

NAME OF TEST: Small grain forage evaluation test, College Station, 1958-59.
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:

Location: Agronomy Farm, College Station, Texas

Soil type: Lufkin fine sandy loam

Cultural practices: Seeded October 10, 1958 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 two 40-pound nitrogen top dressings 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 and earlier maturity. Most of the varieties had made good growth by December 5 which is unusual especially for winter types such as Mustang oats and Abruzzi rye.

Gator and Elbon rye were among the highest producing varieties in 1958-59 and also for the years in which they have been grown. Mid-South oats which had performed well in 1957-58 did not do as well this year.

PROJECT: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: E. C. Holt

Forage yield of small grain varieties and mixtures,
 College Station, Texas, Lufkin fine sandy loam,
 1958-59

Variety	Pounds of air-dry forage per acre				
	Dec 5	Feb 10	Mar 12	Apr 22	Total
Atlas 66 wheat	1240	1160	640	1050	4090
Gator rye	1190	1600	350	860	4000
Elbon rye	1440	980	620	830	3870
Gator barley + ryegrass	1450	1260	230	790	3730
Cordova barley	1310	860	620	710	3500
Moregrain oats	1710	390	390	1000	3490
Experimental wheat	1200	1080	250	800	3330
Mustang oats	1470	550	570	680	3270
Gator rye + ryegrass cross seeded	1290	1100	210	630	3230
Goliad barley + ryegrass	1450	770	480	520	3220
Suregrain oats	1830	320	320	660	3130
Goliad barley + ryegrass cross seeded	1530	660	400	470	3060
Mid-South oats	1250	220	420	1110	3000
New Nortex oats	1290	130	380	880	2680
245 53-188 oats	1580	250	150	480	2460
Goliad barley	990	650	510	280	2430
Alamo oats	1380	280	260	460	2380
Abruzzi rye	710	50	100	950	1810
LSD (.05) for total yield = 580					
C. V. = 16.0%					

Forage yield of small grain varieties at College Station, 1954-59

Variety	Pounds of air-dry forage per acre					Comparable Average
	1954-55	1955-56	1956-57	1957-58	1958-59	
Gator rye				4990	4000	4710
Mid-South oats				5870	3000	4650
Elbon rye			6360	5050	3870	4630
Atlas 66 wheat	3360	3780	5590	5130	4090	4390
New Nortex oats	3680	3230	6640	5050	2680	4260
Victorgrain oats	3300		6360			4260
Suregrain oats				4870	3130	4220
Mustang oats	3300	3140	5410	5250	3270	4070
245-53-188 oats				5140	2460	4020
Bronco oats		2530	6280	4780		3940
Cordova barley		3150	5650	3930	3500	3890
Alamo oats	2750	3550	6270	4250	2380	3840
Goliad barley	2860	3820	4710	4260	2430	3620
Abruzzi rye	3070	1360	5460	3060	1810	2950
Moregrain oats					3490	4570
Experimental wheat					3330	4410
LSD (.05)	720	1080	670	1020	580	
C. V. (%)	16.3	17.4	19.8	20.5	16.0	
No. of cuttings	9	5	4	4	4	

NAME OF TEST: Small grain forage evaluation, Beeville, 1958-59.

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:

Location: Substation No. 1, Beeville, Area II

Soil Type: Goliad clay loam

Cultural Practices: Seeded November 14, 1958 in plots consisting of 4 12-inch rows 14 feet long. Harvested 12 feet of two center rows on February 18 and May 4.

General Weather: Above average moisture during most of the growing season.

RESULTS: See table.

DISCUSSION: Several varieties exceeded 3000 pounds production by mid-February which is above average for the entire growing season. Gator rye showed no disease symptoms. Suregrain and Moregrain oats were free of leaf rust but showed 20 to 40 percent stem rust infection in early May. The experimental wheat (Bowie x Lee 14840-1C) and Atlas 66 were free of stem rust but showed 20 to 25 percent leaf rust in early May. Gulf ryegrass was late but produced extremely good total yields and showed only about 5 percent leaf rust infection.

PROJECT NO: State 1240

DATE SUBMITTED: October 16, 1959

WORKER: Lucas Reyes

Forage yield of small grain varieties at Beeville, 1958-59

Variety	Pounds of air-dry forage per acre		
	Feb. 18	May 4	Total
Gulf ryegrass	1800	5110	6910
Experimental wheat	1910	4510	6420
Atlas 66 wheat	3010	3380	6390
Gator rye	2620	3190	5810
Moregrain oats	2430	3290	5720
Elbon rye	2370	3310 ^{3/}	5680
Alber oats ^{1/}	2500 ^{2/}	2750	5250
Suregrain oats	2300	2700	5000
245-53-188 oats	2940	1940	4880
Alber oats	2520 ^{2/}	2210	4730
40% Alamo + 60% 188	2360 ^{2/}	1120	3480
New Nortex oats	1890 ^{2/}	1460	3350
Goliad x Cordova barley (448)	3260	--	3260
Camellia oats	2420 ^{2/}	800	3220
Arivat barley	3090	--	3090
Goliad x Cordova barley (581)	3050	--	3050
Goliad barley	1800	1200	3000
Mustang oats	1410 ^{2/}	980	2390
Alamo oats	2140 ^{2/}	--	2140
Mid-South oats	1940 ^{2/}	--	1940

LSD (.05) = 720 for total yield. C. V. = 16.0%

^{1/} Received 1½ oz. per bu. Gibrel 88

^{2/} Leaf rust infection exceeded 50% on and following February 18

^{3/} Leaf rust infection exceeded 50% on May 4

Forage yield of small grain varieties at Beevile, 1952-59

Variety	Pounds of air-dry forage per acre						Comparable 1958-59 average	
	1952-52	1953-54	1954-55	1955-56	1956-57	1957-58		
Experimental wheat ^{1/}						4590	6420	4490
245-53-188 oats						5890	4880	4370
Alamo 60%, Mustang 40%	2630	2120	1160	1840	2960	3985	3480 ^{2/}	2600
Camellia oats	2070	2100	790	2050	2400	2690	3220	2470
Victorgrain oats	2510	2040	960	2040	2010	4290		2390
Alamo oats	2210	2010	1180	2170	2810	4040	2140	2370
New Nortex oats	1710		760	1850	2510	3960	3350	2500
Mustang oats	2550	1860	850	1700	2750	3680	2390	2250
Arivat barley			730	1940	2420	3210	3090	2180
Goliad barley	1890	1930	1030	1860	2180	3160	3000	2150
Cordova barley			710	1340	3000	3480		2130
Bronco oats	2070	1930	740	1440	2230			2090
Abruzzi rye				670	3070	2400		1590
Atlas 66 wheat							6390	5910
Gator rye							5810	5330
Moregrain oats							5720	5240
Elbon rye							5680	5200
Suregrain oats							5000	4520
Alber oats							4730	4250
Goliad x Cordova (448)							3260	2780
Goliad x Cordova (581)							3050	2570
Mid-South oats							1940	1460
LSD (.05)		230	210	450	760		720	
C. V. (%)		9.5	22.8	12.1	19.2		16.0	
No. of cuttings	2	3	1	2	2		2	

^{1/} Bowie x Lee 14840-1C^{2/} Alamo 40%; 245-53-188 60%

NAME OF TEST: Small grain variety forage test, Angleton, 1959.

OBJECTIVES: To determine the forage yield of 12 varieties of small grains.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 3, Angleton, Texas

Soil type: Lake Charles clay

Source of seed: E. C. Holt

Experimental design: Randomized block with 3 replications

Plot size: Five 1 ft. rows, 25 ft. long

Seeding date: November 10, 1956

Fertilizer rate: 30-30-0 at planting

RESULTS:

Yield - Pounds per acre over dry forage

Variety	1st harvest ^{1/}	2nd harvest ^{2/}	Total
Moregrain oats	510	6080	6590
Experimental wheat	60	6210	6270
245-53-188 oat	560	5270	5830
Suregrain oat	510	5100	5610
Alamo oat	750	4800	5550
Atlas 66 wheat	260	5160	5420
Gator rye	360	4890	5250
Mid South oat	230	4980	5010
New Nortex oat	150	4270	4420
Elbon rye	360	3980	4340
Cordova barley	170	2980	3150
Mustang oat	110	2970	3080
LSD (.05)	167	721	723

Data processing Center No. 2810 - 1959.

^{1/} First harvest was made on January 14, 1959

^{2/} Second harvest was made on March 20 for the ryes; April 6 for Mid-South, Alamo, Moregrain and Suregrain; April 17 for all other varieties. Second harvest was made when grain was in the dough stage.

DISCUSSION: Cordova barley exhibited a distinct yellow color most of the season. Growth was unsatisfactory. This yellow color has been observed previously in the Gulf Coast. It appears to be the result of a physiological disturbance.

Mustang oat was severely infested with crown rust. For the past three years, Mustang oats has not been a satisfactory variety on the station or in this general area.

PROJECT NO.: 388

DATE SUBMITTED: December 15, 1959

WORKER: Marvin E. Riewe

NAME OF TEST: Forage yield of small grain varieties and mixtures, Denton, 1958-59

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:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Test dry-planted October 6, 1958. Seed was banded with 200 pounds of 20% superphosphate per acre at time of planting. Plots consist of four 12" rows, 25 feet long, replicated four times, with 19'4" of two center rows harvested for yield, to simulate grazing, as growth justified.

General conditions: Growth was extremely limited due to lack of moisture and low temperatures. Only 3.0 inches of moisture was recorded the last three months of 1958 compared to an average for the period of 7.42 inches. This was followed by the driest January, February, March and April (1959) ever experienced at the Denton Station. A total of 2.38 inches were received during this 4 month compared to a long time average of 10.45 inches for the same period.

RESULTS: See table

DISCUSSION: Although satisfactory stands were obtained, growth was limited by lack of moisture. Stands were badly damaged by 6° temperatures January 4. Plant damage from this low temperature was magnified by virtue of the plants having been clipped only a few days previous, December 29, 1958. Cordova barley only slightly damaged in unclipped fields adjoining, was 60% killed in the clipped area. Other evidence of a definite correlation between date of clipping and winterkill, was plainly visible.

Gator and Elbon rye were the least affected by the adverse weather conditions. They were the only two varieties in the test that made sufficient growth to justify the six dates of harvest shown. Approximately 90 percent of small grain planted in North Central Texas is winter grazed; and the returns from the practice are of major economic importance. In most cases livestock remain on the grain after it is well established; others graze as often as growth justified. Any variety or combination of varieties that extends the normal grazing period will add to agricultural income of the area served.

PROJECT: 1240

DATE SUBMITTED: January 1960

WORKER: D. I. Dudley

Forage yield of small grain varieties and mixtures, Denton, 1958-59

Variety or Mixture	Pounds of air-dry forage per acre						Total
	Dec. 29	Feb. 25	Mar. 30	Apr. 22	May 14	June 9	
Gator rye	680	730	1440	440	70	50	3410
Mustang oats	210	-	-	1920	590	500	3220
Elbon rye	540	200	1550	540	50	20	2850
Cordova-Quanah	320	-	-	1650	390	390	2720
Quanah wheat	-	-	-	1100	990	290	2380
Moregrain oats	560	-	-	770	650	260	2240
Cordova barley	420	-	-	1060	310	300	2090
Cordova-Mustang	350	-	-	850	400	410	2010
New Nortex-Quanah	90	-	-	870	670	270	1900
119-50-8 oats	610	-	-	410	400	210	1630
MidSouth oats	440	-	-	310	530	290	1570
Abruzzi rye	-	-	-	930	500	140	1570
New Nortex oats	160	-	-	360	650	200	1370
Atlas 66 wheat	-	-	-	470	470	330	1270
Suregrain oats	40	-	-	540	370	180	1130
245-53-187 oats	460	-	-	30	120	170	780
245-53-188 oats	490	-	-	40	110	120	760
Experimental wheat	70	-	-	90	140	90	390
Alamo oats	150	-	-	10	50	30	240
Goliad barley	100	-	-	-	10	-	110

LSD (.05) for total yields = 540. C. V. = 23.1%

NAME OF TEST: Small grain forage evaluation, Nacogdoches, 1958-59.

OBJECTIVES: To determine the forage yield of different small grain varieties in terms of seasonal distribution of production total production.

EXPERIMENTAL PROCEDURE:

Location: John Weatherly farm, 7 miles north of Nacogdoches, Texas

Soil type: Nacogdoches gravelly loam

Cultural practices: Seeded October 8, 1957 in 5 row plots, 15 feet long, at the rate of 80 pounds of seed per acre. 30-60-60 fertilizer broadcast and disked in before seeding. Harvested Feb. 6, March 10 and April 23.

General Weather: Adequate moisture throughout growing season.

RESULTS: See table.

DISCUSSION: The test included 14 entries. Yields were good except for Abruzzi rye which was very late and low yielding. Gator rye, Moregrain oats and Suregrain oats produced the most early forage. Elbon rye which has performed much the same as Gator at some locations and in some years did not produce as much early forage as Gator. Above average total forage yields were obtained in 1958-59.

