

2003 - 2004

Forage Yields
from

**Rye,
Wheat,
Triticale,
Oat
and
Barley**
Varieties and Strains

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DISCUSSION

Small-grain forage variety trials were planted at the Noble Foundation Headquarters Farm (HQF) near Ardmore and the Red River Demonstration and Research Farm (RRDR) near Burneyville (tables 1 and 2). Fall planting conditions varied some between the two locations. The normal fall planting of mid- September was delayed some at both locations because of dry weather in August and early September. Adequate moisture became available and early fall forage growth was fair to good at both locations. However, very little moisture came from October until January, and forage production was minimal during the late fall and winter months. Cold temperatures in January and early February also contributed to slower winter recovery. Adequate to good moisture and milder temperatures in late February and March resulted in good early spring forage production at both locations. This year, 84 small-grain varieties and experimental strains were harvested throughout the growing season for forage yield comparison. The tests included two barley, 13 oat, 27 wheat, 15 triticale and 27 rye entries.

At the Ardmore HQF, the test plots were planted on a Wilson silt loam soil that had been fallowed the previous year. The trial was harvested four times for forage yield during the growing season (Table 1). The second clipping was delayed about two weeks because of inclement weather in February and, therefore, forage growth was past early jointing phase for most entries in the test. Total dry matter ranged from 3,766 to 6,713 pounds per acre and averaged 5,528 pounds per acre for the test. Note that 50 percent of the total forage was harvested on March 11. Generally, the ryes produced the most fall/winter forage and oats made the most spring forage. On average, the ryes yielded 78 percent of their forage by March 11, and the oats produced 53 percent of their forage after that date. In general, the ryes and oats produced the most forage and wheats the least. Ten of the top 15 producers were ryes.

At Burneyville, the test was planted on a Minco fine sandy loam soil that had been fallowed the previous year. Forage was harvested five times during the growing season (Table 2). In spite of below normal rainfall throughout the growing season, total forage yields were good for all the crops except wheat at this site. Adequate subsoil moisture accumulation from fallowing the previous year may have prevented a drought stress

situation. Overall, 21 percent of the total forage was harvested on Dec. 4; however, only 35 percent had been harvested by Feb. 20. Total forage yields ranged from 2,626 to 6,181 pounds of dry matter per acre, with an average production of 4,345 pounds per acre. On average, the ryes produced 46 percent of their forage by the Feb. 20 clipping; triticales, oats, barleys and wheats yielded 36, 35, 24 and 19 percent, respectively. Again this year, the ryes were the most productive small grain and wheats were the lowest yielders at this location. Fourteen of the top 15 producers were ryes.

For Ardmore and Burneyville, respectively, tables 3 and 4 summarize the total forage yields of commercially available and newly-released small-grain crop varieties that have been tested the last two and three years. Our objective was to evaluate the forage production potential of crops and varieties that are adapted and being grown or have the potential to be marketed and available for use by producers in south-central Oklahoma and north-central Texas.

When studying the data, producers should look for consistency and dependability of crop performance, a variety, or both across multiple years rather than within individual years. The producer should also take into account the location that best approximates their production situation (i.e., soil type, location proximity, yield goals, fertility levels, etc.) when using this data to assist in decision making. Note that rye production (Table 3) has been higher than overall oat and wheat yields at Ardmore (silt loam and clay soils) over the past three years. This has been a trend for many years. The ryes generally gain their overall advantage because they consistently produce the earliest fall-winter forage. Overall, the wheats have been good late-winter and early-spring yielders and oats generally produce more forage later into the spring. Also notice that over the last two seasons, the new triticale varieties have averaged producing slightly more overall forage than the rye varieties. Most of that advantage is a result of excellent spring forage yields. At Burneyville (sandy loam soil), both early fall-winter and total forage production has historically favored the ryes. Note that last year's oats were not harvested and therefore cannot be used in the two- and three-year comparisons (Table 4). In previous years of testing, the oats, wheats and triticales have not been consistent in their forage performance at this sandy loam site. Historically,

as a group, the wheat varieties have been the least productive and were again this year.

