

1998-99

Comparison of
Planting Dates for

**Rye,
Oat,
Wheat,
and
Triticale**

Varieties and Strains

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NF-FOR-99-08

DISCUSSION

Small grains were established on two dates at Ardmore Headquarters Farm and Burneyville Red River Demonstration and Research Farm in the fall of 1998: October 12 and 29 (Ardmore; Table 1) and September 30 and October 20 (Burneyville; Table 2). The early plantings were delayed because of dry soils at both locations and were followed by late plantings approximately three weeks later. The 1998-99 forage yields are shown in Tables 1 and 2; grain yields, Table 4.

Forage

At **Ardmore**, the early planting was clipped four times for forage production; the late planting was clipped only three times. The October 29 planting produced an average of 23% (1,622 pounds) more total forage than the October 12 planting (Table 1). The yield advantage developed during the spring months. Note that the early planting produced more than twice as much forage by February 17. The rye varieties produced the most early forage and oats the least in both plantings. The earliness of the ryes is more obvious in the October 12 test. 'Coker 9134' wheat, 'Presto' triticale, and 'Bates' rye were more consistent in total forage production, regardless of planting date.

At **Burneyville**, the September 30 planting was clipped five times; the October 20 planting was clipped four times. The late planting was also more productive at this location, averaging 20% (1,439 pounds) more total forage than the early planting. The overall yield advantage of the late planting was gained during the late winter and spring months, since 87% (7,466 pounds) of the total forage accumulated after January 26. However, the early planting did yield an average of 1,270 pounds (117%) more forage by January 26. Again, the ryes produced the earliest forage in both plantings. The three oat varieties were the most consistent and dependable for total production, regardless of planting date. 'Longhorn' wheat and 'Trical Stan I' triticale yielded least across both planting dates.

A multiyear comparison of total forage yield from early and late fall plantings at the two locations is shown in Table 3. At Ardmore, forage yields were higher for late fall planting in five out of eight years for the oats. A definite trend in forage production has not been established for the ryes, wheats, and triticales because their production pattern has been similar but more variable from year to year. The 1998-99 growing season was just the fourth year for a comparison of planting dates at Burneyville. The current trend favors the late plantings for total forage production of all the small grains on this sandy loam site. However, note that the late-planted oats did not produce any forage or grain because of complete winterkill in 1995-96.

Grain

Temperatures and moisture during grain-filling were very good this spring. Despite the presence of several leaf diseases during the year, grain yields were excellent at both locations. Leaf rust, barley yellow dwarf virus, and root rots were the most common diseases late in the season.

At **Ardmore** (Table 4), the overall grain yield of the late planting (89.6 bushels) was 21% greater than that of the early planting (74.1 bushels). All varieties but 833 oat responded much

better under the late-planting regimen. The yield pattern for each of the small grains was very consistent for both plantings.

At **Burneyville**, there was no consistent yield pattern, but overall grain yields were much higher (31%) for the late-planted test; only 'Harrison' oat and 'Longhorn' wheat produced less. Lodging and grain shatter contributed to the reduced yield of 'Harrison' oat in both plantings. 'Coker 9134' wheat, 'Presto' triticale, '833' oat, and 'La. 604' oat were the most consistent high yielders for both plantings.

A multiyear comparison of grain production from early and late fall planting at both locations is shown in Table 5. Notice that rye grain production has been higher for the late fall planting each year at both locations. The triticales have responded to the late plantings consistently better than the other small grains. Because oats are more susceptible to winter damage, their yields have fluctuated the most with planting date over the years.