PROJECT NO: State 1240

DATE SUBMITTED: October 16, 1959

WORKER: H. C. Hutson

Forage Yield of Small Grain Varieties at Nacogdoches, 1958-59

Variety	Pounds air-dry forage per acre			
	Feb. 6	March 10	April 23	Total
Gator rye	2000	900	1920	4820
Mid-South Oats	640	930	2640	4210
Moregrain Oats	1310	870	2030	4210
Atlas 66 Wheat	930	1020	2120	4070
Mustang Oats	900	1160	1920	3980
Suregrain Oats	1450	870	1660	3980
Elbon rye	840	1020	1950	3810
New Noxtex Oats	730	520	2470	3720
Cordova barley	640	1100	1710	3450
Experimental Wheat	840	810	1740	3390
Alamo Oats	990	780	1480	3250
Golaid barley	700	870	1660	3230
245-53-188 Oats	1360	750	960	3050
Abruzzi rye	--	230	1160	1390

LSD (.05) for total yield = 1080 C. V. = 16.2%

Forage yield of small grain varieties at Nacogdoches, 1952-59

Variety	Pounds of air-dry forage per acre							Comparable Average 1954-59
	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	
Gator rye						4010	4820	4970
Bronco oats		4810	4770	3760	7420	3510		4720
Elbon rye						4240	3810	3580
Suregrain oats						4010	3980	4550
Mustang oats	3310	4080	4500	4040	6590	3460	3980	4510
New Nortex oats		4600	3700	3420		4210	3720	4320
Cordova barley			3970	3140	6030	3480	3450	4010
Alamo oats	3460		3170	3440	5920	4230	3250	4000
Victorgrain oats					6130			3910
Atlas 66 wheat	4060		3590	2260	5440	3460	4070	3760
Travis wheat	4740	3170	3310					3440
Goliad barley		3000	3060	2150	5120	3420	3230	3400
Abruzzi rye	2870		3870	2050	7120	1720	1390	3230
Mid-South oats							4210	4800
Moregrain oats							4210	4800
Experimental wheat							3390	3980
245-53-188 oats							3050	3640
LSD (.05)		730	540	780	980	1030	1080	
C. V. (%)		11.3	10.8	17.7	9.8	15.7	16.2	
No. of cuttings		3	3	3	3	3	3	

NAME OF TEST: Small grain variety evaluation for forage at Prairie View, 1958-59.

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

EXPERIMENTAL PROCEDURE:

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Seeded October 24, 1958 in plots consisting of 5 12-inch rows, 17 feet long, harvested 3 center rows 14 feet long. Area fertilized with 25-50-50 prior to seeding.

General conditions: Moisture adequate for immediate emergence and good growing conditions throughout most of the season.

RESULTS: See tables.

DISCUSSION: Yields were about average for the growing season. Excellent growth had been made by early January with approximately 50% of the total forage being harvested on January 9.

PROJECT: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: O. E. Smith

Forage yields of small grains grown for forage at Prairie View, Texas
1958-59

Variety	Pounds of air-dry forage per acre				Total
	January 9	March 2	April 2	May 5	
Elbon rye	3220	2360	320	240	6140
Gator rye	2180	2900	390	290	5760
Atlas 66 wheat	2700	2360	350	290	5700
Midsouth oats	3320	1240	700	180	5440
Bronco oats	2460	2070	550	120	5200
Moregrain oats	2900	1010	690	270	4870
Suregrain oats	3270	630	490	440	4830
Cordova barley	1740	2310	570	120	4740
Experimental wheat	1940	2100	250	440	4730
New Nortex oats	2060	1800	740	110	4710
Mustang oats	2180	2210	150	40	4580
245-53-188 oats	2860	540	510	490	4400
Goliad barley	2160	1120	730	130	4140
Alamo oats	2740	570	530	120	3960
Abruzzi rye	510	770	1110	640	3030

LSD (.05) for total yield = 920

C. V. = 15.5%

Forage yield of small grain varieties at Prairie View, 1954-59

Variety	Pounds of air-dry forage per acre				Comparable Average
	1954-55	1955-56	1956-57 ^{1/}	1958-59	
Atlas 66 wheat		3270	4840	5700	4730
Bronco oats	4780	2930	4900	5200	4450
Mustang oats	4230	3310	4200	4580	4080
Victorgrain oats	4600		4160		4050
New Nortex oats	4870	2580	3430	4710	3900
Cordova barley		2750	3440	4740	3770
Alamo oats	3640	3590	3650	3960	3710
Abruzzi rye	4420	2100	5290	3030	3710
Goliad barley	3600	2470	3520	4140	3430
Elbon rye				6140	5750
Gator rye				5760	5370
Mid-South oats				5440	5050
Moregrain oats				4870	4480
Suregrain oats				4830	4440
Experimental wheat				4730	4340
LSD (.05)	440	690	<u>1/</u>	920	
C. V. (%)	8.5	23.2		15.5	
No. of clippings	4	2		4	

^{1/} 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 evaluation, Kirbyville, 1958-59.

OBJECTIVES: To evaluate a number of relatively new small grain varieties for adaptation to the Southeast Texas area in terms of total and seasonal forage production.

EXPERIMENTAL PROCEDURE:

Location: Kirbyville, Texas

Soil type: Bowie fine sandy loam

Cultural practices: Seeded October 31, 1958 in plots consisting of 5 12-inch rows, 15 feet long, 4 replications, harvested plot area of 25 square feet. A 30-60-30 fertilizer was applied at planting time followed by 60 pounds of nitrogen on December 18, February 16, and March 19 making a total of 210-60-30.

General conditions: Satisfactory growing conditions and no serious disease problems.

RESULTS: See tables.

DISCUSSION: The two Coker Seed Company oat varieties, Moregrain and Suregrain, were the highest in yield, but not significantly higher than New Nortex oats. Moregrain and Suregrain oats also produced good early forage and held up well during the growing season.

PROJECT NO: State 1240

DATE SUBMITTED: July 2, 1959

WORKER: John R. Wood

Forage yield of small grain varieties at Kirbyville, 1958-59

Variety	Pounds of air-dry forage per acre					Season Total	
	2/9/59	3/3/59	3/19/59	4/2/59	4/23/59		
Moregrain Oats	2190	1060	610	710	1070	5640	
Suregrain Oats	1970	970	610	860	1230	5640	
New Nortex Oats	1140	1550	880	760	1010	5340	
Bronco Oats	1410	1170	850	730	830	4990	
Mid-South Oats	1350	1370	840	590	730	4880	
Gator Rye	1620	1000	760	660	610	4650	
245-53-188 Oats	1570	890	630	640	740	4470	
Mustang Oats	1270	1140	690	620	710	4430	
Elbon Rye	1470	1220	720	640	340	4390	
Alamo Oats	2100	630	430	700	530	4390	
Cordova Barley	630	1130	1090	680	410	3940	
Experimental Wheat	1270	1120	420	480	520	3810	
Atlas 66 Wheat	980	1240	550	520	480	3770	
Goliad Barley	220	460	840	760	210	2490	
Abruzzi Rye	20	--	220	680	760	1680	
LSD	.05	320	210	180	180	230	660
	.01	430	280	240	N.S.	310	890
C. V. (%)		17.7	14.9	18.6	18.9	24.1	10.8

Forage yield of small grain varieties at Kirbyville, period of years summary 1951-59.

Variety	Pounds of air-dry forage per acre							Comparable average 1953-59
	1951-52	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	
Mid-South oats						6210	4880	5540
Suregrain oats						5130	5640	5380
Gator rye						5870	4650	5260
Bronco oats					4640		4990	5080
Elbon rye						5670	4390	5030
New Nortex oats					3980		5340	4920
Mustang oats	2960	4540	5040	3410	4300	4520	4430	4370
Victorgrain oats	3570	3900	5040		3730			4120
Camellia oats	3670	4160	4430					4080
Cordova barley					3640		3940	4070
Alamo oats	2760	4210	4400	3670	3380	3730	4390	3960
Atlas 66 wheat			4470	3180	3400	4330	3770	3910
Abruzzi rye		3820	3230	3120	3275	4070	1680	3190
Goliad barley		3160	2510	3160	3180	3930	2490	3070
Moregrain oats							5640	6040
245-53-188 oats							4470	4870
Experimental wheat							3810	4210
LSD (.05)				550		1080	660	
C. V. (%)				10.4		15.5	10.8	
No. of cuttings				4	4	6	5	

NAME OF TEST: Small grain forage variety test, McGregor, 1958-59.
OBJECTIVE: To evaluate small grain varieties, including several experimental materials and new varieties, for seasonal and total production.

PROCEDURE:
Location: Substation No. 23, McGregor, Texas
Soil type: Houston clay
Cultural Practices: Seeded November 5, 1958 in a randomized block design, 4 replications, plots were 4 12-inch rows, 12 feet long.

RESULTS: See tables

DISCUSSION: Growing conditions were favorable and yields approached those in 1957-58 which were the best on record. Elbon and Gator rye produced by far the most early forage. Cordova barley and Atlas 66 wheat also had good early production but this amounted to less than half that of Elbon and Gator. Most of the varieties made good total production. Some of the varieties as indicated were severely damaged by 11° F temperature in January.

PROJECT: State 1240
DATE SUBMITTED: March, 1960
WORKER: M. J. Norris

Small Grain Forage Test, McGregor, Texas, 1959

C.I. or Sel. No.	Variety or Cross	Yield air-dry forage lbs./acre		Total Yield
		Clipping dates 2-25	4-24	
C.I. 3422	New Nortex Oats	855	4536	5391
C.I. 4660	Mustang Oats	1172	4482	5655
C.I. 5371	Alamo Oats	216	2292	2509*
C.I. 6977	Mid-South Oats	1110	4385	5495
C.I. 7155	Suregrain oats	828	4218	5045
C.I. 7229	Moregrain Oats	915	4265	5180
245-53-188	New Nortex x BRHJ x L	275	3501	3776*
245-53-190	New Nortex x BRHJ x L	454	3358	3811*
245-53-193	New Nortex x BRHJ x L	742	3884	4626*
	Atlas 66 Wheat	1929	4941	6870
C.I. 12145	Quanah Wheat	1318	5499	6816
C.I. 12702	Crockett Wheat	542	5162	5705
C.I. 7176	Cordova Barley	1751	4735	6486
C.I. 8099	Goliad Barley	285	3214	3499*
	Abruzzi Rye	790	3669	4459
	Gator Rye	3918	2882	6800
	Elbon Rye	4430	2551	6981
	Exp. Wheat	1130	3697	4828

*Heavy damage from 11° freeze in January.

Period of Years Summary Small Grain Forage Test At McGregor 1955-1959

Variety or Cross	Yield Dry Forage: Pounds Per acre								Comparable yields	
	1955		1957		1958		1959		lbs/acre	
	2-15	Total	2-15	Total	2-15	Total	2-15	Total	2-15	Total
New Nortex Oats	743	4340	558	4149	1534	6215	855	5391	922	5024
Mustang Oats	665	4945	662	4930	1920	6895	1172	5655	1104	5607
Alamo Oats	735	3770	1168	3945	2352	5759	216	2509	1117	3996
Quanah Wheat	422	3805	544	4106	1329	6431	1318	6870	903	5303
Cordova Barley	848	4295	636	4101	2220	7571	1751	6486	1365	5613
Bronco Oats	623	4915	466	4151	1321	6288			796	5209
Arkwin Oats					1700	5811			911	4345
Mustang-Alamo Mixture			661	5219					1030	6081
Suregrain Oats					2115	6295	828	5045	1087	4800
Moregrain Oats							915	5180	935	4906
MidSouth Oats					1449	5682	1110	5495	895	4718
Exp. Oats. 119-50-1	758	4075							1157	4952
" " " "-8	842	4430	798	3958	1971	5585			1197	4749
" " " "-12	822	4895	764	4251	2091	5593			1219	5004
" " " "-21	651	3890							1050	4767
" " 152-50-17	850	4840	660	4073	1626	5660			1038	4950
" " 232-53-111					2028	5889			1236	4423
" " 245-53-187					1818	6102			1029	4636
" " 245-53-188					2221	6063	275	3776	863	4050
" " 245-53-190							454	3811	474	3537
" " 245-53-193							742	4626	762	4352
Goliad Barley					2846	6949	285	3499	1181	4354
Atlas 66 Wheat					1872	6211	1929	6870	1516	5670
Crockett Wheat			484	3115			542	5705	708	4704
Abruzzi Rye			105	1770		3099	790	4459	158	2817
Elbon Rye					3601	5692	4430	6981	3631	5466
Gator Rye					3279	5395	3918	6900	3214	5228
Exp. Wheat							1130	4828	1150	4554

NAME OF TEST: The evaluation of small grain varieties for forage at Mt. Pleasant, 1959.

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

EXPERIMENTAL PROCEDURE:

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

Soil type: Norfolk sand

Cultural practices: Seeded October 7, 1958 in plots consisting of 6 12-inch rows, 15 feet long, 4 replications, harvested 2 center rows, 10 feet long. Fertilization: 30-60-60 on Oct. 6, 30-0-0 on Dec. 8, 30-0-0 on Feb. 5, and 30-0-0 on March 4. Goliad was replanted on October 23.

Weather Conditions: Temperature was below normal during much of the growing season. Moisture was adequate at planting time and amounted to 20.53 inches during the growing season (Oct.-April).

RESULTS: See tables.

DISCUSSION: Gator and Elbon rye were outstanding both in early production and total yields. Alamo oats was killed with 9⁰ Temperature on Dec. 14 and 245-53-188 was damaged, estimated at 35% injury. Goliad barley did not produce early forage probably because of delayed emergence from replanting. Moregrain oats shows promise for the area.

Average yields for a 6-year period are shown in the second table and indicate further that Gator and Elbon rye may have a place in the winter forage program of the area.

