

NAME OF TEST: Small grain date of planting for forage production
 OBJECTIVES: To study the influence of date of planting on seasonal
 and total forage production and on time of maturity.

EXPERIMENTAL PROCEDURE:

Experiment No.: 3513

Location: Agronomy Farm, College Station, Texas

Soil type: Lufkin fine sandy loam

Cultural practices: The land was prepared and fertilized with 400 pounds of 12-12-12 per acre. Plots were 5 12-inch rows, 17 feet long, 3-foot alley between replications. Seedings were on Sept. 1, Sept. 15, Oct. 1, Oct. 15, Nov. 1, and Dec. 1. A prolonged rainy period prevented seeding on Nov. 15. Irrigation was used when necessary to obtain immediate emergence. Varieties were Mustang oats, Suregrain oats, and Gator rye.

General conditions: Fall conditions were favorable for plant growth, but excessive cloudiness from late November to February and cool temperatures retarded plant growth. Some stand loss resulted from insect damage with the first two seeding dates.

RESULTS: See tables.

Forage yield of small grain varieties with various dates
 of planting, College Station, Texas, 1960-61

Date of planting	Variety	Pounds dry forage per acre				Total	Total harvest only at maturity
		12/1	2/15	3/14	4/12		
Sept. 1	Gator	710	1380	460	210	2760	6370
	Mustang	1140	510	560	170	2380	5420
	Suregrain	1310	520	590	210	2630	5970
Sept. 15	Gator	990	1490	470	130	3080	5790
	Mustang	1070	430	650	390	2540	3770
	Suregrain	1130	470	670	280	2550	5470
Oct. 1	Gator	940	1690	550	200	3380	6290
	Mustang	1200	420	710	370	2700	4110
	Suregrain	1320	350	600	420	2690	4550
Oct. 15	Gator		3440	500	310	4250	5560
	Mustang		2440	1110	290	3840	4560
	Suregrain		3110	1100	320	4530	4500
Nov. 1	Gator		2270	500	460	3230	6500
	Mustang		1380	1840	470	3690	3620
	Suregrain		1300	1620	430	3350	4620
Dec. 1	Gator			780	890	1670	5140
	Mustang			1560	800	2360	4030
	Suregrain			860	720	1580	3600

DISCUSSION: Adequate forage was produced for harvesting on December 1 with the first three planting dates. The December 1 yields were the same for the Sept. 1, Sept. 15, and Oct. 1 seedings indicating no advantage from the very early seeding. Midwinter production (Dec. 1 to Feb. 15) was best with the October 15 seeding. Yields of the Oct. 15 seeding on Feb. 15 were greater than the combined yields up to that date from earlier seedings.

Total yields in clipped plots increased with later seeding dates up to Oct. 15 and decreased from that date to Dec. 1. Total yields were greater on plots harvested only at maturity than with 4 clippings. Yields varied with date when clipped only at maturity, but there was not a definite trend as with the clipped plots.

The greater yields with a single harvest indicate that clipping reduces potential yield. The absence of the early clipping (Dec. 1) on plots seeded Oct. 15 and Nov. 1 may account in part for the greater total production from these dates of seeding as contrasted with the earlier dates.

Date of seeding also influenced date of heading where the forage was harvested only at maturity. The early seedings of Gator were in the boot stage by December 1 and in full head by January 1. The oat varieties did not boot until about March 1 even with the earliest seedings.

The influence of date of planting on time of booting and heading of small grain varieties

Date of seeding	Mustang		Suregrain		Gator	
	Boot	Head	Boot	Head	Boot	Head
Sept. 1	3/8	3/22	3/1	3/10	12/1	1/1
Sept. 15	3/8	3/27	3/8	3/15	12/1	1/1
Oct. 1	3/15	3/27	3/8	3/22	1/10	2/10
Oct. 15	3/22		3/15	3/27	2/10	3/1
Nov. 1	3/27		3/15	3/30	3/1	3/15
Dec. 1	3/27		3/27		3/1	3/22

NAME OF TEST: Pasture grass establishment study, Denton, 1960

OBJECTIVES: To determine the influence of species, date of planting and various seedbed treatments on emergence and establishment of various warm-season grasses.

