

NAME OF TEST: Small grain forage evaluation test, College Station, 1960-61.

OBJECTIVES: To evaluate new varieties of small grains for early and sustained production in comparison with standard varieties such as Mustang and New Nortex oats.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3503

Location: Agronomy Farm, College Station, Texas.

Soil type: Lufkin fine sandy loam.

Cultural practices: Seeded October 12, 1960 in plots consisting of 5 12-inch rows, 17 feet long, 6 replications, harvested 3 x 14 feet. A 48-48-48 fertilizer was broadcast and disked in prior to seeding and one 30-pound nitrogen top dressing was applied during the growing season. Supplementary irrigation was used as necessary to maintain moisture.

RESULTS: See tables.

DISCUSSION: Yields were not as high as obtained in earlier years possibly because of earlier planting, earlier maturity, and cold wet soil conditions during much of the winter. Most of the varieties made good initial growth producing up to 1500 pounds of forage by December 1.

Elbon and Gator rye, Milam wheat and Explorer barley were outstanding in winter production.

PROJECT: State 1240

DATE SUBMITTED: November, 1961

WORKER: E. C. Holt

Forage yield of small grain varieties at College Station, 1960-61

Variety	Pounds of dry forage per acre				Total
	Dec. 1	Feb. 15	March 14	April 24	
Milam wheat	1260	1220	640	500	3620
Mid-south oats	990	850	1010	660	3510
Exp. barley	1150	1490	390	230	3260
New Nortex oats	1140	530	690	890	3250
Elbon rye	840	1200	870	280	3190
Gator rye	910	1500	430	330	3170
Goliad barley	1510	850	550	250	3160
Irradiated Alamo	1210	720	590	580	3100
Moregrain oats	1260	340	760	710	3070
Radar oats	1210	580	610	580	2980
Suregrain oats	1240	550	650	500	2940
Mustang oats	820	480	970	520	2790
Alamo oats	1100	680	430	470	2680
Cordova barley	840	430	710	460	2440
LSD (.05) for total yield					770
C.V. (%)					15.5

## Forage Yield of Small Grain Varieties at College Station, 1954-61

Variety	Pounds of air-dry forage per acre							Comp. Avg.
	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	
Mid-South oats				5870	3000	3640	3510	4300
Elbon rye			6360	5050	3870	3730	3190	4270
Moregrain oats					3490	3920	3070	4220
Atlas 66 wheat	3360	3780	5590	5130	4090			4160
Gator rye				4990	4000	3210	3170	4140
Milam wheat					3330	3280	3620	4140
New Nortex oats	3680	3230	6640	5050	2680	3690	3250	4030
Suregrain oats				4870	3130	3570	2940	3920
Mustang oats	3300	3140	5410	5250	3270	3310	2790	3780
Cordova barley		3150	5650	3930	3500	3260	2440	3560
Alamo oats	2750	3550	6270	4250	2380	2910	2680	3540
Goliad barley	2860	3820	4710	4260	2430	3340	3160	3510
Abruzzi rye	3070	1360	5460	3060	1810			2720
Irradiated Alamo oats							3100	3750
Radar oats							2980	3730
LSD (.05)	720	1080	670	1020	580	660	770	
C.V. (%)	16.3	17.4	19.8	20.5	16.0	17.2	15.5	
No. of cuttings	9	5	4	4	4	4	4	

**NAME OF TEST:** Small grain forage evaluation, Beeville, 1960-61.

**OBJECTIVES:** To determine forage yields of different small grain varieties in terms of both seasonal and total production and to study disease reaction of the various varieties.

**EXPERIMENTAL PROCEDURE:**

Experiment No.: 3544

Location: Substation No. 1, Beeville, Area II

Soil type: Goliad clay loam

Cultural practices: Seed in plots consisting of 4, 12-inch rows, 14 feet long. Harvested 12 feet of the two center rows on Feb. 14 and April 5. Test was planted on Nov. 8 and was up by the 15th.

General weather: Above normal rainfall fell during the early fall, and good soil moisture was present for the establishment of small grain tests and pastures; consequently, good stands were secured. Above normal rainfall continued through December, but it was also abnormally cool, and plant growth was stymied to some extent during this period. This prolonged wet spell also prevented the planting of some pastures. The early spring was dry, but the subsoil moisture carried the plants in good shape. In general, weather conditions were considered good for small grain forage production. However, the weather was also favorable for leaf rust development that caused extensive damage to susceptible varieties.

**RESULTS:** See tables.

**DISCUSSION:** Suregrain was the only leaf rust resistant oat, and it's being the highest yielder in the test is due to this factor. It is the only rust resistant variety left to recommend for the South Texas Area. Moregrain, a sister strain, which has been the other resistant variety became infected during the middle of the season, and the forage yield was reduced. All other oat varieties suffered heavy damage from leaf rust. The wheats were not as severely affected with leaf rust but were slow in early production. The newly released variety Milam is recommended. The barleys gave good early production, which they generally do; but leaf rust and the cool wet weather hampered their late yield. Arrivat and Goliad are still recommended. It appears that the cool humid weather that prevailed was favorable for the ryes even though these were heavily infected with leaf rust during the middle of the season. All of these show promise but need more testing before definite recommendation. Elbon appears the most suitable for grazing. Gulf ryegrass continues to give total yield but most of this production comes in the late season. It is not adaptable for early winter grazing.

Forage yield of small grain varieties at Beeville,  
1960-61

Variety	Pounds of air-dry forage per acre		
	Feb. 14	April 5	Total
Suregrain	1114	2356	3470
Gator rye	1054	2100	3154
Radar I	1591	1402	2993
Explorer rye (Miss.)	814	1818	2632
Moregrain	993	1561	2554
Gulf ryegrass	614	1753	2367
Elbon rye	902	1407	2309
Lee	1103	1173	2276
Irr. Alamo 2286-3	941	1219	2160
Milam	612	1536	2148
Alamo	999	1132	2131
Goliad X Texan 47-53-576	1116	1007	2123
Cordova	835	1254	2089
245-53-188	1092	963	2055
Arrivat	1617	267	1884
Goliad barley	1165	524	1689
New Nortex	698	905	1603
Victor grain	723	671	1394
Mid South	588	798	1386
Mustang	599	661	1260
LSD (.05) for total yield			780

Forage yield of small grain varieties at Beeville, 1952-61

Variety	Pounds of air-dry forage per acre									Comparable Average 1954-61
	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	
Gator rye							5810	1230	3150	3590
Suregrain oats							5000	1620	3470	3550
Moregrain oats							5720	1760	2550	3530
245-53-188 oats						5890	4880	1930	2060	3460
Radar I oats									2990	3380
Milam wheat						4590	6420	1240	2150	3370
Elbon rye							5680	1010	2310	3190
Explorer rye									2630	3020
Irradiated Alamo								1680	2160	2550
Alamo 60%, Mustang 40%	2630	2120	1160	1840	2960	3985	3480 <sup>1/</sup>			2430
Alamo oats	2210	2010	1180	2170	2910	4040	2140	1310	2130	2270
47-53-476 barley								1050	2120	2220
New Nortex oats	1710		760	1850	2510	3960	3350	1520	1600	2220
Arrivat barley			730	1940	2420	3210	3090	1470	1880	2100
Cordova barley			710	1340	3000	3480		1150	2090	2080
Victorgrain oats	2510	2040	960	2040	2010	4290			1390	2080
Camellia oats	2070	2100	790	2050	2400	2690	3220			1980
Goliad barley	1890	1930	1030	1860	2180	3160	3000	800	1690	1960
Mustang oats	2550	1860	850	1700	2750	3680	2390	1020	1260	1950
Mid-South oats							1940	1330	1390	1740
LSD (.05)		230	210	450	760		720		780	
C.V. (%)		9.5	22.8	12.1	19.2		16.0			
No. of cuttings	2	3	1	2	2		2	2	2	

<sup>1/</sup> Alamo 40% 245-53-188 60%

NAME OF TEST: Small grain variety test, Temple, 1960-61.

OBJECTIVE: To evaluate small grain varieties for early and total yielding ability under Central Texas Blackland conditions.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 5, Temple, Texas

Soil type: Houston clay

Cultural practices: Seeded in early October and harvested as indicated.

RESULTS: See table.

PROJECT: State 1240

DATE SUBMITTED: February, 1962

WORKER: E. D. Cook

Small grain variety test, Blackland Experiment Station, 1961, Temple Texas

Varieties	Pounds per acre air-dry forage			Total
	March 15	April 11	May 25	
Milam wheat	1440	1245	1070	3755
Suregrain Oats	715	1345	990	3050
New Nortex Oats	385	1550	1035	2970
Cordova barley	920	1330	550	2800
Moregrain Oats	505	1170	1000	2675
Barley 47-53-576	1575	345	755	2675
Midsouth Oats	475	1425	620	2520
Mustang Oats	400	1340	620	2360
Goliad barley	1355	380	600	2335
Irr. Alamo 2286-3	615	955	635	2205
Gator rye	995	520	565	2080
Alamo Oats	720	750	595	2065
Elbon rye	945	645	425	2015
Gulf Coast rye	40	400	885	1325
Italian rye	10	75	1060	1145
L.S.D.	218	211	235	

**NAME OF TEST:** Forage yield of small grain varieties and mixtures, Denton, 1960-61.

**OBJECTIVES:** (1) to evaluate small grain varieties including several new and experimental types for seasonal and total production, (2) to determine whether certain mixtures have any advantage over pure varietal stands.

**EXPERIMENTAL PROCEDURE:**

Experiment No.: 3685

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Winter grazing crops test consisting of small grains and combinations was planted in moist soil October 7, 1960 and emerged to a satisfactory stand in about two weeks. Seed were banded with 200 pounds of 20% superphosphate per acre at time of planting. No additional fertilizer or supplemental water was used throughout the test. Plots consist of four 12" rows, 25 feet long, replicated four times, with two center rows harvested for yield on dates indicated. Emergence notes dated November 10, 1960 show all varieties with comparable stand with the exception of combination plots containing ryegrass. Ryegrass in all combination plots showed from 40 to 60 percent stand and did not improve as season progressed.

Recorded precipitation from month of planting to date of last harvest was: Oct., 1960 - 1.80; Nov. - .25; Dec. - 3.17; Jan., 1961 - 3.07; Feb. - 2.41; March - 3.60; April - .08; and May - 2.22. A low of 12° for the winter was recorded during January, 1961 with no permanent injury to any entry.

**RESULTS:** See tables.

**DISCUSSION:** Gator, Mississippi Explorer and Elbon ryes again produced the most early forage, followed by 47-53-576, Cordova and Goliad barleys. The combination Elbon rye-Mustang oats produced slightly more yield than any other entry in the test, and the yield was more evenly distributed over the entire growing period.

In order that differences in growth might be showing at time of Station Field Day, May 12, plots were allowed to go from April 5 until May 15 between clippings, which resulted in little or no regrowth after fourth clipping.

Approximately 90 percent of small grain seeded in the area is grazed by livestock. Producers estimate that approximately 50 percent of their returns from fall-planted small grains is from the grazing it affords livestock. Many dairymen and some beef cattle and sheep producers in the area graze their grain to maturity and do not try for a grain crop. Distribution of grazing throughout the period is of major economic importance.

