

Forage yield of perennial warm season grasses at the Brazos River Valley Lab., on Miller clay soil with irrigation, 1958.

Species or Variety	Pounds of air-dry forage per acre		Total
	July 31	October 6	
Pretoria 90 bluestem	4840	5180	10020
Blue buffel	3430	4980	8410
Setaria sphacelata	3590	4110	7700
Blue panic	4550	3080	7630
Bluestem 313	3220	4090	7310
Bluestem 321	3540	3560	7100
Rhodes	2590	4240	6830
Bluestem 62	2650	2430	5080
Klein	2470	2180	4650
Medio	1500	2830	4330

LSD (05) for total yield = 1680. C.V. = 26.0%

The test was established by transplanting in rows May 8-9, 1958. The area had been fertilized with 30-60-30 prior to establishment and received a 30 pound application of nitrogen in August. The area was irrigated as necessary to maintain growth.

Forage production of twelve warm season grasses on Lake Charles
clay, Angleton, 1956-58.

Species	Pounds per acre of air dry forage			
	1956	1957	1958	Average
Coastal Bermudagrass	12660	13520	15430	13870
Pretoria 90 Bluestem	12580	12230	*	
Angletongrass	11780	13520	9740	11680
Kleingrass	8920	12540	10870	10780
Luling Bermudagrass	8680	11390	10240	10100
Indian Bluestem	8320	12570	8120	9670
Medio Bluestem	8240	12230	12170	10880
Common Bermudagrass	8040	6760	7900	7570
Blue Buffel	7400	12880	*	
Dallisgrass	6620	11090	8670	8790
Buffel T-4464	4880	9670	*	
Gordura	4760	11420	6820	7670
LSD .05	2220	1591	2428	1476

* Did not recover following the 1957 growing season.

Fertilizer applied per acre:

1956 240 - 120 - 60
1957 192 - 144 - 64
1958 172 - 110 - 0

Forage production by June 21 of twelve warm season
grasses on Lake Charles clay, Angleton; 1956-58.

Species	Pounds per acre of air dry forage			
	1956	1957	1958	Average
Coastal Bermudagrass	7240	7910	4840	6660
Angletongrass	5460	5070	500	3680
Kleingrass	5520	7180	2310	5000
Luling Bermudagrass	4820	7080	2260	4720
Indian Bluestem	2320	3710	300	2110
Medio Bluestem	3400	4780	1300	3160
Common Bermudagrass	5200	3590	1340	3380
Dallisgrass	4460	6690	1930	4360
Gordura	2200	6680	1410	3430
Pretoria 90 Bluestem	4760	4170		
Blue Buffel	3180	6500		
Buffel T-4464	2260	3760		

Percent of annual total forage production produced
by June 21 for twelve warm season grasses,
Angleton, 1956-58.

Species	Percent of annual total production			
	1956	1957	1958	Average
Coastal Bermudagrass	57	58	31	48
Pretoria 90 Bluestem	38	34		
Angletongrass	46	38	5	32
Kleingrass	62	57	21	46
Luling Bermudagrass	55	62	22	47
Indian Bluestem	28	26	4	22
Medio Bluestem	41	39	11	29
Common Bermudagrass	65	53	17	45
Blue Buffel	43	51		
Dallisgrass	67	60	22	50
Buffel T-4464	46	39		
Gordura	46	59	21	45

Weighted average protein content of several warm season
grasses grown on Lake Charles Clay at
Angleton, Texas, 1956 and 1957.

Species	1956	1957	Average 1956-57
Coastal Bermudagrass	14.0	9.0	11.6
Common Bermudagrass	12.8	9.4	11.4
Luling Bermudagrass	15.1	9.6	12.2
Dallisgrass	13.9	9.8	11.9
Blue Buffel	13.3	9.9	11.3
Angletongrass	11.9	7.6	9.9
Medio Bluestem	12.5	7.7	10.5
Pretoria 90 Bluestem		7.8	
Indian Bluestem		8.7	
Buffel T-4464		10.1	
Gordura		9.8	
Kleingrass		10.6	
LSD .05	1.3	.9	.8
LSD .01	1.5	1.2	1.1

Fertilizer application:

1956		1957	
February 23	48-60-0	March 2	64-80-0
April 25	64-32-32	May 24	64-32-32
July 5	64-32-32	August 6	64-32-32
September 7	60-0-0	Total	192-144-64
Total	236-124-64		

