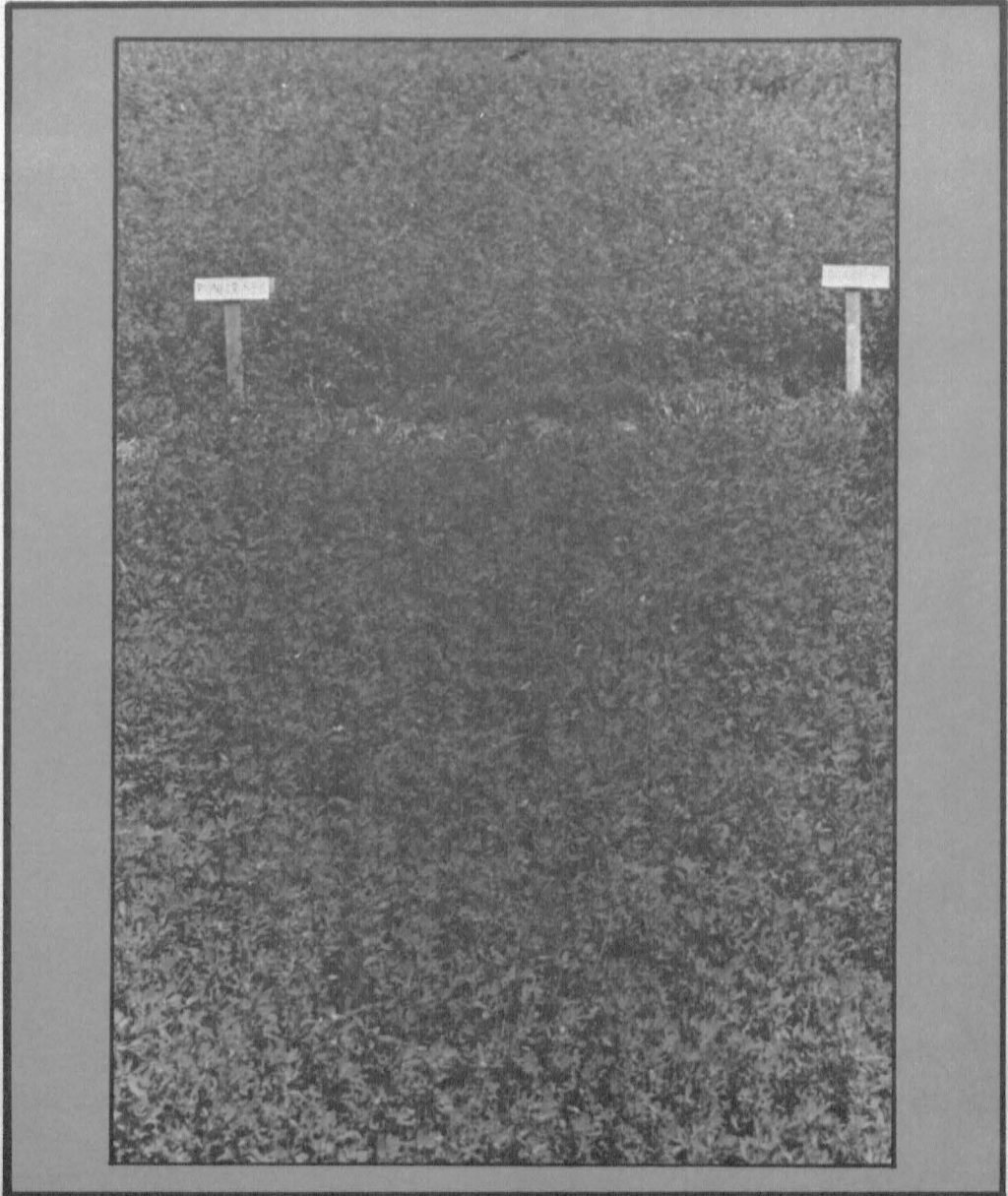


Forages

1985 Missouri Crop Performance



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University of Missouri-Columbia Agricultural Experiment Station

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MISSOURI CROP PERFORMANCE

1985

FORAGES

INTRODUCTION

This report is a contribution of the Department of Agronomy, University of Missouri Agricultural Experiment Station, which reports on Research Project 363. This work was supported in part by funds from the Missouri Seed Improvement Association and fees from the companies submitting varieties or hybrids for evaluation.

Forage performance trials were conducted at the North Missouri Center near Spickard, the Agronomy Research Center near Columbia, the Southwest Center near Mt. Vernon, and the Extension Field near West Plains. These locations are shown in Figure 1, Page 5. In 1985, 27 alfalfa and three red clover varieties were evaluated at three locations, while 11 forage sorghum hybrids and 12 sorghum sudan hybrids were evaluated at two locations.

All producers of forage seed were eligible to enter varieties or hybrids in the 1985 evaluation trials. Participation was voluntary, and no control was exercised by the program over which, or how many entries were submitted. However, to finance the evaluation program, a fee was charged for each entry.

The large number of varieties and hybrids available makes selection of a superior one difficult. To select intelligently, a reliable, unbiased, up-to-date source of information, which will permit valid comparisons among available sources is needed. The objective of the University of Missouri's performance testing program is to provide this information. The tests are conducted under as uniform conditions as possible. Small plots are used to reduce the chance of soil and climatic variations occurring between one variety plot and another. Results obtained should aid the individual grower to judge the relative merits of many of the commercial forage varieties or hybrids available in Missouri today.

COMPARING VARIETIES AND HYBRIDS

The performance of a variety or hybrid cannot be measured with absolute precision. Uncontrollable variability is involved in the determination of each yield average. This variability is often the result of soil disuniformity, but many other conditions may contribute to it. Because variability exists in all field experimentation, statistics are used as a tool to assist with making decisions. The statistical tool used in the analysis of trials reported here is the test of least significant difference (L.S.D.). The L.S.D. is quite simple to apply; when two entries are compared and the difference between them is greater than the L.S.D., the entries are judged to be significantly different. Differences smaller than the L.S.D. may have occurred by chance and are judged to be non-significant.

Performance may seem inconsistent from location to location and from year to year because of differences in rainfall, temperature, soil fertility, diseases, insects, and other factors. To obtain an improved estimate of relative performance, results from more than one location or year should be considered. In this publication, an effort has been made to facilitate comparisons across years and locations.

