

1999–2000
Comparison of
Planting Dates for

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

Varieties and Strains

Jerry L. Baker

The Samuel Roberts Noble Foundation, Inc.
P. O. Box 2180
Ardmore, Oklahoma 73402

DISCUSSION

Small grains were established on two dates at Ardmore Headquarters Farm and Burneyville Red River Demonstration and Research Farm in the fall of 1999: September 23 and October 14 (Ardmore; table 1) and September 22 and October 19 (Burneyville; table 2). The early plantings were delayed by dry soil in early September at both locations. Adequate soil moisture in mid-September allowed early plantings at both locations, and early October rains allowed late plantings to be made approximately three weeks later.

FORAGE

At **Ardmore**, the early planting was clipped five times for forage production; the late planting, only four times. The September 23 planting produced an average of 8 percent (463 pounds) more total forage than the October 14 planting (table 1). The yield advantage developed during the fall and early winter. Note that the early planting had produced 1,421 pounds more forage by January 25. 'NF 87' triticale produced early forage in both plantings. However, the rye varieties as a group produced the most early forage and oats the least in both plantings. The earliness of the ryegrasses was more obvious in the September 23 test. 'Bates' rye and 'Harrison' oat were the most consistent entries in total forage production, regardless of planting date.

At **Burneyville**, the September 22 planting was clipped four times; the October 19 planting was clipped only three times. The late planting was more productive at this location, averaging 27 percent (1,658 pounds) more total forage than the early planting. The overall yield advantage of the late planting was gained during the late winter and spring, since 76 percent (5,973 pounds) of the total forage accumulated after February 16. The late planting also averaged slightly more forage (7 percent) by February 16. The rye varieties and 'NF 87' triticale produced the earliest forage in both plantings. Note the sizeable yield advantage of 'Bates' and 'Oklon' ryegrasses in the February 16 clipping of the late planting. These varieties were also the most consistent and dependable for total production, regardless of planting date. 'Lockett' and 'Jagger' wheats and 'La. 604' oat 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 plantings in five out of nine years for the ryegrasses, wheats, and triticales. A trend in forage production has definitely not been established for any of the crops. They all have similar production patterns, but their response varies from year to year. The 1999–

2000 growing season was the fifth comparison of planting dates at Burneyville. The current trend favors the late plantings for total production of all the small grains at this site. However, note that the late-planted oats did not produce any forage or grain (table 5), because of complete winterkill of all varieties in 1995–96.

GRAIN

Temperatures were unusually warm, and plant development was well ahead of schedule throughout the growing season. Barley yellow dwarf virus was the most common disease in the late fall and winter. Root rots became more apparent in the spring as the crop began to mature. Hot temperatures in May hastened maturity and caused some grain to shrivel in the late-maturing varieties.

At **Ardmore** (table 4), the overall grain yield of the early planting (69.0 bushels) was 10 percent higher than that of the late planting (63.0 bushels). All of the oat and wheat varieties responded better under the early-planting regimen. ‘Harrison’ oat and ‘Coker 9663’ wheat were consistently high-yielding in both plantings, whereas ‘Jagger’ wheat and ‘Trit I’ triticale were the lowest-yielding varieties for both planting dates.

At **Burneyville**, there was not a consistent yield pattern, but overall grain yield was slightly higher (4 percent) for the test planted early. All of the rye varieties responded better in the late planting. ‘Trit I’ triticale, a late-maturity variety, was the poorest grain producer in all environments (i.e., both locations and planting dates). The hot temperatures during the maturation process generally affect the grain of later-maturing varieties the most.

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 also responded more favorably to the late plantings than the oats and wheats. Because oats are more susceptible to winter damage, their forage and grain yields fluctuated the most with planting date.

Table 1. Small-grain forage summary comparing planting dates at Headquarters Farm, Ardmore, Oklahoma; 1999–2000¹