Table 1. Small-grain forage summary comparing planting dates at Headquarters Farm, Ardmore, OK; 1998-99¹

October 12 planting								
Clipping dates								
Variety and crop	12/17	2/17	Total through 2/17	4/7	5/24	1998-99 total	Forage produced by 2/17 (%)	
Pounds of oven-dry forage per acre								
Presto triticale	150	2531	2681	6656	0	9337	29	
Coker 9134 wheat	839	1918	2758	5639	0	8397	33	
Bates rye	-	3616	3616	4515	0	8131	45	
Harrison oat	1554	274	1828	2466	3799	8093	23	
Oklon rye	-	3802	3802	3642	0	7444	51	
Jagger wheat	518	2230	2748	4632	0	7380	37	
La. 604 oat	686	598	1284	3667	2348	7299	18	
NF 87 triticale	716	2495	3211	4060	0	7271	44	
Longhorn wheat	475	1855	2330	4887	0	7217	32	
Trical Stan I triticale	204	1536	1740	5385	0	7125	24	
833 oat	785	738	1523	3136	2424	7083	22	
Maton rye	-	1877	1877	5169	0	7046	27	
Average								
	494	1956	2450	4488	714	7652	32	
L. S. D. ² (.05)								
	414	793	881	790	273	1000		
C. V. ³ (%)								
	49.5	23.9	21.2	10.4	22.6	7.7		
October 29 planting								
Clipping dates								
Variety and crop				2/16	4/6	5/24	1998-99 total	Forage produced by 2/16 (%)
Pounds of oven-dry forage per acre								
Oklon rye				2369	5391	1558	9318	25
Coker 9134 wheat				1082	6950	1217	9249	12
Presto triticale				686	7509	947	9142	8
Bates rye				1759	5985	1398	9142	19
Maton rye				1276	6205	1505	8986	14
Trical Stan I triticale				827	6790	1310	8927	9
833 oat				887	6713	1195	8795	10
NF 87 triticale				2247	5955	544	8746	26
Jagger wheat				1082	6435	919	8436	13
La. 604 oat				273	4984	2719	7976	3
Longhorn wheat				991	6457	299	7747	13
Harrison oat				709	5152	1701	7562	9
Average								
				1182	6210	1276	8668	14
L. S. D. (.05)								
				471	1154	915	1050	
C. V. (%)								
				23.5	11.0	42.3	7.1	

¹Influencing factors were the same for both plantings and are shown in the NF-FOR-99-05 report.²Least significant difference.³Coefficient of variation.

Table 2. Small-grain forage summary comparing planting dates at the Red River Demonstration and Research Farm, Burneyville, OK; 1998-99¹

September 30 planting								
Clipping dates								
Variety and crop	11/2	1/26	Total through 1/26	2/24	3/24	4/29	1998-99 total	Forage produced by 1/26 (%)
Pounds of oven-dry forage per acre								
La. 604 oat	761	1531	2292	904	1467	4691	9354	25
833 oat	861	1580	2441	925	1315	3756	8437	29
Harrison oat	835	1786	2621	1031	1227	3267	8146	32
Maton rye	952	1991	2943	1300	2413	928	7584	39
Coker 9134 wheat	873	1856	2729	1472	1455	1773	7429	37
Bates rye	1185	1471	2656	1229	1818	1496	7199	37
Oklon rye	1311	1561	2872	1484	2051	421	6828	42
NF 87 triticale	1053	1361	2414	1621	966	1433	6434	38
Jagger wheat	729	1389	2118	1819	1595	862	6394	33
Longhorn wheat	690	1158	1848	1630	2077	649	6204	30
Presto triticale	618	1306	1924	1487	1786	891	6088	32
Trical Stan I triticale	355	1085	1440	995	1348	1510	5293	27
Average								
	852	1506	2358	1325	1626	1806	7115	33
L. S. D. ² (.05)								
	224	536	609	341	548	1107	1525	
C. V. ³ (%)								
	15.5	21.0	15.3	15.2	19.9	36.2	12.7	
October 20 planting								
Clipping dates								
Variety and crop					1998-99 total	Forage produced by 1/25 (%)		
	1/25	2/24	3/24	5/3				
Pounds of oven-dry forage per acre								
Harrison oat	790	1973	2596	4710	10069	8		
833 oat	746	1613	2635	4827	9821	8		
La. 604 oat	389	1149	2575	5518	9631	4		
Bates rye	1691	2298	2885	1809	8682	20		
Maton rye	1327	1733	3858	1649	8567	16		
Coker 9134 wheat	1325	2071	2997	2080	8473	16		
Oklon rye	1719	2085	2895	1560	8259	21		
NF 87 triticale	1399	2598	2111	2069	8177	17		
Presto triticale	710	2062	3611	1704	8087	9		
Jagger wheat	1509	2347	2421	1729	8005	19		
Trical Stan I triticale	606	1729	2711	2755	7801	8		
Longhorn wheat	845	2204	2684	1324	7057	12		
Average								
	1088	1989	2832	2645	8554	13		
L. S. D. (.05)								
	255	253	391	574	808			
C. V. (%)								
	13.8	7.5	8.2	12.8	5.6			