PROJECT NO: State 1240

DATE SUBMITTED: June 19, 1959

WORKER: J. A. Lancaster

Forage yield of small grain varieties at Mt. Pleasant, Texas, 1958-59

Variety	Pounds air-dry forage per acre					Total
	Dec. 8	Feb. 5	March 4	March 30	April 22	
Gator rye	600	680	3190	1210	560	6240
Elbon rye	590	560	2880	1160	600	5790
Moregrain oats	890	--	580	1150	1420	4040
Mustang oats	560	--	430	1040	1900	3930
Cordova barley	590	--	830	1340	890	3650
Midsouth oats	470	--	220	1420	1280	3390
Suregrain oats	820	--	170	830	1500	3320
Atlas wheat	--	--	640	1020	950	2610
New Nortex oats	360	--	80	840	1270	2550
Experimental wheat	--	--	400	900	820	2120
245-53-188 oats	710	--	--	90	900	1700
Abruzzi rye	--	--	--	630	1000	1630
Goliad barley	120	--	--	330	890	1220
Alamo oats	950	--	--	--	--	950

LSD (.05) for total yield = 810, C. V. = 18.2%

Forage yield of small grain varieties at Mt. Pleasant, 1953-59

Variety	Pounds of air-dry forage per acre						Comparable Average
	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	
Gator rye					4680	6240	5780
Elbon rye					4630	5790	5530
Mustang oats	3900	4870	2460	2290	4160	3930	3600
New Nortex oats	3400	4500	3190		4380	2550	3350
Bronco oats	4030	4900	1790	2670	3850		3240
Atlas 66 wheat		4600	1770	1870	4590	2610	3200
Abruzzi rye	4650	5180	1530	2300	3250	1630	3090
Cordova barley		4390	1880		1870	3650	3040
Alamo oats	2700	4460	3860	2090	3330	950	2900
Quanah wheat	2710	3350					1930
Goliad barley	1940	3810				1220	1930
Moregrain oats						4040	5060
Mid-South oats						3390	4410
Suregrain oats						3320	4340
Experimental wheat						2120	3140
245-53-188 oats						1700	2720
LSD (.05)		450	1320	360	530	810	
C. V. %		7.6	15.7	7.4	6.6	18.2	
No. of cuttings		8	5	5	6	5	

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:

Location: Grass nursery near Easterwood airport, College Station, Texas.

Soil type: Lufkin fine sandy loam

Cultural practices: Planted November 10, 1958 in plots consisting of 5 12-inch rows, 17 feet long, 6 replications, harvested area 3 X 14 feet. The area received no preplanting fertilizer but was topdressed with 80 pounds of nitrogen in two applications during the growing season. Moisture was maintained by irrigation when necessary.

RESULTS: See tables.

DISCUSSION: All of the varieties and selections yielded more than commercial domestic ryegrass. Florida Rust Resistant is early and made relatively little growth after mid April. Most of the varieties being subjected to selection showed increased resistance over Gulf and La Estanzuela 284. Texas Synthetic No 2 actually is Synthetic No 1 advanced one generation without selection. The increased rust infection indicates the problem that may be encountered with these materials. Florida Rust Resistant is maintained by roguing each year.

The period of years summary indicates the yield advantage of some of the experimental lines.

PROJECT: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: E. C. Holt

Forage yield of ryegrass and rescue varieties at College Station, Texas
Lufkin fine sandy loam soil, 1958-59

Variety	Pounds of air-dry forage per acre				Rust ^{1/} rating
	March 12	April 20	May 29	Total	
Texas Syn. #1	330	2570	1700	4600	2.2
Texas Syn. #2	410	2420	1390	4220	3.3
Florida Rust Resistant	1030	2250	930	4210	2.0
Gulf	540	2440	1100	4080	4.7
Stoneville #2	450	2050	1420	3920	3.2
La Estanzuela 284	320	2450	1040	3810	4.2
Tifton	570	1750	1230	3550	2.7
Stoneville #1	200	1580	1400	3180	2.8
Commercial domestic	250	1350	750	2350	10.0
Commercial perennial	40	1150	820	2010	4.8

LSD (.05) for total yields = 860

C. V. = 20.2%

^{1/} Observational ratings of degree of rust infection (1 = none).

Forage yield of ryegrass varieties at College Station, 1954-59

Variety	Pounds of air-dry forage per acre						Comparable average 1955-59
	1954-55	1955-56 (1)	1956-57	1957-58	1958-59	(2)	
Texas Synthetic Early			7410	3830	4600	(2.2)	5010
Mississippi rust resistant		4150 (1.2)					4940
Stoneville Synthetic#2					3920	(3.2)	4800
La Estanzuela 284		3700 (2.0)	7150	3650	3810	(4.2)	4580
Gulf		3840 (1.4)	7290	3080	4080	(4.7)	4570
Texas Synthetic Late				3290			4560
Florida rust resistant	2940	3260 (1.4)	7230	2890	4210	(2.0)	4420
Tifton					3550	(2.7)	4410
Stoneville Synthetic #1					3180	(2.8)	4040
Common	2290	3400 (4.4)	6720	3210	2350	(10.0)	3920
Perennial	1570	2710 (3.2)	7340	1720	2010	(4.8)	3440
LSD (.05)	860	660	N.S.	670	860		
C. V. (%)				20.9	20.2		
No. of cuttings	3	3	3	3	3	3	

(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 test which was on Lufkin fine sandy loam.

NAME OF TEST: Ryegrass variety yield test, Prairie View, 1958-59.

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

EXPERIMENTAL PROCEDURE:

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted October 24, 1959 in plots consisting of 5 12-inch rows, 17 feet long, harvested 3 center rows, 14 feet long. Area fertilized with 25-50-50 prior to planting.

General conditions: Moisture adequate for immediate emergence and good growing conditions throughout most of the season.

RESULTS: See table.

DISCUSSION: Total yields slightly exceeded yields of small grain varieties grown in and adjacent plot area. Production was considerably later than with small grains but good yields had been produced by March 1. Some rust was present at the last clipping date but was not a serious factor.

PROJECT: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: O. E. Smith

Forage yield of ryegrass and rescue varieties at Prairie View, Texas
1958-59

Varieties	Pounds of air-dry forage per acre			
	March 2	April 2	May 5	Total
Florida Rust Resistant	3900	1320	1580	6800
Texas Late Synthetic	3250	1260	1940	6450
La Estanzuela 284	3270	1460	1750	6480
Commerical domestic	3620	1130	1550	6300
Stoneville Rust Res. #2	3460	980	1700	6140
Texas Synthetic #2	3100	1100	1690	5890
Stoneville Rust Res. #1	3510	820	1540	5870
Gulf	3230	1010	1580	5820
Tifton Rust Resistant	2860	1350	1530	5740
Commercial Perennial	1620	1620	1930	5170

LSD (.05) for total yields = 800 C. V. = 9.5%

NAME OF TEST: Ryegrass variety test, Kirbyville, 1958-59.

OBJECTIVES: To evaluate ryegrass varieties for total and seasonal forage production and rust resistance.

EXPERIMENTAL PROCEDURE:

Location: Kirbyville, Texas

Soil type: Bowie fine sandy loam

Cultural practices: Planted October 31, 1958 in plots consisting of 5 12 inch rows, 15 feet long, 4 replications, harvested 25 square feet.

A 30-60-60 fertilizer was applied at planting time followed by 60 pounds of nitrogen on December 18, February 16 and March 19.

RESULTS: See tables.

DISCUSSION: Yields of ryegrass, rescue and small grains were about the same for the best yielding varieties, but ryegrass and rescue produced only about half as much at the first cutting as small grains. The only significant difference in total yield among the ryegrass varieties was the low yield of commercial perennial. This entry was also later in production than the other varieties. Florida Rust Resistant was the earliest variety. Rust was not a serious problem.

PROJECT NO: State 1240

DATE SUBMITTED: July 2, 1959

WORKER: John R. Wood

Forage yield of Ryegrass varieties, Kirbyville, Texas, 1958-59.

Variety	Pounds of air-dry forage per acre					Season total
	2/9/59	3/2/59	3/19/59	4/2/59	4/23/59	
Gulf	840	1150	960	1420	1480	5850
Stoneville #2	950	1310	850	1320	1330	5760
Fla. Rust Resistant	1170	1320	820	1110	1270	5690
La Estanzuela 284	560	1000	930	1640	1560	5690
Stoneville #1	750	1190	740	1210	1720	5610
Commercial Domestic	850	1220	720	1270	1540	5600
Main Station Selection	820	1260	870	1200	1330	5480
Commercial Perennial	120	530	590	1120	1690	4050
LSD .05	320	360	210	240	240	670
.01	440	490	N.S.	320	320	910
C. V. (%)	28.88	21.84	17.64	12.43	10.74	8.35

NAME OF TEST: Ryegrass variety test, Denton, 1959

OBJECTIVES: To evaluate several new strains of rust resistant ryegrass for yielding ability under North Texas conditions.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Ryegrass test was dry-planted October 6, 1958, on San Saba clay soil. Seed was banded with 200 pounds of 20% superphosphate per acre, at time of seeding. Plots consist of four 12" rows, 25' long, replicated 4 times. The 2 center rows were harvested for yield as growth justified.

General conditions: Fall and winter growth was extremely limited due to lack of moisture and low temperatures. The winter of 1958-59 was the driest on record and plants were damaged by 6° temperature, January 4.

Source of seed: A. A. Hanson, Forage and Range Research Branch, Crops Research Division, Beltsville, Maryland

RESULTS: See table

DISCUSSION: Commercial perennial showed some tendency to grow later in the summer and was showing a green color when the test was abandoned. Production was late with all varieties because of the dry winter. Tifton No. 1 was damaged (about 10%) by 6°F temperature on January 4. Gulf showed about 5% damage and some other varieties a trace of damage. No rust resistant variety produced as much total forage as the 2 domestic sources.

PROJECT: State 1240

DATE SUBMITTED: January 1960

WORKER: D. I. Dudley

Forage yield of ryegrass varieties at Denton, 1959

Variety	Pounds of air-dry forage per acre			
	April 22	May 14	June 9	Total
Commercial Domestic	240	1450	2040	3730
Oregon grown domestic	320	1470	1800	3590
Stoneville No. 1	210	1550	1550	3310
Gulf	440	1380	1350	3170
Stoneville No. 2	270	1360	1420	3050
La Estanzuela 284	320	1350	1170	2840
Commercial perennial	200	1230	1360 ^{1/}	2790
Florida Rust Resistant	480	1010	970	2460
Tifton No. 1. Rust Resistant	210	720	1210	2140

^{1/} Includes 270 pounds harvested July 30

LSD (.05) for total yield = 340, C. V. = 8.1%

NAME OF TEST: Forage yield of rescue varieties at Denton, 1958-59.

OBJECTIVES: To evaluate rescue varieties for forage yielding ability in North Texas

EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Rescuegrass test dry-planted October 6, 1958. Seed was banded with 200 pounds of 20% superphosphate per acre at time of seeding. Plots consist of four 12" rows, 25' long, replicated 4 times. Two center rows were harvested for yield as growth justified.

General conditions: Fall and winter growth was limited due to dry and cold weather. However, good summer rains promoted growth for that period.

Seed source: Dr. A. A. Hanson, Forage and Range Research Branch, Crops Research Division, U.S.D.A., Beltsville, Maryland

RESULTS: See table

DISCUSSION: Due to adverse weather, growth did not start until May rains came. As a result, spring annuals came on at the same time and offered more competition than we normally have from these plants. The percentage of other grasses was particularly noticeable in last clipping of season; however, allowance has been made for these in figures shown.

The percent stand exceeded 95% except for Prairie brome with a 75% stand. No cold damage was observed during the winter.

PROJECT: 1240

DATE SUBMITTED: January 1960

WORKER: D. I. Dudley

Forage yield of rescuegrass varieties at Denton, 1958-59

Variety	Pounds of air-dry forage per acre				Total
	April 22	May 14	June 6	July 30	
Commercial	90	1070	1610	800	3570
Lamont	100	870	1670	900	3540
Georgia Selection	60	880	1620	910	3470
Chapel Hill	100	940	1540	780	3360
Nakura	70	650	1580	760	3060
Prairie brome	50	370	890	1030	2340
Texas Rescue 46	70	300	1140	740	2250

NAME OF TEST: Forage yield of rescuegrass varieties, College Station, 1958-59.
OBJECTIVE: To compare Lamont and Lilimac rescue with Texas Rescue 46 for forage production.

EXPERIMENTAL PROCEDURE:

Location: Grass nursery near Easterwood airport, College Station, Texas.

Soil type: Lufkin fine sandy loam

Cultural practices: Planted November 10, 1958 in plots consisting 5 12-inch rows, 17 feet long, 6 replications, harvested 3 center rows, 14 feet long. No fertilization prior to planting. Nitrogen topdressing of 80 pounds in 2 applications during the growing season.

RESULTS: See tables.

DISCUSSION: Yields were very poor and late in 1958-59 as compared to earlier years (See period of years summary). Later than average planting could have reduced yields to some extent but ryegrass yields in the same test area were about 2000 pounds higher.

Lilimac was selected by Patton Seed Company, Lockhart primarily for good seed production. While it performed as well as other varieties at College Station, it has appeared to lack vigor at other locations. Mildew is not a serious problem in plots harvested for forage but becomes a serious problem when the plant is allowed to produce seed. Chapel Hill and Prairie brome apparently have good mildew resistance. Lamont was developed for head smut resistance and has not been observed for mildew resistance.

Texas Rescue 46 apparently has become mixed with common types. A selected type proved to be better than commercial Texas Rescue 46 for early yield, total yield and mildew resistance but no better than Chapel Hill, therefore it was not increased for release.

PROJECT: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: E. C. Holt

Forage yield of rescuegrass varieties near College Station, 1958-59

Variety	Pounds of air-dry forage per acre			Total
	March 12	April 20	May 29	
Lilimac	20	1220	1320	2560
Texas Rescue 46	50	990	1510	2550
Lamont	30	740	1500	2270

Differences not statistically significant. C. V. = 20.2%

Forage yield of rescuegrass varieties near College Station, 1954-59.

Variety	Pounds of air-dry forage per acre						Comparable average
	1954-55 (1)	1955-56	1956-57	1957-58	1958-59		
Chapel Hill	4240 (2.0)	3540	6350	4640			4690
Prairie brome	3470 (1.2)	3560	5640	3810			4120
Commercial	3600 (5.0)	3110		4040			4110
Texas Rescue 46(Sel)	3870 (3.0)	3370	5190	3690			4030
Lamont		3075	5920	3320	2270		3920
Nakuru			5240	3550			3690
Texas Rescue 46	3230 (5.0)	2820		3280	2550		3640
Lilimac					2560		
LSD	N.S.	N.S.	N.S.	N.S.	N.S.		
C. V. (%)			26.8	14.9	20.2		
No. of clippings	4	3	3	3	3	3	

(1) Mildew ratings prior to final forage harvest (1 = no mildew)

NAME OF TEST: Rescue variety evaluation, Kirbyville, 1958-59.