In each trial, the "top yielding" varieties or hybrids have been identified. These varieties are those that did not yield significantly less than the highest yielding variety or hybrid in the test. They are denoted in the tables by an asterisk (*) next to their yield. Thus, by going down a column, the highest yielding varieties or hybrids can be readily identified. By going across, the relative performance of a variety or hybrid during several years or at several locations can be evaluated. From the standpoint of yield, the most desirable varieties or hybrids will be those which rank within the "top yielding" group (that is, have an asterisk) the greatest number of times.

TABLE 1. CULTURAL PRACTICES OF THE 1985 FORAGE TRIALS.

LOCATION (COUNTY)	COOP- ERATOR*	N-P205-K20	HERBICIDE	INSEC- TICIDE	DATE OF PLANTING	DATE OF HARVEST
<u>ALFALFA (27 VARIETIES) & RED CLOVER (3 VARIETIES)</u>						
SPICKARD (GRUNDY)	DENNIS ONKS*	0 - 34-182	NONE	NONE	SPRING 83	6-13 7-17 10-01
MT. VERNON (LAWRENCE)	NORMAN JUSTUS*	0 - 80-394 +2.5# BORON	NONE	FURADAN	FALL 83	5-09 6-12 7-11 8-09 9-17
WEST PLAINS (HOWELL)	JOHN JENNINGS	0 - 40-200	NONE	FURADAN	FALL 83	5-16 6-18 7-19 9-18
<u>SORGHUM SUDAN (12 HYBRIDS)</u>						
MT. VERNON (LAWRENCE)	NORMAN JUSTUS*	150- 96- 96	RAMROD + ATRAZINE	NONE	5-16	6-28 7-24 8-27 10-02
COLUMBIA (BOONE)	JOHN POEHLMANN*	200- 75- 75	RAMROD + ATRAZINE	NONE	5-07	7-10 8-13 10-16
<u>FORAGE SORGHUM (11 HYBRIDS)</u>						
MT. VERNON (LAWRENCE)	NORMAN JUSTUS*	150- 96- 96	RAMROD + ATRAZINE	NONE	5-16	10-16 10-17
COLUMBIA (BOONE)	JOHN POEHLMANN*	200- 75- 75	RAMROD + ATRAZINE	NONE	5-07	11-06 11-08

* EXPERIMENT STATION MANAGER

PART I

ALFALFA AND RED CLOVER

EXPERIMENTAL PROCEDURES

Field Plot Design. Harvest data were collected from three trials in 1985. These trials were located at the North Missouri Center near Spickard, the Southwest Center near Mt. Vernon, and the Extension field near West Plains (See Figure 1, Page 5). All three consisted of 27 alfalfa and three red clover varieties, were arranged in a lattice design with four replications, and represented second year stands. Plots were 5 feet wide and 20 feet long. At harvest, the ends of each plot were trimmed and a single swath was taken down the middle for yield determination.

Cultural Practices. The tests were hand-planted but harvested with a modified flail chopper. As nearly as possible, harvests were made when all varieties in the trial averaged 10% bloom. Insecticide was used when necessary to control alfalfa weevil, and was applied before damage reached a significant level. Details of the management practices followed at each location are given in Table 1, page 4.

Data Recorded. Total weights were taken on each plot at harvest. A sub-sample was oven-dried to determine the percentage dry weight. In the following tables, yield is presented as tons of dry matter per acre.

RESULTS

In 1985, five harvests were made at Mt. Vernon, four harvests were made at West Plains, and three harvests were made at Spickard. Dry matter yields of individual alfalfa varieties ranged from 2.89 to 3.92 tons per acre in the Spickard trial (Table 2), from 5.98 to 7.28 tons per acre in the Mt. Vernon trial (Table 4), and from 2.74 to 4.01 tons per acre in the West Plains trial (Table 6). Red clover variety yields ranged from 3.17 to 3.59, from 3.85 to 4.33, and from 2.28 to 3.18 tons per acre at Spickard (Table 8), Mt. Vernon (Table 10), and West Plains (Table 12) respectively.

In each trial, varieties which did not differ statistically from the highest yielder at that location are denoted by an asterisk (*) for easy identification. Increased confidence can be placed in results from more than one year since they represent results from a larger sample of climatic conditions.

TABLE 2. DRY MATTER PRODUCTION FOR 27 ALFALFA VARIETIES GROWN ON THE NORTH MISSOURI CENTER NEAR SPICKARD, MO. (GRUNDY CO.) IN 1985. SEEDED: SPRING 1983.

BRAND/VARIETY	HARVESTS - 1985			TOTAL	% CHECK
	6-13	7-17	10-01		
-----TONS/ACRE-----					
WATERMAN-LOOMIS WL 316	2.51	0.77	0.64	3.92**	122
PIONEER 532	2.41	0.76	0.64	3.81*	118
DEKALB ADVANTAGE	2.31	0.82	0.68	3.81*	118
FFR CLASSIC	2.33	0.82	0.64	3.79*	118
LOVELOCK LS-C25	2.36	0.67	0.61	3.64*	113
CIMARRON	2.08	0.87	0.67	3.62	112
FFR HI-PHY	2.18	0.76	0.67	3.61	112
PEAK	2.21	0.73	0.63	3.57	111
PIONEER 526	2.30	0.70	0.55	3.55	110
SARANAC AR ##	2.29	0.60	0.64	3.53	110
SHENANDOAH	2.05	0.80	0.68	3.53	110
PAYMASTER EXPO	2.00	0.69	0.61	3.30	102
DAIRYLAND FUTURA	1.98	0.75	0.56	3.29	102
O'S GOLD EAGLE	1.91	0.70	0.66	3.27	102
PIONEER 531	1.97	0.63	0.66	3.26	101
CODY	1.91	0.72	0.63	3.26	101
LOVELOCK ICO-10	1.86	0.75	0.63	3.24	101
PIONEER 555	1.69	0.92	0.63	3.24	101
EPIC	2.01	0.66	0.57	3.24	101
RILEY ##	2.04	0.58	0.61	3.23	100
WATERMAN-LOOMIS WL 313	1.82	0.62	0.78	3.22	100
WATERMAN-LOOMIS WL 315	2.11	0.60	0.51	3.22	100
PIONEER XAF 12	1.89	0.70	0.60	3.19	99
DEKALB 120	1.93	0.65	0.61	3.19	99
EMBRO H-134	1.71	0.71	0.63	3.05	95
DAIRYLAND MAGNUM	1.86	0.63	0.56	3.05	95
BAKER ##	1.94	0.40	0.55	2.89	90
MEAN	2.06	0.70	0.62	3.39	105
LSD .05	0.50	0.27	0.16	0.29	
C.V. %	16.84	29.55	18.85	19.01	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

CHECK VARIETY, MEAN = 3.22 TONS/A.

