



Texas Agricultural Extension Service

The Texas A&M University System

# Small Grain Notes

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## Small Grain Notes

### 1999-2000 Crop conditions

Weather during the fall and early winter was exceptionally warm and dry over the entire state. Many wheat growing locations received little effective rainfall between July 1 and the year's end. The traditional fall rains on which wheat and wheat- stocker grazing systems are based were missing for much of the state. An early September rain hit parts of the High Plains and a few areas adjacent to the Red River in North Texas. This event was adequate to achieve wheat stands, but most of the state got no rain until October 30, when 1- to 3 inches of rain fell over most of the south Plains, Rolling Plains and parts of north Texas. The Abilene wheat variety trial normally reported in Small Grain notes died prematurely due to drought. In many cases, moisture was adequate to get a stand of wheat. Some farmers used this moisture to finalize seedbed preparation, and totally failed to achieve a stand. More than 200,000 wheat acres were not planted due to prolonged dryness. Total seeded acreage amounted to 6.0 million acres, or down 3.2 % from last year's crop, while harvested acreage was 2.5 million acres, or 26.5 % less than was harvested last year. Per acre yield was 29 bu/acre, down 19.4 % from the 36 bu/acre yield last year, giving a statewide harvest of 72.5 million bushels which was down 40.8 % from last year's harvest and 47 % from the 1997-1998 crop.

**Drought**, greenbug injury, plant diseases, poor harvest conditions and vernalization problems all share some of the blame for the light harvest. Certainly most of the responsibility lies with drought damage. Much of the state finished 1999 ten- to 15 inches behind normal rainfall and for some regions of the state, wheat was not harvested or grazed, but died from drought. The most notable region for drought injury was the area from San Angelo north to Abilene and southern regions of the Rolling Plains and west through the south Plains. Crop reporting districts 1N, 2S, 3 and 7 only harvested 24, 17, 29 and 18 per cent of their planted acreage, respectively. Farmers in this region had practically no wheat grazing, excessively high crop abandonment, and low grain yields on those few fields with adequate grain to justify harvest. In the irrigated wheat of the High Plains, heavy **greenbug** pressure and high natural gas prices associated with the oil shortage resulted in crop production costs well above normal. Dryland wheat in the North Plains surprised some farmers, as many were about to write off the crop due to drought injury before a good snowfall in January and some timely rains in March. Overall drought and greenbug injury significantly reduced the High Plains wheat yield, but some areas made average yields due to cool, moist weather during grain fill.

The best crop in the state was found in the Blackland prairie north of Hillsboro and in northeast Texas. This area had favorable rainfall, but was plagued with an epidemic of **stripe rust** which became apparent about the first week of April, and continued to damage the crop through heading due to unusually cool weather. Several thousand acres in this region were treated with foliar fungicide due to this epidemic. Unfortunately, rainfall continued to fall in this region of the state well after maturity, with final harvest winding up in mid- July, or about a month later than normal. Much wheat in the extreme northern and eastern counties was abandoned due to **post maturity damage from rainfall**. Winter temperatures were well above normal over virtually all of the state. Monthly average temperatures at Waco for November, December, January and February were 4.3, 3.1, 6.2 and 8.4

degrees above normal, respectively. Many wheat fields emerged late due to lack of moisture in the fall and **vernalization** hours were inadequate to produce normal heading; particularly in those varieties requiring significant amounts of chilling. Varieties which appeared to be worst damaged by inadequate vernalization were 2180, 2174, Coker 9704, Tomahawk and HR 217.

A significant and damaging **Hessian fly** population was present in Central Texas. Severe damage from this pest was noted in McLennan and Coryell county wheat fields. While heavy damage from Hessian fly was common in Hill, Bosque, and Bell counties in the late 80s and early 90s, McLennan and Coryell counties have not had significant damage from this insect in recent memory. What is notable about this population is a **shift in biotypes**. This is evidenced by massive injury to fields planted to the variety 2180. This has been a very popular variety in central Texas, and has been widely planted in part to good field resistance to the prevalent makeup of Hessian fly population in the region. An analysis of biotypes from straw samples collected in Coryell, McLennan and Ellis counties is ongoing in the laboratory but will likely not be available before planting time in 2000. Varieties of wheat which appeared to have good field resistance to the new Hessian fly population included Coronado, TAM 400, Coker 9543 and Coker 9474. With specific biotype information, more insight on potential varietal resistance will be available.

The onset of **leaf rust** was late in most of the south and Central Texas regions due to late emergence of the crop and unusually dry weather during early growth stages. Due to its late appearance, yield loss to this disease was not a major problem, although late season leaf area declined rapidly in much of the crop due to this infestation. Prevalent leaf rust races appeared to change significantly from last year, as varieties such as Custer and Ogallala which were very susceptible to the prevalent races in last years crop did not appear to be damaged much by this years population. Refer to notes in the enclosed tables for current disease ratings.

**A new wheat variety** has been approved for release by Texas A&M. **TAM 400** is being released as a new medium- maturity hard red winter variety. It is resistant to the Great Plains and L biotypes of the Hessian fly, giving it good field resistance to prevalent populations in the central and Edwards Plateau regions. In field trials it has had superior yield to other commercially produced varieties in grazed and ungrazed management systems. In 12 site year comparisons from 1996 through 1999 at locations including Brady, Uvalde, College Station, Beaumont, McGregor and Hondo, TAM 400 yielded 10.7, 13.8, 17.2 and 24.5 bushels per acre more than TAM 202, Jagger, 2180 and TAM 107, respectively.