OBJECTIVES: To evaluate Rescue varieties for total and seasonal forage production and mildew resistance.

EXPERIMENTAL PROCEDURE:

Location: Kirbyville, Texas

Soil type: Bowie fine sandy loam

Cultural practices: Planted October 31, 1958 in plots consisting of 5 12-inch rows, 15 feet long, 4 replications harvested area of 25 square feet. A 30-60-30 fertilizer was applied at planting time followed by 60 pounds of nitrogen on December 18, February 16, and March 19.

RESULTS: See table.

DISCUSSION: Very good yields were obtained in 1958-59. The best total yields were equivalent to the small grain varieties but the production was later in the season. Production by early February was only about one-half that of the earliest small grain varieties.

Lamont is a new variety released from the Stoneville, Mississippi station for smut resistance. Nothing is known of its mildew resistance, but mildew was not a problem in the 1958-59 season. Lilimac is a variety selected by Patton Seed Company, Lockhart primarily for uniform, high seed production, but its forage production is not satisfactory.

PROJECT NO: State 1240

DATE SUBMITTED: July 2, 1959

WORKER: John R. Wood

Forage yield of Rescue varieties at Kirbyville, Texas, 1958-59

Variety	Pounds of air-dry forage per acre					Season total	
	2/9/59	3/2/59	3/19/59	4/2/59	4/23/59		
Chapel Hill	690	1110	970	1430	1760	5960	
Georgia Selection	1010	960	640	1040	2030	5680	
Lamont	950	990	560	900	2170	5570	
Commercial	450	940	790	1410	1900	5490	
Texas Rescue 46	580	1080	970	1030	1490	5150	
Nakuru	520	700	340	830	2340	4730	
Lilimac	-	160	340	1040	1940	3480	
Prairie Brome	20	190	230	570	2240	3250	
LSD	.05	180	170	130	240	230	500
	.01	250	230	180	330	320	680
C. V. (%)		23.6	15.2	14.6	16.0	8.0	6.9

NAME OF TEST: Phalaris variety and species evaluation test at College Station, 1958-59

OBJECTIVE: To evaluate phalaris types for yield, survival and regrowth ability.

EXPERIMENTAL PROCEDURE:

Location: Brazos River Valley Lab near College Station, Texas

Soil type: Miller Clay

Cultural practices: Planted November 24, 1959 in plots consisting of 5 12-inch rows, 17 feet long, 6 replications, harvested 3 center rows, 14 feet. The area had produced a crop of Soybeans during the summer and was turned and floated in late fall. No fertilizer applied prior to planting.

RESULTS: See tables.

DISCUSSION: Because of late planting (November 24), only one harvest was obtained in the spring. Since the primary interest is in perennial types, the main evaluation will come in the second and succeeding years. P. coerulea is usually among the earliest in forage production, but is an annual and therefore of limited interest. Its performance is more consistent than P. minor which also is an annual. The best early yield, total yield, survival and regrowth was made by P. tuberosa var hirtiglumis. This has been true in previous tests also. Most of the evaluations have been made in years with above average summer moisture P. bulbosum (P. I. 209,956) survived the summers of 1955 and 1956 in competition with Bermudagrass and made excellent fall growth. Its survival has been satisfactory in these studies but not its second year growth.

PROJECT NO: State 1240

DATE SUBMITTED: November 16, 1959

WORKER: E. C. Holt

Stand and forage yield of Phalaris species and varieties,
Brazos River Valley Lab., 1958-59

Variety	Yield	Stand rating ^{1/}	Vigor rating	% Stand
	May 15, 1959	March 13, 1959		11/11/59
<u>P. bulbosum</u>	1340	1	2	71
Angleton Harding	420	3	3	41
McGregor Strain #1	750	1	2	39
McGregor Strain #2	1080	1	1	38
Alabama Reed	330	3	5	78
Harding	470	3	3	50
<u>P. coerulea</u>	2360	1	1	0
<u>P. tuberosa</u> v. <u>hirtiglumis</u>	2370	1	1	71
Ark. Reed F.C. 34266	400	3	3	76
Ark. Reed F.C. 33964	--	4	5	-

^{1/} 1 = Satisfactory stand

Forage yield of phalaris species and varieties, Brazos River Valley Lab.
1954-1959

Species or variety	Pounds of air-dry forage per acre					Comparable average
	1954-55	1955-56	1956-57	1957-58 ^{1/}	1958-59	
P. coerulescens	2680	3250	4590	2520	2360	3120
P minor	1950	3300	180	3660		2000
Harding	1470	3230	3470	2460	470	2220
P. bulbosum	990	3470	2570	2340	1340	2140
P. tuberosa var hirtiglumis		3355	4540	2300	2370	2950
Alabama Reed		3430		2040	330	2030
Angleton Harding				2880	420	2220
Ioreei			190	1780		470
McGregor Strain 1					750	1840
Arkansas F.C. 34266					400	1490
LSD (.05)	860	N.S.	690	120		
C. V. (%)			14.8	37.9		
No. of clippings	2	3	3	3	1	

^{1/} Alabama Reed and P. tuberosa var hitiglumis showed excellent survival and vigor in the fall and winter of 1958. Harding and P. bulbosum showed good survival and fair vigor and Angleton Harding fair to poor survival and vigor. The remainder of the entries failed to survive.

NAME OF TEST: Phalaris species strain test, Angleton, 1958-59.

OBJECTIVES: (1) To determine forage yields of nine annual and perennial species of Phalaris and Ky. 31 fescue. (2) To determine summer survival

EXPERIMENTAL PROCEDURE:

Location: Substation No. 3, Angleton, Texas

Soil type: Lake Charles clay

Experimental design: Randomized block with five replications

Plot size: 5 ft wide and 20 ft. long

Seeding date: October 9, 1957

Fertilizer: 32-40-0 at planting, 30-0-0 on 12/19/57; 32-40-0 on 10/8/59

RESULTS: The oven-dry forage yields for 1958 are given in Table 1. The forage yields for 1959 by clipping dates are given in Table 2.

DISCUSSION: The yields of all winter annual grasses were low during the winter and spring of 1957-58; therefore, the yields of P. minor and P. coerulescens might be considered acceptable. The Israel and Ottawa S-1 strains of P. arundinacea did not survive the summer of 1958.

The total yield obtained for the two year period for the perennial species in this test is not acceptable.

PROJECT NO: 388

DATE SUBMITTED: March 1960

WORKER: Marvin E. Riewe

Table 1. Oven-dry Forage Yields for 1958 and 1959

Species	1958	1959
P. minor	2850	
P. coerulescens	1960	
P. tuberosa var. hitiglumis	1730	3320
P. bulbosum	1150	3890
P. tuberosa var. stenoptera	800	3270
P. tuberosa var. stenoptera ^{1/}	760	3040
P. arundinacea - Ala.	390	3950
P. arundinacea - Israel	140	
P. arundinacea - Ottawa S-1	100	
Ky. 31 fescue	190	3380
LSD (.05)	472	NS

^{1/} Angleton strain

Table 2. Oven-dry Forage Yields by Clipping Dates for 1959

Species	Mar. 24	May 29
P. tuberosa var. hirtiglumis	1460	1860
P. bulbosum	1600	2290
P. tuberosa var. stenoptera	980	2290
P. tuberosa var. stenoptera ^{1/}	860	2180
P. arundinacea - Ala.	1670	2280
Ky. 31 fescue	1300	2080
LSD (.05)	461	NS

^{1/} Angleton strain

NAME OF TEST: Evaluation of Phalaris species and hybrids at Prairie View, 1958-59.

OBJECTIVE: To determine the yielding ability, both seasonal and total, and survival ability of several Phalaris species and experimental strains.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 18, Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted October 24, 1958 in plots consisting of 5 12-inch rows, 17 feet long, harvested 3 rows, 14 feet long.

Area fertilized with 25-50-50 prior to planting.

RESULTS: See table.

DISCUSSION: Phalaris coerulescens is usually among the earliest in forage production. The experimental line identified as McGregor Strain 1 was also early at this location in 1958-59. McGregor Strain 2 was considerably lower in both early and total production and winterkilled further north in the state.

The test area was destroyed in mid-summer and survival information was not obtained.

PROJECT: State 1240

DATE SUBMITTED: November 15, 1959

WORKER: O. E. Smith

Forage yield of Phalaris species and varieties, Prairie View, Texas, 1958-59

Variety	Pounds of air-dry forage per acre			
	March 2	April 2	May 5	Total
McGregor Strain #1	1630	1130	1890	4650
Harding	1550	1040	1850	4440
<u>Phalaris bulbosum</u>	950	1060	1810	3820
McGregor Strain #2	650	840	2290	3780
<u>Phalaris coerulescens</u>	1650	780	950	3380
Alabama Reed canary	450	310	1070	1830
Angleton Harding	30	330	1160	1520
LSD (.05) for total yield = 1050		C. V. = 18.7%		

NAME OF TEST: Forage yield of Phalaris varieties, Denton, 1958-59

OBJECTIVES: To evaluate the yield and survival ability of several Phalaris species and experimental strains in the North Texas area

EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: The test was dry-planted on October 2, 1958 in plots consisting of 4 12-inch rows, 25 feet long, 4 replications, 2 center rows harvested for yield. The seed were banded with 200 pounds of 20% superphosphate per acre.

General conditions: Growth was extremely limited due to lack of moisture and low temperatures. Some damage to the stand was evident following 6° temperature on January 4. October 1958 through April 1959 was the driest in 46 years for that period.

RESULTS: See table

DISCUSSION: Even though fall and early spring growth was limited by moisture, notes taken at various dates indicate that Alabama Reed Canary appeared the most thrifty. Actually there was no significant difference in yield among the other entries. The test has been preserved to check summer survival and second year yields. This information will be far more useful than the first year data.

PROJECT: State 1240

DATE SUBMITTED: January 1960

WORKER: D. I. Dudley

Forage yield of Phalaris varieties at Denton, 1959

Variety	Pounds of air-dry forage per acre				Total	% Stand	% cold damage
	April 22	May 14	June 6	July 30			
Alabama Reed Canary	700	800	1490	2310	5300	85	8
Phalaris bulbosom	700	1290	440	1400	3830	85	10
Harding	470	1220	650	1470	3810	75	15
Angleton Harding	410	1320	500	1380	3610	85	10
Brome synthetic	90	350	1320	1490	3250	95	T
Phalaris coerulescens	120	890	720	1420	3150	90	5

LSD (.05) for total yield = 1150. C. V. = 10.6%

NAME OF TEST: Forage yield of Phalaris and Brome varieties and species,
McGregor, 1959

OBJECTIVE: To evaluate several experimental materials for yield, survival ability
and fall recovery.

PROCEDURE:

Location: Substation No. 23, McGregor, Texas

Soil type: Houston clay

Cultural practices: Seeded November 5, 1959, 4 replications, no fertilizer
applied.

RESULTS: See tables

DISCUSSION: McGregor strain 2 winter killed and has been dropped from further
tests. Alabama Reed and Angleton Harding became established in only 2
replications. Spring performance following establishment was about the
same for all entries. Alabama Reed Canary showed much better fall
recovery than the other Phalaris entries which were all about the same.

PROJECT: State 1240

DATE SUBMITTED: March, 1960

WORKER: M. J. Norris

Forage yields Brome and Phalaris at McGregor, 1959

C. 1 or Sel No.	Variety or Strain	Fall Harvest 11/24				Total	Lbs. per acre	
		1	2	3	4		May 5	Nov. 24
McGregor Strain 1	Harding (Aust)	2022	3060	2406	3936	11424	3657	2856
McGregor Strain 2	Harding (Tex)							
Angleton	Harding	3294	3450	2070	1182	9996	3070	2499
Phalaris	Phalaris Bulbosum	3936	1980	2094	2532	10542	3384	2636
Alabama	Reed Canary	7272		7590		14862	3108	7431
Phalaris FC 33587	Phalaris Coerulesens						3349	
FC 34226	Harding	2970	2100	2652	2484	10206	3512	2552
Brome	Brome Synthetic	1962	1530	1578	1992	7062	3984	1766
Brome	Southland Brome	2022	2736	2802	3624	11184	3927	2796

NAME OF TEST: Sudan variety and hybrid evaluation, Brazos River Valley Lab., 1959.
 OBJECTIVES: To evaluate varieties and hybrids for yield, regrowth ability, forage quality as indicated by leafiness and leaf disease resistance.

EXPERIMENTAL PROCEDURE:

Location: Brazos River Valley Lab near College Station, Texas

Soil type: Miller clay

Cultural practices: Planted April 24, 1959 in plots consisting of 3 40-inch rows, 20 feet long, 6 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 needed to maintain adequate moisture for growth.

RESULTS: See tables

DISCUSSION: The Sudan-sorghum hybrids produced the highest yields along with Sorghum alnum which is a species hybrid. Evaluations other than yield indicate that the hybrids have larger stems, lower percentage leaves and a higher prussic acid potential. On a leaf yield basis, the hybrid production would have been greater than for most of the varieties but not as much greater as indicated by total yield. The significance of these evaluations will have to be based on additional studies including animal response.

