorded precipitation was the lowest June, July, and August total since 1934.

**Table 4. South Central Kansas, Hutchinson Alfalfa Performance Test, Seeded Sept. 1999.**

NAME	Plant Height inches	Forage Yield								Total, 15% Moist.	00-02 Total, % of Mean
		tons/acre									
		Dry Matter									
		2002				2001	2000	00-02			
8-28	5-29	6-25	7-17	8-28	Total	Total	Total	Total			
<b>RELEASED CULTIVARS</b>											
WL 327	13	2.17	1.69	0.98	1.68	6.52	4.43	5.89	16.84	19.81	109
Magnum V	15	2.09	1.88	1.16	1.10	6.23	4.28	5.66	16.17	19.02	105
Kanza	18	1.95	1.88	1.33	1.30	6.46	4.43	5.16	16.05	18.88	104
Aspire	18	2.13	1.78	1.25	1.17	6.33	4.05	5.65	16.03	18.86	104
Pioneer 54Q53	15	1.95	2.02	1.18	1.07	6.22	4.22	5.41	15.85	18.65	103
Forecast 1001	16	2.01	1.98	1.10	1.23	6.32	4.21	5.28	15.81	18.60	103
ABT350	13	2.02	1.99	0.92	1.34	6.27	4.60	4.90	15.77	18.55	103
DK 142	14	2.14	2.09	0.98	1.02	6.23	4.38	5.15	15.76	18.54	102
6420	16	1.99	1.84	1.10	1.08	6.01	4.57	5.12	15.70	18.47	102
TMF 4464	14	2.13	2.09	1.04	0.98	6.24	4.44	4.94	15.62	18.38	102
WL 232 HQ	13	1.95	2.04	1.05	1.18	6.22	4.45	4.94	15.61	18.36	101
Abilene+Z	15	1.89	1.90	1.25	1.26	6.30	4.36	4.87	15.53	18.27	101
Dagger+EV	15	2.07	1.89	0.98	0.96	5.90	4.35	5.01	15.26	17.95	99
Cimarron SR	15	1.87	1.91	0.98	0.96	5.72	4.46	4.88	15.06	17.72	98
DK 140	15	1.80	1.96	0.96	1.08	5.80	4.30	4.88	14.98	17.62	97
Award	13	1.83	1.88	0.93	1.15	5.79	4.12	4.86	14.77	17.38	96
Perry	13	1.99	1.55	0.94	0.95	5.43	4.48	4.77	14.68	17.27	95
Cimarron 3i	13	1.85	1.81	0.93	0.97	5.56	4.15	4.96	14.67	17.26	95
Macon	14	1.64	1.78	1.00	1.02	5.44	3.99	4.37	13.80	16.24	90
<b>EXPERIMENTAL STRAINS</b>											
ZC9650	15	2.00	1.83	1.10	0.87	5.80	4.29	5.25	15.34	18.05	100
ZC9850A	13	1.95	1.88	0.93	1.06	5.82	4.45	4.92	15.19	17.87	99
<b>SUMMARY STATISTICS</b>											
Average	14	1.96	1.88	1.04	1.11	5.99	4.33	5.06	15.38	18.09	100
LSD(0.05)	2	NS	NS	0.17	0.31	0.75	0.26	0.46	1.56	1.84	10
LSD(0.20)	1	NS	0.19	0.10	0.21	0.48	0.17	0.23	1.00	1.18	7
CV(%)	9	14.10	10.92	9.84	19.79	7.31	4.30	7.64	4.00	4.00	4
MCV(%)	16	NS	NS	16.30	28.07	12.52	6.06	9.02	10.14	10.14	10

**LOCATION:** South Central Kansas  
**Site:** South Central Experiment Field  
**County:** Reno  
**Town:** Hutchinson  
**Soil:** Ost silt loam  
**ESTABLISHMENT:**  
 9/14/99; RCBD, 4 reps  
 Plots 5'x20', 3'x20' harvested  
 18 lb. seed/acre

**2002 FERTILIZATION:**  
 75-40-40 prior to planting  
**2002 PEST CONTROL:**  
 Sinbar applied for weed control.  
 Furadan applied to control alfalfa weevils.