TABLE 3. PERFORMANCE SUMMARY FOR 27 ALFALFA VARIETIES GROWN ON THE NORTH MISSOURI CENTER NEAR SPICKARD, MO. (GRUNDY CO.) DURING 1983-85. SEEDED: SPRING 1983.

BRAND/VARIETY	YEAR			MEAN	% CHECK
	1983	1984	1985		
-----TONS/ACRE-----					
WATERMAN-LOOMIS WL 316	2.08*	4.19	3.92**	3.40**	115
WATERMAN-LOOMIS WL 315	2.21**	4.62**	3.22	3.40*	115
CIMARRON	1.94	4.36*	3.62	3.31*	112
DEKALB ADVANTAGE	1.91	4.20*	3.81*	3.31*	112
PIONEER 532	2.11*	3.91	3.81*	3.28*	111
SHENANDOAH	2.21**	4.09	3.53	3.28*	111
FFR HI-PHY	2.01*	4.18	3.61	3.27*	111
PIONEER 526	2.08*	4.15	3.55	3.26*	111
O'S GOLD EAGLE	1.95*	4.51*	3.27	3.24*	110
PIONEER 555	1.94	4.53*	3.24	3.24*	110
PEAK	1.95*	4.13	3.57	3.22*	109
PAYMASTER EXPO	2.02*	4.28*	3.30	3.20	108
LOVELOCK LS-C25	1.61	4.23*	3.64*	3.16	107
FFR CLASSIC	2.02*	3.58	3.79*	3.13	106
EPIC	2.08*	4.08	3.24	3.13	106
DAIRYLAND FUTURA	2.06*	4.00	3.29	3.12	106
WATERMAN-LOOMIS WL 313	2.00*	4.10	3.22	3.11	106
DAIRYLAND MAGNUM	2.06*	4.15	3.05	3.09	105
PIONEER XAF12	1.94	4.11	3.19	3.08	104
PIONEER 531	1.99*	3.95	3.26	3.07	104
DEKALB 120	1.85	4.15	3.19	3.06	104
SARANAC AR ##	1.87	3.75	3.53	3.05	103
LOVELOCK ICO-10	1.97*	3.83	3.24	3.01	102
CODY	1.93	3.81	3.26	3.00	102
RILEY ##	1.62	4.03	3.23	2.96	100
EMBRO H-134	2.01*	3.68	3.05	2.91	99
BAKER ##	1.87	3.73	2.89	2.83	96
MEAN	1.97	4.09	3.39	3.15	107
LSD .05	0.26	0.42	0.29	0.19	
C.V. %	9.41	7.29	19.01	7.60	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

CHECK VARIETY, MEAN = 2.95 TONS/A.

TABLE 4. DRY MATTER PRODUCTION FOR 27 ALFALFA VARIETIES GROWN ON THE SOUTHWEST CENTER NEAR MT. VERNON, MO. (LAWRENCE CO.) DURING 1985. SEEDED: FALL 1983.

BRAND/VARIETY	HARVESTS - 1985					TOTAL	% CHECK
	5-09	6-12	7-11	8-09	9-17		
-----TONS/ACRE-----							
PIONEER 532	2.06	1.61	1.52	1.01	1.08	7.28**	115
FFR HI-PHY	1.92	1.64	1.41	1.01	1.12	7.10*	112
PEAK	1.92	1.57	1.41	1.01	1.07	6.98	110
PIONEER XAF12	1.95	1.53	1.40	0.98	1.05	6.91	109
LOVELOCK LS-C25	2.06	1.49	1.31	0.93	1.09	6.88	109
SHENANDOAH	1.74	1.61	1.41	0.98	1.12	6.86	108
CODY	1.76	1.43	1.52	0.98	1.13	6.82	107
WATERMAN-LOOMIS WL 316	1.74	1.56	1.47	0.98	1.06	6.81	107
FFR CLASSIC	1.97	1.41	1.33	0.99	1.10	6.80	107
PIONEER 555	1.78	1.46	1.54	0.95	1.04	6.77	107
PIONEER 526	1.84	1.48	1.44	1.00	1.01	6.77	106
CIMARRON	1.82	1.46	1.42	0.96	1.11	6.77	106
WATERMAN-LOOMIS WL 313	1.79	1.48	1.45	0.95	1.08	6.75	107
EMBRO H-134	1.74	1.49	1.39	1.03	1.10	6.75	107
DEKALB 120	2.00	1.47	1.31	0.91	1.06	6.75	106
EPIC	1.84	1.56	1.43	0.90	1.00	6.73	106
LOVELOCK ICO-10	1.71	1.42	1.40	1.07	1.10	6.70	106
WATERMAN-LOOMIS WL 315	1.58	1.44	1.43	1.07	1.10	6.62	104
PIONEER 531	1.76	1.46	1.38	0.91	1.10	6.61	104
DAIRYLAND FUTURA	1.85	1.42	1.31	0.94	1.03	6.55	103
PAYMASTER EXPO	1.77	1.44	1.37	0.91	1.02	6.51	103
O'S GOLD EAGLE	1.68	1.44	1.35	0.93	1.09	6.49	102
RILEY ##	1.64	1.38	1.34	0.89	1.11	6.36	100
SARANAC AR##	1.75	1.42	1.27	0.85	1.07	6.37	100
BAKER ##	1.85	1.25	1.21	0.90	1.10	6.31	100
DEKALB ADVANTAGE	1.59	1.30	1.25	0.90	1.05	6.09	96
DAIRYLAND MAGNUM	1.68	1.31	1.32	0.80	0.87	5.98	94
MEAN	1.81	1.46	1.38	0.95	1.07	6.68	105
LSD .05	NS	0.20	0.17	0.15	0.11	0.18	
C.V. %	12.93	10.43	9.04	12.18	7.70	10.18	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

NS NON-SIGNIFICANT.

CHECK VARIETY, MEAN = 6.34 TONS/A.

TABLE 5. PERFORMANCE SUMMARY FOR 27 ALFALFA VARIETIES GROWN ON THE SOUTHWEST CENTER NEAR MT. VERNON, MD. (LAWRENCE CO.) DURING 1984-85. SEEDED: FALL 1983.