All of the seven rye varieties shown in tables 3 and 4 are consistently good forage producers. However, there isn't a variety that is consistently more productive each year and at each location. "Wrens 96," an early forage yielder developed in Florida, has been the highest producer over the last two seasons at Ardmore, but only average at Burneyville. "Maton," an older variety, continues to perform average to above-average at both locations. "Elbon," the first forage rye variety released by the Noble Foundation in 1956, still performs consistently well on the sandy loam site at Burneyville. Both Maton and Elbon are later forage producers that generally gain an advantage over the earlier varieties in the spring when conditions are more favorable for spring season production. "Oklon," an early-forage type, has performed consistently better over the years at Burneyville where its early fall forage advantage is more evident.

Since oat varieties were not harvested at Burneyville in the 2003-2004 growing season, it is difficult to make comparisons across years and location. In the past, none of the oat varieties have consistently produced the highest yields at both locations. In general, oats are more subject to winter damage and drought stress than the other small grains and, therefore, less predictable. "Dallas" oat perhaps has shown the most consistency and stability compared to the other varieties over the last three seasons at both locations. It appears to possess more winter hardiness than most of the other varieties and that may partially explain why it has been more consistent. "Harrison" generally produces earlier forage than Dallas, and has been more consistent and higher yielding on the heavier soils at Ardmore than on the sandy loam soils at Burneyville. "Horizon 321" and "Horizon 474" are early varieties developed in Florida, but limited data indicate that they may not have adequate winter hardiness to perform at a consistently high level in south-central Oklahoma.

Wheat forage yields have been extremely variable at both locations over the years. "2174" and "Custer" hard red winter wheat varieties with mid-maturity have high three-year averages at both locations, but yields tend to fluctuate dramatically from year to year. "Coronado," an early variety, has high three-year averages at both

locations with slightly better performance on the sandy loam soils at Burneyville. "Jagger" yields continue to shift downward. It produces early fall-winter forage, but will often break dormancy in the late winter or early spring and is more subject to damage from late winter or early spring freezes. Spring forage production of Jagger can often be reduced by powdery mildew when cool, damp conditions exist in the spring. "Lockett," an awnless dual-purpose hard wheat variety, has been the most stable variety in forage production on the heavier soils at Ardmore over the last three years; it has been less than average at Burneyville. "Coker 9663," an awnless soft wheat, generally produces good yields in the fall, but overall forage production has declined dramatically the last three years at both locations. "OK 101" has been below average in forage production in our trials. It is extremely susceptible to powdery mildew, which has been a problem in recent years. It establishes quickly in the fall and holds its spring dormancy better than Jagger, but is not consistent. "Cutter" and "Jagalene" are new AgriPro hard wheat varieties that have created a lot of excitement over the Central Plains with their high grain yields. Both have been in our yield trials for three years with variable forage results. They are both very susceptible to powdery mildew and spring forage yields have been inconsistent. Two new soft wheat varieties, "AGS-2000" and "Coker 9152" have been in our yield trials for only two years with mixed forage results. Both have performed fairly well on the heavier soils at Ardmore, but only average at Burneyville.

"ThunderCale" triticale has consistently produced good spring forage but low fall or early forage. "TAMcale 5019" and "TAMcale 6331" are new triticale varieties released by Texas A&M University that have potential for both grain and forage production in the southern Great Plains. Both will be marketed by AgriPro Wheat. Limited testing (two years) indicate that they both produce earlier forage than ThunderCale, but overall yields have been lower. All three of the varieties appear to be good to excellent for spring hay and silage production. "Trical 342" produces good early forage but is probably too winter-tender to be a consistent forage producer for Oklahoma and North Texas. "Trical 2700" has been tested periodically for several years and it also does not possess adequate winter hardiness to be a consistent forage producer for this area.