PROJECT NO. State 1240

DATE SUBMITTED: December 1, 1959

WORKER: Ethan C. Holt

Forage yield of Sudangrass varieties and hybrids.
 Brazos River Valley Lab. 1959

Variety	Pounds of air-dry forage per acre			Total
	June 19	July 27	Sept. 16	
Sorghum alnum	2470	5410	3260	11140
Texas A3054-17 X R3061	3260	4750	2910	10920
Texas A3054-20 X R3061	3110	5070	2250	10430
Sudax 11	2710	4930	2640	10280
Texas A3054-15 X R3061	3090	4580	2110	9780
Piper	2700	4130	1610	8440
Stoneville Synthetic No. 1	1590	4120	2270	7980
Stoneville Selection	2120	4150	1620	7890
Tift	1780	4110	1460	7350
Perennial Sweet	1240	3990	2080	7310
Georgia 337	1800	3560	1820	7180
Oklahoma No. 8	2130	3660	1320	7110
Greenleaf	1820	3700	1430	6950
Sweet 372	2230	3350	1170	6750
Lahoma	1660	3470	1160	6290
Sweet 372 (S-1)	1890	2630	520	5040

LSD (.05) for total yield = 1950. C. V. = 13.0%

Forage yield of Sudangrass varieties, Brazos River Valley Lab., 1954-1959

Variety	Pounds of air-dry forage per acre						Comparable average
	1954	1955	1956	1957	1958	1959	
Sorghum almum			5180	5520	10760	11140	7780
Stoneville Synthetic #1				6280	10720	7980	7210
Wheeler	7250	5540					7130
Piper	6950	5400	4760	7850	8970	8440	7060
Tift	6670	4580			9860	7350	6710
Common	5740	4120	4770	7230	9860		6560
Stoneville Selection				6230	8750	7890	6500
Perennial Sweet			4320	5510	10120	7310	6440
Georgia 337	4200		3920	6420	9290	7180	5990
Sweet 372	5600	4860	4500	5820	8240	6750	5960
Lahoma	5160	4830	3590	5740	8420	6290	5670
Greenleaf	4770	4750	3750	5830	6490	6950	5420
Sweet 372 (S-1)	3920	5060	4460	5910		5040	5320
Sudax 11						10280	9200
Texas A3054-17 X R3061							9840
Texas A3054-20 X R3061							9350
Texas A3054-15 X R3061							8700
LSD (.05)	1610	N.S.	N.S.	N.S.	1730	1950	
C. V. %	21.8	19.0	16.0	19.2	12.7	13.0	
No. of clippings	5	3	3	4	3	3	

Sudan variety and hybrid evaluations. Brazos River Valley Lab., 1957-59.

Variety	1957		1958		1959							
	Recovering cutting (1= best)	Leaf disease incidence (1= least)	Leaf disease incidence (1= least)	Maturity rating (1=early)	Leaf per- centage	Stalk diameter (inches)	Seedling vigor (1=most vigorous)	Leaf disease incidence ^{1/} (1=least)	Maturity rating ^{1/} (1=early)	Prussic acid rating ^{2/} (1=none)	June 19	Sept. 11
Common	1.2	4.5	4.3	2.0								
Piper	1.5	4.0	3.7	2.3	39.1	2/8	2	4.3	2.3	1.0	1.8	
Greenleaf	1.8	1.8	4.7	4.0	53.7	2/8	3	3.5	3.2	2.2	1.8	
Sweet 372	1.8	2.0	3.3	2.3			2	4.8	2.7	4.0	2.8	
Sweet 372 (S-1)	2.5	2.8			60.0	2/8	3	5.0	4.0	2.0	3.7	
Georgia 337	3.0	2.0	1.7	5.0	53.6	2/8	3	1.8	4.5	1.0	1.0	
La'homa	2.5	2.2	2.7	5.0	51.8	2/8	3	4.2	3.8	2.0	1.0	
Stoneville Sel.	4.8	1.0	2.0	4.3	44.7	3/8	3	1.7	4.2	5.0	3.7	
Stoneville Syn. #1	4.0	1.2	1.7	3.3	43.6	3/8	4	1.5	2.8	5.0	3.3	
Sorghum alnum	3.0	2.8	1.7	2.7			3	1.0	3.7	3.0	3.7	
Perennial Sweet	3.0	3.5	1.3	3.0			4	2.0	3.0	2.0	1.3	
Tift			3.0	4.0	48.5	2/8	3	3.7	2.7	2.0	1.7	
Oklahoma #8			2.7	2.7			3	4.8	3.0	3.5	1.0	
Sudax					43.0	3/8	2	2.2	3.3	5.0	4.3	35
Tex A3054-20 X R3061					45.6	2/8	2	2.7	1.7	4.5	3.7	
Tex A3054-17 X R3061					37.9	2/8	1	2.5	1.3	5.0	3.3	
Tex A3054-15 X R3061					36.7	2/8	2	2.7	1.2	5.0	3.0	

^{1/} Ratings made on July 23 on regrowth following first clipping.

^{2/} Based on prussic acid quick test

NAME OF TEST: Sudan Forage Evaluation Variety Test, Beeville, 1959

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

EXPERIMENTAL PROCEDURE:

Location: Substation No. 1, Beeville

Soil Type: Clareville sandy clay loam

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

Crop Management: Test planted on March 19. Soil in ideal cultivated and moisture condition. Good stands were up by March 27. Seeding rate was 12 lbs. per acre. Previous 2 years crops were sorghum. No irrigation or fertilizer were applied.

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

RESULTS: See table.

DISCUSSION: Three clippings were made: May 11, August 6 and October 12.

Clippings were intended to be made at boot stage of most varieties. Growing condition was one of the best in many years 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. Normally common and regular sweet sudans only furnish grazing up to August.

Sudax 11 produced high yield but is coarse and may not graze well unless it is a sweet stalk.

The hybrids looked good, are fine stem and leafy, and gave good yields. Tex A 3056-17 X R 3061 appeared the best of these.

Sweet 372 appears to be the sweet early type needed for earlier grazing and could be used in a mixture with late type. A seed source is needed.

Tift continues to be a good disease resistant type and is recommended for areas where leaf diseases are prevalent.

A mixture of 50% common and 50% sweet has proven practical. Seed of these are readily available.

When seed is available of Sweet 372 it probably could be mixed with perennial Sweet Sorgrass for early and late grazing.

PROJECT NO: State 1240

DATE SUBMITTED: January 9, 1960

WORKER: Lucas Reyes

Forage yield of Sudan varieties at Beeville, 1959

Variety	Pounds of air-dry forage per acre			Total
	June 11	August 6	October 12	
Sudax 11	2120	2240	1820	6180
Tex A 3054-17 X R 3061	1740	1980	1110	4830
Stoneville Synthetic 1	1560	1910	1220	4690
Tex A 3054-20 X R 3061	1900	1840	900	4640
Tex A 3054-15 X R 3061	1720	1840	880	4440
Stoneville Selection	1450	1350	1200	4000
Tift	1630	1320	960	3910
Sweet 372	1870	1460	400	3730
Perennial Sweet	1150	1590	950	3690
Sweet 50%, Common 50%	1450	1620	510	3580
Lahoma	1370	1580	580	3530
Common	1420	1440	560	3420
Oklahoma No. 8	1430	1210	540	3180
Greenleaf	1210	1120	650	2980
Sweet 372 (S-1)	1540	1140	180	2860
Piper	1200	1220	400	2820
Georgia 337	1220	1090	330	2640

LSD (.05) for total yield = 560, C. V. = 10.4%

NAME OF TEST: Sudan varieties and hybrids for forage production, Nacogdoches, 1959.

OBJECTIVES: To determine the total and seasonal production and regrowth ability of Sudan varieties, hybrids and derivatives.

EXPERIMENTAL PROCEDURE:

Location: John Weatherly farm, 7 mi. N. Nacogdoches, Highway 59

Soil type: Nacogdoches gravelly loam

Cultural practices: The test was planted April 7, 1959 in plots consisting of 4 40-inch rows 30 feet long. The harvested area was 2 rows 30 feet long. The area had been fertilized prior to planting with 500 lbs. 15-60-60. Side-dressed with 45 lbs. N. when forage was knee high.

General growing conditions: Favorable moisture and growing conditions throughout the season.

RESULTS: See table.

DISCUSSION: Yields much above average were obtained in 1959. Sudax 11 is a sorghum x Sudan hybrid and has a large stem like sorghum. The yield of this hybrid was much above the other entries in the test. Since air drying was necessary and since this hybrid has a larger stem than the other entries and would dry slower, it is possible that the moisture content was higher in it than the other entries when weighed. Even though disease ratings were not made, it is apparent that in general the less resistant types were lower yielding and made less regrowth after cutting.

PROJECT NO: State 1240

DATE SUBMITTED: October 16, 1959

WORKER: H. C. Hutson

Forage yield of Sudan varieties at Nacogdoches, 1958-59

Variety	1958	Pounds of air-dry forage per acre-1959			
	July 14 ^{1/}	June 20	Aug. 20	Sept. 18	Total
Sudax 11		9900	7070	--	16970
Greenleaf	4300	7720	3240	--	10960
Stoneville Syn. 1	4200	6170	3620	--	9790
Perennial Sweet	3590	1970	4260	2270	8500
Sorghum alnum	--	3410	4840	--	8250
Tift	3660	4900	2880	--	7780
Tex. A 3054-20 X R 3061	--	3880	2660	1160	7700
Lahoma	3550	6390	900	--	7290
Oklahoma No. 8	3770	5050	2020	--	7070
Stoneville Sel.	5610	5270	1760	--	7030
Tex. A 3054-17 X R 3061	--	2550	2930	1330	6810
Georgia 337	5990	4100	2500	--	6600
Piper	3160	2020	3030	440	5490
Sweet 372	--	3190	960	--	4150
Sweet 372 (S-1)	2790	3300	270	--	3570

LSD (.05) for total yield in 1959 = 2760. C. V. = 19.1%

^{1/} Yields were extremely variable in 1958 (C. V. = 60%) and only one cutting was obtained.

NAME OF TEST: Sudan variety forage evaluation, Prairie View, 1959.

OBJECTIVES: To evaluate the yield and regrowth ability of available varieties* hybrids of Sudan and Sudan-type plants.

EXPERIMENTAL PROCEDURE:

Location: Prairie View

Soil type: Hockley fine sand

Cultural practices: Planted May 5, 1959 in plots consisting of 3 40-inch rows, 20 feet long, 5 replications. Soil moisture was adequate for immediate seed germination. The area had been fertilized with 25-50-50 prior to planting.

RESULTS: See tables.

DISCUSSION: The Sudan-sorghum hybrids produced the most forage at the first cutting and also made the most regrowth following cutting. Sudax 11 is a DeKalb hybrid, very vigorous, and produces a large stalk. The other hybrids produced significantly less than Sudax 11 but had smaller and more desirable stalks. Good yields were obtained with all varieties except Sweet 372 (S-1) which apparently lacks vigor and the ability to recover following cutting.

The two-year averages indicate about the same yield relationships as in 1959. The hybrids were not available in 1957.

PROJECT NO: State 1240

DATE SUBMITTED: October 1959

WORKER: O. E. Smith

Forage yield of Sudan varieties and hybrids at Prairie View, 1959

Variety	Pounds of air-dry forage per acre		
	July 1	August 11	Total
Sudax 11	8390	4800	13190
Sorghum almqm	6970	4530	11500
Tex. A 3054-20 X R 3061	7660	3140	10800
Tex. A 3054-17 X R 3061	6970	3630	10600
Tex. A 3054-15 X R 3061	7710	2800	10510
Stoneville Synthetic #1	6250	2690	8940
Oklahoma No. 8	6000	2620	8620
Tift	5870	2530	8400
Perennial Sweet	5710	2440	8150
Georgia 337	5570	2040	7610
Stoneville Sel.	6000	1520	7520
Greenleaf	5660	1810	7470
Lahoma	5740	1310	7050
Sweet 372	5800	1030	6830
Piper	5350	1390	6740
Sweet 372 (S-1)	4340	700	5040

LSD (.05) for total yield = 1540, C. V. = 12.9%

Period of Years Summary

Forage yield of Sudan varieties and hybrids at Prairie View, 1957
and 1959

Variety	Pounds of air-dry forage per acre		
	1957	1959	Comparable average
Sudax 11		13190	13340
Sorghun. alnum		11500	11650
Tex. A 3054-20 X R 3061		10800	10950
Tex. A 3054-17 X R 3060		10600	10750
Tex. A 3054-15 X R 3061		10500	10650
Oklahoma No. 8		8620	8770
Tift		8400	8550
Stoneville Sel.	9380	7520	8450
Perennial Sweet		8150	8300
Stoneville Synthetic # 1	7410	8940	8180
Georgia 337	7310	7610	7460
Sweet 372	7820	6830	7320
Greenleaf	7070	7470	7270
Lahoma	7280	7050	7160
Piper	6790	6740	6760
Common	6420		6270
Commerical Sweet	6370		6220
Sweet 372 (S-1)	6570	5040	5800
LSD (.05)	N.S.	1540	
C. V. (%)	30.7	12.9	
No. of cuttings	2	2	

NAME OF TEST: Sudan Variety and/or Strain Test, Kirbyville-Cleveland, 1959
 OBJECTIVES: To evaluate Sudan varieties for seasonal and total forage yields.
 EXPERIMENTAL PROCEDURE:

Location: (a) Kirbyville (b) Cleveland
 Soil type: Kirbyville-Plummer FSL: Cleveland-Hockley FSL
 Cultural Practices: Planted May 15, 1959 at Kirbyville in plots consisting of 3, 20 inch rows, 15' long with 4 replications, 16.67 sq. ft. harvested. Planted May 21, 1959 at Cleveland using same field plan. Fertilizer application of 30-60-30 made at planting at each location. 60# N applied on June 3, June 29 and July 23, 1959 at Kirbyville. 30# N applied July 9, 1959 at Cleveland.

RESULTS: See tables.

DISCUSSION: Yields at Kirbyville were exceptional for the area because of excellent rainfall distribution for the season. The experimental hybrids consistently out-yielded the named varieties at both Kirbyville and Cleveland.