**PROJECT:** State 1240

**DATE SUBMITTED:** April, 1962

**WORKER:** D. I. Dudley

Forage yield of small grain varieties and mixtures  
at Denton, Texas, 1960-61

Variety or mixture	Pounds of air-dry forage per acre				
	March 1	March 15	April 5	May 15	Total
Elbon rye - Mustang oats	1950	1470	1350	1730	6500
Gator rye	3620	350	1090	1340	6400
Midsouth Oats	1020	1000	1700	2570	6290
Moregrain oats	1270	1100	1660	2180	6210
Suregrain oats	1390	860	1290	2610	6150
Radar I oats	1670	840	1090	2470	6070
Miss. Explorer rye	2710	1310	1270	770	6060
Mustang oats	1130	1340	1950	1580	6000
New Nortex oats	1320	1040	1650	1620	5630
Elbon rye	2370	1400	1000	800	5570
Cordova barley	1240	1320	940	1980	5480
Irr. Alamo 2286-3	2120	820	820	1480	5240
Alamo oats	1970	680	620	1950	5220
New Nortex - Quanah wheat	600	930	1800	1870	5200
47-53-576 barley	2070	690	690	1630	5080
Cordova barley - Quanah wheat	990	1170	980	1850	4990
New Nortex - Ryegrass	430	600	1540	2280	4850
Quanah wheat	110	700	1790	2180	4780
Gator rye - Ryegrass	2110	520	860	1260	4750
Milam wheat	380	870	1230	1630	4110
Goliad barley	1270	870	650	1150	3940
LSD (.05) for total yields					850
C.V. (%)					22.5

Forage yield of small grain varieties and mixtures at Denton

Variety	Pounds of air-dry forage per acre			
	1959	1960	1961	Comp. Avg.
Mustang oats	3220	4210	6000	4480
Gator rye	3410	3590	6400	4470
Moregrain oats	2240	4210	6210	4220
Midsouth oats	1570	4060	6290	3970
Cordova barley - Quanah wheat	2720	3940	4990	3880
New Nortex oats	1317	4630	5630	3860
Elbon rye	2850	3130	5570	3850
Cordova barley	2090	3900	5480	3820
Quanah wheat	2380	3580	4780	3580
Suregrain oats	1130	3060	6150	3450
New Nortex oats - Quanah wheat	1900		5200	3440
245-53-188 oats	2040	760		2360
Milam wheat		2280	4110	2350
Alamo oats	240	890	5220	2120
Goliad barley	110		3940	1910
LSD (.05)			850	
C.V. (%)			22.5	
No. of cuttings			4	

NAME OF TEST: Small grain variety evaluation for forage at Prairie View, 1960-61

OBJECTIVE: To study the forage yield pattern and total yielding ability of small grain varieties.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3502

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Seeded November 7, 1960 in plots consisting of 5 12-inch rows, 17 feet long, harvested 3 center rows, 14 feet long. Area fertilized with 20-40-40 prior to seeding.

General conditions: Moisture inadequate for immediate emergence.

Growing conditions throughout most of the season were not favorable.

RESULTS: See tables.

DISCUSSION: Yields were below average for the growing season. Early production was not as good as in previous years.

PROJECT: State 1240

DATE SUBMITTED: September, 1961

WORKER: O. E. Smith

Forage yield of small grain varieties at Prairie View, 1960-61

Variety	Pounds of dry forage per acre				Duncan's Multiple Range	
	March 1	March 27	April 21	Total		
New Nortex oats	1240	1400	60	2700		
Gator rye	1580	940	170	2690		
Elbon rye	1390	1030	140	2560		
Suregrain oats	1130	1220	110	2460		
Moregrain oats	1050	1210	170	2430		
Mid-south oats	950	1260	120	2330		
Radar oats	1020	1120	160	2300		
Irradiated Alamo	960	960	130	2050		
Mustang oats	670	1160	40	1870		
Alamo oats	1110	600	100	1810		
Milam wheat	650	850	170	1670		
Goliad barley	400	280	100	780		
Cordova barley	50	450	190	690		
Experimental barley	140	230	90	460		

LSD (.05) for total yield

## Forage yield of small grain varieties at Prairie View, 1954-61

Variety	Pounds of air-dry forage per acre						Comparable Average 1958-61
	1954-55	1955-56	1956-57 <sup>1/</sup>	1958-59	1959-61	1960-61	
Atlas 66 wheat		3270	4840	5700			4710
Elbon rye				6140	5250	2560	4650
Mid-South oats				5440	5870	2330	4550
Gator rye				5760	4740	2690	4400
Moregrain oats				4870	5400	2430	4230
Bronco oats	4780	2930	4900	5200			4210
New Nortex oats	4870	2580	3430	4710	4830	2700	4080
Irradiated Alamo						2050	3880
Mustang oats	4230	3310	4200	4580	4970	1870	3810
Suregrain oats				4830	4140	2460	3810
Milam wheat				4730	4250	1670	3550
Alamo oats	3640	3590	3650	3960	4270	1810	3350
Cordova barley		2750	3440	4740	4470	690	3300
Goliad barley	3600	2470	3520	4140		780	2880
Abruzzi rye	4420	2100	5290	3030			2040
LSD (.05)	440	690	<u>1/</u>	920	780		
C.V. (%)	8.5	23.2		15.5	26.4		
No. of clippings	4	2		4	4	3	

<sup>1/</sup> First clipping was delayed until March 14 and only the late varieties Bronco, New Nortex, Abruzzi and Cordova recovered. The data were not analyzed statistically.

NAME OF TEST: Small grain forage test at McGregor, Texas, 1961

OBJECTIVES: To evaluate new varieties of small grains for winter and total forage production.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 23, McGregor, Texas

Soil type: Houston clay

RESULTS: See Tables.

PROJECT: State 1240

DATE SUBMITTED: April, 1962

WORKER: M. J. Norris

Small grain forage test, 1961, at McGregor, Texas

C.I. or Sel. No.	Variety or cross	Yield of air-dry forage, lbs. per acre		
		2/15/61	Average 4/20/61	Total
C.I. 9174	Rogers Barley	161	8109	8270
C.I. 7576	Cordova Barley	312	7105	7417
C.I. 13369	Milam Wheat	296	6930	7226
C.I. 12145	Quanah Wheat	244	6452	6696
C.I. 3422	New Nortex Oats	108	6345	6453
47-53-576	Exp. Barley	595	5855	6450
2274-3	Irradiated-Alamo Oats	351	5529	5880
	Elbon Rye	782	5061	5843
C.I. 4660	Mustang Oats	86	5741	5827
C.I. 7155	Suregrain Oats	166	5599	5765
2276-2	Irradiated-Alamo Oats	350	5398	5748
	Miss. Explorer Rye	744	4980	5724
2286-3	Irradiated-Alamo Oats	330	5284	5614
	Gator Rye	795	4755	5550
C.I. 6977	Mid-South Oats	144	5391	5535
C.I. 6571	Bronco Oats	21	5406	5427
C.I. 7299	Moregrain Oats	140	5052	5192
C.I. 5371	Alamo Oats	256	4916	5172
C.I. 12702	Crockett Wheat	60	4851	4911

## Period of years summary small grain forage test at McGregor, 1957-61

Variety or cross	Yield air-dry forage, lbs. per acre										Comparable Average	
	1957		1958		1959		1960		1961			
	1st clip	Total	1st clip	Total	1st clip	Total	1st clip	Total	1st clip	Total	1st clip	Total
New Nortex Oats	560	4150	1530	6210	850	5390	160	5570	110	6450	640	5550
Mistang Oats	660	4930	1920	6890	1170	5650	70	4730	90	5830	780	5610
Alamo Oats	1160	3940	2350	5760	220	2510	170	3950	260	5170	830	4270
Mid-South Oats			1450	5680	1110	5490	170	5240	140	5530	700	5680
Suregrain Oats			2110	6290	830	5040	70	5030	170	5760	780	5480
Moregrain Oats					910	5180	190	5530	140	5190	790	5920
Bronco Oats	470	4150	1320	6290					20	5430	440	4100
Quanah Wheat	540	4110	1330	6430	1320	6870	*	4060	240	6700	440	5630
Crockett Wheat	480	3110			540	5700			60	4910	530	5420
Cordova Barley	640	4100	2220	7570	1750	6490	120	5550	310	7420	1010	6230
Elbon rye			3600	5690	4430	6980	100	4300	780	5840	2210	5650
Gator rye			3280	5390	3920	6800	320	4590	790	5550	2090	5530
Abruzzi rye	100	1770	*	3100	790	4460					390	3820
Exp. Wheat					1130	4830	*	4550			940	6480
Atlas 66 Wheat			1870	6210	1930	6870					1210	7500
Goliad Barley			2850	6950	280	3500					880	6180
Exp. Oats 119-50-8	800	3960	1970	5580							820	3840
Exp. Oats 119-50-12	760	4250	2090	5590							870	3990
Exp. Oats 119-50-17	660	4070	1630	5660							580	3930

No. of cuttings in 1961 = 2

\*Not sufficient growth to clip on 2/19/60

1st clipping date: about February 15, each year

NAME OF TEST: The evaluation of small grain varieties for forage at Mount Pleasant, Texas, 1960-61.

OBJECTIVE: To determine the total yield, season of production and winter survival of small grains clipped for forage.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3501

Location: D. C. Hinson Farm, Mount Pleasant, Texas

Soil type: Sawyer fine sandy loam

Cultural practices: Seed October 22, 1960 in plots consisting of six 12-inch rows, 15 feet long, 4 replications, harvested two center rows, 10 feet long. Fertilized 30-60-60 on October 21, 1960, 30-0-0 on February 23, 1961, and 30-0-0 on March 23, 1961.

Weather conditions: Weather conditions were below normal for the winter growing period. Cold weather and continual rain with wet ground was prevalent during most of this period. The early spring growth period was near normal. Dry periods during the growing season were the months of November and April.

Total rainfall for the growing period was 25.22 inches.

Source of material: Dr. E. C. Holt

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: September, 1961

WORKER: J. A. Lancaster

Forage Yield of Small Grain Varieties, Mt. Pleasant, 1960-61

Variety	Pounds of air-dry forage per acre				Total
	Dec. 21	Feb. 23	March 11	April 13	
Irradicated Alamo	1030	1620	1050	2510	6210
Moregrain oats	690	1340	1560	2500	6090
Elbon rye	880	1680	920	2550	6030
Suregrain oats	690	1300	1550	2240	5780
Alamo oats	970	1400	1030	2270	5670
Mid South oats	260	1210	1630	2510	5610
New Nortex oats	510	1350	1500	2180	5540
Goliad barley	920	1540	1150	1750	5360
47-53-593 barley	540	1690	960	2030	5220
Gator rye	420	1840	740	2020	5020
Mistang oats	150	1180	1610	1980	4920
Cordova barley	110	670	1290	2290	4360
Milam wheat	0	1140	1110	2070	4320
LSD (.05) for total yield					1070
C.V. (%)					28.4

## Forage Yield of Small Grain Varieties at Mt. Pleasant, 1957-61

Variety	Pounds of air-dry forage per acre				Comparable Average 1957-61
	1957-58	1958-59	1959-60	1960-61	
Moregrain oats		4040	5760	6090	5220
Gator rye	4680	6240	3870	5020	4950
Elbon rye	4630	5790	2650	6030	4780
New Nortex oats	4380	2550	4270	5540	4190
Mid-South Oats		3390	3450	5610	4070
Suregrain oats		3320	2720	5780	3860
Mustang oats	4160	3930	2390	4920	3850
Alamo oats	3330	950	2060	5670	3000
Atlas 66 wheat	4590	2610			2830
Cordova barley	1870	3650	1250	4360	2780
Milam wheat		2120		4320	2730
Abruzzi rye	3250	1630			1850
47-53-593 barley				5220	4030
Goliad				5360	4170
Irradicated Alamo				6210	5020
LSD (.05)	530	810	980	1070	
C.V. (%)	6.6	18.2	38.2	28.4	
No. of cuttings	6	5	3	4	

NAME OF TEST: Ryegrass variety evaluation test at College Station, Texas.  
 OBJECTIVES: To evaluate experimental materials for early and total forage production and resistance to leaf rust.