Forage production of nine warm season grasses,
1958, Angleton

Species	Pounds per acre of oven dry forage						Total
	4/1	5/15	6/23	7/31	9/6	11/17	
Coastal Bermudagrass	310	1120	2930	2320	3020	4190	13890
Medio Bluestem	280	660	230	1130	4320	4330	10950
Kleingrass	350	460	1270	1750	3370	2580	9780
Luling Bermudagrass	360	630	1040	1240	3400	2550	9220
Angletongrass			450	1520	2770	4030	8770
Dallisgrass	390	560	790	1110	2350	2600	7800
Indian Bluestem			270	1350	2870	2820	7310
Common Bermudagrass	160	530	550	1940	2420	1510	7110
Gordura	320	370	580	830	2060	1980	6140
SD .05	211	247	322	785	1036	756	2185

This is third year data from a test on a Lake Charles clay soil.
Fertilizer applied in 1958 was applied at the rates per acre and
dates as indicated below:

3 - 5 - 58:	250 pounds	16 - 20 - 0
5 - 16 - 58:	200 pounds	21 - 0 - 0
7 - 15 - 58:	300 pounds	16 - 20 - 0
8 - 20 - 58:	200 pounds	21 - 0 - 0

WARM SEASON GRASS VARIETY TEST - 1958 1/

<u>Variety</u>	<u>Pounds per acre air dry forage</u>
Australian Beard	2230
K. R. Bluestem	886
Common Bermuda	800
Johnson	455
Indian <u>2/</u>	---
Buffel T-4464 <u>2/</u>	---
Blue Panic <u>2/</u>	---
L.S.D.	562

1/ Clipped July 3, 1958.

2/ These varieties were not clipped
in 1958.

Buffelgrass Variety Test-Temple, Texas--1955-1958

Pounds per acre air dry forage				
Selection	1955	1956	1957	1958
TS-35588	6765	1125	3610	1805
TS-35585	5905	1325	3820	1790
TS-35583	4925	620	3505	830
T-4701	5030	1135	2600	--- <u>1</u> /
T-4464	4700	770	2150	--- <u>1</u> /
L.S.D.	727	148	426	243

1/ These varieties had died out due to winter kill and drouth.

SIDE OAT VARIETY TEST - 1958

<u>Variety</u>	<u>Pounds per acre air dry forage^{1/}</u>
Mauldin	1805
Tuscon	1710
A-3603	1615
Hope	1575
Encinoso	1500
Elreno	1200
Neb. 37	920
Texas	850
Neb. 52	785
Kansas	585
Oklahoma	480
L.S.D.	490

1/ Cut July 3, 1958.

Forage yield of hybrid Bermudas on very deep
sand near Mt. Pleasant, 1958

Variety	Pounds air-dry forage per acre		Total
	July 25	September 3	
Coastal	3580	3170	6750
Suwannee	2730	3360	6090
Selection No. 3	2440	3220	5660
Common	2460	3100	5560

The test was planted April 22, 1958, fertilized with 20-40-20 at planting time, 30# N June 30 and 30# N July 25. No significant difference in yield.

Forage yield of Johnsongrass hybrids and Perennial Sudans
(second year) at Denton, 1958

Variety	Pounds of air-dry forage per acre				% Stand ^{1/}	Maturity ^{2/}	Quality ^{3/}
	June 19	July 24	Oct.29	Total			
Mississippi Persistent Johnsongrass	2630	790	950	4370	75	6	7
Sorghum - Johnsongrass Hybrid ISJ	1580	1230	1500	4310	35	6 †	5
Commercial Johnsongrass	2240	920	770	3930	70	6	7
Sorghum - Johnsongrass Hybrid SJ2	1670	890	980	3540	50	6 †	6
Sorghum alnum	490	670	1000	2160	25	5	5
Perennial Sudan K-6459 (Sorghum)	200	580	870	1650	25	5	5
Perennial Sudan K-6459-1 (Sorghum)	180	230	600	1010	21	5	5

LSD (05) for total yield = 1770 C.V. = 34.7

^{1/} Average percent stand of yield rows, 4 plots, 10-30-58.

^{2/} Maturity 1 - No seed - - 10 full seed.

^{3/} Quality of forage 1 - all stems - - 10 very leafy.