PROJECT NO: State 1240
 DATE SUBMITTED: January 18, 1960
 WORKER: Jno. R. Wood

Sudan Variety Test, Kirbyville, Texas, 1959

Variety	Pounds of air-dry forage per acre				
	6/24/59	7/21/59	8/31/59	Mean Season Total	
FC 34668(A3056-17xR3061)	3540	2380	1460	7380	
FC 34667(A3056-15xR3061)	3000	2410	1110	6520	
FC 34666(A3054-20xR3061)	2960	1250	720	5030	
FC 34641 Piper	2010	1990	710	4710	
FC 34599 Tift	2000	1640	450	4090	
FC 34143 Greenleaf	1710	1480	360	3550	
FC 34493 Sweet 372	2100	1310	130	3540	
FC 34594 Oklahoma 8	1440	1600	450	3490	
FC 34518 Stoneville Syn. #1	1640	950	490	3080	
FC 34519 Stoneville Selection	1990	640	420	3050	
FC 34600 Georgia 337	1250	1230	360	2840	
FC 34595 Lahoma	1300	820	-0-	2120	
FC 34596 Per. Sweet Sorgrass	790	680	420	1890	
FC 34601 Sweet 372 (S-1)	1130	640	-0-	1770	
LSD	.05	1010	530	400	1600
	.01	1350	710	540	2150
C. V. (%)		36.8	26.9	55.5	29.5

Sudan Variety Test, Cleveland, 1959

	Pounds of air-dry forage per acre			
	7/2/59	7/22/59	Total	
FC 34667(A3056-15xR3061)	1680	2220	3900	
FC 34668(A3056-17xR3061)	1620	1640	3260	
FC 34666(A3054-20xR3061)	1280	1390	2670	
FC 34519 Stoneville Selection	910	980	1890	
FC 34518 Stoneville Syn. #1	620	1030	1650	
FC 34143 Greenleaf	760	870	1630	
FC 34641 Piper	700	800	1500	
FC 34599 Tift	510	790	1300	
FC 34601 Sweet 372 (S-1)	810	-0-	810	
FC 34594 Oklahoma 8	470	340	810	
FC 34600 Georgia 337	530	270	800	
FC 34493 Sweet 372	700	-0-	770	
FC 34596 Per. Sweet Sorgrass	340	330	670	
FC 34595 Lahoma	450	-0-	450	
LSD:	.05	360	520	660
	.01	480	700	880
C. V. (%)	30.3	48.2	29.1	

NAME OF TEST: Sudan and Millet variety test, Mt. Pleasant, 1959

OBJECTIVES: (1) To evaluate Sudan hybrids in comparison with standard varieties for adaptation to the Mt. Pleasant area. (2) To determine the yielding ability of Millet varieties.

EXPERIMENTAL PROCEDURE:

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

Soil type: Sandy (Norfolk)

Source of Materials: Agronomy 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: April 30, 1959

Fertilized: 30-60-60 April 30, 1959

Top dressed: 30 lb N₂ June 16, 1959.

Plots made very little growth after July 31 clipping.

General: Above average growing season - March through July total 20.35 inches.

RESULTS: See table

DISCUSSION: The Sudan x Sorghum hybrids generally produced more forage than the standard varieties. Tift Sudan was the only exception to this. Texas A 3054-17 x R 3061 Sudan hybrid was the only Sudan entry producing as much as the two best millet varieties. The distribution of production was about the same for all the entries.

PROJECT: State 1240

DATE SUBMITTED: November 1959

WORKER: J. Albert Lancaster

Forage yield of Sudan and Millet varieties at Mt. Pleasant, 1959

Variety	Pounds of air-dry forage per acre			
	June 11	July 1	July 31	Total
Texas A 3054-17 x R 3061	1200	700	1670	3570
Texas A 3054-15 x R 3061	900	600	1340	2840
Sudax 11	550	460	1600	2610
Tift Sudan	710	560	1340	2610
Texas A 3054-20 x R 3061	610	520	1240	2370
Sorghum almum	460	520	1360	2340
Piper	510	550	1010	2070
Perennial Sweet	380	590	1100	2070
Sweet 372 (S-1)	400	480	1130	2010
Lahoma	400	440	1100	1940
Stoneville Synthetic 1	160	450	1330	1940
Georgia 337	420	560	940	1920
Stoneville Selection	250	490	1000	1740
Greenleaf	370	500	870	1740
Oklahoma No. 8	170	530	920	1620
Hybrid S-J Millet	1180	930	1420	3520
Gahi-1 Millet	860	900	1280	3040
Common pearl Millet	1000	720	970	2690
Starr Millet	720	700	1020	2440
Cattail No. 7 Millet	630	670	1060	2320
Sweet 372 Sudan	460	350	950	1760

LSD (.05) for total yield = 800. C. V. = 24.4%

NAME OF TEST: Sudan and Millet variety test, Mt. Pleasant, 1959

OBJECTIVES: (1) To evaluate Sudan hybrids in comparison with standard varieties for adaptation to the Mt. Pleasant area. (2) To determine the yielding ability of Millet varieties.

EXPERIMENTAL PROCEDURE:

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

Soil type: Sandy (Norfolk)

Source of Materials: Agronomy 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: April 30, 1959

Fertilized: 30-60-60 April 30, 1959

Top dressed: 30 lb N₂ June 16, 1959.

Plots made very little growth after July 31 clipping.

General: Above average growing season - March through July total 20.35 inches.

RESULTS: See table

DISCUSSION: The Sudan x Sorghum hybrids generally produced more forage than the standard varieties. Tift Sudan was the only exception to this. Texas A 3054-17 x R 3061 Sudan hybrid was the only Sudan entry producing as much as the two best millet varieties. The distribution of production was about the same for all the entries.

PROJECT: State 1240

DATE SUBMITTED: November 1959

WORKER: J. Albert Lancaster

Forage yield of Sudan and Millet varieties at Mt. Pleasant, 1959

Variety	Pounds of air-dry forage per acre			
	June 11	July 1	July 31	Total
Texas A 3054-17 x R 3061	1200	700	1670	3570
Texas A 3054-15 x R 3061	900	600	1340	2840
Sudax 11	550	460	1600	2610
Tift Sudan	710	560	1340	2610
Texas A 3054-20 x R 3061	610	520	1240	2370
Sorghum almum	460	520	1360	2340
Piper	510	550	1010	2070
Perennial Sweet	380	590	1100	2070
Sweet 372 (S-1)	400	480	1130	2010
Lahoma	400	440	1100	1940
Stoneville Synthetic 1	160	450	1330	1940
Georgia 337	420	560	940	1920
Stoneville Selection	250	490	1000	1740
Greenleaf	370	500	870	1740
Oklahoma No. 8	170	530	920	1620
Hybrid S-J Millet	1180	930	1420	3520
Gahi-1 Millet	860	900	1280	3040
Common pearl Millet	1000	720	970	2690
Starr Millet	720	700	1020	2440
Cattail No. 7 Millet	630	670	1060	2320
Sweet 372 Sudan	460	350	950	1760

LSD (.05) for total yield = 800. C. V. = 24.4%

NAME OF TEST: Millet variety forage yields, College Station, 1959.

OBJECTIVES: To evaluate the forage yielding ability of Millet varieties especially in comparison with Sudan under good growing conditions.

EXPERIMENTAL PROCEDURE:

Location: Brazos River Valley Laboratory near College Station

Soil type: Miller clay

Cultural practices: planted May 2, 1959 in plots consisting of 3 40-inch rows, 20 feet long, 6 replications. Fertilized with 48-60-0 prior to planting and 30 pounds of nitrogen top dressing following first cutting. Irrigated 3 times during growing season.

RESULTS: See tables

DISCUSSION: Common Sudan produced somewhat more forage than the millet varieties. There was no significant difference among the millet varieties except for Starr which was low in yield. Gahi-1 which usually is the highest yielding was third among the millets but appeared to hold up better in late season which also has been noted in previous plantings.

PROJECT: 1240

DATE SUBMITTED: February 1960

WORKER: Ethan C. Holt

Forage yield of Millet varieties near College Station, 1959

Variety	Pounds of air-dry forage per acre			Total
	June 29	August 5	September 16	
Common Sudan	3750	2690	1140	7580
Hybrid SJ Millet	3450	2320	1350	7120
Common Pearl Millet	3410	2110	1260	6780
Gahi-1 Millet	2980	1950	1720	6650
Cattail No. 7 Millet	3500	1640	990	6130
Starr Millet	2370	1890	1300	5560
LSD (.05) for total yield = 1680. C. V. = 12.7%				

Variety	Period of years summary		
	1958	1959	Average
Common Sudan	11780	7580	9680
Gahi-1 Millet	9250	6650	7950
Hybrid SJ Millet	6710	7120	6915
Starr Millet	7980	5560	6770
Cattail No. 7 Millet	7350	6130	6740
Common Pearl Millet	6550	6780	6665
LSD (.05)			
	2010	1680	

NAME OF TEST: Millet Variety Clipping Test, Beeville, 1959.

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

EXPERIMENTAL PROCEDURE:

Location: Substation No. 1, Beeville

Soil type: Clareville sandy clay loam

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

Crop management: Test planted on March 19th. Soil was in ideal cultivated and moisture condition. Good stands were secured by March 27th. 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: Only one clipping was made. It appears that when millets grow under abundance of moisture at start, they do not come back for second cutting.

The merits of millet appear to be their use as a catch forage crop or in seasons with light moisture and quick forage is needed. They have not yielded forage equal to sudans for grazing under normal conditions.

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

PROJECT NO: State 1240

DATE SUBMITTED: January 9, 1960

WORKER: Lucas Reyes

Forage yield of pearl millet varieties at Beeville, 1959

Variety	Pounds of air-dry forage per acre June 12
Common	2000
Hybrid S-J	1850
Cottail No. 7	1760
Gahi-1	1340
Starr	1080
LSD (.05)	360
C.V. (%)	14.7

NAME OF TEST: Millet Variety Test, Denton, 1959

OBJECTIVE: To evaluate available pearl Millet varieties for forage producing ability in the North Texas area.

EXPERIMENTAL PROCEDURE:

Location: Substation NO. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Test was planted May 29, 1959. Plots consist of four 40" rows, 25 feet long, replicated four times. No supplemental water or fertilizer were used in conjunction with the test.

Seed Source: Regional variety test, A.R.S. Beltsville, Maryland

RESULTS: See table

DISCUSSION: Previous tests having shown the millets to have very limited ability to recover after clipping, this test was clipped only one time. An effort was made to leave all varieties until maximum seasonal growth was obtained before clipping, August 21, 1959.

After final air dry weights were obtained, the millet bundles were made available to Hereford range cows, and it was quite noticeable the way they were avoided by the cattle.

PROJECT: 1240

DATE SUBMITTED: February, 1960

WORKER: D. I. Dudley

Forage yield of Millet varieties, Denton, 1959

Variety	Lbs. air-dry forage per acre August 21
Gahi-1 Pearl Millet - F.C. 34604	4160
Common Pearl Millet - F.C. 34486	3640
Cattail No. 7 Millet - F.C. 34602	3570
Hybrid SJ Peal Millet - F.C. 34605	3530
Starr Peal Millet - F.C. 34603	2860
German Millet R - F.C. 34606	2470
German Millet 8A - F.C. 34543	1360
LSD (.05)	760
C.V. (%)	16.6

NAME OF TEST: Pearl millet forage evaluation, Nacogdoches, 1959

OBJECTIVES: To study the total and seasonal production and regrowth ability of millet varieties and hybrids.

EXPERIMENTAL PROCEDURE:

Location: John Weatherly farm, 7 mi. N. Nacogdoches, Highway 59

Soil type: Nacogdoches gravelly loam

Cultural practices: Planted April 17, 1959 in plots consisting of 4 40-inch rows 30 feet long. The area had been fertilized prior to planting with 500 lbs. 15-60-60, side dressed with 45 lbs. N. when forage was knee high.

General weather: Favorable moisture and growing conditions throughout the season.

RESULTS: See table

DISCUSSION: Extremely good yields were obtained in 1959. The data were quite variable with replication 3 being especially poor. Gahi-1 yielded significantly more than any other variety. The regrowth of both Gahi-1 and Starr was better than for the other entries. The comparison with Sudan falls in line with earlier results from Southeast Texas.

Forage yield of millet varieties at Nacogdoches, 1959

Variety	Pounds air-dry forage per acre		
	June 17	July 28	Total
Gahi-1	6760	3240	10000
Starr	3510	2930	6440
Hybrid S5	3400	960	4360
Common	2820	1440	4260
Sudan	1760	1650	3410
Selection No. 7	2390	320	2710

Forage yield of millet varieties at Nacogdoches, 1958-59

Variety	Pounds of air-dry forage per acre		
	1958	1959	Average
Gahi-1	8550	10000	9275
Starr	3430	6440	4935
Hybrid Cottail S-J	5435	4360	4900
Common pearl	5445	4260	4850
Cottail No. 7	5435	2710	4070
Common Sudan		3410	3410
LSD (.05)	740	1/	
C. V. (%)	19.4	50.1	
No. of cuttings	2	2	

1/ Gahi-1 significantly different from other yields

NAME OF TEST: Millet varieties and hybrids for forage production, Prairie View, 1959.

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

EXPERIMENTAL PROCEDURE:

Location: Prairie View

Soil type: Hockley fine sand

Cultural practices: Planted May 5, 1959 in plots consisting of 3 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: Extremely good yields were obtained in 1959. Actually excessive growth had been produced at the time of the first cutting and recovery growth was poor. Gahi-1 made excellent early growth and also made the most regrowth. A heavy infestation of chinch bugs also reduced regrowth and caused additional variability in the results. The weaker plants appeared to be more severely damaged by the chinch bugs.

The two-year summary also shows that Gahi-1 is outstanding in performance.