Table 1. Small-grain forage performance, 2003-2004; Headquarters Farm, Ardmore, Okla.¹

Variety or strain ²	Clipping dates				2003- 2004 Total	Maton (%)	Forage Produced By 3/11 (%)
	12/8	3/11	4/5	4/30			
	Pounds of oven-dry forage						
95412 oat	901	2,419	2,317	1,076	6,713	122	49
NF65 rye	1,482	3,956	652	432	6,522	119	83
Oklon (Breeders) rye	1,456	3,845	737	404	6,442	117	82
95318 rye	1,368	4,344	351	363	6,426	117	89
Wrens 96 rye	1,456	4,266	246	454	6,422	117	89
NF27 oat	1,231	1,871	2,623	671	6,396	117	49
XR-032 rye	699	3,781	1,400	501	6,381	116	70
NF95407 oat	614	1,546	3,189	1,015	6,364	116	34
95301B rye	1,390	4,158	501	303	6,352	116	87
Bates RS4 rye	1,566	4,159	326	266	6,317	115	91
NF95304 rye	1,646	3,818	537	294	6,295	115	87
Thunder Cale triticale	357	3,338	2,106	453	6,254	114	59
TX00D639 barley	1,265	1,850	2,867	258	6,240	114	50
96304 rye	1,305	4,050	481	365	6,201	113	86
Winterking rye	1,207	3,733	971	250	6,161	112	80
NF95322 rye	1,192	4,155	373	376	6,096	111	88
XR-033 rye	494	3,580	1,578	420	6,072	111	67
96210 triticale	1,061	3,857	573	508	5,999	109	82
Oklon (Foundation) rye	1,129	3,488	1,125	235	5,977	109	77
96213 triticale	1,098	3,713	729	428	5,968	109	81
96309 rye	1,269	4,051	300	343	5,963	109	89
95418 oat	1,019	1,867	2,652	398	5,936	108	49
NF95306 rye	1,420	3,753	456	306	5,935	108	87
96323 rye	1,106	3,958	616	254	5,934	108	85
Bates rye	1,168	3,848	560	329	5,905	108	85
TX96D093 oat	1,255	1,885	2,409	346	5,895	107	53
96412 oat	744	1,546	2,477	1,110	5,877	107	39
95322B rye	1,327	3,915	289	301	5,832	106	90
NF19 rye	1,433	3,821	310	247	5,811	106	90
Coker 9152 wheat (soft)	580	3,803	769	634	5,786	106	76
TAMcale5019 triticale	560	3,362	1,156	697	5,775	105	68
TAMcale6331 triticale	622	3,393	1,095	661	5,771	105	70
AGS 104 rye	907	4,545	208	103	5,763	105	95
RSI 1029E triticale	368	3,911	936	539	5,755	105	74
XR-031 rye	495	3,629	1,285	307	5,716	104	72
Plot Spike LA9339 oat	1,274	1,874	2,098	451	5,697	104	55
Overley wheat	1,061	3,137	911	585	5,694	104	74
Lockett wheat	724	2,278	2,421	266	5,689	104	53
Fannin wheat	1,116	3,037	987	536	5,676	103	73
Thunder Cale V triticale	394	3,224	1,865	185	5,667	103	64
Wintermore rye	683	3,475	1,164	295	5,617	102	74
Ranger Brand wheat (soft)	641	1,926	2,612	357	5,536	101	46
Boss rye	338	4,270	571	330	5,509	100	84
Maton rye	943	2,772	1,518	251	5,484	100	68
2174 wheat	1,117	1,592	2,688	57	5,454	99	50
Coronado wheat	1,006	2,422	1,966	49	5,443	99	63
LA9766B122-B-12 oat	532	1,678	2,649	569	5,428	99	41
Elbon rye	809	2,234	2,236	122	5,401	98	56
Dallas oat	724	1,877	2,317	473	5,391	98	48
NF95203 triticale	931	2,802	1,202	451	5,386	98	69