BRAND/VARIETY	YEAR		MEAN	% CHECK
	1984	1985		
	-----TONS/ACRE-----			
FFR HI-PHY	4.34**	7.10*	5.72**	114
PIONEER 532	4.12*	7.28**	5.70*	113
SHENANDOAH	4.27*	6.86	5.56*	111
WATERMAN-LOOMIS WL 313	4.30*	6.75	5.53*	110
PEAK	4.06*	6.98	5.52*	110
PIONEER XAF12	4.01*	6.91	5.46*	109
FFR CLASSIC	4.08*	6.80	5.44*	108
DEKALB 120	4.09*	6.75	5.42*	108
LOVELOCK LS-C25	3.96*	6.88	5.42*	108
CIMARRON	4.05*	6.77	5.41*	108
PIONEER 526	4.01*	6.77	5.39*	107
EPIC	4.01*	6.73	5.37*	107
EMBRO H-134	3.96*	6.75	5.36*	107
WATERMAN-LOOMIS WL 316	3.78*	6.81	5.30*	105
LOVELOCK ICO-10	3.87*	6.70	5.29*	105
DAIRYLAND FUTURA	4.00*	6.55	5.28	105
PIONEER 555	3.74	6.77	5.26	105
PIONEER 531	3.82*	6.61	5.22	104
SARANAC AR ##	4.05*	6.37	5.21	103
CODY	3.53	6.82	5.18	103
WATERMAN-LOOMIS WL 315	3.67	6.62	5.15	102
BAKER ##	3.87*	6.31	5.09	101
PAYMASTER EXPO	3.66	6.51	5.09	101
O'S GOLD EAGLE	3.60	6.49	5.05	100
DAIRYLAND MAGNUM	3.81*	5.98	4.90	97
RILEY ##	3.24	6.36	4.80	95
DEKALB ADVANTAGE	3.23	6.09	4.66	93
MEAN	3.89	6.68	5.29	105
LSD .05	0.59	0.18	0.43	
C.V. %	10.83	10.18	5.90	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

CHECK VARIETY, MEAN = 5.03 TONS/A.

TABLE 6. DRY MATTER PRODUCTION FOR 27 ALFALFA VARIETIES GROWN NEAR WEST PLAINS, MO. (HOWELL CO.) DURING 1985.
SEEDED: FALL 1983.

BRAND/VARIETY	HARVESTS - 1985				TOTAL	% CHECK
	5-16	6-18	7-19	9-18		
-----TONS/ACRE-----						
FFR CLASSIC	2.39	0.87	0.38	0.38	4.01**	131
WATERMAN-LOOMIS WL 316	2.28	0.89	0.42	0.41	3.99*	130
PIONEER 531	2.13	0.88	0.40	0.37	3.78	124
LOVELOCK ICO-10	1.40	0.84	0.50	0.57	3.31	108
O'S GOLD EAGLE	1.40	0.94	0.50	0.44	3.28	107
FFR HI-PHY	1.45	0.87	0.54	0.38	3.24	106
WATERMAN-LOOMIS WL 315	1.49	0.86	0.50	0.35	3.20	105
DEKALB 120	1.34	0.84	0.46	0.54	3.18	104
PIONEER XAF12	1.50	0.83	0.37	0.48	3.18	104
SARANAC AR##	1.33	0.98	0.43	0.44	3.17	104
EPIC	1.31	0.79	0.49	0.53	3.12	102
CODY	1.27	0.78	0.57	0.48	3.10	101
LOVELOCK LS-C25	1.32	0.89	0.45	0.44	3.09	101
DEKALB ADVANTAGE	1.37	0.94	0.42	0.35	3.08	101
WATERMAN-LOOMIS WL 313	1.33	0.90	0.46	0.39	3.08	101
RILEY ##	1.47	0.79	0.42	0.37	3.05	100
PEAK	1.30	0.81	0.42	0.52	3.04	99
SHENANDOAH	1.43	0.74	0.46	0.41	3.04	99
PIONEER 555	1.18	0.72	0.49	0.64	3.03	99
PIONEER 532	1.26	0.88	0.42	0.43	2.99	98
PIONEER 526	1.27	0.82	0.47	0.43	2.98	97
BAKER ##	1.34	0.69	0.38	0.55	2.96	97
EMBRO H-134	1.25	0.74	0.52	0.46	2.96	97
CIMARRON	1.35	0.79	0.48	0.32	2.95	96
DAIRYLAND FUTURA	1.19	0.86	0.38	0.50	2.93	96
DAIRYLAND MAGNUM	1.21	0.78	0.47	0.41	2.87	94
PAYMASTER EXPO	1.22	0.79	0.37	0.36	2.74	90
MEAN	1.44	0.83	0.45	0.44	3.16	103
LSD .05	0.25	0.12	0.17	0.18	0.16	
C.V. %	12.40	10.49	27.82	29.50	15.42	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

CHECK VARIETY, MEAN = 3.06 TONS/A.

TABLE 7. PERFORMANCE SUMMARY FOR 27 ALFALFA VARIETIES GROWN NEAR WEST PLAINS, MO. (HOWELL CO.) DURING 1984-85.
SEEDING: FALL 1983.

BRAND/VARIETY	YEAR		MEAN	% CHECK
	1984	1985		
-----TONS/ACRE-----				
WATERMAN-LOOMIS WL 316	2.92*	3.99*	3.46**	121
PIONEER 531	3.07*	3.78	3.43*	120
FFR CLASSIC	2.54	4.01**	3.28*	114
DEKALB 120	3.30*	3.18	3.24*	113
EPIC	3.33*	3.12	3.23*	113
LOVELOCK ICO-10	3.12*	3.31	3.22*	112
PEAK	3.36**	3.04	3.20*	111
O'S GOLD EAGLE	3.08*	3.28	3.18*	111
CODY	3.13*	3.10	3.12*	109
PIONEER 555	3.12*	3.03	3.08*	107
FFR HI-PHY	2.89*	3.24	3.07*	107
PIONEER 532	3.08*	2.99	3.04	106
SARANAC AR ##	2.91*	3.17	3.04	106
WATERMAN-LOOMIS WL 313	2.95*	3.08	3.02	105
LOVELOCK LS-C25	2.91*	3.09	3.00	105
PIONEER XAF12	2.66	3.18	2.92	102
WATERMAN-LOOMIS WL 315	2.62	3.20	2.91	101
DAIRYLAND FUTURA	2.82	2.93	2.88	100
EMBRO H-134	2.79	2.96	2.88	100
DAIRYLAND MAGNUM	2.86*	2.87	2.87	100
PIONEER 526	2.75	2.98	2.87	100
RILEY ##	2.65	3.05	2.85	99
PAYMASTER EXPO	2.90*	2.74	2.82	98
CIMARRON	2.66	2.95	2.81	98
SHENANDOAH	2.54	3.04	2.79	97
DEKALB ADVANTAGE	2.49	3.08	2.79	97
BAKER ##	2.48	2.96	2.72	95
MEAN	2.89	3.16	3.03	105
LSD .05	0.53	0.16	0.39	
C. V. %	13.02	15.42	9.20	

** HIGHEST YIELDING VARIETY.

* VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.