TAM 400 is mid- short with about the same plant height as 2180. Through the 1999 growing season, it had excellent resistance to prevalent races of leaf rust. In the 2000 season, TAM 400 had varying levels of infection with leaf rust, but protection appears to equal to most commonly produced wheats in the central Texas region. TAM 400 has had exceptionally high test weights, averaging 63.7 lbs/bu in the above mentioned yield trials compared to 61.3 for TAM 202 and 59.4 lbs/bu for Jagger. Protein content of grain is comparable to Jagger. TAM 400 has a long mix time and excellent dough handling characteristics, although crumb score can be a bit low if undermixed. Its pedigree consists of a cross of TAM 200 with TX82D5668, a breeding line developed from the cross of Era and TAM W-101. Based on trial work to this date, it is believed that it is best adapted to central and west- central Texas.

**Yield trials** reported in this publication are from replicated, randomized plots harvested with plot combines. While a portion of these trials were conducted on Texas A&M properties, many were planted on farms in the major wheat growing regions in cooperation with the wheat farmers and county extension agents-agriculture. Much of the potential yield of wheat and other small grains comes from the unique package of genetics which gives a variety its characteristics and it is a natural tendency to seek a **Best** variety to plant on the entire farm. It must be remembered, however that a **Best** variety cannot be determined until all of the yield limiting factors have been determined, and as these factors change from season to season, it is generally better to diversify wheat acreage by planting several varieties with diverse germplasm to hedge production risks. Most of the yield tables report either 2 or 3 year averages to better reflect a variety's performance under varying weather conditions. Notes on plant diseases are helpful, but may not reflect changes in races of fungal disease which can change from year to year.

Investigators/collaborators in these trials can be contacted on their respective research and extension centers. Thanks are extended to these individuals, the Texas Wheat Producers Board for their support and the many individuals on farms, ranches and in county offices who made them possible.

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**TABLE 1. 1999-2000 Irrigated Wheat Variety Trials Conducted in the Texas Panhandle and South Plains**

Source	Variety	Yield, Bu/Ac			Avg. of 3 Sites	Two Year Avg.
		Sunray	Bushland	Lamesa		
Kansas St.	2137	49	51	70	57	71.9
Oklahoma St.	2174	58	–	–	–	–
Colorado St.	Akron	54	48	65	56	–
AgriPro	AP-7510	50	–	67	–	–
AgriPro	Big Dawg	50	–	–	–	–
AgriPro	Coronado	56	–	77	–	–
Oklahoma St.	Custer	53	66	67	62	75.3
Texas A&M	Hickok	56	72	65	64	–
Kansas St.	Ike	50	–	71	–	–
Kansas St.	Jagger	55	62	–	–	–
Texas A&M	Lockett	48	60	–	–	–
AgriPro	Longhorn	52	55	55	54	67.4
AgriPro	Ogallala	57	48	60	55	66.8
AgriPro	Rowdy	62	–	58	–	–
U. of Nebraska	Scout	39	–	57	–	–
Texas A&M	TAM 105	46	–	60	–	–
Texas A&M	TAM 107	47	58	75	60	68.3
Texas A&M	TAM 109	55	–	59	–	–
Texas A&M	TAM 110	62	76	70	69	71.5
Texas A&M	TAM 200	50	77	72	66	74.9
Texas A&M	TAM 201	51	77	63	64	73.1
Texas A&M	TAM 202	48	56	71	58	70.0
Texas A&M	TAM 302	64	62	–	–	–
Texas A&M	TAM 400	66	67	69	67	–
Texas A&M	TAM W 101	53	57	72	60	67.5
AgriPro	Thunderbolt	64	54	73	64	63.8
AgriPro	Tomahawk	57	49	55	54	69.4
Oklahoma St.	Tonkawa	55	–	68	–	–
Kansas St.	Trego <sup>3)</sup>	71	73	73	72	–
Public	Triumph	48	–	51	–	–

1) Entire test area was infected with wheat streak mosaic. Ratings are based on percent yellowing of leaves on a scale of 0 to 9 with 9 representing most of the leaf area affected.

2) Percent of plants lodged was determined after wheat was fully mature following a rain and wind storm

3) Trego is a hard white winter wheat.

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**TABLE 2. 1999-2000 Irrigated Wheat Variety Trial - North Plains, Sunray, TX**

Source	Variety	Wheat Streak Mosaic Injury Rating <sup>1)</sup>	Lodging, Percent <sup>2)</sup>	Height, Inches	Test Wt. Lbs/Bu	Yield Bu/Ac	2 Year Avg, Irrigated
Kansas St.	Trego <sup>3)</sup>	3.5	5	24	58.1	70.6	–
Texas A&M	TAM 400	1.5	5	23	56.5	65.9	–
Texas A&M	TAM 302	1.3	20	26	49.9	63.9	65.5
AgriPro	Thunderbolt	0.5	15	26	57.1	63.9	60.2
AgriPro	Rowdy	1.8	0	25	56.3	62.2	72.5
Texas A&M	TAM 110	2.5	15	26	57.9	61.6	59.1
Oklahoma	2174	2.0	0	28	57.1	57.9	61.0
AgriPro	Ogallala	2.8	0	23	54.9	57.4	60.4
AgriPro	Tomahawk	7.8	10	26	56.1	57.0	70.8
AgriPro	Coronado	1.0	10	22	54.6	56.0	66.1
AgriPro	Hickok	1.8	10	26	57.5	55.8	–
Oklahoma	Tonkawa	2.5	30	25	56.8	55.0	52.5
Texas A&M	TAM 109	5.5	15	25	51.9	54.7	60.1
Kansas	Jagger	0.5	10	24	55.4	54.5	57.1
Colorado St.	Akron	1.3	20	25	50.9	53.5	59.6
Oklahoma	Custer	2.0	10	24	56.5	53.3	65.1
Texas A&M	TAM W-101	3.8	30	24	54.4	53.0	57.6
AgriPro	Longhorn	0.5	0	27	54.0	51.5	64.3
Texas A&M	TAM 201	5.0	5	23	53.8	50.7	58.1
AgriPro	AP-7510	1.5	0	25	51.0	50.1	59.4
AgriPro	Big Dawg	2.5	0	26	51.0	50.0	54.5
Texas A&M	TAM 200	4.5	15	21	55.4	49.8	58.2
Kansas St.	Ike	5.3	10	26	56.5	49.5	51.6
Kansas St.	2137	1.3	10	26	56.7	49.4	62.6
Texas A&M	TAM 202	4.0	10	24	53.6	47.9	57.1
Texas A&M	Lockett	3.0	40	26	52.2	47.8	65.2
Public	Triumph	1.3	60	37	57.2	47.5	51.1
Texas A&M	TAM 107	3.8	10	26	54.1	47.4	56.4
Texas A&M	TAM 105	2.3	5	26	52.1	46.0	56.6
U. of	Scout	8.0	60	36	55.9	38.8	50.0
Test Average		2.8	14.3	25.7	54.8	54.1	59.7