PROJECT NO: State 1240

DATE SUBMITTED: October, 1959

WORKER: O. E. Smith

Forage yield of Millet varieties at Prairie View, 1957 and 1959

Variety	Pounds of air-dry forages per acre		
	1957	1959	Average
Gahi-1	5240	13870	9560
Hybrid Cattail S-J	5390	10240	7820
Common pearl	5360	10320	7840
Cattail No. 7	5200	8910	7060
Starr	4400	8870	6640
Common Sudan		8230	
German R	1570		
German B	1050		
LSD (.05)	990	2610	
C. V. (%)		21.2	
No. of cuttings	1	2	

Forage yield of Millet varieties, Prairie View, 1959

Variety	Pounds air-dry forage per acre		Total
	July 1	August 11	
Gahi 1	10890	2980	13870
Common pearl	8620	1700	10320
Hybrid SJ	8590	1650	10240
Cattail No. 7	7640	1270	8910
Starr	7330	1540	8870
Common Sudan	6030	2200	8230

LSD (.05) for total yield = 2610, C. V. = 21.2%

NAME OF TEST: Millet variety test, Kirbyville and Cleveland, 1959

OBJECTIVES: To evaluate millet varieties for seasonal and total forage yields.

EXPERIMENTAL PROCEDURE:

Location: (a) Kirbyville (b) Cleveland

Soil Type: Kirbyville-Plummer FSL
Cleveland-Hockley FSL

Cultural Practices: Planted May 15, 1959 at Kirbyville and May 21, 1959 at Cleveland. Plots at both locations consisted of 3, 20-inch rows, 15' long. An application of 30-60-30/acre was made at planting at each location. Harvest area was 16.67 sq. ft. Application of 60# N/acre was made at Kirbyville on June 3, June 29 and July 23, 1959. An application of 30# N/acre was made at Cleveland on July 9, 1959.

RESULTS: See tables

DISCUSSION: The only significant difference in forage yields indicated in the highly variable kirbyville data is the low forage yield of Starr Millet compared to the other entries. At Cleveland, Common, Hybrid SJ and Gahi-1 appear superior to others tested.

PROJECT NO: State 1240

DATE SUBMITTED: January 18, 1960

WORKER: Jno. R. Wood

Millet Variety Test, Kirbyville 1959

Variety	Pounds of air-dry forage per acre				
	6/24/59	7/21/59	8/31/59	Total	
F.C. 34605 Hybrid S.J.	5030	1640	1500	8170	
F.C. 34604 Gahi-1	3380	1740	2130	7250	
F.C. 34486 Common	4300	1810	1240	6850	
F. C. 34602 Cattail #7	3380	1680	780	5840	
F.C. 34603 Starr	1750	1400	350	3500	
LSD	.05	1720	N.S.	470	2310
	.01	N.S.	N.S.	650	3230
C. V. (%)	31.3	22.7	25.2	23.6	

Millet Variety Test, Cleveland, 1959

Variety	Pounds of air-dry forage per acre			
	7/2/59	7/22/59	Total	
F.C. 34604 Gahi-1	2510	5430	7940	
F.C. 34605 Hybrid SJ	2550	4480	7030	
F.C. 34486 Common	2220	4370	6590	
F.C. 34602 Cattail #7	2270	3290	5560	
F.C. 34603 Starr	1770	3850	5620	
LSD	.05	N.S.	770	1090
	.01	N.S.	1080	1530
C. V. (%)	15.6	11.6	10.8	

NAME OF TEST: Sorghum silage variety test, B.R.V.L., 1959

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

EXPERIMENTAL PROCEDURE:

Location: Brazos River Valley Lab near College Station

Soil type: Miller clay

Cultural practices: Planted on April 24 in plots consisting of 3 40-inch rows, 20 feet long, 6 replications. Fertilized with 48-60-0 prior to planting and sidedressed with 30 pounds of nitrogen when about 24 inches high. Watered as necessary to maintain adequate moisture for growth, 3 irrigations used in 1959.

Source of seed:

Honey, Tracy, Atlas, Sart and Hi-hegari from commercial sources.

Beef Builder, Silo King, Asgrow H-5820 are hybrids supplied by Asgrow Seed Company

DeKalb FS 1A and FS-22 are hybrids supplied by DeKalb Seed Company

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

Agronomic data: The varieties were rated for lodging at the time of harvest with a value of 1 assigned for no lodging. 10 plants were collected at random at harvest for plant height and stalk diameter measurements and for leaf-stalk-head determinations. Heads are reported as such and not as grain.

Yield data: Each variety or hybrid was harvested in the medium dough stage when this could be determined. Heads of several of the late entries were damaged by insects and did not mature normally. The second harvest was immediately following frost which was early in 1959.

RESULTS: See table

DISCUSSION: Green yields varied from 16.5 tons to almost 32 tons per acre.

Sart and Honey were higher in green yield than any of the hybrids but Beef Builder, C. E. 8804 and C. E. 8808 were about as high in dry matter production as Sart. Honey was high in moisture at harvest and therefore not as high in dry matter production as the above varieties. Second cutting yields were low for all entries and did not vary appreciably between varieties and hybrids.

Beef Builder and Asgrow H-5820 lodged fairly badly. Several other entries lodged to some extent.

PROJECT: State 1240

DATE SUBMITTED: February 1960

WORKER: E. C. Holt

Green and Dry yield of Sorghum varieties grown for silage, Brazos River Valley Lab, 1959

Variety	First harvest				Second harvest				Total yield	
	Green yield tons/acre	Dry yield tons/acre	% Moisture	Days to harvest	Green yield tons/acre	Dry yield tons/acre	% moisture	Days to harvest	Green (tons)	Dry (tons)
Sart	31.7	7.2	77.5	130	3.1	.8	74.0	73	34.8	8.0
Honey	30.4	5.4	82.1	116	3.7	1.0	72.3	86	34.1	6.4
Asgrow H-5820	26.7	6.0	77.4	130	5.1	1.4	71.7	73	31.8	7.4
C.E. 8802	27.8	6.9	75.1	116	4.3	1.5	65.7	86	32.1	8.4
C.E. 8804	26.2	7.0	73.2	116	5.1	1.6	67.9	86	31.3	8.6
C.E. 8801	26.0	6.7	74.1	116	4.4	1.5	65.2	86	30.4	8.2
Beef Builder	26.9	7.6	71.7	130	3.5	1.1	67.7	73	30.4	8.7
C.E. 8805	25.1	6.4	74.4	116	5.3	1.7	67.3	86	30.4	8.1
C.E. 8809	25.1	6.1	75.6	116	5.0	1.7	65.2	86	30.1	7.8
C.E. 8808	25.3	7.0	72.2	116	4.4	1.4	67.3	86	29.7	8.4
Tracy	25.1	4.9	80.5	102	4.1	1.3	67.6	99	29.2	6.2
DeKalb FS-22	23.9	5.0	79.2	102	5.1	1.6	69.6	99	29.0	6.6
DeKalb FS-1A	21.3	5.0	76.4	102	5.7	1.9	67.2	99	27.0	6.9
C.E. 8806	22.5	5.8	74.0	116	4.3	1.5	64.1	86	26.8	7.3
Atlas	23.0	4.7	79.7	102	3.5	1.2	65.4	99	26.5	5.9
Silo King	20.9	4.2	80.1	102	4.3	1.3	68.9	99	25.2	5.5
Asgrow H-5819	19.6	4.9	75.2	91	4.9	1.6	68.3	110	24.5	6.5
Hi-hegari	18.9	4.5	76.1	91	3.9	1.2	69.4	110	22.8	5.7
C.E. 8813	16.9	4.3	74.7	91	4.1	1.3	69.1	110	21.0	5.6
C.E. 8815	16.5	4.5	72.5	91	3.9	1.4	64.2	110	20.4	5.9
LSD (.05)	4.4				N.S.				4.7	
C.V. (%)	15.9									

Evaluation of Sorghum varieties and hybrids for silage
Brazos River Valley Lab, 1959

Variety or hybrid	Seedling vigor (1= best)	Relative lodging (1= none)	Stalk diameter (inches)	Plant height (feet)	Percent of forage in		
					Heads	Leaves	Stems
Honey	3	1.7	5/8	9.0	5.3	32.8	61.9
Tracy	2	1.0	4/8	8.7	3.7	29.1	66.2
Atlas	3	1.0	4/8	7.1	11.3	32.8	55.9
Sart	3	1.8	4/8	12.0	1.2	30.6	68.2
Hi-hegari	2	1.0	4/8	6.9	16.5	32.7	50.8
Beef Builder	2	2.5	4/8	9.6	4.9	33.0	62.1
Silo King	2	1.0	4/8	8.5	20.2	25.9	53.9
Asgrow H-5819	2	1.0	3/8	5.4	14.1	32.0	53.9
Asgrow H-5820	2	3.3	4/8	10.0	5.2	36.0	58.8
DeKalb FS-1A	2	1.0	4/8	6.8	15.5	32.7	51.8
DeKalb FS-22	2	1.0	4/8	9.0	8.2	27.1	64.7
C.E. 8801	2	1.7	4/8	8.6	40.7	21.9	37.4
C.E. 8802	2	1.7	5/8	8.1	13.5	37.2	49.3
C.E. 8804	2	1.0	5/8	8.0	9.9	37.1	53.0
C. E. 8805	2	1.3	3/8	7.9	22.3	27.6	50.1
C. E. 8806	2	1.0	5/8	7.0	14.8	41.1	44.1
C. E. 8808	2	1.0	5/8	7.2	16.2	31.2	62.1
C. E. 8809	2	1.0	3/8	7.2	9.6	39.8	50.6
C. E. 8813	2	1.0	3/8	6.6	18.5	29.2	52.3
C. E. 8815	2	1.0	4/8	6.6	30.5	27.0	42.5

NAME OF TEST: The yield of sorghum varieties and hybrids for silage at Tyler, 1959.

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

EXPERIMENTAL PROCEDURE:

Location: Substation No. 2, Tyler, Texas

Soil type: Kironi fine sandy loam

Cultural practices: The test was planted May 20, 1959 in 4-row plots, rows 40 inches wide and 43.6 feet long. 5 replications, 2 center rows harvested for yield. Fertilized with 22-45-22 at planting time and following a hairy vetch cover crop estimated at 10 tons green weight per acre. The cover crop was planted October 24, 1958, fertilized with 10-40-40 at planting and turned April 24, 1959. Silage plots harvested August 25-58, 1959.

RESULTS: See table.

DISCUSSION: Because of erratic stands some plots had to be eliminated and the data were not subject to statistical analysis. Yields were low, averaging about 5 tons less than in 1958 where early harvest was necessary because of drouth. It may be noted that the late varieties such as Sart and Honey were high in moisture content and therefore low in dry matter yield.

PROJECT NO: State 1240

DATE SUBMITTED: October, 1959

WORKER: P. R. Johnson

Yield of crops grown for silage at Tyler, 1959

Variety	Green yield tons/acre	Air-dry yield tons/acre	% Moisture	Days to bloom
Beef Builder	16.2	4.0	75.2	97
Sart	15.0	3.9	81.8	-
Dekalb FS-22	14.4	3.2	78.0	80
Asgrow H-5820	14.4	3.3	77.0	98
Honey	13.1	2.2	82.7	-
Sudax 11	12.1	3.3	72.5	70
Tracy	11.2	2.2	80.7	90
Silo King	10.5	3.0	71.5	77
Atlas	9.6	2.1	77.9	81
Asgrow H-5819	9.5	2.4	74.4	75
Dekalb FS-1a	9.1	2.4	73.6	91
Hegari	5.6	1.3	76.9	77

1/ Based on air-dry weight. Actual moisture content would be slightly higher.

NAME OF TEST: Silage variety test, Denton, 1959

OBJECTIVE: To evaluate various crops for silage yielding ability in the North Central Texas area.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Cultural practices: Silage variety test was planted in three 40-inch row plots 25 feet long, replicated four times, 10 pounds of seed per acre and 20 feet of center row harvested for yield. There were two dates of planting; the four corn varieties, Sorghum Alnum and Common Sudan were planted March 17, and the remainder of the test planted April 13. Each group being planted in accordance with recommended planting dates for the area. Although the first four months of the year were the driest corresponding period ever recorded at the Station, all entries emerged satisfactorily and good stands were obtained. Summer rains were unusually good, and yields for the test are considered quite satisfactory.

Included in the test were 17 new sorghum hybrids, mostly originating at the Chillicothe Station; however, others were from DeKalb, Asgrow and Northup-King. These hybrids were entered to check their adaptability to local conditions, and to furnish breeder with performance data.

RESULTS: See table

DISCUSSION: Visitors inspecting the test July 22 were asked to indicate their first three choices as to type of silage plant they preferred; considering size of plant, maturity, leafiness, grain and standing ability, but not necessarily indicated yield. On the 42 placing cards returned, 21 listed CE8801 (A378 x Rk306) among the three preferred, 15 included Northup-King 320, 9 listed both Beefbuilder and Asgrow H5819 and 8 included CE8802 (A398 x R1306).