**2002 CONDITIONS:**  
 A June hailstorm lowered second-cutting yields. Dry conditions in July and August lowered third and fourth-cutting yields.

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

NAME	Forage Yield					Total, 15% Moist.	2002 Total, % of Mean
	tons/acre						
	Dry Matter						
	2002						
	6-11	7-8	8-7	9-16	Total		
<b>Released Cultivars</b>							
Lightning II	2.95	1.19	1.34	1.40	6.89	8.11	111
Magnum V	2.73	1.29	1.38	1.36	6.76	7.95	109
631	2.71	1.16	1.51	1.35	6.73	7.92	108
Enhancer	2.63	1.24	1.30	1.48	6.65	7.82	107
645-II	2.61	1.13	1.51	1.38	6.64	7.81	107
Target II Plus	2.71	1.19	1.35	1.35	6.61	7.78	106
Pioneer 53V08	2.56	1.20	1.34	1.40	6.51	7.66	105
Pioneer 54Q53	2.36	1.14	1.40	1.39	6.29	7.40	101
Reward	2.46	1.18	1.21	1.31	6.17	7.26	99
Kanza	2.44	1.08	1.20	1.32	6.05	7.12	97
4200	2.45	1.05	1.27	1.17	5.95	7.00	96
Geneva	2.34	1.10	1.13	1.38	5.94	6.99	96
Feast+EV	2.17	1.05	1.33	1.19	5.75	6.76	92
Perry	2.05	0.77	1.14	1.20	5.18	6.09	83
<b>Experimental Strains</b>							
A 30-6	2.68	1.12	1.41	1.55	6.77	7.96	109
ZC9840A	2.51	1.09	1.48	1.41	6.50	7.65	105
ZC9842A	2.53	1.14	1.25	1.50	6.43	7.56	103
ZC9841A	2.44	1.03	1.37	1.58	6.43	7.56	103
6M71	2.33	1.24	1.39	1.42	6.38	7.51	103
CW 94008	2.40	1.24	1.46	1.27	6.37	7.49	102
ZC9950A	2.42	1.24	1.34	1.35	6.35	7.47	102
5M84	2.38	1.15	1.38	1.41	6.32	7.44	102
ZC9851A	2.58	1.06	1.30	1.34	6.28	7.39	101
5M85	2.39	1.23	1.29	1.32	6.24	7.34	100
CW 75044	2.25	1.11	1.44	1.43	6.23	7.33	100
ZC9854A	2.57	0.95	1.23	1.46	6.22	7.32	100
CW 64004	2.33	1.18	1.27	1.41	6.19	7.28	100
ZC9940A	2.22	1.16	1.15	1.46	6.00	7.06	96
CW 64026	2.41	1.13	1.22	1.24	6.00	7.06	96
CW 74040	2.19	1.03	1.21	1.41	5.84	6.87	94
CW 64049	2.24	0.95	1.29	1.31	5.80	6.82	93
CW 54033	2.21	0.99	1.12	1.25	5.57	6.55	90
CW 73029	1.98	0.87	1.15	1.36	5.37	6.32	86
<b>Summary Statistics</b>							
Average	2.43	1.11	1.31	1.37	6.22	7.32	100
LSD(0.05)	0.35	0.19	0.19	0.19	0.47	0.55	8
LSD(0.20)	0.23	0.13	0.13	0.13	0.31	0.36	5
CV(%)	10.20	12.29	10.46	9.83	5.43	5.00	5
MCV(%)	14.32	17.29	14.66	13.77	7.62	7.62	8