CHECK VARIETY, MEAN = 2.87 TONS/A.

TABLE 8. YIELD PERFORMANCE OF RED CLOVER VARIETIES GROWN ON THE NORTH MISSOURI CENTER NEAR SPICKARD DURING 1985.
 SEEDING: SPRING 1983.

BRAND/VARIETY	HARVEST DATE			TOTAL	% CHECK
	6-13	7-17	10-01		
-----TONS/ACRE-----					
KENSTAR ##	2.67	0.32	0.60	3.59**	100
KENLAND	2.36	0.44	0.52	3.32	92
FFR 1004	2.40	0.37	0.40	3.17	88
TRIAL MEAN	2.48	0.38	0.51	3.36	94
TRIAL LSD .05	NS	NS	NS	NS	
TRIAL C.V. %	16.7	23.8	21.1	22.1	

** HIGHEST YIELDING VARIETY.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 9. PERFORMANCE SUMMARY OF RED CLOVER VARIETIES GROWN ON THE NORTH NEAR SPICKARD 1983-85.
 SEEDING: SPRING 1983.

BRAND/VARIETY	YEAR			MEAN	% CHECK
	1983	1984	1985		
-----TONS/ACRE-----					
FFR 1004	1.38	4.41**	3.17	2.99**	115
KENLAND	1.35	3.23	3.32	2.63*	102
KENSTAR ##	1.56**	2.63	3.59**	2.59	100
TRIAL MEAN	1.43	3.42	3.36	2.74	106
TRIAL LSD .05	NS	0.41	NS	0.37	
TRIAL C.V. %	10.7	7.6	22.1	17.0	

** HIGHEST YIELDING VARIETY.
 * VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 10. YIELD PERFORMANCE OF RED CLOVER VARIETIES GROWN ON THE SOUTHWEST CENTER NEAR MT. VERNON DURING 1985. SEEDED: FALL 1983.

BRAND/VARIETY	HARVEST DATE					TOTAL	% CHECK
	5-09	6-12	7-11	8-09	9-17		
	-----TONS/ACRE-----						
KENSTAR ##	1.81	0.78	0.73	0.25	0.76	4.33**	100
KENLAND	1.58	0.66	0.97	0.31	0.78	4.30	99
FFR 1004	1.45	0.58	0.72	0.26	0.84	3.85	89
TRIAL MEAN	1.61	0.67	0.81	0.27	0.79	4.16	96
TRIAL LSD .05	NS	NS	NS	NS	NS	NS	
TRIAL C.V. %	19.1	21.1	38.7	16.3	9.8	21.6	

** HIGHEST YIELDING VARIETY.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 11. PERFORMANCE SUMMARY OF RED CLOVER VARIETIES GROWN ON THE SOUTHWEST CENTER NEAR MT. VERNON 1984-85. SEEDED: FALL 1983.

BRAND/VARIETY	YEAR		MEAN	% CHECK
	1984	1985		
	-----TONS/ACRE-----			
KENSTAR ##	3.91**	4.33**	4.12**	100
KENLAND	3.82	4.30	4.06	99
FFR 1004	3.33	3.85	3.59	87
TRIAL MEAN	3.69	4.16	3.92	95
TRIAL LSD .05	NS	NS	NS	
TRIAL C.V. %	7.9	21.6	19.0	

** HIGHEST YIELDING VARIETY.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 12. YIELD PERFORMANCE OF RED CLOVER VARIETIES GROWN ON THE EXTENSION FIELD NEAR WEST PLAINS, MO. DURING 1985. SEEDED: FALL 1983.

BRAND/VARIETY	HARVEST DATE				TOTAL	% CHECK
	5-16	6-18	7-19	9-18		
	-----TONS/ACRE-----					
KENLAND	1.74	0.67	0.20	0.57	3.18**	111
KENSTAR ##	1.48	0.67	0.26	0.46	2.87	100
FFR 1004	1.48	0.39	0.16	0.25	2.28	79
TRIAL MEAN	1.57	0.58	0.21	0.43	2.78	97
TRIAL LSD .05	NS	NS	0.06	NS	NS	
TRIAL C.V. %	17.4	21.9	16.9	67.6	23.8	

** HIGHEST YIELDING VARIETY.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 13. PERFORMANCE SUMMARY OF RED CLOVER VARIETIES GROWN ON THE EXTENSION FIELD NEAR WEST PLAINS, MO. DURING 1984-85. SEEDED: FALL 1983.

BRAND/VARIETY	YEAR		MEAN	% CHECK
	1984	1985		
	-----TONS/ACRE-----			
KENSTAR ##	3.28**	2.87	3.08**	100
KENLAND	2.96*	3.18**	3.07	100
FFR 1004	1.93	2.28	2.10	68
TRIAL MEAN	2.72	2.78	2.75	89
TRIAL LSD .05	0.91	NS	NS	
TRIAL C.V. %	19.3	23.8	19.0	

** HIGHEST YIELDING VARIETY.
 * VARIETY WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING VARIETY IN THE TEST.
 ## CHECK VARIETY.
 NS NOT SIGNIFICANT AT .05 LEVEL.

TABLE 14. ALFALFA AND RED CLOVER ENTRIES EVALUATED IN 1985 AND THEIR SEED SOURCES.