1) Wheat varieties were infected with wheat streak mosaic virus. Each variety was rated based on percent of leaf area that was yellowed. The scale used was 0 through 9, with 9 representing 100% yellowing of plant leaves.

2) Percent of plants lodged was rated after maturity, following a wind and rain storm.

3) Trego is a hard white winter wheat.

**TABLE 3. 1999-2000 Irrigated Wheat Variety Trial<sup>1)</sup> in Dawson County**

Source	Variety	% Lodging	Height, Inches	Test Wt. Lbs/Bu	Yield Bu/Ac
AgriPro	Coronado	–	22	54.4	76.7
Texas A&M	TAM 107	–	26	53.5	74.7
AgriPro	Thunderbolt	10	26	55.4	72.9
Kansas St.	Trego <sup>2)</sup>	–	24	51.1	72.7
Texas A&M	TAM 200	10	21	55.2	71.7
Texas A&M	TAM W-101	–	24	54.7	71.5
Kansas St.	Ike	20	26	54.3	70.8
Texas A&M	TAM 202	–	24	51.3	70.7
Kansas St.	2137	10	26	54.9	70.3
Texas A&M	TAM 110	–	26	52.5	70.3
Texas A&M	TAM 400	–	23	55.2	68.7
Oklahoma State	Tonkawa	–	25	55.1	68.4
Oklahoma State	Custer	–	24	53.7	67.3
AgriPro	AP-7510	–	25	52.7	67.1
Colorado State	Akron	–	25	54.0	65.3
AgriPro	Hickok	10	26	56.4	65.3
Texas A&M	TAM 201	–	23	51.9	63.3
Texas A&M	TAM 105	–	26	52.0	60.3
AgriPro	Ogallala	–	23	54.6	60.1
Texas A&M	TAM 109	–	25	55.3	59.1
AgriPro	Rowdy	–	25	52.2	58.2
U. of Nebraska	Scout	50	36	53.8	56.5
AgriPro	Longhorn	–	27	53.7	55.2
AgriPro	Tomahawk	–	26	49.1	54.8

1) Replications: 2

2) Trego is a hard white winter wheat.

**TABLE 4. 1999-2000 Dryland Wheat Variety Trials - Panhandle and South Plains**

Source	Variety	Dryland, Bu/Ac			Average For Three Sites	Two Year Average
		Bushland	Conway	Silverton		
Kansas St.	2137	38	28	36	34	51
Oklahoma St.	2174			30	-	-
Colorado St.	Akron	43	26	38	36	-
AgriPro	AP-7510	-	-	36	-	-
AgriPro	Big Dawg	-	-	32	-	-
AgriPro	Coronado	-	-	38	-	-
Oklahoma St.	Custer	50	29	37	39	53
AgriPro	Hickok	50	31	27	36	-
Kansas St.	Ike	-	-	37	-	-
Kansas St.	Jagger	48	29	37	38	54
Texas A&M	Lockett	36	28	32	32	52
AgriPro	Longhorn	38	21	29	29	45
AgriPro	Ogallala	47	25	35	36	53
AgriPro	Rowdy	-	-	32	-	-
U. of Nebraska	Scout	-	-	39	-	-
Texas A&M	TAM 105	-	-	41	-	-
Texas A&M	TAM 107	48	32	42	41	51
Texas A&M	TAM 109	-	-	40	-	-
Texas A&M	TAM 110	49	28	42	40	53
Texas A&M	TAM 200	49	28	43	40	54
Texas A&M	TAM 201	40	22	31	31	49
Texas A&M	TAM 202	47	27	38	37	53
Texas A&M	TAM 302	39	23	32	31	51
Texas A&M	TAM 400	-	-	26	-	-
Texas A&M	TAM W-101	44	21	36	34	48
AgriPro	Thunderbolt	41	32	34	36	52
AgriPro	Tomahawk	38	19	35	31	48
Oklahoma St.	Tonkawa	-	-	30	-	-
Kansas St.	Trego <sup>3)</sup>	46	26	-	-	-
Public	Triumph	-	-	34	-	-

1) Entire test area was infected with wheat streak mosaic. Ratings are based on percent yellowing of leaves on a scale of 0 to 9 with 9 representing most of the leaf area affected.

2) Percent of plants lodged was determined after wheat was fully mature following a rain and wind storm.

3) Trego is a hard white winter wheat.