Bradley wheat (soft)	1,136	2,054	2,066	121	5,377	98	59
Tam 202 wheat	678	3,235	644	794	5,351	98	73
RSI 1029E/Trical 2700 blend triticale	632	3,334	870	463	5,299	97	75
Harrison oat	970	2,178	1,678	459	5,285	96	60
96104 wheat	629	2,257	2,089	296	5,271	96	55
AGS-2000 wheat (soft)	736	2,899	760	874	5,269	96	69
Jagger wheat	929	2,805	1,086	435	5,255	96	71
JEI 110 wheat	1,161	1,806	2,230	47	5,244	96	57
NF94120 wheat	591	2,953	1,350	315	5,209	95	68
95215 triticale	747	2,826	1,103	532	5,208	95	69
Horizon 314 oat	876	1,799	1,965	552	5,192	95	52
Trical 2700 triticale	970	2,706	1,119	393	5,188	95	71
95123 wheat	1,157	2,808	984	232	5,181	94	77
NF4 wheat	1,021	2,438	1,364	312	5,135	94	67
96104A wheat	792	2,351	1,655	318	5,116	93	61
Custer wheat	747	1,874	2,400	94	5,115	93	51
OK 101 wheat	1,010	1,532	2,560	0	5,102	93	50
96202 triticale	765	2,848	900	541	5,054	92	71
Tambar 501 barley	433	1,173	3,162	265	5,033	92	32
NF9 triticale	1,105	2,405	1,111	348	4,969	91	71
NF91 triticale	1,037	2,036	1,450	419	4,942	90	62
96125A wheat	474	1,820	2,511	130	4,935	90	46
Endurance wheat	329	1,371	3,071	159	4,930	90	34
NF94109 wheat (soft)	819	2,637	1,033	374	4,863	89	71
Sturdy 2K wheat	602	1,818	2,139	154	4,713	86	51
Horizon 474 oat	1,306	824	2,084	492	4,706	86	45
Trical 342 triticale	1,079	2,515	962	141	4,697	86	77
Horizon 321 oat	861	1,242	2,047	392	4,542	83	46
Cutter wheat	664	2,420	906	536	4,526	82	68
XR-035 rye	198	1,059	2,911	301	4,469	81	28
OK 102 wheat	687	797	2,863	72	4,419	81	34
Coker 9663 wheat (soft)	329	2,471	989	630	4,419	81	63
Jagalene wheat	925	1,862	1,415	99	4,301	78	65
XR-034 rye	88	1,057	2,415	206	3,766	69	30
Average							
	904	2,762	1,480	382	5,528	101	65
L.S.D. ³ (.05)							
	556	598	417	312	942		
C.V. ⁴ (%)							
	38.2	13.4	17.5	50.5	10.6		

¹Planting date: Sept. 26, 2003.

Seeding rate: 2,000,000 live seed per acre, which approximates 90-120 lb. per acre, depending on variety and crop.

Seeding method: Drilled in seven-inch rows at a one-inch planting depth.

Replications: Three.

Soil type: Wilson silt loam.

Previous crop: Fallow.

Management: Disked and roller-harrowed.

Weed control: None.

Fertilization: Preplant – 100 pounds of N, 25 pounds of P₂O₅, and 40 pounds of K₂O per acre on September 10, 2003; topdress – 50 pounds of

N per acre on February 27, 2004.

²NF numbers are Noble Foundation experimental strains. XR numbers are experimental blends developed by Seed Resource. TX and LA numbers are Texas A&M University and Louisiana State University experimental strains, respectively. RSI 1029E is an experimental triticale strain developed by Resource Seeds, Inc. Seed of these experimental materials are not commercially available.

³Least significant difference.

⁴Coefficient of variation.

Table 2. Small-grain forage performance, 2003-2004; Red River Demonstration and Research Farm, Burneyville, Okla.¹