EXPERIMENTAL PROCEDURE:

Experiment No: 3506

Location: Brazos River Valley Lab near College Station, Texas.

Soil type: Miller clay

Cultural practices: Planted October 18, 1960 in plots consisting of five 12-inch rows, 17 feet long, 6 replications, harvested area 3 x 14 feet. The area was topdressed with 60 pounds of nitrogen in two applications during the growing season. Moisture was maintained by irrigation when necessary.

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: September, 1961

WORKER: E. C. Holt

Forage yield of ryegrass varieties, Brazos River Valley Lab, 1960-61

Variety	Pounds air-dry forage per acre		
	Feb. 1	April 18	Total
Stoneville No. 1	1830	2810	4640
Stoneville No. 2	1620	2930	4550
State College No. 1	1130	3280	4410
State College No. 4	1150	3140	4290
State College No. 2	1310	2810	4120
State College No. 5	1280	2660	3940
Texas Synthetic early	1170	2770	3940
Texas Synthetic late	890	3010	3900
State College No. 3	1240	2350	3590
Gulf	860	2660	3520
Florida Rust Resistant	470	2880	3350
Commercial domestic	1070	2050	3120
Stoneville No. 3	710	2360	3070
Tetrone (N9-7)	1090	1440	2530
Commercial Perennial	420	1730	2150
L.S.D. (.05)			1320
C.V. (%)			29.0

Forage yield of ryegrass varieties at College Station, 1955-61

Variety	Pounds of air-dry forage per acre						Comparable Average 1955-61
	1955-56 (1)	1956-57	1957-58	1958-59 (2)	1959-60 (1)	1960-61	
Texas Synthetic Early Stoneville #2		7410	3830	4600 (2.2)	3780 (1.2)	3940	4640
Gulf	3840 (1.4)	7290	3080	4080 (4.7)	3620 (1.2)	3520	4240
La Estanzuela 284	3700 (2.0)	7150	3650	3810 (4.2)	3350 (1.6)		4210
Stoneville #1				3180 (2.8)	3390 (1.3)	4640	4490
Florida rust resistant Common	3260 (1.4)	7230	2890	4210 (2.0)	1220 (4.4)	3350	3690
Perennial	3400 (4.4)	6720	3210	2350 (10.0)	2860 (3.2)	3120	3610
Stoneville #3	2710 (3.2)	7340	1720	2010 (4.8)	2200 (2.8)	2150	3020
State College #1					3590 (1.1)	3070	4220
State College #4						4410	5020
State College #2						4290	4900
State College #5						4120	4730
State College #3						3940	4550
Tetrone (N9-7)						3590	4200
						2530	3140
LSD (.05)	660	N.S.	670	860	365	1320	
C.V. (%)			20.9	20.2	32.9	29.0	
No. of cuttings	3	3	3	3	3	2	

(1) Numbers in parenthesis are rust ratings on a 1 to 5 scale with 1 representing no rust.

(2) Numbers in parenthesis are rust ratings on a 1 to 10 scale with 1 representing no rust.

The test was conducted on Miller clay soil except for the 1958-59 and 1959-60 tests which were on Lufkin fine sandy loam.

NAME OF TEST: Ryegrass variety test at Denton, Texas, 1960-61  
 OBJECTIVE: To determine the total yield and seasonal forage production.  
 EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: The test was planted October 7, 1960, in San Saba clay soil (acre E-2). Seed were banded with 200 pounds of 20 percent superphosphate per acre at time of planting. Plots consist of four 12-inch rows, 25 feet long, replicated 4 times, with 19 feet, 4 inches of two center rows harvested for yield, as growth justified.

Recorded precipitation from month of planting to date of last harvest was: October, 1960, 1.80; November, .25; December, 3.17; January, 1961, 3.07; February, 2.41; March, 3.60; April, .08; May, 2.22; June, 5.58; July, 1.62; August, .73; and September, 4.15. A low of 12 degrees for the winter was recorded during January, 1961, with no permanent injury to any variety.

Source of materials: Dr. A. A. Hanson, Forage and Range Research Branch, ARS, Beltsville, Maryland and Dr. E. G. Holt, Soil and Crop Sciences Department, College Station, Texas.

RESULTS: See table.

DISCUSSION: All plots emerged to satisfactory stands and fair yields were obtained. Commercial Domestic and Commercial Perennial yielded 5 harvests while the remaining 12 entries were harvested only 4 times. As in previous years, Commercial Perennial, encouraged by favorable June rains, was still alive and showed a satisfactory stand when the test was abandoned. However, yields of this entry were much below most other varieties in the test.

PROJECT: State 1240

DATE SUBMITTED: April, 1962

WORKER: D. I. Dudley

Forage yield of ryegrass varieties at  
 Denton, 1960-61

Variety	Pounds air-dry forage per acre					Total
	3/1/61	3/15/61	4/5/61	5/15/61	7/5/61	
College Station Ryegrass-2	670	660	1830	2860		6020
F.C. 35814 Stoneville #1 Rust Res.	460	420	1710	3390		5980
F.C. 35898 Commercial Domestic	340	360	1450	3070	700	5920
F.C. 35209 Gulf Ryegrass	620	550	1880	2870		5920
F.C. 35891 State College #3 Rust Res.	740	590	1840	2460		5630
F.C. 35816 Stoneville #3 Rust Res.	340	520	1820	2930		5610
F.C. 35890 State College #2 Rust Res.	530	530	1920	2580		5560
F.C. 35815 Stoneville #2 Rust Res.	220	360	1840	3110		5530
F.C. 35892 State College #4 Rust Res.	560	580	1960	2350		5450
F.C. 35910 Florida Rust Res.	630	700	1720	2310		5360
College Station Ryegrass-3	460	620	1880	2390		5350
F.C. 35892 State College #5 Rust Res.	480	580	1750	2380		5190
F.C. 35889 State College #1 Rust Res.	290	360	1710	2200		4560
F.C. 34535 Commercial Perennial	50	80	740	2470	450	3790
LSD (.05) for total yield						580
C.V. (%)						17.2

## Forage yield of ryegrass varieties at Denton, 1957-61

Variety	Pounds of air-dry forage per acre				Comparable Average
	1957	1958	1959	1960-61	
Commercial Domestic	4080	10030	3730	5920	5940
Stoneville No. 2			3050	5530	5410
Stoneville No. 1			3310	5980	5270
Gulf Ryegrass		8470	3170	5920	5210
La Estranzuela 284	3140	9590	2840		5150
Commercial Perennial	3100	9430	2790	3790	4780
Florida Rust Resistant	2450	8430	2460	5360	4670
LSD (.05)		1410	340	580	
C.V. (%)		8.4	8.1	17.2	
No. of cuttings	3	5	3	5	

NAME OF TEST: Ryegrass variety yield test, Prairie View, 1960-61.

OBJECTIVES: To study the yield performance and rust infection of experimental ryegrass varieties in comparison with common ryegrass.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3509

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted November 7, 1960 in plots consisting of five 12-inch rows, 17 feet long, harvested 3 center rows, 14 feet long. Area fertilized with 20-40-40 prior to planting; seeding rate 10 pounds per acre.

General conditions: Moisture inadequate for immediate emergence..

Growing conditions throughout most of the season were below average.

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: November, 1961

WORKER: O. E. Smith

Forage yield of ryegrass varieties, Prairie View, 1960-61

Variety	Pounds of air-dry forage per acre				Duncan Multiple Range Test
	March 1	March 27	April 21	Total	
Florida Rust Res.	890	2390	700	3980	
Gulf	1060	2170	660	3890	
State College No. 3	940	2240	580	3760	
State College No. 4	990	2160	610	3760	
State College No. 5	1010	2150	530	3690	
State College No. 2	760	2200	680	3640	
Stoneville No. 2	850	2130	610	3590	
Stoneville No. 3	650	1860	870	3380	
State College No. 1	700	2040	630	3370	
Stoneville No. 1	600	1900	580	3080	
Commercial domestic	600	1660	760	3020	
Commercial perennial	20	570	550	1140	
LSD (.05) for total yield				925	
C.V. (%)				32.7	

## Forage yield of ryegrass varieties, Prairie View, 1958-61

Variety	Pounds of air-dry forage per acre			Comparable Average
	1958-59	1959-60	1960-61	
Florida Rust Res.	6800		3980	6090
Gulf	5820	7370	3890	
State College No. 3			3760	5920
State College No. 4			3760	5920
State College No. 5			3690	5850
State College No. 2			3640	5800
Stoneville No. 2	6140	6730	3590	5490
Stoneville No. 3		6850	3380	5490
State College No. 1			3370	5530
Stoneville No. 1	5870	6140	3080	5030
Commercial domestic	6300	7060	3020	5460
Commercial perennial	5170	5280	1140	3860
LSD (.05)	800	650	925	
C.V. (%)	9.5	13.5	32.7	
No. of cuttings	3	3	3	

NAME OF TEST: Ryegrass variety test, Mt. Pleasant, Texas, 1960-61  
 OBJECTIVE: To determine the total yield and season forage production.  
 EXPERIMENTAL PROCEDURE:

Location: D. C. Hinson Farm, Mt. Pleasant, Texas

Soil type: Sawyer fine sandy loam

Cultural practices: Seed October 24, 1960 in plots consisting of four 12-inch rows, 15 feet long, 4 replications, harvested two center rows 10 feet long. Fertilized 30-60-60 on October 23, 1960, 30-0-0 on March 11, 1961 and 30-0-0 on April 4, 1961.

Weather conditions: Weather conditions were below normal for the winter growing period. Cold weather and continual rain with wet ground was prevalent during most of this period. The early spring growth period was near normal. Dry periods during the growing season were the months of November and April.

Total rainfall for the growing period was 25.22 inches.

Source of material: Dr. E. C. Holt

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: September, 1961

WORKER: J. A. Lancaster

Forage yield of ryegrass varieties at Mt. Pleasant, 1960-61

Variety	Pounds of air-dry forage per acre			Total
	March 11	April 3	April 27	
College Station #1	970	1820	2260	5050
College Station #2	900	1580	2320	4800
Stoneville #3	920	1640	2160	4720
Gulf	850	1590	2280	4720
State College #3	910	1780	2000	4690
State College #2	780	1650	1780	4210
State College #4	840	1520	1820	4180
State College #5	690	1360	2110	4160
Stoneville #2	830	1320	1910	4060
State College #1	670	1450	1830	3950
Stoneville #1	630	1140	1940	3740
Florida Rust.Res.	780	1400	1540	3720
Commercial Domestic	600	870	2130	3600
Commercial Perennial	460	670	1280	2410
LSD (.05) for total yield				700
C.V. (%)				21.0

## Forage yield of ryegrass varieties at Mt. Pleasant, 1959-61

Variety	Pounds of air-dry forage per acre		Comparable Average
	1959-60	1960-61	
College Station #2		4800	3960
College Station #1	2780	5050	3920
Gulf	2980	4720	3850
State College #3		4690	3850
State College #2		4210	3370
State College #4		4180	3340
State College #5		4160	3320
Stoneville #2	2480	4060	3270
Stoneville #3	1820	4720	3270
La Estanzuela 284	2360		3200
State College #1		3950	3110
Commercial Domestic	2360	3600	2980
Florida Rust Res.		3720	2880
Stoneville #1	1870	3740	2810
Commercial Perennial	1470	2410	1940
LSD (.05)	690	700	
C.V. (%)	31.2	21.0	
No. of clippings	2	3	

NAME OF TEST: Rescuegrass variety test, Mt. Pleasant, Texas.

OBJECTIVE: To determine the seasonal and total forage production of several rescuegrass varieties.