¹Influencing factors were the same for both plantings and are shown in the NF-FOR-99-05 report.

²Least significant difference.

³Coefficient of variation.

Table 3. Multiyear comparison of forage yields and planting dates at Ardmore and Burneyville

		Ardmore				
Fall planting	Year ¹	Planting date	Total dry forage per acre (pounds)			
			Rye	Oat	Wheat	Triticale
Early	1990-91	Oct. 4	4331	3358	3644	3755
	1991-92	Oct. 2	2992	3493	2953	2744
	1992-93	Sept. 24	3362	3433	2353	2762
	1993-94	Sept. 30	3559	3745	3449	3255
	1994-95	Sept. 27	2998	3634	2422	2612
	1995-96	Sept. 28	3451	2042	3286	3061
	1997-98	Sept. 30	5139	6520	5778	5761
	1998-99	Oct. 12	7540	7492	7631	7911
			Average			
Oct. 1			4172	4215	3940	3983
Late	1990-91	Oct. 30	3993	2590	3375	3384
	1991-92	Oct. 23	3670	4051	3439	3026
	1992-93	Oct. 21	5363	4771	4089	4620
	1993-94	Oct. 27	2600	2868	2274	2646
	1994-95	Nov. 2	4986	3908	3084	4080
	1995-96	Oct. 18	3279	2636	2954	2930
	1997-98	Oct. 29	3742	4181	3335	4077
	1998-99	Oct. 29	9149	8111	8477	8939
			Average			
Oct. 26			4598	4140	3878	4213
Burneyville						
Early	1995-96	Sept. 27	5988	2357	4616	3959
	1996-97	Sept. 13	5088	3362	3636	3776
	1997-98	Oct. 6	6755	4872	3837	4302
	1998-99	Sept. 30	7204	8646	6676	5938
			Average			
Sept. 27			6259	4809	4691	4494
Late	1995-96	Oct. 17	6897	0	4574	4247
	1996-97	Oct. 3	5871	5654	5170	4717
	1997-98	Oct. 29	6470	6367	6211	6312
	1998-99	Oct. 20	8503	9840	7845	8022
			Average			
Oct. 17			6935	5465	5950	5825

¹No comparison can be made at Ardmore for the 1996-97 season. The late test was not planted because of wet conditions in October and early November of 1996.

Table 4. Grain yield comparison of planting dates at Ardmore and Burneyville, 1998-99