**TABLE 5. 1999-2000 Hard Red Winter Wheat Trials – Rolling Plains**

Source	Variety	Grain Yield, Bushels/acre				Avg. of 4 Sites	2 Year Average
		Foard	Young	Chillicothe	Lockett		
AgriPro	Thunderbolt	20.6	35.4	61.9	53.1	<b>42.8</b>	<b>42.2</b>
AgriPro	Ogallaha	18.7	33.4	62.7	59.0	<b>43.5</b>	<b>40.8</b>
AgriPro	Hickok	15.7	33.5	67.8	61.8	<b>44.7</b>	<b>40.2</b>
Texas A&M	Lockett	21.0	25.4	65.1	53.7	<b>41.3</b>	<b>39.8</b>
Oklahoma St.	Custer	17.1	30.3	55.2	48.8	<b>37.9</b>	<b>39.3</b>
Kansas State	Jagger	16.4	33.3	58.8	42.6	<b>37.8</b>	<b>38.4</b>
Texas A&M	TAM 202	15.8	32.9	59.9	61.8	<b>42.6</b>	<b>38.2</b>
Texas A&M	TAM 110	16.4	29.8	59.2	64.9	<b>42.6</b>	<b>37.9</b>
AgriPro	Tomahawk	20.6	25.9	59.9	42.1	<b>37.1</b>	<b>37.1</b>
Texas A&M	TAM W-101	25.4	28.4	49.7	51.5	<b>38.8</b>	<b>36.9</b>
Texas A&M	TAM 302	15.7	24.3	56.4	49.5	<b>36.5</b>	<b>36.6</b>
AgriPro	Longhorn	18.0	29.5	53.8	41.9	<b>35.8</b>	<b>34.6</b>
Hardeman Grain	HG-9	17.6	23.7	52.0	29.7	<b>30.8</b>	<b>31.7</b>

**TABLE 6. 2000 Wheat Forage Variety Trial - Northern Rolling Plains, Jacksboro, TX**

Source	Variety	Wheat forage <sup>(1)</sup> Lbs/Ac	Wheat Forage <sup>(2)</sup> Lbs/Ac	Total Forage Yield
Texas A&M	TAM 202	1284	3457	4741
Oklahoma State	Custer	905	3487	4392
Kansas State	Jagger	1334	3024	4358
George Warner	Trit II	1098	3232	4330
AgriPro	Coronado	977	3002	3979
Oklahoma State	2174	1065	2667	3732
Texas A&M	Lockett	938	2788	3726
AgriPro	Ogallala	927	2190	3117
Hardeman Grain	HG-9	933	2162	3095
AgriPro	Thunderbolt	823	2036	2859

1) Ratings taken on 12/31/99

2) Ratings taken on 3/7/00

**TABLE 7. 2000 Forage Variety Trial - Rolling Plains**  
**Location: Wichita County, TX**

Source	Variety	Species	Lbs Dry Matter/Acre			
			Clipping #1	Clipping #2	Clipping #3	Total Forage Yield
Poland	Danko Presto	Triticale	282	757	1024	2063
AgriPro	Thunderbolt	Wheat	191	448	1112	1750
Kansas State	Jagger	Wheat	173	607	909	1689
Colorado State	Presto	Triticale	226	636	777	1639
Warner Seeds	Trit-1	Triticale	292	696	580	1568
AgriPro	AP Forage	Blend	284	715	473	1472
Hardeman Grain	HG-9	Wheat	156	378	814	1349
AgriPro	Longhorn	Wheat	163	387	736	1286
Texas A&M	TAM 202	Wheat	201	363	628	1193
AgriPro	Coronado	Wheat	189	477	510	1176
Texas A&M	Lockett	Wheat	93	310	462	865

**TABLE 8. 1999-2000 - Hard Red Winter Wheat Trials - North Texas Blacklands**

Source	Variety	Test Wt. Avg. Lb/Bu	Yield, Bu/Ac				Avg. Yield, Bu/Ac	3 Yr. Avg. Yield, Bu/Ac
			Prosper	Dallas	Era	Howe		
Oklahoma St.	Custer	54.7	49.0	59.3	44.3	63.4	54.0	60.7
Texas A&M	TAM 302	53.7	50.2	60.9	49.1	64.0	56.1	59.9
Texas A&M	Sturdy	56.3	42.6	53.1	48.2	75.4	54.8	59.9
Public	2180	55.3	52.4	55.3	44.5	64.8	54.2	57.9
AgriPro	Ogallala	57.1	51.4	54.2	45.0	63.3	53.4	55.8
Kansas St.	Jagger	54.7	41.8	55.5	49.3	63.2	52.4	53.5
Texas A&M	TAM 202	53.0	42.2	49.5	41.9	56.1	47.4	53.1
Texas A&M	TAM 301	53.1	42.2	45.9	41.3	46.5	44.0	51.5

**TABLE 9. 1999-2000 Agronomic Characteristics - Hard Red Winter Wheat  
North Texas Blacklands**

Source	Variety	Maturity*	Winter Hardiness**	Height***
Oklahoma St.	Custer	M	H	M
Texas A&M	TAM 302	ML	H	M
Texas A&M	Sturdy	M	H	M
Public	2180	E	I	S
AgriPro	Ogallala	L	H	M
Kansas St.	Jagger	E	T-I	M
Texas A&M	TAM 202	M	H	M
Texas A&M	TAM 301	E	H	M

*E=Early*

*M=Medium*

*ML=Medium Late*

*L=Late*

*T=Tender*

*I=Intermediate*

*H=Hardy*

*S=Short*

*M=Medium*

*T=Tall*

**TABLE 10. Disease Resistance\* of Hard Red Winter Wheat Varieties  
North Texas Blacklands**

Source	Variety	Leaf Rust	Barley Yellow Dwarf Virus	Stripe Rust
Oklahoma St.	Custer	MS-S	MS	MS-MR
Texas A&M	TAM 302	MS-MR	MR-MS	MS-MR
Texas A&M	Sturdy	MS-MR	MS	MR-MS
Public	2180	MS-S	MS	MS-MR
AgriPro	Ogallala	MS-MR	MS	MR
Kansas St.	Jagger	S	S	MS-MR
Texas A&M	TAM 202	S-MS	S-MS	MR-MS
Texas A&M	TAM 301	S	S-MS	MR

\* Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible. Where two reactions are given, the first reaction is predominant.