BRAND	VARIETY	SEED SOURCE
DAIRYLAND	MAGNUM, FUTURA	DAIRYLAND RESEARCH INTERNATIONAL, RT. 1, BOX 51, CLINTON, WI 53525
DEKALB BRAND	120, ADVANTAGE	DEKALB-PFIZER GENETICS, 3100 SYCAMORE RD., DEKALB, IL 60115
EMBRO	H-134	EMBRO SEED COMPANY, BOX 247, WRIGHT CITY, MO 63390
FFR	CLASSIC, HI-PHY, 1004*	FFR COOPERATIVE, 4112 EAST STATE RD. 225, WEST LAFAYETTE, IN 47906
GREAT PLAINS	CIMARRON, SHENANDOAH	GREAT PLAINS RESEARCH CO., INC., 1221 PIONEER CT., CARY, NC 27511
LOVELOCK	LS-C25, ICO-10	LOVELOCK SEED COMPANY, BOX 700, LOVELOCK, NV 89419
O'S GOLD	EAGLE	O'S GOLD SEED COMPANY, BOX 460, PARKERSBURG, IA 50665
PAYMASTER	EXPO	PAYMASTER SEEDS, BOX 307, BELMOND, IA 50421
PETERSON'S	EPIC	LARRY PETERSON, LTD., BOX 772, CEDAR FALLS, IA 50613
PIONEER	531, 532, 555, 526, XAF12	PIONEER HI-BRED INT., INC., 7301 NW 62ND, BOX 85, JOHNSTON, IA 50131
RESEARCH SEEDS	PEAK	RESEARCH SEEDS, INC., BOX 1393, ST. JOSEPH, MO 64502
WL	313, 316, 315	WATERMAN-LOOMIS RESEARCH, INC., 7625 BROWN BRIDGE RD., HIGHLAND, MD 20777
KANSAS AES	CODY, RILEY	KANSAS AG. EXP. STATION & USDA, MANHATTAN, KS 66506
KENTUCKY AES	KENSTAR* KENLAND*	KENTUCKY AG. EXP. STATION, LEXINGTON, KY 40506
NEBRASKA AES	BAKER	NEBRASKA AG. EXP. STATION & USDA, LINCOLN, NE 68503
NEW YORK AES	SARNAC AR	N.Y. AG. EXP. STATION & USDA, ITHACA, NY 14850

* Red clover variety.

SORGHUM SUDANS

FORAGE SORGHUMS

EXPERIMENTAL PROCEDURES

Field Plot Design. Twelve sorghum sudans and 11 forage sorghum hybrids were evaluated at both Mt. Vernon and Columbia, Mo. in 1985. The tests were each arranged in a randomized complete block design with four replications. Individual plots consisted of four rows, 30 inches wide and 25 feet long.

Cultural Practices. Both tests were planted with a conventional planter modified for small plot work. At harvest, a representative portion of the center two rows was hand harvested to determine yield. The sorghum sudans were harvested at approximate monthly intervals, or when appropriate regrowth was attained, while the forage sorghums were harvested near the 'normal' first frost date. Details of the management practices followed in each trial are given in Table 1, page 4.

Data Recorded. The sorghum sudan trials were harvested three times at Columbia, and four times at Mt. Vernon. A single harvest was made in both forage sorghum trials. Total weights were taken from the two center rows at harvest. A sample was then oven-dried to determine the percentage dry weight. In addition to yield, plant height was measured at harvest in all forage trials. The percentage of heads and percentage of stalks were measured in the forage sorghum trials. All yield data are presented on a dry matter basis.

RESULTS

Sorghum Sudans. Dry matter yields ranged from 2.59 to 3.65 tons per acre at Columbia (Table 15), and from 4.11 to 5.28 tons per acre at Mt. Vernon (Table 16). Two location average yields ranged from 3.48 to 4.46 tons per acre (Table 17). By comparing across years, one can obtain a good indication of the yield stability of a hybrid across a series of environments.

Forage Sorghums. Significant differences in silage yields were found between individual hybrids. Dry matter yields ranged from 6.52 to 11.20 tons per acre at Columbia (Table 18), and from 4.92 to 10.10 tons per acre at Mt. Vernon (Table 19). Two location average yields ranged from 6.75 to 10.14 tons per acre (Table 20). A corn variety was included in the 1985 forage sorghum trial for silage comparison purposes, and was planted at a population of 29,000 plants per acre.

TABLE 15. DRY MATTER PERFORMANCE OF SORGHUM X SUDAN CROSSES NEAR COLUMBIA ON THE AGRONOMY RESEACH CENTER DURING 1983-85.
PLANTED: 7 MAY 1985

BRAND/HYBRID	HARVESTS									YEAR		
	7-10			8-13			10-16			1985	1984	1983
	MOIS- TURE (%)	HEIGHT (IN)	YIELD (T/A)	MOIS- TURE (%)	HEIGHT (IN)	YIELD (T/A)	MOIS- TURE (%)	HEIGHT (IN)	YIELD (T/A)	(T/A)	(T/A)	(T/A)
PIONEER 877F	80.3	76	1.57	84.5	68	1.26	81.4	46	0.82	3.65**	10.98	--
GRAZE KING II	76.7	75	1.50	84.2	69	1.34	82.4	45	0.67	3.51	--	--
PAYMASTER X8908	75.2	74	1.52	85.8	65	1.04	82.3	45	0.89	3.45	--	--
PAYMASTER SWEET SIOUX IV	77.5	76	1.44	86.7	69	0.95	82.1	48	1.00	3.39	12.11	--
DEKALB SUDAX SX-17 *	75.1	79	1.53	86.9	65	0.92	83.9	44	0.90	3.35	15.11**	--
WARNER SUPER-SU IIR	80.2	81	1.35	86.3	72	0.95	82.1	53	0.84	3.14	--	--
TERRA SWEETEN-N-HONEY	78.5	71	1.36	86.1	58	0.98	82.3	44	0.73	3.07	--	--
TAYLOR-EVANS HAYGRAZER II	78.8	80	1.31	85.9	60	0.94	82.5	38	0.69	2.94	12.24	--
TRIUMPH SUPER SWEET 10	81.4	72	1.10	85.7	69	1.06	82.6	50	0.74	2.90	10.74	--
PAG HONEYCHOW	79.6	73	1.25	87.7	65	0.74	82.4	41	0.86	2.85	9.31	--
TERRA GRAZE KING II	79.4	84	1.17	87.0	68	0.92	80.9	56	0.73	2.82	--	--
DEKALB SUDAX ST-6E	80.1	73	1.14	87.1	60	0.96	85.0	42	0.49	2.59	9.80	--
TRIAL AVERAGE	78.6	76	1.35	86.2	66	1.00	82.5	46	0.78	3.14	10.62	
TRIAL LSD .05	3.8	4	NS	NS	NS	0.19	NS	4	0.21	NS	2.85	
TRIAL C.V. %			29.4			13.3			19.6	23.7		

-- DATA NOT AVAILABLE.

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

NS NOT SIGNIFICANT.