NOTES - The above figures for 1958 represent the second year of yield data from these plots. Test was planted April 10, 1957 on Durant-San Saba clay soil. Plots consist of four 12" rows, 25 feet long, replicated four times, with 19' 4" of two center rows harvested for yield.

The entire test is bordered on the west by two 12" rows of entry No. 6 (Perennial Sudan K-6459) and the east border consist of two similar rows of entry No. 5 (Sorghum alnum). These border rows were not harvested for yield but were harvested on the same dates and in the same manner as the yield area.

Notes taken 10-30-58 show that the outside border row of entry No. 6 (west) maintained a 90 percent stand over the two years of clipping and that corresponding row of entry No. 5 (east) maintained a 75 percent stand under similar conditions. These notes thus indicate that for greater survival and probably more efficient use as a perennial that plantings should be made in 36 or 40 inch rows rather than 12 inch rows as used in this test. Precipitation through the growing season was not well distributed for maximum yields. Stands are becoming very irregular.

Seed for the above test furnished by Dr. A. A. Hanson, Field Crops Research Branch, U.S.D.A., Beltsville, Maryland, and R. E. Karper, Agronomist, T.A.E.S. Substation No. 8, Lubbock, Texas.

Forage yield of Johnsongrass and Johnsongrass type hybrids
at Kirbyville and Cleveland, 1958

KIRBYVILLE, TEXAS

Variety	Pounds of air-dry forage per acre		
	7/8/58	8/13/58	Total
Sorghum Almum	1710	2070	3780
Sorghum Johnsongrass SJ2	1780	1790	3570
Commercial Johnsongrass	960	1220	2180
Miss. Persistent Johnsongrass	960	890	1850
Perennial Sweet Sorgrass	620	690	1310

CLEVELAND, TEXAS

	7/1/58	7/22/58	Total
Sorghum Almum	1640	1800	3440
Sorghum Johnsongrass SJ2	1050	1310	2360
Perennial Sweet Sorgrass	940	1060	2000
Commercial Johnsongrass	440	710	1150
Miss. Persistent Johnsongrass	400	610	1010

The tests were seeded in the spring of 1958

The influence of La.S-1 white clover, nitrogen and potash on yield
of several adapted warm season grasses grown on
Lake Charles clay, Angleton, 1958.

Species	Treatment	Pounds per acre of oven dry forage								Total
		2/28	3/26	4/28	5/27	7/14	8/19	9/30	12/2	
Coastal Bermuda-Clo.	0-80-0	250	700	1690	170	1310	690	2510	520	7840
Coastal Bermuda-Clo.	100-80-0		110	1760	180	1220	1160	4090	710	9230
Coastal Bermuda-Clo.	100-80-80	10	90	1800	240	1500	1060	4230	840	9770
Coastal Bermuda-	100-80-0			990	300	1640	1150	3240	850	8270
Coastal Bermuda-	200-80-0			1600	430	2150	1780	5210	1260	12430
Common Bermuda -Clo.	0-80-0	1070	1170	1810	450	330	920	1620	260	7630
Common Bermuda -Clo.	100-80-0	440	800	2110	390	500	1350	3370	430	9400
Common Bermuda -Clo.	100-80-80	470	770	2060	450	460	1210	3100	420	8940
Common Bermuda -	100-80-0			610	310	400	1320	1960	370	4970
Common Bermuda -	200-80-0			1030	510	930	2070	3910	670	9120
Dallisgrass -Clo.	0-80-0	600	750	1670	100	260	330	1620	580	5910
Dallisgrass -Clo.	100-80-0	550	840	1860	110	270	330	2370	680	7010
Dallisgrass -Clo.	100-80-80	380	640	1750	140	290	370	2110	790	6500
Dallisgrass -	100-80-0			560	550	720	550	2160	740	5280
Dallisgrass -	200-80-80			1100	640	1130	920	3000	850	7640
Angletongrass -Clo.	0-80-0	680	910	1400	90	80	220	1710	1050	6250
Angletongrass -Clo.	100-80-0	390	730	1760	60	50	220	1290	850	5600
Angletongrass -Clo.	100-80-80	360	770	1510	50	60	110	1530	800	5420
Angletongrass -	100-80-0			-	140	1530	970	3810	970	7420
Angletongrass -	200-80-0			-	130	1530	1230	3470	1180	7540

The influence of nitrogen on the weighted average leaf percentage and total oven dry leaf yield per acre of several warm season grasses, Angleton, 1958.