PROJECT: 1240

DATE SUBMITTED: January 1960

WORKER: D. I. Dudley

Yield of crops grown for silage at Denton, 1959

Variety	Green weight tons/acre	Dry weight tons/acre	Maturity rating	Lodging rating	Grain rating	Height (inches)
Sart	27.4	10.9	L	T	0	120
Honey	24.1	14.7	M	0	1	102
Asgrow H-5820	23.6	12.9	M	3	2	116
Beef Builder	23.3	12.2	L	2+	0	114
NK-320	23.2	13.7	M	2	2	92
Wiley	22.6	10.5	L	3+	1-	144
Tracy	22.3	10.8	M	2	0	108
DeKalb Fs-22	21.6	12.8	M	2	1	96
CE 8801	21.2	10.6	M	1+	2+	90
CE 8805	20.3	10.7	M	T	1-	86
Sourless Orange	19.7	9.6	M	T	1+	82
NK 300	19.2	11.6	M	0	2-	74
CE 8804	19.2	9.2	M	T	1+	84
CE 8808	18.9	10.2	M	0	1+	74
Atlas	18.4	7.7	M	1	1	84
Silo King	18.1	10.4	M	2	1+	86
CE 8802	17.7	9.1	M	0	3	84
CE 8809	17.7	9.7	M	0	2+	72
Asgrow H-5819	17.3	9.4	M	1+	2	78
CE 8806	17.3	9.1	M	0	1	72
Brawley	16.4	8.7	M	0	1+	82
CE 8813	15.6	3.9	E	2	3	72
DeKalb Fs-1A	15.5	6.1	M	T	2	72
Tex. A605 X R7210	15.5	3.9	E	1	2+	72
Asgrow 101 W Corn	14.6	4.0	E	0	2	74
CE 8815	14.5	3.9	E	2	3	72
DeKalb Sudax 11	14.3	7.5	M	T	1+	90
Texas 30 Corn	14.1	4.0	E	0	2	76
Hillegari	12.3	3.5	E	T	2+	76
Asgrow 104 Corn	12.1	3.6	E	0	2	78
Yellow Surecropper	10.5	3.2	E	0	2	72
Sorghum alnum	9.6	3.5	E	2+	1	84
Common Sudan	5.2	1.9	E	2	1	66

LSD (.05)

5.6

5.0

C.V.(%)

11.3

21.6

Maturity: E = early; m = intermediate, L = late

Lodging: 1 = slight indication; 2 = noticeable lodging; 3 = lodged badly

Grain: 0 = no grain in head, 1 = 25% or less; 2 = fair; 3 = good grain

NAME OF TEST: The yield of sorghum varieties and hybrids for silage at Nacogdoches, 1959.

OBJECTIVES: To determine the yield and regrowth of several hybrids in comparison with standard sorghum varieties.

EXPERIMENT PROCEDURE:

Location: Nacogdoches, Texas

Soil type: Nacogdoches gravelly loam

Cultural practices: The test was planted April 7, 1959 in plots consisting of 4 40-inch rows, 30 feet long, 4 replications, harvested 2 center rows. Plot area was fertilized March 6, 1959

General: Soil moisture was adequate for growth throughout the season

RESULTS: See tables

DISCUSSION: First cutting yields were not as good as might be expected on the basis of a good season. Regrowth was good with most entries. The standard varieties such as Honey, Tracy, Atlas and Sart were lower than the hybrids. Beef Builder, Asgrow 5820, Silo King, FS22 and C. E. 8801 produced good regrowth yields.

Sart which is usually a long season high yielding variety was harvested in 99 days and was the lowest yielding entry in the test.

Moisture percentage was calculated on the basis of air-dry yields. Dry yield determinations were not made because of lack of drying facilities. Drying even in a greenhouse as it was done in this case is slow. With variation in stalk size and the slow moisture loss from sorghum stalks, there may be some variation in moisture content in the air-dry yields.

PROJECT NO: State 1240

DATE SUBMITTED: December 2, 1959

WORKER: H. C. Hutson

Yield of Crops Grown for Silage at Nacogdoches, 1959

Variety	First Cutting				Second Cutting				Total	
	Green yield tons/ac	Air-dry yield tons/ac	% Moisture ^{1/}	Days to Harvest	Green yield tons/ac	Air-dry yield tons/ac	% Moisture ^{1/}	Days to harvest	Green	Air-dry
Beef Builder	21.5	7.0	67.3	94	13.2	6.5	50.9	62	34.7	13.5
Asgrow 5820	18.0	5.6	68.5	93	14.0	6.8	51.6	61	32.9	12.4
FS-22	18.9	5.5	70.6	91	9.5	3.8	60.1	59	28.4	9.3
CE 8801	18.1	5.1	71.8	94	9.9	4.2	57.6	62	28.0	9.3
Silo King	17.9	4.9	72.7	91	9.6	5.2	45.6	59	27.5	10.1
CE 8804	16.6	5.1	69.0	99	8.1	3.4	57.6	74	24.7	8.5
Asgrow H-5819	14.4	3.8	73.3	91	9.3	3.5	62.0	41	23.7	7.3
CE 8809	13.7	3.7	72.9	93	9.7	4.4	56.3	61	23.4	8.1
CE 8813	15.3	3.3	78.5	91	8.1	4.7	66.0	39	23.4	8.0
CE 8808	15.1	4.6	69.5	93	6.9	3.2	54.4	73	22.0	7.8
CE 8815	13.7	2.9	78.6	91	7.8	2.5	68.3	39	21.5	5.4
CE 8808	15.1	4.6	69.5	93	6.9	3.2	54.4	73	22.0	7.8
CE 8815	13.7	2.9	78.6	91	7.8	2.5	68.3	39	21.5	5.4
Tracey	16.2	7.2	55.4	98	4.9	2.0	58.2	73	21.1	9.2
FS 1A	13.1	3.6	72.2	91	7.1	2.7	61.6	59	20.2	6.3
CE 8806	14.2	4.9	65.2	98	6.4	3.2	51.3	73	20.6	8.1
Atlas Sargo	13.6	5.0	63.4	98	5.1	1.7	66.1	66	18.7	6.7
Sart	6.3	3.2	49.7	99	3.5	1.1	69.4	84	9.8	4.3
Hi Hegari										

LSD (.05) for total yield: Green = 4.1 tons, C. V. = 8.0%

Dry = 1.9 tons, C. V. = 12.2%

^{1/} Actual moisture content would be somewhat higher since this was calculated on the basis of air-dry weights.

NAME OF TEST: Sorghum variety silage test, Prairie View, 1959

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

EXPERIMENTAL PROCEDURE:

Location: College Farm at Prairie View, Texas

Soil type: Hockley fine sand

Cultural practices: Planted on May 4 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, Atlas and Hi-hegari are commercial varieties. Beef Builder, Silo King, Asgrow H-5819 and Asgrow H-5820 are hybrids supplied by the Asgrow Seed Co. Fs-1A and FS-22 are hybrids supplied by the Dekalb Seed Co. The C. E. numbers are hybrids supplied by the Experiment Station at Chillicothe, Texas.

RESULTS: See table

DISCUSSION: Good yields were obtained in 1959. Regrowth was poor because of a dry period following harvest and a second cutting was not obtained. For convenience Honey and Sart were cut in a less mature stage than the other entries and this is reflected in their higher moisture content.

Lodging notes made at the time of harvest indicate that Beef Builder and Asgrow H-5819 are subject to lodging. Some of the other entries also may lodge but did not lodge seriously in this list.

PROJECT: State 1240

DATE SUBMITTED: January 1960

WORKER: E. O. Smith

Yield of sorghum varieties and hybrids grown for silage at Prairie View, 1959.

Variety	Tons green weight	Tons dry weight	% Moisture	Days to harvest	Plant height (inches)	Lodging rating (1 = none)
Honey	31.2	7.0	77.6	99	110	1.0
Sart	30.1	5.9	80.4	99	123	1.5
Asgrow 5820	29.0	8.2	71.7	99	106	2.2
C.E. 8801	24.8	6.5	73.8	99	100	1.9
Beef Builder	24.6	6.7	72.8	99	109	3.2
C.E. 8805	23.6	6.5	72.5	88	101	1.7
C. E. 8808	23.4	6.8	71.0	99	83	1.0
Tracy	22.2	6.1	72.5	88	107	2.0
C.E. 8802	22.1	6.5	70.6	99	93	1.2
C.E. 8804	22.1	6.3	71.5	99	89	1.0
C.E. 8809	22.0	6.2	71.8	88	84	1.4
Atlas	21.3	5.6	73.7	88	91	1.0
Silo King	20.7	5.6	73.0	88	103	1.8
Asgrow 5819	20.4	5.9	71.1	99	93	2.8
C.E. 8806	20.2	6.2	69.3	99	83	1.0
Hi-hegari	20.0	5.4	73.0	88	95	2.2
DeKalb FS-22	19.8	5.4	72.7	88	112	1.2
C.E. 8815	19.3	5.3	72.5	88	82	1.0
C.E. 8813	19.2	5.1	73.4	88	88	1.1
DeKalb FS-1a	18.8	6.0	68.1	88	83	1.0

NAME OF TEST: Silage variety test at Mt. Pleasant, 1959

OBJECTIVES: To evaluate sorghum varieties and hybrids for adaptation to the Northeast Texas area.

EXPERIMENTAL PROCEDURE:

Location: Billy Porter Farm, Mt. Pleasant, Texas

Soil type: Norfolk sand

Cultural practices: planted on May 21, 1959 in 4-row plots, 30 feet long, 4 replications. Fertilized with 30-60-60 before planting and 30 pounds of N on June 8. Each variety was harvested when it reached the medium dough stage.

General conditions: Fifteen inches of rainfall between May 1 and August 31.

Good growing conditions.

RESULTS: See tables

DISCUSSION: Yields were low considering the good moisture condition in 1959.

Actual moisture content could not be determined but appeared to vary considerably. Either the varieties differed considerably in moisture content at the time of harvest or they dried unevenly under the conditions of air-drying.

PROJECT: State 1240

DATE SUBMITTED: November 23, 1959

WORKER: J. A. Lancaster

Yield of sorghum varieties and hybrids grown for silage at Mt. Pleasant, 1959

Variety	Tons Green wt.	% Moisture ^{1/}	Tons Air-dry wt.	Days to harvest
Beef Builder	22.8	27.1	16.6	105
Sart	20.0	27.4	14.4	104
Honey	19.7	42.9	11.3	104
Asgrow 5820	19.7	44.8	10.8	92
CE 8802	16.6	56.4	6.6	91
DeKalb FS 22	15.5	41.0	9.1	89
Tracy	14.1	50.1	7.1	90
Silo King	13.3	48.0	6.9	84
CE 8809	13.1	49.4	6.2	88
CE 8806	12.1	57.2	5.2	88
Hi-hegari	11.2	49.8	5.6	85
Asgrow 5819	10.6	43.9	6.0	84
DeKalb Fsla	10.6	57.6	4.5	89
Atlas	10.0	46.8	5.3	88
CE 8815	7.1	47.5	3.7	84

^{1/} Based on air-dry weights; actual % moisture could not be calculated since only air-dry weights were obtained

NAME OF TEST: Sorghum Silage evaluation, Kirbyville & Cleveland, 1959

OBJECTIVES: To evaluate a number of Sorghum varieties and hybrids for adaptation to the Southeast Texas area in terms of total forage production and leafiness.

EXPERIMENTAL PROCEDURE:

Location: (1) Kirbyville on Plummer fine sandy loam
(2) Cleveland on Hockley fine sandy loam

Cultural Practices: Seeded May 13, 1959 and May 21, 1959 respectively at Kirbyville and Cleveland. Plots consisted of 1-40" row, 30' long, 66.67 sq. ft. harvested. A 30-60-30 fertilizer was applied at planting time at each location. Test at Kirbyville location received an additional 60# N as side-dressing 6/1/59. Cleveland location was not side-dressed.

General Conditions: Good growing conditions except for heavy rain and high wind which blew sorghum down on July 25, 1959, necessitating early harvest.

RESULTS: See tables

DISCUSSION: At time of harvest (July 24-26 at Kirbyville and August 12-18 at Cleveland) only seven entries had reached soft dough stage: Hi hegari, Asgrow H-5819, CE8813, A605 x R7210, DeKalb FS-22, DeKalb Sx-11 and Silo King. All entries were harvested because of extreme lodging.

PROJECT NO: State 1240

DATE SUBMITTED: 1/7/60

WORKER: Jno. R. Wood

Silage Variety Test, Kirbyville, 1959

Variety	Yields of 70% Moisture Material Tons/acre		Percentage Leaves (Dry Matter Basis)
Beef Builder		22.5	39.1
CE 8801 (A378 x R1306)		21.8	38.9
A605 x R1306		18.0	34.2
Asgrow H-5820		17.3	40.3
A378 x R6645		17.2	42.8
CE 8808 (A308 x R6645)		16.2	40.1
FS-22		16.0	23.9
DeKalb Sx-11		15.8	24.6
A3048 x R1306		15.7	42.9
A605 x R6645		15.4	40.7
Asgrow H5819		15.1	27.5
Silo King		13.7	33.0
FS-1a		13.3	36.6
CE 8804 (A606 x R1306)		13.0	38.9
CE 8813 (A378 x R7210)		12.9	29.6
Tracy		12.2	28.0
A605 x R7210		11.6	33.4
Atlas		11.0	30.7
Honey		10.4	42.6
Sart		10.3	39.6
Hi Hegari		7.8	34.5
LSD	.05	6.1	6.2%
	.01	8.1	8.2%
C. V. (%)		29.5%	12.4%

Silage Variety Test, Cleveland, Texas, 1959

Variety	Yields of 70% Moisture Tons/acre		Percentage Leaves in harvested Mat. (Dry Matter Basis)
Asgrow H-5820		21.9	33.2
Beef Builder		21.3	33.2
Sart		20.6	24.6
A605 x R1306		20.2	33.9
A378 x R6645		19.1	40.7
CE8801 (A378 x R1306)		18.8	40.0
A605 x R6645		17.4	40.2
A3048 x R1306		16.9	43.5
CE 8808 (A308 x R6645)		15.8	40.6
CE 8804 (A606 x R1306)		15.6	39.3
FS-22		13.0	30.9
DeKalb Sx-11		12.8	23.6
FS-1a		12.8	40.8
Honey		11.8	32.6
Tracy		11.6	29.5
A605 x R7210		11.5	31.3
Asgrow H-5819		10.5	26.0
Hi Hegari		10.3	30.7
Silo King		10.2	32.5
CE 8813 (A378 x R7210)		9.6	29.9
Atlas		8.5	26.5
LSD	.05	4.2	10.4
	.01	5.5	13.8
C. V. (%)		19.8	21.9