Variety or strain ²	Clipping dates					2003– 2004 Total	Maton (%)	Forage Produced By 2/20 (%)
	12/4	2/20	3/12	4/6	5/4			
	Pounds of oven-dry forage							
NF65 rye	1,761	1,560	1,570	1,252	38	6,181	109	54
Oklon (Breeders) rye	1,595	1,302	1,627	1,377	168	6,069	107	48
Oklon (Foundation) rye	1,653	1,131	1,385	1,588	210	5,967	105	47
Dallas oat	1,119	628	821	2,647	733	5,948	105	29
96323 rye	1,814	1,202	1,548	1,189	186	5,939	104	51
NF95322 rye	1,981	1,296	1,715	831	112	5,935	104	55
96309 rye	1,802	1,289	1,765	873	154	5,883	104	53
Maton rye	1,468	388	1,484	2,181	163	5,684	100	33
95318 rye	1,895	1,153	1,630	859	40	5,577	98	55
Bates RS4 rye	1,641	1,268	1,372	1,062	224	5,567	98	52
Winterking rye	1,282	1,092	1,664	1,441	12	5,491	97	43
NF19 rye	1,910	1,163	1,368	889	59	5,389	95	57
95322B rye	1,677	1,115	1,300	1,140	104	5,336	94	52
NF95304 rye	1,916	884	1,566	941	10	5,317	94	53
Wrens 96 rye	1,616	1,068	1,668	944	9	5,305	93	51
Thunder Cale triticale	256	1,135	1,590	1,940	363	5,284	93	26
Bates rye	1,475	1,005	1,445	1,270	71	5,266	93	47
XR-031 rye	1,017	942	1,496	1,644	108	5,207	92	38
NF27 oat	1,543	450	571	2,048	575	5,189	91	38
Thunder Cale V triticale	459	1,014	1,435	1,972	266	5,146	91	29
96304 rye	1,618	1,076	1,442	983	11	5,130	90	53
XR-032 rye	1,130	828	1,579	1,551	6	5,094	90	38
Elbon rye	1,339	495	863	2,321	56	5,074	89	36
95301B rye	1,760	1,155	1,184	919	53	5,071	89	57
Boss rye	885	1,289	1,608	1,184	43	5,009	88	43
NF95306 rye	1,505	945	1,508	871	161	4,990	88	49
AGS 104 rye	1,808	1,122	1,361	590	108	4,989	88	59
XR-033 rye	983	998	1,429	1,494	74	4,978	88	40
Wintermore rye	1,250	674	1,115	1,832	10	4,881	86	39
NF95407 oat	720	373	942	2,096	745	4,876	86	22
Tambar 501 barley	876	309	650	2,558	476	4,869	86	24
TX96D093 oat	1,247	221	896	2,154	297	4,815	85	30
95418 oat	1,404	256	731	1,890	447	4,727	83	35
96412 oat	1,378	237	362	1,761	962	4,700	83	34
RSI 1029E triticale	442	1,041	1,632	1,343	144	4,602	81	32
Horizon 314 oat	1,359	422	730	1,527	498	4,536	80	39
Harrison oat	1,094	400	920	1,794	293	4,501	79	33
95412 oat	1,113	469	531	1,586	774	4,473	79	35
RSI 1029E/Trical 2700 blend triticale	1,017	700	1,045	1,366	299	4,427	78	39
96210 triticale	668	928	1,495	1,033	285	4,409	78	36
96213 triticale	713	1,080	1,448	1,030	129	4,400	77	41
Horizon 321 oat	1,362	298	373	1,681	568	4,282	75	39
NF95203 triticale	742	650	1,077	1,471	247	4,187	74	33
Trical 2700 triticale	1,218	753	521	1,238	455	4,185	74	47
Plot Spike LA9339 oat	1,375	249	427	1,561	561	4,173	73	39
2174 wheat	487	356	795	2,335	174	4,147	73	20
LA9766B122-B-12 oat	1,250	217	609	1,473	489	4,038	71	36
TAMcale5019 triticale	500	943	1,243	1,139	198	4,023	71	36
JEI 110 wheat	575	346	836	1,893	315	3,965	70	23
96202 triticale	536	740	1,007	1,302	254	3,839	68	33