Species	Treatment	Percent leaves							Ave.	Total leaf Yield per Acre
		4/28	5/27	7/14	8/19	9/30	12/2			
Coastal Bermudagrass	100-80-0	84	87	76	79	57	70	70	5790	
Coastal Bermudagrass	200-80-0	77	89	75	78	50	76	66	8200	
Average		80	88	75	78	53	74	67	7000	
Dallisgrass	100-80-0	97	98	48	59	51	87	66	3480	
Dallisgrass	200-80-0	95	99	55	62	64	91	73	5580	
Average		96	99	52	61	59	89	70	4530	
Angletongrass	100-80-0			47	62	60	48	56	4160	
Angletongrass	200-80-0			56	53	51	54	53	4000	
Average				52	57	56	52	55	4080	

A difference of 4.66 percent in the average leaf percent of any two species is required to be considered significant at the .05 level. The main effect of nitrogen or the interaction of species with nitrogen were not significant.

THE EFFECT OF DIFFERENT RATES OF FERTILIZER ON ESTABLISHED
BERMUDAGRASS PASTURE, TEMPLE, TEXAS, 1958

Treatment	Pounds per acre air dry forage		Total
	June 5 clipping	Nov. 7 clipping	
0-0-0	3305	3125	6430
0-30-0	3565	3195	6760
0-60-0	2515	3430	5945
30-0-0	4705	3750	8455
30-30-0	4360	3720	8080
30-60-0	5440	3980	9420
60-0-0	5210	3880	9090
60-30-0	5040	3635	8675
60-60-0	5560	3315	8875
90-0-0	5560	4645	10205
90-30-0	5740	3820	9560
90-60-0	5440	3635	9075
90-60-60	5990	3885	9875
120-90-0	6030	3485	9515
180-90-0	6140	3515	9655
180-90-60	5965	4105	10070
Soylaid	3550	3145	6695
L.S.D.	706	N.S.	

Coastal Bermuda Fertilizer Test - Temple - 1958

Treatment	Pounds Per Acre Air Dry Forage			
	Clipping Dates			
	June 4	July 15	Nov. 7	Total
0-0-0	1565	1020	1830	4415
0-45-0	1745	1235	2065	5045
0-90-0	1810	1020	2000	4830
45-0-0	2455	1130	2025	5610
45-45-0	2945	1415	2390	6750
45-90-0	2280	1280	1935	5495
90-0-0	3305	1495	2265	7065
90-45-0	3705	1530	2575	7810
90-90-0	3270	1365	2110	6745
90-90-60	3485	1480	2550	7515
135-0-0	3700	1465	2300	7465
135-45-0	3770	1725	2600	8095
135-90-0	4155	1570	2575	8300
135-90-60	4445	1755	2785	8985
L.S.D.	711	352	429	

Forage yield in an irrigated fertilizer plot study
on Common Bermudagrass-Dallisgrass sod, Lufkin, 1958

Treatment	Pounds of air-dry forage per acre							Total
	5/29	6/26	7/24	8/21	9/18	10/23	11/28	
0-0-0	1050	1460	800	420	600	420	480	5230
60-40-40	1330	2410	1280	490	1060	600	710	7880
60-60-60	1300	2320	900	460	1010	200	560	6750
60-80-80	1260	1900	1090	580	1240	610	560	7240
Average	1235	2023	1018	488	977	457	577	6775
90-60-60	1030	2020	1060	540	1000	510	660	6820
120-40-40	1440	2540	1010	480	1630	390	600	8090
120-60-60	1870	2610	1290	520	1580	470	640	8980
120-80-80	1730	2210	880	820	1420	450	710	8220
Average	1517	2345	1060	590	1408	455	653	8028
120-120-120	2300	2280	1050	540	1160	250	690	8270
180-120-120	1750	2370	1640	510	1830	560	760	9420

LSD (05) for total yields = 1800. C.V. = 31.6

The effect of cultivation and fertilization on forage yield of Selection No. 3 Bermudagrass, Mt. Pleasant, 1958.