EXPERIMENTAL PROCEDURE:

Location: D. C. Hinson Farm, Mt. Pleasant, Texas

Soil type: Sawyer fine sandy loam

Cultural practices: Seeded October 22, 1960 in plots consisting of four 12-inch rows, 15 feet long, 4 replications, harvested 2 center rows 10 feet long. Fertilized 30-60-60 on October 22, 1960, 30-0-0 on March 11, 1961, 30-0-0 on April 3, 1961.

Weather conditions: Weather conditions were below normal for the winter growing period. Cold weather and continual rain with wet ground was prevalent during most of this period. The early spring growth period was near normal. Dry periods during the growing season were the months of November and April.

Total rainfall for the growing period was 25.22 inches.

Source of material: Dr. E. C. Holt

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: September, 1961

WORKER: J. A. Lancaster

Forage yield of rescuegrass varieties at Mt. Pleasant, 1960-61

Variety	Pounds of air-dry forage per acre			
	March 11	April 3	April 27	Total
Georgia Selection	1030	1280	2130	4440
Lamont	980	1210	2030	4220
Chapel Hill	590	1000	1790	3380
Nakuru	610	850	1620	3080
LSD (.05) for total yield				890
C.V. (%)				28.4

## Forage Yield of Rescue Varieties at Mt. Pleasant, 1959-61.

Variety	Pounds of air-dry forage per acre		Comparable
	1959-60	1960-61	Average 1950-61
Georgia Selection	3500	4440	3970
Lamont	2760	4220	3490
Prairie Brome	2700		3140
Chapel Hill	2780	3380	3080
Nakuru	2550	3080	2820
Texas 46	2050		2490
LSD (.05) for total yield		560	890
C.V. (%)		25.2	28.4
No. of clippings		3	3

NAME OF TEST: Smooth brome and Phalaris varieties

OBJECTIVE: To evaluate the yielding and survival ability of various smooth brome and Phalaris varieties and accessions.

EXPERIMENTAL PROCEDURE:

Location: Brazos River Valley Lab near College Station, Texas

Soil type: Miller clay

Cultural practices: Seeded October 27, 1960 in single row plots, 40" rows, 18' long, 4 replications. Emergence delayed because of dry soil. Good stands obtained in late November. Top-dressed with 30 pounds per acre of nitrogen in April, 1961. Growth and development was very slow during the winter and only one harvest was made in late June.

RESULTS: See table.

DISCUSSION: The Phalaris entries produced about twice as much forage as the brome varieties and strains. Fall recovery of the Phalaris varieties also was better than the bromes. All entries except Manchar brome maintained satisfactory stands through the summer.

PROJECT: 1240

DATE SUBMITTED: January, 1962

WORKER: E. C. Holt

Forage yield of smooth brome and Phalaris varieties,  
Brazos River Valley Lab., 1961

Variety	Pounds of air-dry forage per acre June 28, 1961
Phalaris bulbosum	2450
Hardinggrass	2280
Southland brome	1100
Texas 58 brome	985
Saratoga brome	980
Wisconsin brome	860
Lancaster brome	760
Wisconsin 81 brome	700
15-33 brome	600
Manchar brome	570
Achevbach brome	550
6-4-2 brome	410
LSD (.05)	640
C.V. (%)	43.4

NAME OF TEST: Sudan variety and hybrid evaluation, Brazos River Valley Lab., 1961

OBJECTIVE: To evaluate varieties and hybrids for forage yield and regrowth ability.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3578

Location: Brazos River Valley Lab near College Station, Texas

Soil type: Miller clay

Cultural practices: Planted April 14, 1961 in plots consisting of 3 40-inch rows, 20 feet long, 5 replications, center row harvested for yield. A 48-48-48 fertilizer applied in band under row when land was prepared for planting, 60 pounds of nitrogen topdressing during growing season. The area was irrigated as necessary for good growth.

RESULTS: See tables.

DISCUSSION: The yields were extremely variable in 1960. This area was leveled for irrigation during the winter of 1960-61 and this probably accounts for much of the variation in yields.

PROJECT NO.: State 1240

DATE SUBMITTED: December, 1961

WORKER: Ethan C. Holt

Forage yield of Sudan varieties and hybrids, Brazos River Valley Lab., 1961

Variety or hybrid	Pounds of air-dry forage per acre			Total
	June 22	July 20	Sept. 18	
Perennial Sweet sorgrass	2070	1750	4500	8320
Sudax 11	3120	2070	1770	6960
Sorghum alnum	2280	2150	2370	6800
Piper Sudan	2730	2040	1950	6720
Grazer W	2860	1870	1650	6380
Stoneville Synthetic #1	2170	1850	1880	5900
Georgia 337	1910	1590	2160	5660
Oklahoma Experimental (Piper XS)	2440	1830	1100	5370
Greenleaf Sudan	2170	1810	1150	5130
Stoneville Selection	1980	1260	1830	5070
Wheeler Sudangrass	1810	1780	1300	4890
Lahoma Sudan	2090	1190	890	4170

Forage yield of Sudangrass varieties, Brazos River Valley Lab., 1954-61

Variety	Pounds of air-dry forage per acre								Comp. Avg.
	1954	1955	1956	1957	1958	1959	1960	1961	
Sudax 11						10280		6960	8220 ✓
Sorghum alnum			5180	5520	10760	11140	8500	6800	7980 ✓
Common	5740	4120	4770	7230	9860				7670
Piper	6950	5400	4760	7850	8970	8440	7470	6720	7370
Stoneville Syn. #1				6280	10720	7980	8120	5900	7280
Perennial Sweet			4320	5510	10120	7310	6990	8320	7100 ✓
Tift	6670	4580			9860	7350	7580		7010 ✓
Grazer W.								6380	6820 ✓
Georgia 337	4200		3920	6420	9290	7180	7070	5660	6590
Oklahoma Exp.							7350	5370	6400
Stoneville Sel.				6230	8750	7890	6390	5070	6350
Sweet 372	5600	4860	4500	5820	8240	6750	5650		6100
Sweet 372 (S-1)	3920	5060	4460	5910		5040			5830 ✓
Greenleaf	4770	4750	3750	5830	6490	6950	6550	5130	5780
Lahoma	5160	4830	3590	5740	8420	6290		4178	5710
Wheeler	7250	5540						4890	5330
LSD (.05)	1610	N.S.	N.S.	N.S.	1730	1950	2350	N.S.	
C.V. (%)	21.8	19.0	16.0	19.2	21.9	22.5	7.0		
No. of clippings	5	3	3	4	3	3	4	3	

NAME OF TEST: Sudan Variety Forage Evaluation Test, 1960.

OBJECTIVES: To try to ascertain the characteristics of a sudan variety that would be best adapted for South Texas condition through its relative forage-production characteristics.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 1 - Beeville Experiment No.: 3440

Soil type: Clareville sandy clay loam

Experiment design: Randomized block, 4 replications, 2-row plots (38" x 34.38" ft. long) - 1/200 acre.

Crop management: Test planted March 29th. Soil was in ideal cultivated and moisture condition. Good stands were up by April 4th. The abnormal cold weather delayed spring planting from 10 to 15 days. Seeding rate was 12 pounds per acre. Previous 2 years crops were sorghum. No irrigation or fertilizer was applied.

Source of material: E. C. Holt, College Station, Texas.

RESULTS: See tables.

DISCUSSION: Three clippings were made: June 2, July 25, Sept. 27.

Clippings were intended to be made at boot stage of most varieties.

Growing conditions were very favorable for sudan production because of ample rainfall with good distribution.

The development of a sudan with a longer life cycle that will

Forage yield of Sudan varieties, hybrids, and seed mixtures,  
Beeville, 1960

Variety or Mixture	Pounds of air-dry forage per acre			
	June 2	July 25	Sept. 27	Total
Grazer W	2070	2020	1600	5690 —
Sorghum alnum	1520	1900	1840	5260
50% Sorgrass-50% Grazer W.	1720	1720	1480	4920
Common	1460	1580	1660	4700~
50% Sorgrass-50% Common	1700	1380	950	4030
Piper	1550	1560	880	3990
Stoneville Synthetic No. 1	1370	1480	1120	3970
Tift	1160	1480	1160	3800
50% Sweet-50% Common	1430	1240	840	3510
Georgia 337	1240	1380	790	3410
50% Sorgrass-50% Sweet	1230	1180	970	3380
Sorgrass	830	1260	1180	3270
Sweet 372	1220	1240	630	3090 ✓
Greenleaf	1070	1240	730	3040
Stoneville Selection	1150	1100	760	3010
LSD(.05) for total yields				890
C.V. (%)				12.1

DISCUSSION CONTINUED: produce forage as late as October will help bridge the gap between the warm-season annuals that go out in August and the cool-season plants that do not produce forage until late November or December. Grazer, Sudax-11, Sorghum Almun, and Sorgrass seem to be accomplishing this need. Also, the mixtures look promising. Normally, common, Piper, Greenleaf, and regular sweet sudans only furnish grazing up to August.

Grazer produced very good yield and has good recovery ability. It also grazes very well from observation of strips planted in two grazing fields.

Sorghum Almun is also a good consistent producer but is not as palatable. This also was borne out in observations in the grazing field. This variety probably would be good for maintenance-cattle grazing such as a herd of brood cows with calves.

Sorgrass gave somewhat disappointing yield, but this is due to poor stands. It showed up well in the grazing field and proved more palatable than Sorghum Almun.

Tift continues to show up for leaf disease resistance but lacks in palatability. Would do well as a maintenance grazer.

Common, Piper, and the regular sweet sudans fall in the same pattern of good grazing in spring and early summer but play out early and do not recover after the summer drouth.

The mixtures continue to show good promise in making for better grazing and a long distribution.

PROJECT: 1240

DATE SUBMITTED: March 10, 1961

WORKER: Lucas Reyes

Forage yield of Sudan varieties and hybrids  
Beeville, 1958-60

Variety	Pounds of air-dry forage per acre			Comparable average
	1958	1959	1960	
Sudax 11		6180		6150
Grazer			5690	5630 ✓
Sorghum Almun	5630		5260	5460
50% Sorgrass-50% Grazer			4920	4860
Stoneville Synthetic No. 1	3930	4690	3970	4200
Tift	4290	3910	3800	4000
Perennial Sweet sorgrass	4610	3690	3270	3860
Stoneville Selection	4490	4000	3010	3830
Common	2880	3420	4700	3670
Piper	3580	2820	3990	3460
50% Sweet-50% Common	2430	3580	3510	3170
Sweet 372	2390	3730	3090	3070
Georgia 337	2900	2640	3410	2980
Lahoma	2360	3530		2970
Greenleaf		2980	3040	2970
LSD (.05)	780	560	890	
C.V. (%)	14.4	10.4	12.1	
No. of cuttings	3	3	3	

**NAME OF TEST:** Sudan forage evaluation variety test, 1961, Beeville.

**OBJECTIVES:** To try to ascertain the characteristics of a sudan variety that would be best adapted for South Texas conditions through its relative value of forage production with good distribution for grazing usefulness.

**EXPERIMENTAL PROCEDURE:**

Location: Substation No. 1 - Beeville, Texas

Soil type: Clareville sandy clay loam

Experimental design: Randomized block, 4 replications, 2-row plots (38" x 34.38 feet long) - 1/200 acre

Cultural practices: Test was planted March 27, and soil was in an ideal cultivated and moisture condition. Good stands were up by April 5th. The abnormally cold weather delayed spring planting from 15 to 20 days. Seeding rates were 8-10 and 12 pounds per acre depending on seed size. Previous 3 years the crops were sorghum. No irrigation or fertilizer was applied.

Source of material: E. C. Holt, College Station, Texas

**RESULTS:** See table.

**DISCUSSION:** Three clippings were made on June 5, July 24, and October 6. Clippings were intended to be made at boot stage of most varieties. Growing conditions were favorable for sudan production because of ample rainfall with good distribution.