Variety and crop	Ardmore			
	October 12 planting		October 29 planting	
	Yield (bu/ac)	Test weight (lbs/bu)	Yield (bu/ac)	Test weight (lbs/bu)
Harrison oat	116.7	40.2	128.4	36.3
833 oat	112.1	40.5	95.2	35.0
La. 604 oat	98.2	41.1	116.4	33.0
Trical Stan I triticale	84.0	53.2	104.9	52.9
NF 87 triticale	81.1	50.0	92.6	48.2
Presto triticale	73.0	52.0	98.4	51.9
Coker 9134 wheat	69.5	56.0	98.0	56.3
Jagger wheat	62.4	55.9	83.5	56.0
Longhorn wheat	60.6	59.8	72.7	59.6
Bates rye	51.0	56.3	69.2	54.8
Oklon rye	43.4	55.9	65.1	53.8
Maton rye	37.3	56.2	50.7	53.7
	Average			
	74.1	51.4	89.6	49.3
	L. S. D. ¹ (.05)			
	12.5	1.5	17.2	1.3
Variety and crop	Burneyville			
	September 30 planting		October 20 planting	
	Yield (bu/ac)	Test weight (lbs/bu)	Yield (bu/ac)	Test weight (lbs/bu)
833 oat	77.7	38.2	83.6	34.8
La. 604 oat	76.1	37.0	82.4	33.8
Coker 9134 wheat	64.4	58.9	87.7	57.6
Longhorn wheat	57.1	56.7	55.7	58.1
Presto triticale	57.0	49.3	85.8	49.2
Maton rye	55.2	55.8	66.1	55.2
NF 87 triticale	50.7	49.0	83.9	41.7
Harrison oat	50.3	38.0	46.6	34.0
Bates rye	49.2	55.6	73.3	54.7
Jagger wheat	47.3	55.4	66.7	55.0
Trical Stan I triticale	46.0	48.2	82.3	49.2
Oklon rye	45.1	56.3	73.2	55.5
	Average			
	56.4	49.9	74.0	48.2
	L. S. D. (.05)			
	13.2	0	17.9	4.4

¹Least significant difference.

Table 5. Multiyear date-of-planting comparison of grain yields at Ardmore and Burneyville

Ardmore							
Fall planting	Year ¹	Planting date	Bushels per acre				
			Rye	Oat	Wheat	Triticale	
Early	1990-91	Oct. 4	36.4	53.8	32.4	30.5	
	1991-92	Oct. 2	21.2	79.0	18.1	25.7	
	1993-94	Sept. 30	34.0	36.1	25.0	21.2	
	1994-95	Sept. 27	10.7	37.9	12.8	11.3	
	1995-96	Sept. 28	39.7	52.6	44.7	29.4	
	1997-98	Sept. 30	41.7	100.1	57.5	44.2	
	1998-99	Oct. 12	43.9	109.0	64.2	79.4	
			Average				
			Oct. 1	32.5	66.9	36.9	34.5
Late	1990-91	Oct. 30	42.3	64.1	32.1	41.9	
	1991-92	Oct. 23	31.4	115.5	42.8	48.1	
	1993-94	Oct. 27	35.7	27.4	25.2	32.2	
	1994-95	Nov. 2	21.4	86.1	32.9	43.1	
	1995-96	Oct. 18	41.2	67.0	56.2	32.5	
	1997-98	Oct. 29	43.2	92.7	55.9	56.5	
	1998-99	Oct. 29	61.7	113.3	84.7	98.6	
			Average				
			Oct. 27	39.6	80.9	47.1	50.4
Burneyville							
Early	1995-96	Sept. 27	27.8	27.3	28.5	12.8	
	1996-97	Sept. 13	14.6	71.1	14.4	22.1	
	1997-98	Oct. 6	53.1	72.6	48.5	50.5	
	1998-99	Sept. 30	49.8	68.0	56.3	51.2	
			Average				
			Sept. 27	36.3	59.8	36.9	34.2
Late	1995-96	Oct. 17	41.0	0	38.2	24.7	
	1996-97	Oct. 3	17.3	43.8	16.0	33.5	
	1997-98	Oct. 29	66.8	106.7	78.7	72.3	
	1998-99	Oct. 20	70.9	70.9	70.0	84.0	
			Average				
			Oct. 17	49.0	55.4	50.7	53.6

¹A comparison cannot be made at Ardmore for the 1992-93 and 1996-97 seasons. In 1992-93 the grain yield for early plantings was not taken because of ryegrass infestation. The late test was not planted in the fall of 1996-97 because of wet conditions.