Variety and Crop	September 23 Planting						1999– 2000 Total	Forage Produced by 1/24 (%)
	Clipping Dates							
	11/17	Total through 1/24	1/24	3/1	3/28	5/8		
Pounds of oven-dry forage per acre								
Harrison oat	978	1,415	2,393	1,205	1,659	2,701	7,958	30
Bates rye	1,602	1,697	3,299	1,807	2,118	0	7,224	46
Maton rye	1,617	938	2,555	1,443	2,771	28	6,797	38
Dallas oat	413	910	1,323	1,222	1,492	1,866	5,903	22
Lockett wheat	805	408	1,213	1,794	2,717	177	5,901	21
Oklon rye	1,409	1,187	2,596	1,499	1,752	22	5,869	44
Coker 9663 wheat	834	1,179	2,013	2,320	627	749	5,709	35
NF 87 triticale	1,248	1,588	2,836	1,529	843	135	5,343	53
Danko Presto triticale	424	363	787	1,390	2,659	275	5,111	15
La. 604 oat	548	591	1,139	697	1,220	2,005	5,061	23
Jagger wheat	595	827	1,422	2,124	856	503	4,905	29
Trit I triticale	571	29	600	686	2,613	744	4,643	13
Average								
	920	928	1,848	1,476	1,777	767	5,868	31
L. S. D. ² (.05)								
	461	393	762	489	590	405	677	
C. V. ³ (%)								
	29.6	25.0	24.3	19.6	19.6	31.2	13.6	
October 14 Planting								
	Clipping Dates						1999– 2000 Total	Forage Produced by 1/25 (%)
	1/25	3/1	3/28	5/8				
	Pounds of oven-dry forage per acre							
NF 87 triticale		1,183	3,842	2,017	291	7,333	16	
Bates rye		1,464	2,478	2,219	192	6,353	23	
Harrison oat		316	1,566	2,695	1,546	6,123	5	
Coker 9663 wheat		379	2,724	1,884	966	5,953	6	
Danko Presto triticale		521	2,172	2,680	227	5,600	9	
Oklon rye		810	2,353	2,000	256	5,419	15	
Jagger wheat		189	1,737	3,437	3	5,366	4	
Dallas oat		57	654	2,675	1,430	4,816	1	
Lockett wheat		51	1,850	2,788	115	4,804	1	
Maton rye		152	2,197	2,296	102	4,747	3	
La. 604 oat		0	389	2,556	1,247	4,192	0	
Trit I triticale		0	1,079	2,647	426	4,152	0	
Average								
		427	1,920	2,491	567	5,405	7	
L. S. D. (.05)								
		413	901	NS ⁴	503	NS		
C. V. (%)								
		57.2	27.7	31.8	52.4	20.5		

¹Influencing factors were the same for both plantings and are shown in the NF-FOR-00-10 report.

²Least significant difference.

³Coefficient of variation.

⁴Nonsignificant.

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	1990–1991	Oct. 4	4,331	3,358	3,644	3,755
	1991–1992	Oct. 2	2,992	3,493	2,953	2,744
	1992–1993	Sept. 24	3,362	3,433	2,353	2,762
	1993–1994	Sept. 30	3,559	3,745	3,449	3,255
	1994–1995	Sept. 27	2,998	3,634	2,422	2,612
	1995–1996	Sept. 28	3,451	2,042	3,286	3,061
	1997–1998	Sept. 30	5,139	6,520	5,778	5,761
	1998–1999	Oct. 12	7,540	7,492	7,631	7,911
	1999–2000	Sept. 23	6,630	6,307	5,505	5,032
				Average		
		Sept. 30	4,445	4,447	4,113	4,099
Late	1990–1991	Oct. 30	3,993	2,590	3,375	3,384
	1991–1992	Oct. 23	3,670	4,051	3,439	3,026
	1992–1993	Oct. 21	5,363	4,771	4,089	4,620
	1993–1994	Oct. 27	2,600	2,868	2,274	2,646
	1994–1995	Nov. 2	4,986	3,908	3,084	4,080
	1995–1996	Oct. 18	3,279	2,636	2,954	2,930
	1997–1998	Oct. 29	3,742	4,181	3,335	4,077
	1998–1999	Oct. 29	9,149	8,111	8,477	8,939
	1999–2000	Oct. 14	5,506	5,044	5,374	5,695
				Average		
		Oct. 25	4,699	4,240	4,045	4,377
		Burneyville				
Early	1995–1996	Sept. 27	5,988	2,357	4,616	3,959
	1996–1997	Sept. 13	5,088	3,362	3,636	3,776
	1997–1998	Oct. 6	6,755	4,872	3,837	4,302
	1998–1999	Sept. 30	7,204	8,646	6,676	5,938
	1999–2000	Sept. 22	7,942	5,737	4,805	6,133
			Average			
		Sept. 26	6,595	4,995	4,714	4,822
Late	1995–1996	Oct. 17	6,897	0	4,574	4,247
	1996–1997	Oct. 3	5,871	5,654	5,170	4,717
	1997–1998	Oct. 29	6,470	6,367	6,211	6,312
	1998–1999	Oct. 20	8,503	9,840	7,845	8,022
	1999–2000	Oct. 19	9,728	6,757	6,750	8,016
			Average			
		Oct. 18	7,494	5,724	6,110	6,263

