PUBLICATIONS

1982

FORAGE AND BEEF CATTLE RESEARCH - 1982

Research Center Technical Report 82-2

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May 19, 1982

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VARIETY TESTS FOR WINTER ANNUAL FORAGE PRODUCTION

1980-81

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SUMMARY

It is important for producers to know which small grain varieties have the potential to produce high forage yields. This information is very valuable for cattlemen who will either graze out the small grain or pull cattle off and harvest grain. Therefore, in an attempt to simulate grazing, tests were clipped several times to compare varieties for forage yield at various times during the growing season and for total yield. Separate tests were conducted for oats, rye, ryegrass, triticale and wheat. It is important to consider forage distribution throughout the growing season and not only total forage yield. Early fall and winter forage production may be of more value to a forage program than forage produced in April or May.

OBJECTIVE

These trials were conducted to determine which varieties produce highest forage yields in East Texas. Second, to compare experimental and newly released lines with recommended varieties for their adaptation to East Texas growing conditions.

PROCEDURE

Rye, wheat and oats were planted into separate tests on September 8. The triticale and ryegrass variety tests were planted on September 12th and 15th, respectively. Seed was planted into six-row plots spaced 8 inches apart, 10 ft in length. The four center rows were harvested at a height of about 2 inches with a flail-type harvester. Fertilizer application consisted of a preplant application at a rate of 60-60-60 (N-P_2O_5-K_2O) lbs/acre and a split N application of 100 lbs on October 1, 1980 and 60 lbs on February 17, 1981 for a total N application of 220 lbs/acre. Individual small grain forage tests were harvested when there was sufficient forage to cut. Normally, this would be when the forage was from 8 to 10 inches tall. No serious disease or insect pests were observed in these tests.

Moisture was limiting during most of the fall and winter. This required one irrigation during late September of about 1 inch to avoid losing stands of all small grain forage tests. Precipitation amounts in inches by months were: September - 3.3; October - 2.0; November - 3.6; December - 1.5; January - 1.1; February - 2.8; March - 2.8; April - 2.0; May - 7.9. We observed some winterkill on ryegrass and triticale, with the coldest temperatures occurring on February 12 when a temperature of 10° F was recorded. Winter injury on for several triticale varieties was related to a harvest shortly before the severe low temperatures.

RESULTS

Forage yield data are presented in Tables 1 through 5. Highest overall forage yields in 1980-81 were produced by oats and rye, followed by triticale, ryegrass and wheat. Overall, the warmer than average temperatures did not result in higher forage yields because of fairly dry growing conditions. These same warm growing conditions did allow mid-winter (Jan & Feb) growth for oats (Table 1) and ryegrass (Table 2). Some freeze injury occurred on ryegrass, however, none was recorded on oats. Good yields on rye (Table 3) were obtained and, as would be expected, most of the forage was produced prior to March 30th. Good yields were harvested on the triticale test (Table 4). A large proportion of the triticale forage was produced prior to December 10th and after March 30th. The distribution of wheat forage (Table 5) indicates a uniform production until early April. If wheat is going to be harvested for grain, cattle would normally be taken off about February 15th. Therefore, forage from the first two harvests only would be available, which in this particular study would have equalled from 2500 to 3000 lbs of forage per acre.

When making comparisons between varieties within a table, difference between varieties of less than the LSD are probably due to chance only and should not be considered as important. Furthermore, data from one year may be misleading because of unusual weather conditions. Therefore, these data should only be used to give an indication of varietal differences. Recommendations should be made using at least 3-years data.

Table 1. Oat forage variety test at Overton, TX 1980-81.