TABLE 16. DRY MATTER PERFORMANCE OF SORGHUM X SUDAN CROSSES NEAR MT. VERNON ON THE SOUTHWEST CENTER DURING 1983-85.
PLANTED: 17 MAY 1985

BRAND/HYBRID	HARVESTS												YEAR		
	6-28			7-24			8-27			10-02			1985	1984	1983
	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	MOIS- TURE HT. YIELD (%) (IN) (T/A)	(T/A)	(T/A)	(T/A)
PIONEER 877F	89.4	47	1.06	84.7	56	1.91	87.4	59	1.66	79.8	23	0.65	5.28**	3.99*	--
TAYLOR-EVANS HAYGRAZER II	89.1	50	1.24	87.0	61	1.66	87.1	56	1.59	78.8	25	0.67	5.16*	4.52**	3.23*
PAYMASTER X8908	89.6	43	0.89	86.2	58	1.88	87.4	56	1.57	77.1	20	0.67	5.01*	--	--
GRAZE KING II	89.5	48	0.91	86.5	61	1.63	86.7	61	1.69	79.4	23	0.60	4.83	4.14*	3.57*
TERRA GRAZE KING II	89.4	51	1.07	86.9	59	1.58	87.0	57	1.53	79.0	24	0.65	4.83	4.14*	3.57*
WARNER SUPER-SU IIR	89.6	48	1.06	86.3	60	1.64	87.3	58	1.59	79.1	22	0.51	4.80	--	--
DEKALB SUDAX ST-6E	90.3	50	1.04	87.5	61	1.66	86.9	56	1.53	77.3	19	0.52	4.75	4.25*	--
PAYMASTER SWEET SIOUX IV	89.5	42	0.83	87.2	55	1.61	87.8	54	1.50	78.7	21	0.64	4.58	4.46*	3.29*
TERRA SWEETER-N-HONEY	89.8	45	0.86	86.7	59	1.59	86.7	56	1.50	78.4	20	0.57	4.52	--	--
TRIUMPH SUPER SWEET 10	89.4	39	0.70	86.7	56	1.73	85.9	48	1.51	79.4	20	0.57	4.51	3.97*	3.63**
DEKALB SUDAX SX-17	90.0	47	1.05	88.8	52	1.36	89.0	56	1.45	79.0	20	0.52	4.38	4.10*	--
PAG HONEY CHOW	90.1	45	1.07	87.9	47	1.26	88.1	51	1.40	78.0	17	0.38	4.11	3.42	--
TRIAL AVERAGE	89.6	46	0.98	86.9	57	1.63	87.3	56	1.54	78.7	21	0.58	4.75	4.11	3.22
TRIAL LSD .05	0.6	4	0.16	1.7	3	0.25	0.9	3	0.14	1.3	3	0.06	0.40	0.58	0.51
TRIAL C.V. %			11.0			10.6			6.4			8.2	1.2		

-- DATA NOT AVAILABLE.

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

TABLE 17. PERFORMANCE SUMMARY OF DRY MATTER FOR SORGHUM X SUDAN CROSSES AT TWO MISSOURI LOCATIONS (COLUMBIA AND MT. VERNON) DURING 1985.

	COLUMBIA			MT. VERNON			TWO LOCATION MEAN		
	AVERAGE MOISTURE (%)	TOTAL HEIGHT (IN)	YIELD (T/A)	AVERAGE MOISTURE (%)	TOTAL HEIGHT (IN)	YIELD (T/A)	AVERAGE MOISTURE (%)	TOTAL HEIGHT (IN)	YIELD (T/A)
PIONEER 877F	82.1	190	3.65**	85.3	185	5.28**	83.7	188	4.46**
PAYMASTER X8908	81.1	184	3.45	85.1	177	5.01*	83.1	180	4.23*
GRAZE KING II	81.1	189	3.51	85.5	193	4.83	83.3	191	4.17*
TAYLOR-EVANS HAYGRAZER II	82.4	178	2.94	85.5	192	5.16*	84.0	185	4.05*
PAYMASTER SWEET SIOUX IV	82.1	193	3.39	85.8	172	4.58	84.0	182	3.99*
WARNER SOOPER-SU IIR	82.9	206	3.14	85.6	188	4.80	84.2	197	3.97*
DEKALB SUDAX SX-17	82.0	188	3.35	86.7	175	4.38	84.4	182	3.86*
TERRA GRAZE KING II	82.4	208	2.82	85.6	191	4.83	84.0	200	3.82*
TERRA SWEETEN-N-HONEY	82.3	173	3.07	85.4	180	4.52	83.8	176	3.80*
TRIUMPH SUPER SWEET 10	83.2	191	2.90	85.4	163	4.51	84.3	177	3.70
DEKALB SUDAX ST-6E	84.1	175	2.59	85.5	186	4.75	84.8	180	3.67
PAG HONEYCHOW	83.2	179	2.85	86.0	160	4.11	84.6	170	3.48
TRIAL AVERAGE	82.5	188	3.14	85.6	180	4.73	84.0	184	3.93
TRIAL LSD .05			NS			0.40			0.66
TRIAL C.V. %			23.7			1.2			4.9

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

NS NOT SIGNIFICANT.

TABLE 18. DRY MATTER PERFORMANCE OF FORAGE SORGHUM CROSSES EVALUATED NEAR COLUMBIA ON THE AGRONOMY RESEARCH CENTER DURING 1984-85.
PLANTED: 7 MAY 1985. HARVESTED: 6,8 NOVEMBER 1985.

BRAND/HYBRID	HEIGHT (IN)	MOIS- TURE (%)	HEAD		STALK		YEAR		
			(%)	(T/A)	(%)	(T/A)	1985 (T/A)	1984 (T/A)	1983 (T/A)
ASGROW H8351	105	54	35	3.94	65	7.26	11.20**	--	--
TRIUMPH SUPER SILE 20	102	63	45	4.32	55	5.30	9.62*	9.22	--
PIONEER 931	118	56	27	2.46	73	6.67	9.13*	14.61**	--
PIONEER 3382 ##	93	42	56	5.25	44	3.73	8.98*	3.20	--
DEKALB FS-25E #	87	63	41	3.38	59	4.97	8.35*	9.65	--
PIONEER 947	90	49	43	3.75	57	4.51	8.26	11.70*	--
WARNER 2 WAY DR	85	62	42	3.47	58	4.73	8.20	--	--
PIONEER 927	73	67	27	2.15	73	5.53	7.68	--	--
TRIUMPH SUPER STERILE 30	86	61	47	3.52	53	4.04	7.56	--	--
TAYLOR-EVANS SILOMAKER	75	62	47	3.31	53	3.89	7.20	7.57	--
TERRA HO-K	118	69	28	2.10	72	4.80	6.90	9.48	--
ASGROW BEEFBUILDER T	85	64	28	1.87	72	4.65	6.52	10.75*	--
TRIAL AVERAGE	93	59	39	3.29	61	5.01	8.30	8.67	
TRIAL LSD .05				1.85		1.58	2.89	4.94	
TRIAL C.V. %				40.6		22.3	24.8		

-- DATA NOT AVAILABLE.