**TABLE 11. 1999-2000 Hard Red Winter Wheat Variety Performance, Blacklands District 8  
Texas Agricultural Extension Service Non-Replicated Strip Trials**

Source	Variety	Location							Variety Average	Yield As % of Checks
		Bosque	McLennan	Williamson	Bell	Ellis	Coryell	Falls		
		Grain yield, Bu/Ac								
AgriPro	Coronado	50.0	34.2	36.0	38.7	53.8	42.2	39.7	–	–
AgriPro	Hickok	–	–	44.0	–	–	–	–	42.1	110.5
AgriPro	Ogallala	48.3	15.8	37.0	36.2	53.1	34.4	44.6	–	–
AgriPro	Tomahawk	41.2	9.5	–	30.1	44.0	30.0	40.0	–	85.3
Terra	HR 217	46.9	17.7	45.0	–	–	43.6	–	–	115.7
Kansas St.	Jagger	–	–	–	–	–	34.6	–	–	–
Oklahoma St.	Custer	51.1	28.1	38.0	36.4	45.7	41.1	42.7	40.4	106.0
Oklahoma St.	2174	–	7.7	39.0	35.9	32.8	18.7	39.5	28.9	75.9
Texas A&M	TAM 302	44.6	27.4	39.0	46.2	65.4	39.2	49.4	44.5	116.8
Public	2180	20.8	8.0	–	37.8	53.9	11.1	32.8	–	72.0
Texas A&M	TAM 400	–	51.0	–	–	–	–	–	–	–
AgriPro	Thunderbolt	47.6	20.2	42.0	23.5	54.7	39.0	41.1	38.3	100.5
Test Average		43.8	22.0	40.0	35.6	50.4	33.4	41.2	38.1	–

**TABLE 12. 1999-2000 Disease Resistance - Hard Red Winter Wheat Central Texas Blacklands  
Texas Agricultural Extension Service Non-Replicated Strip Trials 1999-2000**

Source	Variety	Location			
		McLennan	Williamson	Ellis	Falls
		Leaf Rust Ratings, % Leaf Injury			
AgriPro	Coronado	40 S	70	–	5 MR
AgriPro	Hickok	–	60	–	–
AgriPro	Ogallala	30 MS	50	10 R	R
AgriPro	Tomahawk	60 MS	–	5 R	R
Terra	HR 217	20 MR	60	–	–
Kansas St.	Jagger	–	–	–	–
AgriPro	Thunderbolt	20 S	60	TR R	R
Oklahoma St.	Custer	30 MS	70	–	R
Oklahoma St.	2174	5 MR	80	10 R	R
Texas A&M	TAM 302	–	50	20 R	R
Texas A&M	TAM 400	5 MR	–	–	–
Public	2180	20 S	–	–	TR
<i>Rating date</i>		<i>29-April-00</i>			<i>19-April-00</i>

**TABLE 13. 1999-2000 Disease Resistance - Soft Red Winter Wheat Central Texas Blacklands  
Texas Agricultural Extension Service Non-Replicated Strip Trials**

Source	Variety	Location				
		Hill	McLennan	Williamson	Ellis	Falls
		Leaf Rust Ratings, % Leaf Injury				
AgriPro	Mason	80	TR R	30	–	–
AgriPro	Shiloh	40	5 S	80	–	–
AgriPro	Marion	40	–	–	–	–
AgriPro	Patton	–	–	80	–	–
Novartis	Coker 9474	R	R	30	–	–
Novartis	Coker 9543	60	70 S	20	–	–
Novartis	Coker 9663	20	TR R	30	–	40 MR
Terra	SR 204	–	40 S	–	50 S	40 MR
Terra	SR 218	100	90 S	–	30S	60 S
<i>Rating Date</i>		<i>26-Apr-00</i>	<i>20-Apr-00</i>			<i>19-Apr-00</i>

Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible

**TABLE 14. 1999-2000 Hard Red Winter Wheat Elite Trials  
Central and South Texas - McGregor and Uvalde**

Source	Variety	Test Wt. Avg.	McGregor Yield	Uvalde Yield	Avg. Yield
AgriPro	Pecos	59.2	72.88	63.15	68.0
Texas A&M	TAM 400	60.2	69.75	54.74	62.2
Texas A&M	Mit	58.1	63.46	50.24	56.9
AgriPro	Ogallala	59.1	57.48	54.19	55.8
AgriPro	Coronado	56.8	62.64	37.85	50.3
Texas A&M	TAM 202	57.0	42.5	48.3	45.4
Kansas St.	Jagger	54.4	42.12	47.0	44.6
Texas A&M	TAM 302	53.1	57.7	18.5	38.1
Texas A&M	TAM 110	54.4	52.8	22.4	37.6
Public	2180	56.2	48.6	22.8	35.7
Texas A&M	TAM W-101	56.4	29.9	28.3	29.1
Texas A&M	TAM 107	54.1	39.8	15.2	27.5

**TABLE 15. 1999-2000 Disease Resistance\* of Hard Red Winter Wheat Varieties  
Central and South Texas - McGregor and Uvalde**