Variety	Harvest date					Total Yield
	Dec 3	Feb 12	Mar 5	Apr 6	May 8	
	Pounds of dry matter per acre					
Walken	1162	1226	1584	2017	2248	8237
Coker 76-16	1621	1098	1354	2299	1762	8134
Coker 77-19	2006	1201	1200	1583	2043	8033
Coker 227	1135	1022	1864	2171	1787	7979
Big Mac	1081	1175	1737	1992	1890	7875
Coker 79-21	1270	1073	1507	2043	1966	7859
Four-Twenty-Two	1531	1379	1507	1507	1915	7839
Coker 73-23	1720	945	1354	1609	2120	7748
NF-95	1513	1200	1405	1941	1635	7694
NF-188	1126	1149	1558	1915	1941	7689
Coker 79-22	1756	1149	1124	1660	1967	7656
Ark 148-15	1306	1047	1533	1890	1788	7564
TAM-0-312	1351	1226	1405	1813	1762	7557
Coker 234	1441	971	1533	1890	1686	7521
NF-121	2153	869	1175	1966	1353	7516
New Nortex	1621	1047	1609	1532	1558	7367
Mesquite	1126	1303	1558	1839	1430	7256
Ora	1162	766	1558	2401	1303	7190
Bob	1396	945	1430	1788	1583	7142
Nora	1081	792	1430	2426	1252	6981
Mean	1428	1079	1471	1914	1749	7641
C.V.	24	20	13	12	17	
LSD (10% level)	405	259	230	272	351	

Planted on Sept. 8, 1980.

Fertilizer application preplant - 500 lbs of 12-12-12/acre, topdress N - 100 lbs/N/acre on Oct. 1st, 60 lbs/N/acre on Feb. 17th.

Table 2. Ryegrass forage variety test at Overton, TX 1980-81.

Variety	Harvest date					Total Yield	% Winter injury	Crown rust %
	Dec 12	Jan 28	Mar 5	Mar 31	Apr 27			
	Pounds of dry matter per acre							
Marshall	1098	945	1226	1966	2222	7457	5	45[2]
Tetrablend 444	1124	919	971	1634	1864	6512	30	30
Tx-0-R-78-1	1022	971	945	1558	1890	6386	30	10
Tx-0-R-80-4	1226	1124	894	1328	1711	6283	25	15
Common	1124	1073	1022	1430	1634	6283	40	25
Gulf	1175	971	818	1532	1737	6233	35	25
Fla. Reseeding	1175	945	843	1430	1813	6206	40	1
Sunbelt	1150	971	818	1532	1711	6182	30	25
Ga. Reseeding	1124	894	869	1405	1839	6131	40	50
Tx-0-R-80-5	1124	1098	818	1277	1813	6130	40	10
Meritra	971	766	869	1584	1890	6080	20	35
Mont. Selection	741	818	1022	1456	1864	5901	15	55
Shannon	1073	792	843	1380	1481	5569	30	45
Gulf - Vitavax (4 oz)[1]	1456	945	741	1354	1864	6360	30	-
Gulf - Vitavax (8 oz)[1]	1150	970	792	1328	1941	6181	30	-
Mean	1115	947	899	1480	1818	6259		
C.V.	16	15	14	12	12			
LSD (10% level)	207	170	146	210	246			

[1] Seed treated with 4 and 8 oz, respectively, of vitavax per 100 lbs of seed.

Planted on Sept. 15, 1980.

Fertilizer application preplant 500 lbs 12-12-12/acre, topdress N - 100 lbs/N/acre on Oct. 1st, 60 lbs/N/acre on Feb. 17th.

[2] Crown rust ratings were taken on May 20, 1981 at Angleton, TX. Ratings are on a percentage of leaf area covered with rust.

Table 3. Rye forage variety test at Overton, TX 1980-81.

Variety	Harvest date: Nov 20	Jan 23	Feb 27	Mar 30	Apr 24	Total Yield
	Pounds of dry matter per acre					
Wintergrazer 70-B	1981	1737	1711	2528	639	8596
NF 74	2297	1890	1379	2094	639	8299
NF 72	2116	1941	1405	2196	562	8220
NF 214	2116	1839	1507	2068	613	8143
Wintergrazer 80	2206	1558	1430	2299	537	8030
Bonel	1892	1583	1430	2145	792	7842
Maton	2297	1609	1405	1967	562	7840
GI-75	2162	1685	1277	2094	537	7755
Wintergrazer 70	2071	1686	1328	2068	409	7562
Gurley Grazer 2000	2297	1813	1048	1762	613	7533
Elbon	1711	1966	1303	1890	639	7509
Gurley Abruzzi	2207	1992	945	1788	562	7494
GI-75	2071	1788	1124	1864	537	7384
NAPB SR-80	1666	1839	1124	2171	511	7311
Wrens Abruzzi	2161	1788	537	2119	588	7193
McNair Vitagraze	2252	1915	588	1762	588	7105
Athens Abruzzi	1666	1763	1099	1813	588	6929
Northrup King SS1	2269	1634	511	1685	562	6661
Mean	2080	1779	1175	2017	582	7634
CV	22	14	15	15	27	
LSD (10% level)	543	298	198	372	185	