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

CORN HYBRID CHECK.

BIRD RESISTANT.

TABLE 19. DRY MATTER PERFORMANCE OF FORAGE SORGHUM CROSSES EVALUATED NEAR MT. VERNON ON THE SOUTHWEST CENTER DURING 1983-85.

PLANTED: 16 MAY 1985. HARVESTED: 16,17 OCTOBER 1985.

BRAND/HYBRID	HEIGHT (IN)	MOIS- TURE (%)	HEAD		STALK		YEAR		
			(%)	(T/A)	(%)	(T/A)	1985 (T/A)	1984 (T/A)	1983 (T/A)
PIONEER 931	137	59	26	2.67	74	7.43	10.10**	8.71**	--
ASGROW H8351	128	59	35	3.23	65	5.84	9.07*	--	--
ASGROW BEEFBUILDER T	107	65	39	3.10	61	4.74	7.84*	8.63	--
TERRA HO-K	120	69	35	2.69	65	4.84	7.53	7.56	7.89**
DEKALB FS-25E #	108	67	35	2.59	65	4.78	7.37	7.58	--
WARNER 2 WAY DR	97	66	36	2.61	64	4.73	7.34	--	--
22 PIONEER 947	110	56	42	3.11	58	4.22	7.33	6.93	--
TAYLOR-EVANS SILOMAKER	89	62	45	3.20	55	3.98	7.18	6.29	5.10
TRIUMPH SUPER SILE 20	116	71	29	1.87	71	4.60	6.47	7.89	6.39
TRIUMPH SUPER STERILE 30	90	65	36	2.31	64	3.99	6.30	--	--
PIONEER 927	89	71	16	0.88	84	4.94	5.82	--	--
PIONEER 3382 ##	107	46	55	2.70	45	2.22	4.92	1.79	--
TRIAL AVERAGE	108	63	36	2.58	64	4.69	7.27	7.03	6.11
TRIAL LSD .05				1.12		1.48	2.34	0.79	1.36
TRIAL C.V. %				30.4		23.4	22.7		

-- DATA NOT AVAILABLE.

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

CORN HYBRID CHECK.

BIRD RESISTANT.

TABLE 20. DRY MATTER PERFORMANCE OF FORAGE SORGHUM CROSSES EVALUATED AT TWO MISSOURI LOCATIONS (COLUMBIA AND MT. VERNON DURING 1985.

BRAND/HYBRID	AVERAGE OF TWO LOCATIONS						LOCATION		
	HEIGHT (IN)	MOIS- TURE (%)	HEAD		STALK		COLUMBIA (T/A)	MT. VERNON (T/A)	MEAN (T/A)
			(%)	(T/A)	(%)	(T/A)			
ASGROW H8351	116	56	35	3.58	65	6.55	11.20**	9.07*	10.14**
PIONEER 931	128	58	26	2.56	74	7.05	9.13*	10.10**	9.62*
TRIUMPH SUPER SILE 20	109	67	37	3.10	63	4.95	9.62*	6.47	8.04
DEKALB FS-25E #	98	65	38	2.99	62	4.88	8.35*	7.37	7.86
PIONEER 947	100	52	42	3.43	58	4.36	8.26	7.33	7.80
WARNER 2 WAY DR	91	64	39	3.04	61	4.73	8.20	7.34	7.77
TERRA HO-K	119	69	32	2.40	68	4.82	6.90	7.53	7.22
TAYLOR-EVANS SILOMAKER	82	62	46	3.26	54	3.94	7.20	7.18	7.19
ASGROW BEEFBUILDER T	96	64	34	2.48	66	4.70	6.52	7.84*	7.18
PIONEER 3382 ##	100	44	56	3.98	44	2.98	8.98*	4.92	6.95
TRIUMPH SUPER STERILE 30	88	63	42	2.92	58	4.02	7.56	6.30	6.93
PIONEER 927	81	69	22	1.52	78	5.24	7.68	5.82	6.75
TRIAL AVERAGE	101	61	37	2.94	63	4.85	8.30	7.27	7.79
TRIAL LSD .05							2.89	2.34	1.86
TRIAL C.V. %							24.8	22.7	23.4

** HIGHEST YIELDING HYBRID IN THE TEST.

* HYBRID WHICH DID NOT YIELD SIGNIFICANTLY LESS THAN THE HIGHEST YIELDING HYBRID IN THE TEST.

CORN HYBRID CHECK.

BIRD RESISTANT.

TABLE 21. FORAGE SORGHUM AND SORGHUM SUDAN ENTRIES EVALUATED IN 1985 AND THEIR SEED SOURCES.

BRAND	VARIETY	SEED SOURCE
ASGROW	BEEFBUILDER T, H8351	ASGROW SEED COMPANY, 7000 PORTAGE ROAD, KALAMAZOO, MI 49001
DEKALB-PFIZER	FS-25E, SUDAX ST-6E, SUDAX ST-17	DEKALB-PFIZER GENETICS, ROUTE 2, LUBBOCK, TX 79415
MID-STATE	GRAZE KING II	MID-STATE WAREHOUSE & STORAGE, INC. 1320 S. GLENSTONE, SUITE 23, SPRINGFIELD, MO 65804
PAG	HONEY-CHOW	PAG SEEDS, BOX 9480, MINNEAPOLIS, MN 55440
PAYMASTER	SWEET SIOUX IV, X8908	PAYMASTER SEEDS, BOX 9493, MINNEAPOLIS, MN 55440
PIONEER	877F, 927, 931, 947	PIONEER HYBRID INTERNATIONAL, INC., 7000 PIONEER PARKWAY, JOHNSTON, IA 50131
T-E	SILOMAKER, HAYGRAZER II	TAYLOR-EVANS SEED COMPANY, BOX 68, TULIA, TX 79088
TERRA	GRAZE KING II, HO-K, SWEETER-N-HONEY	TERRA SEED COMPANY, BOX 10121, LUBBOCK, TX 79408
TRIUMPH	SUPER STERILE 30, SUPER SILE 20, SUPER SWEET 10	TRIUMPH SEED COMPANY, BOX 1050, RALLS, TX 79357
WARNER	SOOPER-SU II R, 2 WAY DR	GEORGE WARNER SEED COMPANY, INC., BOX 1448, HEREFORD, TX 79045

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