Source	Variety	Leaf Rust	Uvalde Stem Rust	McGregor Stripe Rust
Texas A&M	TAM W-101	S	R	—
Texas A&M	TAM 107	S	R	—
Texas A&M	TAM 110	S	R	—
Texas A&M	TAM 202	S	R	—
Texas A&M	TAM 302	S	R	—
Kansas St.	Jagger	S	R	—
AgriPro	Ogallala	Ms-MR	R	—
Public	2180	MS-S	R	—
Texas A&M	Mit	MS-S	S	—
AgriPro	Pecos	MS-S	MR	—
AgriPro	Coronado	S	R	S
Texas A&M	TAM 400	MR-MS	MR-MS	—

\* Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible

**TABLE 16. 1999-2000 Agronomic Characteristics - Hard Red Winter Wheat  
Central and South Texas**

Source	Variety	Maturity	Height
Texas A&M	TAM W-101	L	M-T
Texas A&M	TAM 107	M	T
Texas A&M	TAM 110	ME	M
Texas A&M	TAM 202	ML	M-T
Texas A&M	TAM 302	ML	M-T
Kansas St.	Jagger	ME	M
AgriPro	Ogallala	ML	M-T
Public	2180	M	S-M
Texas A&M	Mit	ME	M-T
AgriPro	Pecos	ME	S-M
AgriPro	Coronado	ME	M
Texas A&M	TAM 400	ML	M

*E=Early*

*S=Short*

*M=Medium*

*ML=Medium Late*

*T=Tall*

*L=Late*

**TABLE 17. 1999-2000 Soft Red Winter Wheat Elite Trials - North Texas Blacklands**

Source	Variety	Texas Wt. Avg. (Lb/Bu)	Yield (Bu/Ac)				Avg. Yield, Bu/Ac	3 year Avg. Yield, Bu/Ac
			Prosper	Dallas	Era	Howe		
Pioneer	2571	52.6	67.4	60.4	48.1	61.3	59.3	69.4
Pioneer	2684	55.5	63.5	63.9	45.3	60.9	58.4	68.9
AgriPro	Mason	55.1	74.1	65.7	61.3	75.0	69.1	66.2
Pioneer	2566	53.5	56.7	56.9	53.2	65.5	58.1	65.5
Novartis	Coker	53.5	52.9	70.7	35.3	63.5	55.6	64.9
Novartis	Coker	55.7	61.8	44.1	52.4	68.1	56.6	63.6
AgriPro	Hickory	51.2	45.0	52.8	28.3	47.8	43.5	56.3
Pioneer	25R57*	55.1	65.1	56.5	66.4	75.1	65.8	—
VPI	Roane*	56.3	53.2	56.3	50.3	66.9	56.7	—
Novartis	Coker	53.9	57.7	57.0	38.5	57.5	52.7	—
AgriPro	Marion*	52.0	50.3	65.5	33.4	59.4	52.2	—
Pioneer	25R26*	50.2	56.5	45.7	42.9	45.2	47.6	--

\* Varieties tested for less than three years.

**TABLE 18. 1999-2000 Agronomic Characteristics - Soft Red Winter Wheat  
North Texas Blacklands**

<b>Source</b>	<b>Variety</b>	<b>Maturity</b>	<b>Winter Hardiness</b>	<b>Height</b>
Pioneer	2571	M	H	M
Pioneer	2684	E	I	M
AgriPro	Mason	E	I-T	M
Pioneer	2566	M	H	M
Novartis	Coker 9134	M	H	M
Novartis	Coker 9663	E	I-T	M
Univ. of Arkansas	Jaypee	E	T	M
Novartis	Coker 9803	M	H	M
Novartis	Coker 9474	M	H	M
AgriPro	Hickory	E	T	T
Pioneer	25R57*	ML	-	M
VPI	Raone*	L	-	S
Novartis	Coker 9704*	L	-	M
AgriPro	Marion*	M	-	S
Pioneer	25R26*	L	-	S

*E=Early*

*I=Intermediate*

*M=Medium*

*T=Tender*

*ML=Medium Late*

*T=Tall*

*S=Short*

*H=Hardy*

*L=Late*

**TABLE 19. 1999-2000 Disease Resistance\* of Soft Red Winter Wheat Varieties  
North Texas Blacklands**

<b>Source</b>	<b>Variety</b>	<b>Leaf Rust</b>	<b>Barley Yellow Dwarf Virus</b>	<b>Stripe Rust</b>
Pioneer	2571	MR-MS	MS-MR	MS
Pioneer	2684	MR-MS	MR	S
AgriPro	Mason	R	MR-MS	R-MR
Pioneer	2566	S-MS	MS	MS
Novartis	Coker 9134	MR	MS	S-MS
Novartis	Coker 9663	MR	MR	MS-S
U. of Arkansas	Jaypee	MR-MS	MR-MS	S
Novartis	Coker 9803	MR-R	S-MS	S
Novartis	Coker 9474	R-MR	MS-MR	MS
AgriPro	Hickory	MR-MS	MS-MR	S
Pioneer	25R57	MS-MR	MS	MR-R
VPI	Roane	R	MS-S	MS
Novartis	Coker 9704	R	MS	S
AgriPro	Marion	MR	MS	S
Pioneer	25R26	S-MS	MS-MR	MR-MS

\* Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible. Where two reactions are given, the first reaction is predominant.