The development of a sudan with a longer life cycle that will produce forage as late as October will help bridge the gap between the warm-season annuals that go out in August and the cool-season plants that do not produce forage until late November or December. The hybrid sudan strains, sorghum alnum and sorgrass, seem to be helping to accomplish this need. Also, the mixtures look promising. It has been found that normally common, Piper, greenleaf, and regular sweet sudans only furnish grazing up to August.

All of the hybrids from crosses of sorghums with sweet sudan produced very good yields and had good recovery ability. Some of these have grazed very well from observation of strips planted in two grazing fields.

Sorghum alnum is also a good consistent producer but is not as palatable. This also was borne out in observations in the grazing field. This variety probably would be better suited for maintenance grazing such as a herd of brood cows with calves.

Sorgrass did not produce as high yields, but the forage quality is good. It showed up well in the grazing field and proved more palatable than sorghum alnum.

Common, Piper and the other regular sweet sudans fall in the same pattern of good grazing in spring and early summer but play out early and do not recover after the summer drouth.

The mixtures continue to show good promise in making for better grazing and a longer distribution.

**PROJECT NO.:** State 1240

**DATE SUBMITTED:** February, 1962

**WORKER:** Lucas Reyes

Forage yield of sudan varieties, hybrids and seed mixtures,  
Beeville, 1961

Variety or mixture	Pounds of air-dry forage per acre			
	June 5	July 24	Oct. 6	Total
Redlan. X Sweet	2160	3140	1410	6710
Rhod. X Stoneville Syn.	2750	2700	1230	6680
Tex. Bh. Kafir X Sweet	2090	3080	1180	6350
Tex. Comb. Kafir X Sweet	2220	2770	1070	6060
Sudax 11	2030	2750	1050	5830 -
Grazer W	2400	2620	740	5760 -
Grain-Grass 3056 X Piper	2320	2430	1000	5750
Suhi-1 Sudax X (Rhod. X Tift)	1950	2540	1200	5690
Grain-Grass 3054 X Sweet	1940	2380	1150	5470
Sorghum Alum	2030	2190	1190	5410
50% Sorgrass - 50% Grazer W	2240	2060	850	5150
Grain-Grass 3056 X Sweet	2130	2000	990	5120
Piper X S. propinguum	1870	2170	850	4890
50% Sweet - 50% Sorghum Alum	1770	1850	830	4450
Sorgrass	1340	1950	960	4250
50% Sweet - 50% Common	2090	1450	500	4040
50% Sweet - 50% Sorgrass	1320	1660	760	3740
Greenleaf	1350	1750	600	3700
Common	1560	1600	460	3620
Sweet 372	1570	1400	370	3340
LSD (.05) for total yields				620
C.V. (%)				15.1

Forage yield of sudan varieties and hybrids  
Beeville, 1958-61

Variety	Pounds of air-dry forage per acre				Comparable
	1958	1959	1960	1961	Avg.
Redlan X Sweet				6710	6430
Rhod. X Stoneville Syn.				6680	6400
Tex. Bh. Kafir X Sweet				6350	6070
Sudax 11		6180		5830	5830
Tex. Comb. Kafir X Sweet				6060	5780
Grazer			5690	5760	5530
Rhod. X Stoneville Syn.				5750	5470
Sorghum Almun	5630		5260	5410	5450
Suhi-1 Sudax X (Rhod. X Tift)				5690	5410
Grain-Grass 3054 X Sweet				5470	5190
Grain-Grass 3056 X Sweet				5120	4840
50% Sorgrass - 50% Grazer			4920	5150	4840
Piper X S. propinguum				4890	4610
Stoneville Syn. No. 1	3930	4690	3970		4290
50% Sweet - 50% Sorghum Almun				4450	4170
Tift	4290	3910	3800		4090
Perennial Sweet Sorgrass	4610	3690	3270	4250	3950
Stoneville Selection	4490	4000	3010		3920
Common	2880	3420	4700	3620	3650
Piper	3580	2820	3990		3550
50% Sweet - 50% Sorgrass				3740	3460
50% Sweet - 50% Common	2430	3580	3510	4040	3390
Sweet 372	2390	3730	3090	3340	3140
Lahoma	2360	3530			3130
Greenleaf		2980	3040	3700	3090
Georgia 337	2900	2640	3410		3070
LSD (.05)	780	560	890	620	
C.V. (%)	14.4	10.4	12.1	15.1	
No. of cuttings	3	3	3	3	

NAME OF TEST: Forage yields of sudan at McGregor, Texas, 1961

EXPERIMENTAL PROCEDURE:

Location: Substation No. 23, McGregor, Texas

Soil type: Houston clay

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: April, 1962

WORKER: M. J. Norris

Forage yields of sudan at McGregor, 1961

Variety or strain	Yield forage dry, lbs. per acre		Total
	1st clipping 7/19/61	2nd clipping 10/17/61	
Bk. Kafir X Sweet Sudan	8,688	5,184	13,872
F1 Hybrid Sudan	8,760	4,540	13,300
Hy-Su	7,547	4,027	11,574
Su-Grass	7,429	3,782	11,211
Bk. Kafir X Piper	7,338	3,850	11,188
Stoneville Sel.	6,391	3,767	10,758
Lahoma	5,942	4,104	10,046
Grain Grass 3054 X S.S.	6,870	3,097	9,967
Sorghum alnum	6,754	3,159	9,913
Grain Grass 3054 X Piper	6,931	2,704	9,635
Piper X S. Propinquum	6,032	3,551	9,583
Stoneville Synthetic	5,652	3,765	9,417
Greenleaf	5,674	3,128	8,802
Piper	5,884	2,786	8,670
Perennial Sweet Sudan	5,275	2,954	8,229
Georgia 337	5,029	2,863	7,892
Sweet 372	4,874	2,256	7,130
Wheeler	4,288	1,884	6,172
Johnsongrass	2,572	1,061	3,633

Period of years summary 1960-61, Sudan forage test  
McGregor, Texas

Variety	Yield dry forage, lbs. per acre					
	1960		1961		Comparable Average	
	1st	Total	1st	Total	1st	Total
Bk. Kafir X Sweet Sudan			8,690	13,870	7,880	12,840
F1 Hybrid Sudan			8,760	13,300	7,950	12,270
Hy-Su			7,550	11,570	6,740	10,540
Su-Grass			7,430	11,210	6,620	10,180
Bk. Kafir X Piper			7,340	11,190	6,530	10,160
Lahoma			5,940	10,050	5,130	9,020
Grain Grass 3054 X S.S. (Sweet Sudan)			6,870	9,970	6,060	8,940
Stoneville Selection	4,950	7,480	6,390	10,160	5,670	8,820
Grain Grass 3054 X Piper			6,930	9,630	6,120	8,600
Piper X S. Propinquum			6,030	9,580	5,220	8,550
Stoneville Synthetic	4,450	7,570	5,650	9,420	5,050	8,490
Sorghum alnum	3,690	6,720	6,750	9,910	5,220	8,320
Greenleaf	4,410	6,610	5,670	8,800	5,040	7,700
Piper	3,960	6,690	5,880	8,670	4,920	7,680
Georgia 337	4,220	6,870	5,030	7,890	4,620	7,380
Perennial Sweet Sudan	2,870	5,770	5,270	8,230	4,070	7,000
Sweet Sudan 372	3,990	6,130	4,870	7,130	4,410	6,630
Wheeler			4,290	6,170	3,480	5,140
Johnsongrass			2,570	3,630	1,760	2,600

NAME OF TEST: Sudan (and Millet) variety test, Mt. Pleasant, Texas, 1960  
 OBJECTIVE: To determine the yielding ability and adaptation of sudan and millet to the Mt. Pleasant area.

## EXPERIMENTAL PROCEDURE:

Experiment No.: 3644  
 Location: Grant McAnally Farm, Mt. Pleasant, Texas  
 Soil type: Bowie loamy fine sand  
 Source of materials: Soil & Crop Sciences Department  
 Experimental design: (a) Randomized: 4 reps., (b) Plot size: 3 rows planted 36 inches apart, 30 feet long, area clipped for yield 20 feet of 1 row (center row).

## CROP MANAGEMENT PRACTICES:

Planted: May 16, 1961  
 Fertilized: 30-60-60, May 15, 1961  
 Top dressed: 30 lb. of N on June 29, 1961

GENERAL: The weather conditions during the growing season were unfavorable at times. The rainfall total was 15.98 inches.

RESULTS: See tables.

Forage yield of Sudan varieties and hybrids  
 at Mt. Pleasant, 1961

Variety or hybrid	Pounds of air-dry forage per acre <u>1/</u>			% Leaves	
	June 29	July 25	Total	June 29	July 25
Tex. Comb Kafir x Sweet	480	480	960 a	56.5	53.5
Grazer - W	430	510	940 ab	64.5	48.0
Tex. Graingrass 3054 x Piper	430	480	910 abc	52.0	36.5
Tex. Graingrass 3056 x Sweet	460	450	910 abcd	51.5	39.5
Tex. Redlan x Sweet	420	470	890 abcde	67.0	49.0
Tex. Blk. Kafir x Sweet	440	450	890 abcdef	61.0	47.0
Ga. Exp. F <sub>1</sub>	370	470	840 bcdefg	58.5	52.0
Tex. Graingrass 3056 x Piper	440	390	830 cdefg	48.0	44.0
Tex. Blk. Kafir x Piper	390	410	800 defgh	51.5	50.5
Tex. Redlan x Piper	400	390	790 efgh	47.0	40.0
Sorghum alnum	350	440	790 fgh	55.0	49.0
Sudax 11	380	400	780 fghij	59.5	45.5
Stoneville Syn.	340	420	760 ghij	58.0	46.5
Stoneville Sel.	340	400	740 ghij	53.0	46.0
Tex. Graingrass 3054 x Sweet	370	370	740 ghij	65.5	41.0
Ga. Suhi-1	380	360	740 ghij	58.5	49.0
Tex. Comb. Kafir x Piper	340	400	740 ghij	55.5	46.0
Sweet 372	340	398	730 ghij	47.5	47.0
Greenleaf	360	360	720 hij	47.5	44.5
Oklahoma Experimental	340	360	700 hij	51.5	42.5
Piper	360	320	680 ijk	61.5	41.5
Perennial Sweet	320	350	670 jk	51.5	48.0
Lahoma	300	300	600 k	54.0	49.0

PROJECT: 1240  
 DATE SUBMITTED: January, 1962  
 WORKER: J. A. Lancaster

1/ The values within the column having the same letter do not differ at the 5% level of probability. C. V. = 11.6%.

## Forage yield of Sudan varieties at Mt. Pleasant

## Period of Years Summary

Variety	1959	1960	1961	Comparable Average
Tift	2610	3040		2320
Sudax 11	2610		780	2090
Piper	2070	3320	680	2020
Sorghum alnum	2340		790	1960
Grazer-W			940	1950
Greenleaf	1740	3150	720	1870
Stoneville Synthetic	1940	2760	760	1820
Oklahoma Experimental		2740	700	1830
Sweet 372	1760	2680	730	1720
Stoneville Selection	1740		740	1640
Georgia 337	1920	2240		1580
Perennial Sweet	2070	1850	670	1530
Lahoma	1940	2040	600	1530
LSD (.05)	800	510	100	
C.V. (%)	24.4	30.5	11.6	
No. of cuttings	3	4	2	

NAME OF TEST: Millet variety forage yields, College Station, 1961  
 OBJECTIVES: To evaluate the forage yielding ability of Millet varieties and hybrids under good growing conditions.