Coronado wheat	467	215	1,163	1,969	0	3,814	67	18
TAMcale6331 triticale	342	571	1,342	1,430	101	3,786	67	24
NF91 triticale	819	493	850	1,317	305	3,784	67	35
Custer wheat	211	299	1,214	2,053	0	3,777	66	13
TX00D639 barley	827	73	485	2,229	160	3,774	66	24
Horizon 474 oat	1,555	180	260	1,359	395	3,749	66	46
96125A wheat	195	223	1,319	1,752	186	3,675	65	11
NF9 triticale	1,152	192	660	1,398	224	3,626	64	37
Endurance wheat	342	132	636	2,474	2	3,586	63	13
Sturdy 2K wheat	214	123	1,156	2,076	4	3,573	63	9
NF94120 wheat	288	446	1,289	1,464	86	3,573	63	21
Fannin wheat	576	614	1,108	1,222	46	3,566	63	33
96104A wheat	304	132	1,255	1,706	113	3,510	62	12
AGS-2000 wheat (soft)	450	709	1,126	1,043	177	3,505	62	33
95215 triticale	470	559	1,312	1,044	93	3,478	61	30
NF4 wheat	298	408	1,204	1,500	39	3,449	61	20
96104 wheat	180	53	1,129	1,954	93	3,409	60	7
Ranger Brand wheat (soft)	169	38	432	2,489	209	3,337	59	6
Bradley wheat (soft)	428	234	697	1,923	53	3,335	59	20
Cutter wheat	233	538	1,455	851	228	3,305	58	23
XR-034 rye	231	253	730	1,975	114	3,303	58	15
Jagger wheat	483	949	716	1,142	3	3,293	58	43
Lockett wheat	168	138	1,162	1,726	92	3,286	58	9
Tam 202 wheat	179	453	1,341	1,218	77	3,268	57	19
OK 101 wheat	233	25	685	2,321	0	3,264	57	8
OK 102 wheat	170	121	368	2,558	14	3,231	57	9
Coker 9663 wheat (soft)	339	689	1,090	825	287	3,230	57	32
Coker 9152 wheat (soft)	137	282	1,540	1,145	126	3,230	57	13
95123 wheat	399	571	1,205	1,022	7	3,204	56	30
XR-035 rye	438	237	540	1,566	390	3,171	56	21
Overley wheat	395	547	1,461	722	2	3,127	55	30
Jagalene wheat	465	208	1,016	1,389	0	3,078	54	22
NF94109 wheat (soft)	355	191	1,231	1,132	6	2,915	51	19
Trical 342 triticale	1,164	245	276	781	160	2,626	46	54
Average								
	916	617	1,105	1,510	197	4,345	76	35
L.S.D. ³ (.05)								
	423	375	404	446	246	951		
C.V. ⁴ (%)								
	28.7	37.7	22.7	18.3	77.7	13.6		

¹Planting date: Sept. 19, 2003.

Seeding rate: 2,000,000 live seed per acre, which approximates 90-120 lbs. per acre, depending on variety and crop.

Seeding method: Drilled in seven-inch rows at a one-inch planting depth.

Replications: Three.

Soil type: Minco fine sandy loam.

Previous crop: Fallow.

Management: Disked, swept and roller-harrowed.

Weed control: None.

Fertilization: Preplant – none; topdress – 90 pounds of N per acre on October 10, 2003 and 75 pounds of N per acre on February 27, 2004.

²NF numbers are Noble Foundation experimental strains. XR numbers are experimental blends developed by Seed Resource.

TX and LA numbers are Texas A&M University and Louisiana State University experimental strains, respectively. RSI 1029E is an experimental triticale strain developed by Resource Seeds, Inc. Seed of these experimental materials are not commercially available.

³Least significant difference.

⁴Coefficient of variation

Table 3. Forage performance summary of commercial small-grain varieties, 2001-2004; Ardmore, Okla.