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, 1999–2000

Variety and Crop	Ardmore			
	September 23 Planting		October 14 Planting	
	Yield (Bu./Ac.)	Test Weight (Lbs./Bu.)	Yield (Bu./Ac.)	Test Weight (Lbs./Bu.)
Harrison oat	103.0	37.1	84.7	37.6
Coker 9663 wheat	98.0	61.0	88.3	59.2
Dallas oat	91.0	36.6	79.3	36.8
La. 604 oat	79.7	35.1	61.0	35.6
Lockett wheat	73.3	57.9	54.7	54.3
Bates rye	63.0	54.8	69.7	55.2
Maton rye	63.0	56.1	57.3	54.9
Presto triticale	60.7	50.8	63.0	50.2
Oklon rye	59.0	55.5	70.0	54.6
NF 87 triticale	55.7	46.5	61.0	47.5
Jagger wheat	49.7	56.7	44.0	52.5
Trit I triticale	31.3	49.2	23.0	43.3
	Average			
	69.0	49.8	63.0	48.5
	L. S. D. ¹ (.05)			
	22.0	—	21.7	—
Variety and Crop	Burneyville			
	September 22 Planting		October 19 Planting	
	Yield (Bu./Ac.)	Test Weight (Lbs./Bu.)	Yield (Bu./Ac.)	Test Weight (Lbs./Bu.)
Coker 9663 wheat	71.0	58.7	63.0	59.0
Dallas oat	66.0	37.0	64.3	37.3
Oklon rye	57.3	57.1	60.7	53.6
Presto triticale	54.7	51.2	39.0	49.6
Maton rye	54.7	56.9	61.0	54.7
Bates rye	54.3	57.1	65.0	54.5
NF 87 triticale	53.3	50.9	56.7	48.2
Lockett wheat	50.7	57.5	45.3	52.2
La. 604 oat	50.0	34.8	39.0	36.7
Harrison oat	48.0	37.8	51.3	38.9
Jagger wheat	47.0	58.5	47.3	58.6
Trit I triticale	30.7	48.6	21.0	45.1
	Average			
	53.1	50.5	51.1	49.0
	L. S. D. (.05)			
	11.9	—	11.5	—

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	1990–1991	Oct. 4	36.4	53.8	32.4	30.5
	1991–1992	Oct. 2	21.2	79.0	18.1	25.7
	1993–1994	Sept. 30	34.0	36.1	25.0	21.2
	1994–1995	Sept. 27	10.7	37.9	12.8	11.3
	1995–1996	Sept. 28	39.7	52.6	44.7	29.4
	1997–1998	Sept. 30	41.7	100.1	57.5	44.2
	1998–1999	Oct. 12	43.9	109.0	64.2	79.4
	1999–2000	Sept. 23	61.7	91.2	73.7	49.2
		Average				
Late		Oct. 1	36.2	70.0	41.1	36.4
	1990–1991	Oct. 30	42.3	64.1	32.1	41.9
	1991–1992	Oct. 23	31.4	115.5	42.8	48.1
	1993–1994	Oct. 27	35.7	27.4	25.2	32.2
	1994–1995	Nov. 2	21.4	86.1	32.9	43.1
	1995–1996	Oct. 18	41.2	67.0	56.2	32.5
	1997–1998	Oct. 29	43.2	92.7	55.9	56.5
	1998–1999	Oct. 29	61.7	113.3	84.7	98.6
	1999–2000	Oct. 14	65.7	75.0	62.3	49.0
			Average			
		Oct. 25	42.9	80.1	49.0	50.2
		Burneyville				
Early	1995–1996	Sept. 27	27.8	27.3	28.5	12.8
	1996–1997	Sept. 13	14.6	71.1	14.4	22.1
	1997–1998	Oct. 6	53.1	72.6	48.5	50.5
	1998–1999	Sept. 30	49.8	68.0	56.3	51.2
	1999–2000	Sept. 22	55.4	54.7	56.2	46.2
		Average				
		Sept. 26	40.1	58.7	40.8	36.6
Late	1995–1996	Oct. 17	41.0	0	38.2	24.7
	1996–1997	Oct. 3	17.3	43.8	16.0	33.5
	1997–1998	Oct. 29	66.8	106.7	78.7	72.3
	1998–1999	Oct. 20	70.9	70.9	70.0	84.0
	1999–2000	Oct. 19	62.2	51.5	51.9	38.9
		Average				
		Oct. 18	51.6	54.6	51.0	50.7

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.