## EXPERIMENTAL PROCEDURE:

Experiment No.: 3576

Location: Brazos River Valley Laboratory near College Station

Soil type: Miller clay

Cultural practices: Planted April 14, 1961 in plots consisting of 3 40-inch rows, 20 feet long, 5 replications. Fertilized with 48-48-48 prior to planting and 30 pounds of nitrogen top dressing following first cutting. Irrigated 2 times during growing season.

RESULTS: See tables.

DISCUSSION: There was no significant difference among the varieties. Gahi-1 was the highest yielding and appeared to hold up better in late season which also has been noted in previous plantings. The yields were variable which also has been noted in previous seasons. Millet makes rather erratic regrowth which increases the variability of the results.

PROJECT: 1240

DATE SUBMITTED: November 1961

WORKER: Ethan C. Holt

## Forage yield of millet varieties near College Station, 1961

Variety	Pounds of air-dry forage per acre			Total
	June 22	July 20	Sept. 18	
Gahi-1 Pearl Millet	2410	1270	1840	5520
Hybrid SJ Pearl Millet	2150	1720	1090	4960
Lahoma Sudangrass	2330	1510	730	4570
Common Pearl Millet	2040	1880	560	4480
Texas No. 7 Millet	2380	1640	310	4330
Starr Pearl Millet	1690	1470	1050	4210

LSD (.05)

N.S.

C.V. (%)

31.4

Variety	Period of years Summary				Average
	1958	1959	1960	1961	
Gahi-1	9250	6650	5480	5520	6720
Hybrid SJ	6710	7120	4490	4960	5820
Starr	7980	5560	5080	4210	5710
Common	6550	6780	4990	4480	5700
Texas No. 7	7350	6130	4360	4330	5540

LSD (.05)

2010

1680

N.S.

N.S.

C.V. (%)

29.9

38.3

40.4

31.4

No. of cuttings

3

3

3

3

NAME OF TEST: 1960 Millet Variety Clipping Test

OBJECTIVES: To evaluate the adaptability of millets for forage and grazing usefulness under South Texas conditions.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3439

Location: Substation No. 1 - Beeville

Soil type: Clareville sandy clay loam

Experiment Design: Randomized block, 4 replications, 2-row plots (38" x 34.38 ft. long) = 1/200 acre.

Crop management: Test planted on March 30. Soil was cultivated and in good moisture condition. Good stands were secured by April 5. Seeding rate was 10 pounds per acre. Previous two years crops were sorghum. No fertilizer or irrigation was applied.

Source of material: E. C. Holt, College Station, Texas.

RESULTS: See table.

DISCUSSION: Two clippings were made: June 2nd and July 24th. It appears that when millets are planted early in March they do not produce as well as when planted in early April. Probably because of day length effects. Growing conditions were considered good for the season with fairly good moisture distribution.

The merits of millets still appear to be for use as a catch forage crop in seasons with light moisture or for delayed plantings and quick forage. Also, they appear good for fall plantings. They might do well in arid, short rainfall regions. They have not produced yields equal to sudans for grazing under normal conditions.

Common and Hybrid S-J are good early yielders and will produce the most. Cattail No. 7 is the earliest and produces fine stem, leafy forage. Gahi-1 and Starr are late types and might be better for a longer grazing season.

PROJECT: 1240

DATE SUBMITTED: April 10, 1961

WORKER: Lucas Reyes

Forage yield of Pearl Millet varieties, Beeville, 1960

Variety	Pounds of air-dry forage per acre		
	June 2	July 24	Total
Hybrid S-J	1180	840	2020
Gahi-1	860	1120	1980
Common	950	700	1650
Starr	810	830	1640
Cattail No. 7	860	560	1420
LSD(.05) for total yield			350
C.V.(%)			9.4

NAME OF TEST: 1961 Millet variety clipping test, Beeville, Texas.  
 OBJECTIVES: To evaluate the adaptability of millets for forage and grazing usefulness under South Texas conditions.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 1, Beeville, Texas  
 Soil type: Clareville sandy clay loam  
 Experimental design: Randomized block, 4 replications, 2-row plots (38" x 34.38 feet long) = 1/200 acre.  
 Cultural practices: Test was planted on March 27th. Soil was in good cultivated and moisture condition. Good stands were secured by April 5th. Seeding rate was 10 pounds per acre. Previous two years, crops were sorghum. No fertilizer or irrigation was applied.

Source of material: E. C. Holt, College Station, Texas

RESULTS: See table.

DISCUSSION: Three clippings were made on June 5, August 1 and October 5; however, only Gahi-1 produced forage for the 3rd cutting. The merits of millets still appear to be their use as a catch crop in seasons with light moisture or delayed plantings. They also appear good for fall plantings where early maturity is needed. They might do well in arid, short rainfall regions. They have not yielded forage equal to sudans for grazing under normal conditions, but appear would make better quality hay for bailing. Common and hybrid SJ are good early yielders and will produce the most early. Cattail No. 7 is the earliest and produces fine stem, leafy forage. Gahi and Starr are late types and might lend better for a longer grazing season.

PROJECT: State 1240  
 DATE SUBMITTED: February, 1962  
 WORKER: Lucas Reyes

Forage yield of Pearl Millet varieties, Beeville, 1961

Variety	Pounds of air-dry forage per acre			
	June 5	August 1	October 6	Total
Gahi-1	1490	1780	700	3970
Hybrid S-J	1630	980	---	2610
Starr	1380	1190	---	2570
Common	1320	890	---	2210
LSD (.05) for total yield				240
C.V. (%)				10.2

Forage yield of Pearl Millet varieties,  
Beeville, 1960-61

Variety	1960	1961	Comparable Avg.
Gahi-1	1980	3970	2970
Hybrid S-J	2020	2610	2310
Starr	1640	2570	2100
Common	1650	2210	1930
Cattail No. 7	1420		1930
LSD (.05) for total yield	350	240	
C.V. (%)	9.4	10.2	

NAME OF TEST: Millet varieties and hybrids for forage production, Prairie View, 1961

OBJECTIVE: To study the forage yield and regrowth ability by available varieties and hybrids of Pearl Millet.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3576

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted April 21, 1961 in plots consisting of three 40-inch rows, 20 feet long, 5 replications. The area had been fertilized with 500 pounds of 5-10-10 per acre prior to seeding.

RESULTS: See tables.

DISCUSSION: Good first cutting yields were obtained in 1961. Gahi-1 made slightly more regrowth than the other varieties.

The three-year summary also shows that Gahi-1 is outstanding in performance having averaged about a ton of forage more than the next highest yielding entry.

PROJECT NO: State 1240

DATE SUBMITTED: October, 1961

WORKER: O. E. Smith

Forage yield of Pearl Millet varieties at  
Prairie View, 1961

Variety	Pounds of air-dry forage per acre		Total
	June 23	July 26	
Gahi-1 Pearl Millet	4530	1530	6060
Hybrid SJ Pearl Millet	4720	1250	5970
Starr Pearl Millet	4800	1100	5900
Common Pearl Millet	4590	1090	5680
Lahoma Sudan	3820	1620	5440
Pearl Millet No. 7	4100	1090	5190
LSD (.05)			N.S.
C.V. (%)			19.6

Forage yield of Pearl Millet varieties at  
Prairie View, 1957-61

Variety	Pounds of air-dry forage per acre				Average
	1957	1959	1960	1961	
Gahi-1 Pearl Millet	5240	13870	9050	6060	8560
Hybrid SJ Pearl Millet	5390	10240	5270	5970	6720
Starr Pearl Millet	4400	8870	7470	5900	6660
Common Pearl Millet	5360	10320	5240	5680	6650
Pearl Millet No. 7	5200	8910	5060	5190	6090
LSD (.05)	990	2610	2080	N.S.	
C.V. (%)		21.2	28.7	19.6	
No. of cuttings	1	2	2	2	

NAME OF TEST: Millet variety test, Mt. Pleasant, Texas, 1961

OBJECTIVE: To determine the yielding ability and adaption of Millet to Northeast Texas area.

EXPERIMENTAL PROCEDURE:

Location: Grant McAnally Farm, Mt. Pleasant, Texas

Soil type: Bowie loamy fine sand

Source of materials: Soil & Crop Sciences Dept.

Experimental design: (a) Randomized - 4 replications

(b) Plot size - 3 rows planted 36 inches apart  
30 feet long, area clipped for yield 20 feet  
of 1 row (center row).

CROP MANAGEMENT PRACTICES:

Planted: May 16, 1961

Fertilized: 30-60-60 on May 15, 1961

Top dressed: 30-0-0 on June 29, 1961

General Conditions: The weather conditions during the growing season were unfavorable at times. Total rainfall, May through August, was 15.98 inches.

PROJECT: 1240

DATE SUBMITTED: January, 1962

WORKER: J. A. Lancaster

Forage yield of millet varieties at Mt. Pleasant, 1961

Variety	Pounds of air-dry forage per acre			Total
	June 29	July 25	August 22	
Hybrid S-J	1130	1550	600	3280
Common	1290	1320	550	3160
Gahi-1	1100	1300	650	3050
Starr	870	1100	730	2700
	% Leaves			
Hybrid S-J	55.5	52.0	41.5	49.7
Common	52.5	45.0	43.0	46.8
Gahi-1	58.5	48.5	53.0	53.3
Starr	61.0	48.0	46.5	51.8

Pearl Millet variety yields - Period of years summary  
Mt. Pleasant, Texas, 1959-61

Variety	1959	1960	1961	Average
Hybrid Millet S-J	3520	4870	3280	3890
Gahi-1 Millet	3040	4880	3050	3660
Common Pearl millet	2690	4560	3160	3470
Starr millet	2440	4480	2700	3210
Cattail No. 7 millet	2320	4390		3100
LSD (.05)	800	N.S.	N.S.	
C.V. (%)	24.4	30.5	25.2	
No. of cuttings	3	4	3	

NAME OF TEST: Sorghum silage variety test, B.R.V.L., 1961.

OBJECTIVES: To determine the yield of several sorghum hybrids in comparison with standard varieties and to study agronomic characteristics of the various varieties and hybrids.

EXPERIMENTAL PROCEDURES:

Experiment No.: 3577

Location: Brazos River Valley Lab near College Station

Soil type: Miller Clay

Cultural practices: Planted on April 14 in plots consisting of three 40-inch rows, 20 feet long, 5 replications. Fertilized with 48-48-48 prior to planting and sidedressed with 45 pounds of nitrogen in June when about 24 inches high. Watered as necessary to maintain adequate moisture for growth, 2 irrigations used in 1961.

Source of seed:

Honey, Tracy, Atlas, Wiley, Sart and Regular hegari and Medium Dwarf Sumac from commercial sources.

Beef Builder and Silo King are hybrids supplied by the Asgrow Seed Company.

Texas accessions are hybrids supplied by the Experiment Station at Chillicothe, Texas.

FS-1A and FS-22 are Dekalb hybrids and the seed was the same as that used in 1959.

Yield data: Each variety or hybrid was harvested in the medium dough stage when this could be determined. Heads of some of the late entries formed poorly and did not mature normally.

RESULTS: See tables.

DISCUSSION: Green yields varied from 12.9 to 21.8 tons per acre. Yields were much below some earlier years probably due to a poor soil condition resulting from land levelling the preceding winter. The entries requiring about 110 days to reach harvest stage and producing 19 to 21 tons were the most promising in this test.