Variety	Pounds of oven-dry forage per acre									
	2001–2002		2002–2003		2003–2004		Three-Year Average		Two-Year Average	
							2001–2004		2002–2004	
Rye										
Bates	6,313	(1) ¹	4,875	(5)	5,904	(4)	5,697	(2)	5,390	(4)
Elbon	6,017	(2)	4,679	(7)	5,401	(7)	5,366	(6)	5,040	(7)
Maton	6,014	(3)	4,928	(3)	5,485	(6)	5,476	(4)	5,207	(5)
Oklon	5,374	(5)	4,811	(4)	5,976	(3)	5,387	(5)	5,394	(3)
Winterking	5,576	(4)	5,089	(2)	6,161	(2)	5,609	(3)	5,625	(2)
Wrens 96	5,081	(7)	5,978	(1)	6,423	(1)	5,827	(1)	6,201	(1)
Wintermore	5,291	(6)	4,775	(6)	5,617	(5)	5,228	(7)	5,196	(6)
Average										
	5,667		5,019		5,852		5,513		5,436	
Oat										
Dallas	4,283	(3)	5,128	(1)	5,390	(1)	4,934	(3)	5,259	(1)
Harrison	4,902	(2)	5,119	(2)	5,285	(2)	5,102	(2)	5,202	(2)
Horizon 314	5,466	(1)	5,050	(4)	5,193	(3)	5,236	(1)	5,122	(3)
Horizon 321 (FL9708-P37) ³	•		4,638	(5)	4,542	(5)	•		4,590	(5)
Horizon 474	•		5,058	(3)	4,706	(4)	•		4,882	(4)
Average										
	4,884		4,999		5,023		5,091		5,011	
Wheat										
2174	5,826	(1)	4,779	(13)	5,454	(3)	5,353	(2)	5,117	(9)
Coker 9663 (soft)	5,234	(2)	5,430	(5)	4,418	(13)	5,027	(5)	4,924	(12)
Coronado	4,625	(5)	5,047	(10)	5,442	(4)	5,038	(4)	5,245	(7)
Custer	5,210	(3)	5,187	(7)	5,115	(10)	5,171	(3)	5,151	(8)
Jagger	4,111	(9)	5,327	(6)	5,255	(8)	4,898	(8)	5,291	(5)
Lockett	5,151	(4)	6,058	(2)	5,688	(2)	5,632	(1)	5,873	(1)
OK101	4,285	(6)	4,932	(11)	5,102	(11)	4,773	(9)	5,017	(10)
Tam 202	3,947	(10)	5,460	(4)	5,350	(6)	4,919	(7)	5,405	(4)
Bradley (soft)	4,269	(7)	5,198	(8)	5,377	(5)	4,948	(6)	5,288	(6)
Cutter	4,215	(8)	5,275	(7)	4,525	(12)	4,672	(10)	4,900	(13)
Jagalene	3,785	(11)	4,545	(15)	4,302	(15)	4,211	(11)	4,424	(15)
AGS-2000 (soft)	•		6,333	(1)	5,269	(7)	•		5,801	(3)
Coker 9152 (soft)	•		5,827	(3)	5,786	(1)	•		5,807	(2)
OK 102	•		4,833	(12)	4,419	(14)	•		4,626	(14)
JEI 110 (Nova)	•		4,724	(14)	5,244	(9)	•		4,984	(11)
Average										
	4,605		5,263		5,116		4,967		5,190	
Triticale										
Thunder Cale (Danko Presto)	5,476		5,772	(2)	6,254	(1)	5,834		6,013	(1)
TAMcale5019 (TX96VT5019)	•		5,961	(1)	5,775	(2)	•		5,868	(2)
TAMcale6331 (TX94VT6331)	•		5,701	(3)	5,771	(3)	•		5,736	(3)
Trical 342 (FL91142-A19)	•		5,069	(5)	4,697	(5)	•		4,883	(5)
Trical 2700	•		5,626	(4)	5,188	(4)	•		5,407	(4)
Average										
			5,626		5,537		5,834		5,581	
Overall Average										
	5,021		5,225		5,328		5,197		5,277	
L. S. D. ² (.05)										
	1,139		712		977					

¹The number in parentheses is the rank within year(s) and crop.²Least significant difference.³Former identification.

Table 4. Forage performance summary of commercial small-grain varieties, 2001-2004; Burneyville, Okla.