<p><b>LOCATION:</b> Northwest Kansas  <b>Site:</b> Northwest Research-Extension  <b>County:</b> Thomas  <b>Town:</b> Colby  <b>Soil:</b> Keith silt loam</p> <p><b>ESTABLISHMENT:</b>              8/29/01; RCBD, 4 reps              Plots 3'x20'; 3'x17' harvested              18 lb. seed/acre</p>	<p><b>2002 FERTILIZATION:</b>              17-60-0 prior to planting</p> <p><b>2002 PEST CONTROL:</b>              No insect or disease problems.</p>	<p><b>2002 CONDITIONS:</b>              Spring and early summer were very dry. A total of 35.3" of water was added in 10 irrigations.</p>
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**Table 6. Southwest Kansas, Garden City Irrigated Alfalfa Performance Test, Seeded Sept. 1999.**

NAME	Forage Yield								Total, 15% Moist.	00-02 Total, % of Mean
	tons/acre									
	Dry Matter					2001 Total	2000 Total	00-02 Total		
	2002		8-1	9-5	Total					
5-20	7-1	2001 Total				2000 Total	00-02 Total			
<b>RELEASED CULTIVARS</b>										
TMF 4464	3.27	4.12	2.31	2.05	11.75	9.61	12.16	33.52	39.44	104
Pioneer 54Q53	3.19	3.99	2.42	2.10	11.70	9.71	12.08	33.49	39.40	104
Magnum V	3.31	3.83	2.38	2.13	11.65	9.20	12.15	33.00	38.82	102
Aspire	3.26	3.55	2.44	2.16	11.41	9.61	11.77	32.79	38.58	102
Dagger+EV	3.25	3.82	2.34	2.06	11.47	9.55	11.75	32.77	38.55	102
Pioneer 53V08	3.02	4.06	2.42	2.16	11.66	9.24	11.85	32.75	38.53	102
WL 327	3.09	3.65	2.31	2.04	11.09	9.39	12.21	32.69	38.46	102
Forecast 1001	3.07	3.74	2.41	2.14	11.36	9.41	11.87	32.64	38.40	101
Emperor	3.12	3.71	2.30	2.07	11.20	9.34	11.97	32.51	38.25	101
Abilene+Z	3.22	3.76	2.31	2.14	11.43	9.34	11.68	32.45	38.18	101
Jade II	3.11	3.87	2.28	2.07	11.33	9.10	12.01	32.44	38.16	101
Affinity+Z	3.32	3.36	2.32	2.10	11.10	9.47	11.84	32.41	38.13	101
GH 750	3.12	3.93	2.23	1.97	11.25	9.17	11.77	32.19	37.87	100
Cimarron 3i	3.21	3.52	2.20	2.04	10.97	9.25	11.97	32.19	37.87	100
ABT 400SCL	3.23	3.48	2.23	2.07	11.01	9.28	11.87	32.16	37.84	100
ABT350	3.15	3.95	2.29	2.05	11.44	9.27	11.34	32.05	37.71	100
DK 140	3.05	3.97	2.29	2.01	11.32	9.13	11.47	31.92	37.55	99
FQ315	2.96	3.79	2.30	2.05	11.10	9.11	11.62	31.83	37.45	99
6420	3.13	3.59	2.34	2.01	11.07	9.15	11.60	31.82	37.44	99
Cimarron SR	3.09	3.69	2.17	2.08	11.03	9.03	11.73	31.79	37.40	99
Kanza	2.95	3.84	2.41	2.09	11.29	9.21	10.83	31.33	36.86	97
Award	3.11	3.41	2.22	2.03	10.77	8.93	11.18	30.88	36.33	96
Perry	3.23	3.46	2.08	1.98	10.75	8.76	11.30	30.81	36.25	96
DK 142	3.04	3.40	1.98	1.97	10.39	8.95	11.43	30.77	36.20	96
<b>EXPERIMENTAL STRAINS</b>										
ZC9850A	3.21	4.14	2.48	2.21	12.04	9.58	12.10	33.72	39.67	105
DS983809	3.19	4.27	2.38	2.10	11.94	9.38	12.39	33.71	39.66	105
HybriForce-400	3.20	4.01	2.35	2.11	11.67	9.67	11.98	33.32	39.20	103
DS983810	3.23	3.78	2.36	2.15	11.52	9.20	12.37	33.09	38.93	103
ZC9853A	3.48	3.77	2.29	2.11	11.65	9.55	11.85	33.05	38.88	103
DS983811	3.26	4.06	2.33	2.02	11.67	9.36	11.99	33.02	38.85	103
DS9707 HYB	3.23	4.08	2.39	2.12	11.82	9.21	11.92	32.95	38.76	102