PROJECT: State 1240

DATA SUBMITTED: November, 1961

WORKER: E. C. Holt

Sorghum varieties and hybrids - forage evaluations,  
Brazos River Valley Lab, 1961

Variety	Green yield (tons)	Dry yield (tons)	% moisture	Days to harvest
Wiley	21.8	7.5	65.6	130
FS-22	21.1	5.7	73.1	111
Texas 9913	21.0	5.5	73.8	111
Texas 9917	20.8	5.7	72.7	111
Tracy	20.8	5.1	75.6	111
Honey	20.2	5.3	73.9	111
Texas 9912	20.2	5.4	73.3	111
Beef Builder	20.0	6.2	68.9	130
Texas 9910	19.9	5.5	72.4	111
Texas 9915	19.1	5.2	72.8	111
Texas 9918	18.3	5.8	68.1	130
Sart	16.9	5.0	70.4	130
Silo King	16.7	3.6	78.6	97
Brawley	16.5	4.8	70.8	111
Atlas	16.5	4.4	74.5	111
FS-1A	14.4	4.0	74.4	111
Hi-hegari	12.9	2.4	81.1	97
Regular hegari	12.9	3.0	76.1	97
LSD (.05)	4.6			
C.V.	14.4%			

Green and dry yield of sorghum varieties and hybrids at B.R.V.L. . . . .  
1958-61

Variety	1958		1959		1960		1961		Comparable Average	
	Green	Dry	Green	Dry	Green	Dry	Green	Dry	Green	Dry
Honey	51.3	9.8	34.1	6.4	41.8	5.8	20.2	5.3	36.8	6.8
Sart	49.5	13.5	34.8	8.0	36.4	9.2	16.9	5.0	34.4	8.9
Beef Builder	40.2	9.2	30.4	8.7	39.8	7.6	20.0	6.2	32.6	7.9
Wiley	35.5	10.2			34.0	10.4	21.8	7.5	30.4	9.3
Tracy	37.9	8.7	29.2	6.2	31.7	7.0	20.8	5.1	29.9	6.8
Silo King	31.4	8.5	25.2	5.5	26.9	5.5	16.7	3.6	25.0	5.8
Hi-hegari	35.6	8.5	22.8	5.7			12.9	2.4	24.4	5.4
Atlas	29.3	7.0	26.5	5.9	20.9	3.9	16.5	4.4	23.3	5.3
FS-22			29.0	6.6			21.1	5.7	30.9	7.2
FS-1A			27.0	6.9			14.4	4.0	26.5	6.5
Texas 9913					37.3	7.4	21.0	5.5	33.6	7.6
Texas 9912					37.0	9.6	20.2	5.4	33.0	8.7
Texas 9918					37.8	9.1	18.3	5.8	32.5	8.6
Texas 9910					36.0	8.0	19.9	5.5	32.3	8.0
Texas 9915					32.0	7.2	19.1	5.2	30.0	7.4
Texas 9917					32.0	7.4	20.8	5.7	30.8	7.8
LSD (.05)			4.1	1.9	5.5	1.8	4.6	1.5		
C.V. (%)			8.0	12.2	14.0	20.9	14.4	26.4		

NAME OF TEST: 1960 Forage Sorghums Variety Test, Beeville

OBJECTIVES: To evaluate the adaptability of sorghums for forage production under South Texas conditions.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3441

Location: Substation No. 1 - Beeville

Soil type: Clareville sandy clay loam

Experiment Design: Randomized block, 4 replications, 2-row plots (38" W x 30' 8" long) - 1/224 acre. This size plots harvested for both heads and stover.

Crop management: Test was planted on March 29th. The soil was in good cultivated and moisture condition. Plants were up to good stand by April 6th. The seeding rate was 8 lbs. per acre. Previous two years crops were sorghum. No fertilizer or irrigation was applied. Growing conditions were considered fairly good for the season because good moisture conditions prevailed towards the end; however, plants were somewhat under stress before the late rains fell. Planting was about 10 days later than normal because of a cold, wet spring that prevented earlier planting.

RESULTS: See tables.

DISCUSSION: Only one cutting was made on July 27th. Under South Texas dry-land farming conditions, normally it is not practical or advisable to try to get more than one cutting. In trying to get more than one cutting, with the limited rainfall, it usually only produces light yields at the second cutting and interferes with the production

Forage yield and date of blooming of sorghum varieties and hybrids  
grown for silage  
Beeville, 1960

Variety	Green (Tons)	Dry (Tons)	Date 50% bloom
Wiley	8.6	3.8	July 15
Honey	8.9	3.7	July 10
Tracy	7.4	3.6	July 1
Beet Builder	7.6	3.3	June 14
Texas 9918	7.9	3.2	June 14
Sourless Orange	7.0	3.0	June 29
Silo King	6.6	2.9	June 14
Sart	7.6	2.8	-----
Texas 9915	6.3	2.8	June 10
Sugar drip	7.3	2.7	July 6
Texas 9917	6.5	2.7	June 10
Texas 9913	6.2	2.7	June 12
Texas 9912	5.5	2.5	June 12
Texas 9910	5.7	2.4	June 12
Atlas	6.0	2.4	June 16
Regular hegari	4.0	1.7	June 1
LSD (.05)	1.9	.7	
C.V. (%)	19.8	18.6	

DISCUSSION CONTINUED: of the succeeding crop.

Forage sorghums are depended on for roughage in the form of silage and cured hay for livestock feeding. The livestock farming and dairy operations in the area use silage and hay as roughage in fattening rations, maintenance of dairy cattle, and as a reserve supply of roughage for critical periods. Lately, sorghums have been found to be good sources for green matter to plow into the soil.

Atlas and Sumac have been used predominantly; however, Sart, Tracy, beefbuilder, Silkoking, and Hoti have been replacing them as they have proven well adapted. Honey normally produces good yields of leafy forage but seldom heads. The experiment hybrids continue to show good promise but may need further testing before plant breeders determine the best combinations to release for commercial production.

PROJECT: 1240

DATE SUBMITTED: April, 1961

WORKER: Lucas Reyes

Yield and date of blooming of sorghum varieties and hybrids  
Beeville, 1959

Variety or hybrid	Green (Tons)	Air-dry (Tons)	Date 50% bloom
CE 8811	12.6	7.2	July 10
Sart	13.9	7.0	
Asgrow H-5820	12.2	7.0	July 5
Hoti	12.1	6.3	July 5
CE 8808	11.5	6.0	July 10
CE 8801	11.8	5.9	July 1
CE 8802	11.0	5.8	July 10
CE 8804	11.2	5.5	July 5
CE 8809	10.2	5.3	July 15
CE 8805	10.4	5.2	July 5
Honey	10.6	5.1	July 15
CE 8806	9.6	5.1	July 1
Hi-hegari	6.7	4.3	June 5
Atlas	8.9	4.3	June 25
Asgrow H-5819	7.7	4.1	June 5
Tracy	5.5	3.7	July 5
CE 8813	6.9	3.5	June 10
CE 8815	6.9	3.4	June 10
Sourless	6.0	3.2	June 11
Sumac	6.4	3.1	June 17
RS 610	5.2	2.7	June 8
Hegari	4.8	2.6	June 5
Texas No. 30 Corn	3.2	2.4	
Texioca - 54	4.6	2.2	June 10
Texas Blackhull Kafir	2.8	1.3	June 20
LSD (.05)	2.4	1.1	
C.V. (%)	17.5	16.8	

**NAME OF TEST:** 1961 Forage sorghums variety test, Beeville.

**OBJECTIVES:** To evaluate the adaptability of sorghums for forage production under South Texas conditions.

**EXPERIMENTAL PROCEDURE:**

Location: Substation No. 1, Beeville, Texas

Soil type: Clareville sandy loam

Experimental design: Randomized block, 4 replications, 2-row plots (38" wide x 38'8" long) - 1/224 acre. This size plots was harvested for both heads and stover.

Cultural practices: Test was planted on March 27th. The soil was in good cultivated and moisture condition. Plants were up to good stand by April 5th. The seeding rate was 6 and 8 pounds per acre. Previous two years crops were sorghum. No fertilizer or irrigation was applied. Growing conditions were considered fairly good; however, plants were somewhat in distress before the late rains fell during the bloom stage. Planting was about 15 days later than normal because of a cold wet spring that prevented earlier planting.

**RESULTS:** See tables.

**DISCUSSION:** Only one cutting was made on August 3rd. Under South Texas dry-land farming conditions, normally it is not practical or advisable to try to get more than one cutting. In trying to get more than one cutting, with the limited rainfall, it usually only produces light yields at the second cutting and interferes with the preparation of land for the succeeding crop.

Forage sorghums are depended on for roughages in the form of silage and cured hay for livestock feeding. The livestock farming and dairy operations in the area use silage and hay as roughage in fattening rations, maintenance of dairy cattle and as a reserve supply of feed for critical drouthy periods. Lately, sorghums have been found to be good sources for green matter to plow into the soil. This practice is proving useful in the more intensified areas.

Atlas and Sumac have been used predominantly; however, Sart, Tracy, Beef Builder, Siloking and Hoti have been replacing them as they have proven well adapted. Honey normally produces good yields of leafy forage but seldom heads. The experimental hybrids continue to show good promise but need further testing before plant breeders determine the best combinations to release for commercial productions.

**PROJECT:** State 1240

**DATE SUBMITTED:** February, 1962

**WORKER:** Lucas Reyes

Forage yield and date of blooming of sorghum varieties and hybrids  
grown for silage  
Beeville, 1961

Variety	Green (Tons)	Air-dry (Tons)	Date 50% bloom
Tex. Comb. Kafir X R1645 Heg. Deri.	12.6	4.0	June 24
Honey	12.3	3.8	June 24
Sart	12.2	4.9	June 24
Beef Builder	11.7	4.4	June 17
Tex. Comb. Kafir X R1306 Heg. Deri.	10.0	3.4	June 22
Wiley	9.3	3.5	June 22
FS - 22 Sorghum	9.2	3.0	June 17
Tracy	9.1	3.0	June 17
Silo King	7.8	2.6	June 18
Atlas	7.6	2.2	June 20
FS-1A Sorghum	7.4	2.6	June 15
Stoneville Syn. Sudan	7.2	2.5	June 13
Stoneville Sel. Sudan	7.0	2.2	June 18
Brawley	6.9	2.8	June 16
Sumac (Red top)	6.8	2.2	June 20
Redlan X Piper	6.3	2.5	June 8
Hegari (Regular)	6.0	2.2	June 16
Tex. Comb. Kafir X Piper	5.9	2.3	June 8
Tex. Bh. Kafir X Piper	5.6	2.2	June 18
Grain-Grass 3054 X Piper	4.1	1.6	June 9
LSD (.05)	1.7	.6	
C.V. (%)	14.2	15.3	

Forage yield of sorghum varieties and hybrids grown for silage  
Beeville, 1961

Variety	1959		1960		1961		Comparable Average
	Green	Dry	Green	Dry	Green	Dry	
Sart	13.9	7.0	7.6	2.8	12.2	4.9	8.1
Honey	10.6	5.1	8.9	3.7	12.3	3.8	7.4
Beef Builder			7.6	3.3	11.7	4.4	7.1
Wiley			8.6	3.8	9.3	3.5	6.7
Tracy	5.5	3.7	7.4	3.6	9.1	3.0	5.4
Silo King			6.6	2.9	7.8	2.6	5.3
Atlas	3.9	4.3	6.0	2.4	7.6	2.2	5.2
Sourless	6.0	3.2	7.0	3.0			5.0
Sumac	6.4	3.1			6.8	2.2	4.1
Hegari (Reg.)	4.8	2.6	4.0	1.7	6.0	2.2	3.6
LSD (.05)	2.4	1.1	1.9	.7	1.7	.6	
C.V. (%)	17.5	16.8	19.8	18.6	14.2	15.3	

NAME OF TEST: The yield of sorghum varieties and hybrids for silage at Tyler, 1961.