Variety	Pounds of oven-dry forage per acre									
	2001–2002		2002–2003		2003–2004		Three-Year Average		Two-Year Average	
Rye										
Bates	4,344	(6)	7,127	(7)	5,266	(5)	5,579	(7)	6,197	(6)
Elbon	5,149	(1)	8,229	(1)	5,073	(6)	6,150	(1)	6,651	(3)
Maton	4,824	(4)	7,338	(5)	5,684	(2)	5,949	(3)	6,511	(4)
Oklon	4,946	(3)	7,420	(4)	5,967	(1)	6,111	(2)	6,694	(2)
Winterking	4,292	(7)	7,994	(2)	5,491	(3)	5,926	(4)	6,743	(1)
Wrens 96	4,503	(5)	7,551	(3)	5,305	(4)	5,786	(5)	6,428	(5)
Wintermore	5,081	(2)	7,262	(6)	4,881	(7)	5,741	(6)	6,072	(7)
Average										
	4,734		7,560		5,381		5,892		6,471	
Oat										
Dallas	4,294	(1)	•		5,949	(1)	•		•	
Harrison	3,555	(3)	•		4,501	(3)	•		•	
Horizon 314	3,951	(2)	•		4,536	(2)	•		•	
Horizon 321 (FL9708-P37) ³	•		•		4,282	(4)	•		•	
Horizon 474	•		•		3,749	(5)	•		•	
Average										
	3,933		•		4,603					
Wheat										
2174	3,660	(4)	7,569	(1)	4,147	(1)	5,125	(1)	5,858	(1)
Coker 9663 (soft)	3,337	(7)	5,944	(15)	3,229	(14)	4,170	(11)	4,587	(15)
Coronado	3,808	(2)	6,509	(9)	3,814	(3)	4,710	(2)	5,162	(5)
Custer	3,060	(10)	7,199	(2)	3,776	(4)	4,678	(3)	5,488	(3)
Jagger	2,883	(11)	6,373	(11)	3,294	(8)	4,183	(10)	4,834	(11)
Lockett	3,376	(5)	6,442	(10)	3,285	(9)	4,368	(7)	4,864	(10)
OK101	3,256	(8)	6,625	(6)	3,264	(11)	4,382	(6)	4,945	(8)
Tam 202	3,095	(9)	6,713	(5)	3,268	(10)	4,359	(8)	4,991	(7)
Bradley (soft)	3,346	(6)	7,120	(4)	3,334	(6)	4,600	(4)	5,227	(4)
Cutter	3,878	(1)	6,323	(12)	3,304	(7)	4,502	(5)	4,814	(12)
Jagalene	3,689	(3)	6,176	(13)	3,078	(15)	4,314	(9)	4,627	(13)
AGS-2000 (soft)	•		6,581	(7)	3,505	(5)	•		5,043	(6)
Coker 9152 (soft)	•		5,971	(14)	3,230	(13)	•		4,601	(14)
OK 102	•		6,576	(8)	3,231	(12)	•		4,904	(9)
JEI 110 (Nova)	•		7,137	(3)	3,965	(2)	•		5,551	(2)
Average										
	3,399		6,617		3,448		4,490		5,033	
Triticale										
Thunder Cale (Danko Presto)	3,968		7,489	(3)	5,284	(1)	5,580		6,387	(1)
TAMcale5019 (TX96VT5019)	•		7,696	(1)	4,023	(3)	•		5,860	(2)
TAMcale6331 (TX94VT6331)	•		7,494	(2)	3,786	(4)	•		5,640	(3)
Trical 342 (FL91142-A19)	•		7,140	(4)	2,626	(5)	•		4,883	(5)
Trical 2700	•		6,180	(5)	4,185	(2)	•		5,183	(4)
Average										
	3,968		7,200		3,981		5,580		5,591	
Overall Average										
	3,922		6,969		4,135		5,064		5,509	
L. S. D. ² (.05)										
	987		1,013		969					

¹The number in parentheses is the rank within year(s) and crop.²Least significant difference.³Former identification.

Table 5. Weather factors, 2003–2004

Month	Rainfall (inches)			
	Ardmore		Burneyville	
	2003–2004 Season	102-Year Average	2003–2004 Season	10-year Average
September	3.90	3.66	1.92	3.45
October	.01	3.67	.07	3.51
November	2.95	2.48	1.10	2.38
December	.90	2.26	.53	2.52
January	1.34	1.79	1.38	1.67
February	2.87	2.10	2.46	2.39
March	1.57	2.88	1.18	2.73
April	5.11	4.02	5.33	3.22
May	.53	5.28	.87	4.07
Total	19.18	28.14	14.84	25.94

Minimum temperatures (20° F or lower)

Ardmore		Burneyville	
Date	Temperature (° F)	Date	Temperature (° F)
January 6	11	December 6	18
January 7	16	December 11	16
January 26	20	December 14	19
January 27	15	December 17	19
January 30	18	January 6	11
February 7	18	January 7	10
February 13	18	January 10	18
		January 19	19
		January 26	19
		January 27	14
		February 3	16
		February 7	17
		February 13	17

Information in this report is not conclusive, but can be of great value when compared with similar information from other sources. Weather data was taken from Oklahoma Mesonet Weather Stations located on the Headquarters Farm at Ardmore and the Red River Demonstration and Research Farm at Burneyville.

All available information pertaining to forage production should be used in making conclusions and decisions. This publication is intended to furnish supplemental information to aid decision-making and formulate ideas.

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