**Table 6. Southwest Kansas, Garden City Irrigated Alfalfa Performance Test, Seeded Sept. 1999.**

NAME	Forage Yield									00-02 Total, % of Mean
	tons/acre									
	Dry Matter					2001 Total	2000 Total	00-02 Total	Total, 15% Moist.	
	2002		8-1	9-5	Total					
5-20	7-1	2001 Total				2000 Total	00-02 Total	Total, 15% Moist.		
DS983808	3.13	3.80	2.38	2.13	11.44	9.14	12.36	32.94	38.75	102
ZC9650	3.19	3.93	2.39	2.18	11.69	9.08	11.92	32.69	38.46	102
ZC9851A	3.20	3.78	2.40	2.13	11.51	9.18	11.81	32.50	38.24	101
DS983812	3.21	3.52	2.35	2.03	11.11	9.23	11.94	32.28	37.98	100
CW 64025	3.03	3.74	2.31	2.07	11.15	9.31	11.67	32.13	37.80	100
ZC9854A	3.10	3.84	2.29	2.05	11.28	9.15	11.64	32.07	37.73	100
CW 74033	3.04	3.90	2.38	2.08	11.40	9.08	11.48	31.96	37.60	99
DS983813	3.19	3.87	2.28	2.06	11.40	9.13	11.27	31.80	37.41	99
DS9704 HYB	2.93	3.69	2.33	2.13	11.08	8.93	11.79	31.80	37.41	99
CW 64018	2.95	3.80	2.30	2.03	11.08	9.03	11.40	31.51	37.07	98
CW 84025	2.97	3.58	2.24	2.05	10.84	9.31	11.24	31.39	36.93	97
CW 84024	2.94	3.50	2.26	2.11	10.81	8.94	11.64	31.39	36.93	97
ZC9840A	3.13	3.91	2.09	1.93	11.06	8.90	11.40	31.36	36.89	97
ZC9841A	3.18	3.89	2.16	2.06	11.29	8.78	11.13	31.20	36.71	97
ZC9842A	3.24	3.36	2.25	2.02	10.87	9.21	11.07	31.15	36.65	97
CW 74043	2.99	3.47	2.17	1.87	10.50	8.85	11.41	30.76	36.19	96

**SUMMARY STATISTICS**

Average	3.14	3.77	2.30	2.07	11.28	9.21	11.71	32.20	37.88	100
LSD(0.05)	0.22	0.51	0.15	0.11	0.73	0.45	0.43	1.70	2.00	5
LSD(0.20)	0.14	0.33	0.10	0.08	0.48	0.29	0.22	1.11	1.31	3
CV(%)	4.91	9.70	4.68	3.86	4.66	3.48	3.17	2.24	2.64	3
MCV(%)	6.86	13.54	6.53	5.39	6.52	4.86	3.71	5.28	5.28	5

<p><b>LOCATION:</b> Southwest Kansas  <b>Site:</b> Southwest Res.-Ext. Center  <b>County:</b> Finney  <b>Town:</b> Garden City  <b>Soil:</b> Keith silt loam</p> <p><b>ESTABLISHMENT:</b>            8/24/99; RCBD, 4 reps            Plots 3'x20'; 3'x20' harvested            32 lb. seed/acre</p>	<p><b>2002 FERTILIZATION:</b>            22-104-0 applied at planting</p> <p><b>2002 PEST CONTROL:</b>            Pursuit Plus applied in March to control grasses. Cygon 400 applied on August 8 to control cowpea aphids.</p>	<p><b>2002 CONDITIONS:</b>            Minimal disease and insect stress facilitated excellent yields. Hot, dry winds may have reduced yields to some extent.</p>
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**Appendix 1: Varieties in 2002 Kansas Alfalfa Performance Tests  
with unverified fall dormancy and disease and insect resistance ratings.**