OBJECTIVES: To determine the yielding ability of several new sorghum hybrids in comparison with standard varieties.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3645

Location: Substation No. 2, Tyler, Texas

Soil type: Bowie loamy fine sand

Cultural practices: The test was planted May 9, 1961 in 4-row plots, rows 40 inches wide and 30 feet long. ~~Five~~ <sup>2</sup> replications, 2 center rows harvested for yield. Fertilized with 22-45-22 at planting time and following a hairy vetch cover crop estimated at ~~9 tons green weight per acre~~. The silage crop was top dressed June 12 with 67-0-0. Silage plots harvested August 11, 1961. Soil moisture was favorable except for a few days during the middle of June and before harvest. Wilting point was being reached each afternoon before harvest.

RESULTS: See tables.

PROJECT: State 1240

DATE SUBMITTED: December, 1961

WORKER: P. R. Johnson

Forage yield and agronomic characteristics of sorghum varieties and hybrids grown for silage at Tyler, 1961

Variety or hybrid	Green yield <sup>1/</sup> tons/acre	Dry yield <sup>1/</sup> tons/acre	% moisture	70% moisture tons/acre	Days to Plant full bloom	Plant height (feet)
Beef Builder	23.3 a	5.3 a	77.0	17.8	86	12.0
Lindsey 115F	23.0 a	5.0 ab	78.2	16.6	83	11.0
NK 320	22.8 ab	4.5 abcde	79.2	15.1	78	10.5
NK 300	21.0 abc	4.7 abc	77.3	15.6	79	8.3
X-3058	19.6 abcd	4.6 abcd	76.4	15.4	77	10.8
FS-22	16.6 abcd	4.4 abcdef	77.7	14.6	78	11.3
Lindsay 101F	18.9 abcde	4.1 bcdef	78.4	13.5	80	8.8
X-3-59	17.7 bcde	3.6 cdefg	79.3	12.2	86	8.0
FC 36082	17.3 bcde	4.2 bcdef	75.8	13.9	82	7.3
FC 36081	16.4 cdef	3.9 bcdefg	76.4	13.0	81	8.5
Atlas	16.2 def	3.5 defg	78.3	11.6	80	9.3
Brawley	15.9 def	3.8 bcdefg	75.8	12.8	80	9.5
Lindsay 92F	15.9 def	4.0 cdef	74.6	13.4	70	10.5
Wiley	15.6 def	2.8 g	82.6	9.4	--	11.3
FS-1A	14.3 ef	3.4 g	76.4	11.2	78	7.5
NK 145	12.0 f	3.4 efg	71.9	11.5	62	8.0

<sup>1/</sup> The values within the column having the same letter do not differ at the 5% level of probability.

NAME OF TEST: Evaluation of forage sorghum varieties and hybrids at  
Denton, 1961

EXPERIMENTAL PROCEDURE:

Experiment No.: 3642

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: The test was planted April 21, 1961, in 3-row plots, rows 40 inches wide and 25 feet long, replicated 4 times, 20 feet of center row harvested for forage. Emergence was generally satisfactory and summer rains as follows were favorable: April, .08; May, 2.22; June, 5.58; July, 1.62; August, .73 inches. The test was harvested August 21 and air-dry weights taken about 60 days later.

RESULTS: See table.

DISCUSSION: Seven of the varieties produced yields in excess of 9 tons of air-dry forage and another 5 entries exceeded 8 tons. Only Regular hegari, NK145 and FS-1A were shorter than 8 feet. Lodging was not a serious problem in 1961. Hi-hegari showed more tendency for lodging than other entries, and this is typical for this variety. Most of the entries were poor in grain production. The two hegaris and FS-1A were the only entries rated as good in grain production.

PROJECT: 1240

DATE SUBMITTED: January, 1962

WORKER: D. I. Dudley

Forage yield and agronomic ratings of various sorghum varieties  
and hybrids, Denton, Texas, 1961

Variety	Tons of air-dry forage per acre <sup>1/</sup>	Lodging <sup>2/</sup>	Grain <sup>3/</sup>	Height (inches)
Tracy	11.7 a	T	1	126
Sart	10.6 abc	0	0	126
Brawley	10.3 abcd	0	1	120
FS-22 (DeKalb)	10.0 bcde	T	1	126
Wiley	9.2 cdef	0	0	120
Atlas	9.2 cdef	0	1	96
Beef Builder (Asgrow)	9.1 cdef	T	1	126
X 3058 Forage Hybrid	8.8 defg	0	2	102
Honey	8.8 defg	0	T	120
X 3059 Forage Hybrid	8.8 defg	0	2	96
Silo King (Asgrow)	8.3 efghi	T	1-	120
Combine Kafir x R6645	8.2 fghi	0	1	90
NK 300 (Northrup-King)	7.7 fghij	0	1+	90
NK 320 (Northrup-King)	7.3 ghijk	1	1+	102
Combine Kafir x R1306	7.1 hijkl	T	2	96
FS-1A (DeKalb)	6.6 ijklm	T	3	84
Combine Kafir x Sweet Sudan	6.0 jklmn	2	1	120
Hi-hegari	5.9 klmn	2+	3	120
Regular hegari	5.8 klmn	T	3	72
NK 145 (Northrup-King)	5.4 lmn	0	1	84
Sudax 11	5.4 lmn	0	1	120
Grazer-W	5.3 mn	T	1	120
Redlan x Sweet Sudan	4.8 mn	2	1	120
Blk Kafir x Piper Sudan	4.7 n	T	1	120
Redlan x Piper	4.4 n	T	1	124
Combine Kafir x Piper	4.4 n	0	1	120

<sup>1/</sup> The values within the column having the same letter do not differ at the 5% level of probability. C.V. = 14.7%

<sup>2/</sup> Lodging: 0 = None, T = trace, 1 = little, 2 = noticeable, 3 = severe

<sup>3/</sup> Grain: 0 = None, T = trace, 1 = little, 2 = fair, 3 = good grain formation

NAME OF TEST: Forage yields of silage sorghums at McGregor, Texas, 1960-61  
 EXPERIMENTAL PROCEDURE:

Location: Substation No. 23, McGregor, Texas

Soil type: Houston clay

RESULTS: See tables.

PROJECT: 1240

DATE SUBMITTED: April, 1962

WORKER: M. J. Norris

Forage yields of silage sorghums at McGregor, Texas, 1961

Variety or strain	Average
Beef Builder	14,918
Northrup King 3065	14,617
F.S. 22	14,463
Sart	13,973
Honey	13,806
Tracy	13,597
Northrup King 300	13,476
Silo King	12,478
Atlas	11,520
F.S.-1A	11,432
Hi Hegari	11,389
Sudan-11	11,000
Hegari	10,085
Grazer W	9,941
Sumac	8,846
Northrup King 145	7,655
Early Hegari	6,942

Forage yields on silage sorghums at McGregor, Texas, 1960-61

Variety or strain	Yield of air-dry forage, lbs. per acre		
	1960	1961	Average
Sart	17,586	13,973	15,780
Honey Sargo (Texas)	17,251	13,806	15,228
Beef Builder	15,262	14,918	15,090
Tracy	16,371	13,597	14,984
Northrup King 300	13,877	13,476	13,676
Northrup King 3605	11,794	14,617	13,206
Atlas	13,021	11,520	12,270
Silo King	11,449	12,478	11,964
Northrup King 145	12,054	7,655	9,854
Regular Hegari	8,967	10,085	9,526

NAME OF TEST: Sorghum variety silage test, Prairie View, 1961

OBJECTIVES: To evaluate sorghum varieties and hybrids for green and dry yield, height of growth and lodging under conditions at Prairie View.

EXPERIMENTAL PROCEDURE:

Experiment No. 3577

Location: College Farm at Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted on April 1, 1961 in 40-inch rows, 3-row plots, 20 feet long, 5 replications. Fertilized with 25-50-50 at planting time.

Source of seed: Honey, Sart, Tracy, Wiley, Atlas and Regular hegari are commercial varieties. Beef Builder and Silo King are hybrids supplied by the Asgrow Seed Company. FS-22 and FS-1A are hybrids supplied by the Dekalb Seed Co. The Texas numbers are hybrids supplied by the Experiment Station at Chillicothe, Texas.

General: The soil was dry and the seedbed loose at the time of planting. Fair stands were obtained.

DISCUSSION: Yields were fair in 1960. A dry April and May retarded early growth to some extent. Honey, which is frequently very high in moisture content, produced good green yields but less dry matter than the later maturing varieties and hybrids. Those types which required 120 or more days to mature, were the highest producing. Sart had not reached the soft dough stage when harvested.

Regrowth was noted but not harvested at the end of the growing season. Silo King, Texas 9917 and FS-1A had an estimated 2 tons per acre green matter in October; all other hybrids averaged 3 to 5 tons, and the standard varieties about 1 ton.

PROJECT: State 1240

DATE SUBMITTED: December, 1961

WORKER: E. O. Smith

## Yield of sorghum varieties and hybrids grown for silage at Prairie View, 1961

Variety	Green yield (tons)	Dry yield (tons)	% moisture	Days to harvest
Honey	31.4	5.4	82.9	96
Sart	25.3	7.2	71.7	120
Texas 9918	25.2	7.5	70.5	120
Wiley	25.0	7.7	69.1	120
Beef Builder	24.0	7.6	68.4	120
Texas 9913	22.8	7.0	68.1	120
FS-22	21.1	5.2	75.4	96
Texas 9910	20.6	5.0	75.9	96
Texas 9915	19.6	4.7	75.9	96
Texas 9917	19.0	4.4	77.0	96
Texas 9912	19.0	4.6	75.9	96
Atlas	17.8	4.1	77.2	96
Silo King	16.0	3.8	76.1	96
Tracy	15.8	3.7	76.6	96
Brawley	14.3	3.8	73.7	96
Regular hegari	12.5	3.3	73.7	96
FS-1A	12.2	2.9	76.0	96
Hi-hegari	11.9	3.0	74.9	96
LSD (.05)	5.3	1.4		
C.V. (%)	21.4	21.9		

## Yield of sorghum varieties and hybrids grown for silage at Prairie View, 1959-61

Variety or hybrid	1959		1960		1961		Comparable average		Average days to harvest
	Green (tons)	Dry (tons)	Green (tons)	Dry (tons)	Green (tons)	Dry (tons)	Green	Dry	
Beef Builder	24.6	6.7	30.9	5.9	24.0	7.6	26.5	6.7	110
Sart	30.1	5.9	30.1	7.5	25.3	7.2	28.5	6.9	120
Texas 9912			26.8	6.7	19.0	4.6	23.7	6.0	104
Honey	31.2	7.0	26.6	3.5	31.4	5.4	29.7	5.3	98
Texas 9918			26.5	6.8	25.2	7.5	26.6	7.6	130
Texas 9913			26.5	6.2	22.8	7.0	25.4	7.0	116
Texas 9917			22.1	3.5	19.0	4.4	21.4	4.4	97
Tracy	22.2	6.1	22.0	4.2	15.8	3.7	20.0	4.7	94
Texas 9910			21.7	4.3	20.6	5.0	22.0	5.1	97
Texas 9915			20.9	3.7	19.6	4.7	21.1	4.6	97
FS-22	19.8	5.4	19.9	4.5	21.1	5.2	20.3	5.3	94
Wiley			19.6	3.7	25.0	7.7	23.1	6.1	116
Silo King	20.7	5.6	14.2	3.0	16.0	3.8	17.0	4.1	94
Regular hegari			10.3	2.1	12.5	3.3	12.2	3.1	94
Atlas	21.3	5.6	10.3	2.0	17.8	4.1	16.5	3.9	94
FS-1A	18.8	6.0			12.2	2.9	15.9	4.1	94
Hi-hegari	20.0	5.4			11.9	3.0	15.6	3.8	94
LSD (.05)			6.3		5.3	1.4			
C.V. (%)			23.2		21.4	21.9			