EXPERIMENTAL PROCEDURE:

Location: Substation No. 6, Denton, Texas

Soil type: San Saba clay

Grasses: A - Buffalograss, B - Sideoats grama, C - King Ranch blue-stem, D - Dallisgrass, E - Switchgrass, F - Blue Panic

Treatments: R - roll seedbed after planting; T - treated seed with KNO_3 ; C - chilled seed; two dates of planting (3-21-60 and 4-19-60) as shown. Test planted in single randomized rows, 40" wide and 25' long, replicated 4 times.

General conditions: Monthly precipitations as follows: January, 2.98; February, 1.24; March, 1.42; April, 2.54; May, 2.68; June, 1.48; July, 5.54; August, 3.53.

Data: Plant counts were made on established plants only at the end of the growing season.

RESULTS: See tables.

DISCUSSION: There is very little indication of any treatment effects. If stands are average for all plots in which rolling followed seeding, the number of plants is slightly greater than with no treatment, but this is not statistically significant. There is no indication of a favorable response to either KNO_3 treatment or chilling of the seed.

Species differed significantly in their establishment ability, and there was a significant species X date interaction. All species showed better establishment with April seeding than March seeding, but the difference in favor of April was much greater with the rapid emerging species, Sideoats, K.R. bluestem, and Blue Panic.

Early planting generally has favored slow emerging species such as Buffalo and Dallisgrass. The number of established plants from the two dates of seeding for these species did not differ greatly.

Three years of results from this study are summarized (See table). Seed treatments showed no effects. Species differed greatly. Early planting favored slow germinating species and later planting favored rapid germinating species. At the later date of planting, establishment was consistently better with seedbed rolling. The differences were not great but were in favor of rolling. If rolling has an influence, it would be greater at the later planting.

The influence of various seed and seedbed treatments on establishment of six warm-season grasses. Denton, 1960.

Treatment	Number of plants per 25 feet of 40-inch row						
	Buffalo	Sideoats	K.R. bluestem	Dallis	Switch	Blue	Panic
March 21, 1960							
None	8	73	20	18	23	30	29
Seedbed rolled	8	79	26	19	30	34	33
Seed treated KNO ₃	14	68	28	21	15	22	28
Rolled + treated	10	65	20	27	25	39	31
Seed chilled	13	77	29	20	20	19	30
Rolled + chilled	11	75	21	21	26	34	31
Treated + chilled	10	83	30	25	21	24	32
Roll + treat. + chill	9	78	18	27	26	26	31
Average	11	75	24	22	22	29	
April 19, 1960							
None	12	119	17	22	34	66	45
Seedbed rolled	15	107	13	23	33	79	45
Seed treated KNO ₃	15	108	24	26	44	73	48
Rolled + treated	17	91	28	38	47	78	50
Seed chilled	18	98	19	23	30	73	44
Rolled + chilled	14	135	22	23	38	76	51
Treated + chilled	26	90	18	21	38	58	42
Roll + treat. + chill	16	92	25	40	43	80	49
Average	17	105	105	27	38	73	

The influence of various seed and seedbed treatments on establishment
of six warm-season grasses. Denton, 1958-60.

Treatment	No. of plants per 25 feet of 40-inch row						Average
	Buffalo	Sideoats	Caucasian ¹	Dallis	Switch	Blue Panic	
March planting							
None	14	137	58	16	43	68	56
Seedbed rolled	16	136	50	16	48	63	55
Seed treated KNO ₃	17	137	55	26	45	56	56
Rolled + treated	18	125	49	21	46	66	54
Seed chilled	18	125	49	18	51	52	52
Rolled + chilled	18	151	42	17	41	59	55
Treated + chilled	20	145	51	20	42	62	57
Roll + treat. + chill	18	135	46	25	39	54	53
Average	17	136	50	20	44	60	55
April planting							
None	7	124	38	12	56	88	54
Seedbed rolled	11	139	37	13	62	95	60
Seed treated KNO ₃	9	130	36	14	55	86	55
Rolled + treated	11	138	46	15	70	98	63
Seed chilled	9	121	36	10	42	82	50
Rolled + chilled	11	147	44	12	60	101	62
Treated + chilled	12	122	40	10	55	86	54
Roll + treat. + chill	13	145	45	19	72	99	66
Average	10	133	40	13	59	92	58

¹/ K.R. bluestem used in 1960