Treatment	Pounds air-dry forage per acre					Total
	June 5	July 1	Aug.1	Aug.29	Oct.2	
None	660	900	660	590	1020	3830
Cultivation	770	1020	680	600	1070	4140
Fertilization	1330	2680	1960	1890	2740	10600
Cultivation & fertilization	1900	2910	2070	2160	2570	11610

LSD (.05) for total yield - 1740

The influence of clipping frequency and height on total and leaf oven dry yield per acre in pounds and on percent leaves of Angletongrass, Angleton, 1958.

Clipping Freq.	treat. Ht.	Average yield*	Average yield**	Average leaf yield**	Weighted ave.% leaf**
2 week	Low	3250	3370	2900	86
2 week	High	2570	2630	2240	85
4 week	Low	5030	5140	3860	75
4 week	High	4870	5000	3610	72
6 week	Low	4660	4980	3180	64
6 week	High	4150	4090	2700	66
8 week	Low	7960	8330	4800	58
8 week	High	8940	9340	4950	53

Source of Variation	Degrees of freedom	Mean Square Yield *	Degrees of freedom	Mean Square % leaf **
Rep	3	283,738	1	0
Treatment				
Height	3	80,001	3	670**
Freq.	1	43,927,271**	1	9
H x F	3	1,097,325*	3	12
Error	21	265,961	7	12

* Based on four reps
 ** Only two reps were separated into leaf and stem fractions

Fertilizer was applied at the following rates and dates: 32-40-0 on June 1; 45-0-0 on July 25 and 45-0-0 on September 22 with the exception that plots cut at six-week intervals were fertilized on October 3 instead of September 22. This could at least partially account for the somewhat lower yield of plots cut at six-week intervals when compared with plots cut at four-week intervals.

The data for this year reveal a marked increase in total yield as the time between cuttings is increased but a marked decline in leaf percentage. The interaction of clipping height with clipping frequency is, at present, incompletely understood.

Rotation 719
SIX YEAR SUMMARY OF DATA
Temple, Texas
1953-1958

No.	Rotation	Treatment	Bushels per acre					Ave.	
			1953	1954	1955	1956	1957		1958
- O A T Y I E L D -									
2	2	Oats, cotton, oats	89	48	21	31	40	21	42
3	2	Oats-swcl., cotton, oats-swcl.	83	68	20	34	34	20	43
4	3	Swcl., cotton, oats-swcl.	83	56	24	31	24	19	40
5	3	Alfalfa, cotton, oats-alfalfa	97	53	26	31	31	19	43
9	2	Oats, corn, oats	96	48	19	23	32	15	39
10	2	Oats-swcl., corn, oats-swcl.	81	61	17	36	37	19	42
11	3	Swcl., corn, oats-swcl.	85	61	21	39	37	18	44
12	3	Alfalfa, corn, oats-alfalfa	87	73	28	42	37	14	47
- C O T T O N Y I E L D* -									
1	Cont.	Cotton, cotton, cotton	1462	1013	350	740	865	465	816
2	2	Cotton, oats, cotton	1890	1046	310	1292	1040	880	1076
3	2	Cotton, oats-swcl., cotton	1772	1003	325	1334	900	445	963
4	3	Oats-swcl., swcl., cotton	1614	1155	545	1263	880	640	1016
5	3	Oats-alfalfa, alfalfa, cotton	1814	1144	375	1234	955	735	1043
6	3	Fescue-alf, fes-alf, cotton	1200	843	435	1278	875	1080	952
7	4	Fescue-alf, fes-alf, cotton	1250	905	595	1183	955	595	913
7A	4	Fescue-alf, cotton, cotton	1381	1090	540	915	960	160	841
- C O R N Y I E L D -									
8	Cont.	Corn, corn, corn	38.5	32.0	49.8	22.2	38.0	NO	36.0
9	2	Corn, oats, corn	37.9	41.0	53.4	40.6	59.3		46.0
10	2	Corn, oats-swcl., corn	47.9	39.0	47.1	31.2	69.1	HAR-	47.0
11	3	Oats-swcl., swcl., corn	42.0	48.9	41.0	31.7	79.4		48.0
12	3	Oats-alfalfa, alfalfa, corn	49.8	42.0	43.7	38.2	78.7	VEST	50.0
13	3	Fescue-alfalfa, fes-alf, corn	30.2	44.0	44.0	30.6	82.8		46.0

*Cotton data shown in pounds per acre of hand pulled cotton.