Planted on Sept. 9, 1980.

Fertilizer application preplant - 500 lbs of 12-12-12/acre, topdress N - 100 lbs N/acre on Oct. 1st, 60 lbs N/acre on Feb. 17.

Table 4. Triticale forage variety test at Overton, TX 1980-81.

Variety	Harvest date					Total yield	% Winter injury
	Dec 10	Jan 27	Mar 4	Mar 30	May 7		
	Pounds of dry matter per acre						
Kershen-B-858 (grain type)	3570	562	843	1405	1634	8014	20
Kershen-Commercial Blend	2564	307	1252	1609	1941	7673	0
Kershen-A-313-A-36	2462	716	1328	1354	1660	7520	5
Kershen-B-227-8	2159	690	1507	1609	1073	7038	0
Kershen-B-858	2347	818	996	1252	1481	6894	40
Kershen-A-313-A-15	1860	741	1252	1225	1711	6790	10
Kershen-A-876-6	2341	1099	1022	1048	1226	6736	60
Noble Foundation-12	3205	894	384	767	1227	6527	90
Noble Foundation-55	2774	588	537	945	1303	6147	60
Noble Foundation-185	2306	741	767	894	1200	5908	60
Coker 68-15	2433	971	1343	511	179	5437	10
Mean	2585	732	1002	1158	1356	6833	
C.V.	18	22	15	11	19		
LSD (10% level)	550	191	183	154	320		

Planted on Sept. 12, 1980.

Fertilizer application preplant - 500 lbs of 12-12-12/acre, topdress N - 100 lbs N/acre on Oct. 1st, 60 lbs N/acre on Feb. 17.

Table 5. Wheat forage variety test at Overton, TX 1980-81.

Variety	Harvest date: Dec 11	Feb 13	Mar 5	Apr 7	Total yield
	Pounds of dry matter per acre				
Tx-0-73-133	1316	1609	1201	1507	5633
McNair 10-03	1504	1507	1073	1302	5386
Tx-0-76-40	1489	1328	1124	1251	5192
Tx-0-73-93	1219	767	1405	1762	5153
Tx-0-78-7303	1397	1252	971	1481	5101
Tx-0-73-61	1330	1124	1379	1099	4932
Tx-0-72-9	1035	614	1737	1507	4893
Oasis	1415	1124	1124	1201	4864
Delta Queen	1224	1456	741	1328	4747
Rosen	1456	1379	1022	792	4649
Coker 762	1046	1584	818	1175	4623
Coker 68-15	1340	869	1430	971	4610
Sturdy	1202	665	1277	1226	4370
Tx-0-74-39	1740	1022	742	843	4347
TAM-W-101	945	767	1609	996	4317
NF-21	1258	1124	766	1149	4297
NF-2	1310	1047	920	971	4248
Agent	1271	1098	1047	817	4233
Arthur-71	1164	741	1354	894	4153
Ark-150-31	1256	767	1328	766	4117
NF-25	1451	843	1099	664	4057
Southern Belle	939	690	1533	869	4031
Coker 797	1370	537	333	715	2955
Mean	1290	1039	1132	1099	4561
CV	18	19	18	22	
LSD (10% level)	287	242	245	287	

Planted on Sept. 8, 1980.

Fertilizer application - preplant 500 lbs of 12-12-12/acre, topdress 100 lbs of N/acre on Oct. 1st, 60 lbs of N/acre on Feb. 16.