**TABLE 20. 1999-2000 Northeast Texas Soft Red Winter Wheat Trials**

Source	Variety	Test Weight (Lbs/Bu)	Height (Inches)	Location			2000 Avg Yield	3 Year Avg. Dekalb
				Overton	Mt. Pleasant	Dekalb		
				Grain Yield, Bu/Ac				
Pioneer	P25R57	55	42	105.3	92.9	59.9	86.0	–
Novartis	Coker 9663	55	39	113.0	89.0	49.9	84.0	69.1
Pioneer	2684	57	35	95.7	80.6	64.5	80.3	70.8
AgriPro	Mason	54	37	92.0	94.5	50.5	79.0	58.9
Pioneer	2571	55	38	106.3	66.2	58.0	76.8	68.3
Novartis	Coker 9704	56	35	108.7	64.0	56.3	76.3	–
Pioneer	P25R26	50	38	98.0	62.6	62.2	74.3	–
U. of Arkansas	Jaypee	57	35	95.3	76.6	47.1	7.0	66.5
Novartis	Coker 9803	55	36	101.7	67.6	49.0	72.8	61.0
Novartis	Coker 9835	52	35	88.3	66.1	62.3	72.2	68.4
VA Tech	Roane	53	38	108.3	61.8	45.9	72.0	–
Novartis	Coker 9474	57	34	86.3	69.6	59.4	71.8	65.2
Pioneer	2566	56	36	91.3	71.6	50.9	71.3	61.7
Novartis	Coker 9134	54	39	107.3	50.0	47.9	68.1	61.9
AgriPro	Hickory	51	36	92.0	54.1	58.2	68.1	68.3
AgriPro	Marion	55	32	98.3	53.3	48.9	66.8	–
Purdue	Abe	55	38	73.7	43.1	42.0	52.9	54.3
Novartis	Coker 68-15	53	38	81.3	40.4	32.5	51.4	50.9

**TABLE 21. Soft Red Winter Wheat Variety Performance, Blacklands District 8  
Texas Agricultural Extension Service Non-Replicated Strip Trials 1999-2000**

Source	Variety	Location								Variety	Yield As % of Checks
		Bosque	Hill	McLennan	Williamson	Bell	Ellis	Coryell	Falls		
		Grain Yield, Bu/Ac									
AgriPro	Mason	51.1	65.0	30.0	62.0	36.9	37.1	53.6	–	48.0	117.6
AgriPro	Shiloh	28.2	64.0	16.6	34.0	27.1	44.3	29.8	–	34.9	85.5
AgriPro	Patton	–	–	–	36.0	–	–	–	–	–	–
AgriPro	Marion	–	74.0	–	–	–	–	–	–	47.5	–
Novartis	Coker 9474	48.5	61.0	43.1	55.0	36.7	42.9	45.3	–	–	116.4
Novartis	Coker 9543	52.0	63.0	30.6	53.0	36.9	55.2	–	–	–	120.1
Novartis	Coker 9704	35.2	69.0	11.7	–	–	58.1	28.6	–	–	96.0
Novartis	Coker 9663	54.3	61.0	47.9	62.0	38.1	38.7	–	31.0	–	124.5
Terra	SR 204	34.2	–	9.5	–	–	55.6	16.9	37.7	–	73.7
Terra	SR 218	21.8	57.0	2.1	–	–	64.1	11.8	25.4	–	71.0
Pioneer	25R57	–	74.0	–	–	–	–	–	–	–	–
Test Average		40.7	65.3	22.8	50.3	35.1	49.5	31.0	31.4	40.8	–

**TABLE 22. 1999-2000 Soft Wheat Elite Variety Trials  
McGregor and Uvalde, Texas**

Source	Variety	McGregor Test Weight	Location		Average Yield
			McGregor	Uvalde	
Univ. of Georgia	Fleming	–	–	72.2	–
Pioneer	2684	57.9	76.04	64.0	70.0
Clemson	Jaypee	56.2	68.35	60.71	64.5
Univ. of Florida	Florida 304	–	–	64.2	–
Novartis	Coker 9663	58.6	59.65	64.71	62.2
Novartis	Coker 9704	55.8	60.1	–	–
AgriPro	Mason	58.2	97.64	19.7	58.7
AgriPro	Marion	58.1	66.51	45.23	55.9
Novartis	Coker 9835	51.9	53.65	58.0	55.8
Pioneer	2566	57.8	70.86	31.51	51.2
Novartis	Coker 6815	56.3	48.43	–	–
Novartis	Coker 9474	58.5	47.42	48.77	48.1
Purdue	Abe	52.3	41.13	42.0	46.1
AgriPro	Hickory	54.4	47.81	40.41	44.1
Novartis	Coker 9134	53.4	59.88	24.02	42.0
Novartis	Coker 9803	57.0	57.81	25.32	41.6
AgriPro	Mallard	–	–	39.4	–
Pioneer	2571	52.4	52.38	23.4	37.9
AgriPro	Patton	–	–	38.3	–
Pioneer	2580	–	–	27.33	–
Novartis	Coker 9543	–	–	25.9	–
AgriPro	Clemens	–	–	9.7	–

**TABLE 23. 1999-2000 Disease Resistance\* of Soft Red Winter Wheat Varieties  
Central and South Texas - McGregor and Uvalde**

Source	Variety	McGregor Leaf Rust	Uvalde Leaf Rust	McGregor Stripe Rust	Uvalde Stem Rust
Purdue	Abe	S	MR	S	S
AgriPro	Clemens	–	S	–	S
Novartis	Coker 6815	S	–	S	–
Novartis	Coker 9134	R	MR	S	S
Novartis	Coker 9474	R	R	S	S
Novartis	Coker 9543	–	R	–	S
Novartis	Coker 9663	R	R	MR	S
Novartis	Coker 9704	R	–	S	–
Novartis	Coker 9803	R	R	S	S
Novartis	Coker 9835	R	R	S	S
Univ. of Georgia	Fleming	–	R	–	MR
Univ. of Florida	Florida 304	–	R	–	R
AgriPro	Hickory	R	MR	S	S
Clemson	Jaypee	R	R	S	S
AgriPro	Mallard	–	R	–	S
AgriPro	Marion	R	R	S	R
AgriPro	Mason	R	R	R	S
AgriPro	Patton	–	MR	–	R
Pioneer	2566	S	MS	R	S
Pioneer	2571	R	R	R	S
Pioneer	2580	–	R	–	S
Pioneer	2684	S	R	S	S

\* Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible

**TABLE 24. 1999-2000 Agronomic Characteristics  
Soft Red Winter Wheat Central and South Texas**

Source	Variety	Maturity	Height
Purdue	Abe	ML	M
AgriPro	Clemens	L	M
Novartis	Coker 6815	ML	-
Novartis	Coker 9134	M	S
Novartis	Coker 9474	M	M
Novartis	Coker 9543	L	S
Novartis	Coker 9663	ME	T
Novartis	Coker 9704	ML	-
Novartis	Coker 9803	ML-L	M
Novartis	Coker 9835	ME	S
Univ. of Georgia	Fleming	E	S
Univ. of Florida	Florida 304	M	T
AgriPro	Hickory	E	T
Clemson	Jaypee	ME	S
AgriPro	Mallard	L	S
AgriPro	Marion	ML-L	M
AgriPro	Mason	E	S
AgriPro	Patton	L	M
Pioneer	2566	ML	S
Pioneer	2571	L	S
Pioneer	2580	M	M
Pioneer	2684	E	M

\* Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible

**TABLE 25. 1999-2000 Hard Red Spring Wheat Trial  
Central Texas, Thrall**

Source	Variety	Yield	Test Weight	Leaf Rust <sup>1)</sup>	Maturity <sup>2)</sup>	Height <sup>3)</sup>
AgriPro	Ivan	58.3	56.5	R	M	T
CIMMYT	Cajeme 71	50.7	57.5	MR	E	M
South Dakota	Russ	50.5	58.5	R	E	M
Minnesota	Norm	50.4	58.1	R	E	T
AgriPro	Norlander	48.3	56.9	R	E	S
Minnesota	Verde	47.0	58.6	R	E	M
AgriPro	Norpro	46.3	51.7	R	L	T
AgriPro	Lars	43.3	56.7	MR	E	S
AgriPro	Hamer	41.4	57.8	R	E	S
Texas A&M	Mit	40.2	55.6	MR	M	T
WPB	Express	38.6	58.4	R	E	M
CIMMYT	Nadodores 63	31.8	50.5	MR	L	T
South Dakota	Oxen	26.5	56.5	R	E	M

<sup>1)</sup> Leaf rust ratings taken on 4/6/00. Resistance to various diseases noted by: R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible

2) E= Early                      M=Medium                      L=Late

3) S=Short                      M=Medium                      T=Tall

4) Mit is a hard red winter wheat

**TABLE 26. 1999-2000 Winter Oat Trials  
North Texas Blacklands**

Source	Variety	Test Wt. Average Lbs/Bu	Yield (Bu/Ac)			Avg. Yield, Bu/Ac	3 Year Avg. Yield, Bu/Ac
			Prosper	Era	Howe		
Texas A&M	Dallas	40.6	116.7	114.1	111.0	113.9	103.9
Terral	Secretariat 495	39.2	107.5	107.6	110.5	108.3	100.4
Univ. of Florida	Chapman	38.5	107.6	91.6	110.4	103.2	96.3
Texas A&M	TAMO 386	38.6	114.1	114.6	110.9	113.2	95.0
Arkansas Co.	Harrison	40.2	94.7	110.2	92.8	99.2	91.5
Arkansas Co.	811	42.7	92.2	80.1	95.9	89.4	89.9
Arkansas Co.	LA 604	39.5	103.3	109.7	110.0	107.7	88.5
Texas A&M	TAMO 397	40.0	105.0	112.5	95.6	104.4	87.4
U. of Arkansas	Bob	42.9	103.4	99.2	94.4	99.0	83.9
U. of Arkansas	Nora	39.7	107.7	90.6	82.4	93.6	76.7

**TABLE 27. 1999-2000 Agronomic Characteristics & Barley Yellow Dwarf Virus  
Winter Oat - North Texas Blacklands**

Source	Variety	Maturity*	Winter Hardiness**	Height***	Barley Yellow Dwarf Virus <sup>1</sup>
Texas A&M	Dallas	ML	H	M	MR-R
Terral	Secretariat 495	M	H	M	MS-MR
Univ. of Florida	Chapman	E	I	M	MS-MR
Texas A&M	TAMO 386	ML	T	T	R-MS
Arkansas Co.	Harrison	M	H	M	MS-MR
Arkansas Co.	811	E	H	M	R-R
Arkansas Co.	LA604	ML	I	M	MR
Texas A&M	TAMO 397	E	T	T	MR
Univ. of Arkansas	Bob	E	T	T	S-MS
Univ. of Arkansas	Nora	M	H	M	MS

\* Resistance to various diseases noted by: R= resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible

E=Early

T=Tender

S=Short

I=Intermediate

ML=Medium Late

H=Hardy

M=Medium

T=Tall

L=Late

**TABLE 28. 1999-2000 Winter Barley Trials  
North Texas Blacklands**

Source	Variety	Test Wt. Average Lbs/Bu	Yield (Bu/Ac)				Avg. Yield Bu/Ac	3 Year Avg. Yield, Bu/Ac
			Prosper	Dallas	Era	Howe		
Texas A&M	TAMBAR 500	48.6	76.4	55.5	68.2	82.4	70.6	77.1
OSU	Post 90	48.2	81.7	49.3	64.6	80.0	68.9	74.7
VPI	Starling	47.1	79.1	40.0	62.1	79.7	65.2	72.9
Paramount	P-954*	47.4	77.8	63.8	62.5	83.7	71.8	–
Paramount	P-721*	48.1	63.2	59.6	59.7	80.9	65.8	–
KSU	Weskan*	46.5	45.2	42.2	67.9	78.6	58.5	–

\* Varieties tested for less than three years.

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