COMPANY Name	S N													COMPANY Name	S N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Yielder	3	H	H	H	R	H	-	R	-	-	-	-	-		<b>Monsanto</b>															Aspire	6	M	R	H	H	H	H	H	R	H	-	-	-	-		Award	4	H	H	H	H	H	H	H	R	R	R	-	-	-		DK 140	4	H	R	H	H	H	H	R	M	M	H	-	M	M		DK 141	4	H	H	H	H	H	R	R	-	M	H	-	-	-		DK 142	4	H	R	H	R	H	R	H	-	R	H	-	-	-		DKA42-15	-	-	-	-	-	-	-	-	-	-	-	-	-		<b>Mycogen</b>															TMF 4464	4	H	H	H	H	H	-	R	-	M	R	-	-	-		<b>NC+</b>															Jade II	4	H	R	H	R	H	R	R	M	-	M	-	M	M		<b>NE AES &amp; USDA</b>															Perry	3	R	-	-	L	-	M	-	-	-	-	-	-		<b>NK</b>															Geneva	4	H	H	H	H	H	R	H	L	R	H	-	-	-		<b>Pioneer</b>															53V08	3	H	H	H	H	H	R	H	M	H	L	-	H	H		54H55	5	H	H	R	R	H	H	H	R	H	-	-	H	H		54Q53	4	H	H	R	R	H	M	M	-	H	M	-	H	H		54V54	-	-	-	-	-	-	-	-	-	-	-	-	-		<b>Producers</b>															Target II Plus	3	H	R	H	R	H	R	R	M	R	M				<b>Sharp</b>															Abundance	4	H	M	H	R	H	R	R	M	R	R				Enhancer	4	H	R	H	R	H	R	R	M	M	M	-	-	-		<b>Sharp/Font/Arrow</b>															Journey 204 Hybrid	4	-	-	-	-	-	-	-	-	-	-	-	-		<b>Star</b>															Lightning II	4	H	R	H	H	H	H	M	-	M	H				Spur	4	H	R	H	H	H	R	H	-	M	R	-	M	M		<b>US Seeds</b>															US A4230	4	H	H	H	H	H	R	R	-	R	H				<b>W-L Research</b>															ABT 400SCL	4	H	H	-	H	H	R	H	-	M	H	-	M	M		ABT350	3	H	H	H	H	H	R	R	-	-	H	-	-	-		Ace	4	H	R	H	H	H	M	R	R	H	R	-	-	-		WL 232 HQ	2	H	H	H	H	H	R	R	-	R	H	-	L	L		WL 324	3	H	R	H	H	H	R	H	-	M	H	-	-	-		WL 325 HQ	3	H	R	H	H	H	R	R	M	R	R	-	-	-		WL 327	4	H	R	H	H	-	R	-	-	R	H	-	-	-		WL 342	4	-	-	-	-	-	-	-	-	-	-	-	-	-	

Variety characterization codes:

FD = Fall dormancy rating  
 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

Fall dormancy ratings:

<u>Check variety</u>	<u>Rating</u>
Norseman	1
Vernal	2
Ranger	3
Saranac	4
Archer	5
ABI 700	6
Dona Ana	7
Maricopa	8
CUF 101	9
UC 1887	10

Pest resistance ratings:

<u>Code</u>	<u>Resistance class</u>	<u>% Resistant plants</u>
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	

Fall dormancy and disease and insect resistance ratings are from Alfalfa Varieties, a publication of the Certified Alfalfa Seed Council, NAAIC cultivar descriptions, or from developers of the varieties. Blank spaces indicate that the variety has not been tested adequately for that trait.

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

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