

2001 - 2002 Wheat Variety Trials in the Texas Panhandle

Brent Bean¹

2002 Wheat Crop

This year will not be remembered as a good wheat year. Generally we think of the ideal time to plant wheat as the first week of October. This year, however, many producers elected to plant their dryland wheat early when we had good moisture. This turned out to be a good choice for two reasons. One, we had very little rainfall during the fall making it difficult to get later planted wheat established. And second, greenbugs were particularly damaging to late planted wheat that was too small to withstand heavy greenbug populations. Even relatively low populations of greenbugs can be devastating on small wheat. The winter and spring months provided little relief from dry weather. A combination of drought, greenbug, and late freeze damage caused many dryland wheat fields to be abandoned. Those that remained tended to produce below average yield. Irrigated wheat fared better, but was an expensive crop to grow because of increased insect and irrigation costs.

In contrast to last year, this was a good year to evaluate varieties under drought conditions. Wheat variety trials were harvested in Dallam, Hemphill, Castro/lamb, Potter/Randall, Armstrong, Moore, and Briscoe counties.

Wheat Variety Trial Results

Each trial consisted of a uniform set of 35 wheat varieties (see accompanying tables). The dryland trials were established near Silverton, Claude, Bushland, Etter, and Canadian. Irrigated trials were located near Hart, and between Dalhart and Texline.

Dryland

In the accompanying tables bold type indicates those varieties that yielded in the top 20% at each location. In the dryland trials, varieties with greenbug tolerance; TAM 110, Above, and AP 502 CL, were consistently high performers. Above and AP 502 CL are in a new class of wheats called Clearfield wheats. Clearfield wheats are tolerant to the herbicide Beyond sold by BASF. Beyond can be used to control grasses such as cheat and jointed goatgrass. Other varieties that were in the top 20% in at least two locations were Custer, Jagaline, Jagger, Trego, Prairie Red, Stanton, TAM 105, TAM 107, and TAM 111. TAM 105 and TAM 107 are older varieties that set the standard for dryland wheats in the Panhandle. Although they are susceptible to many diseases, they are still very consistent performing varieties. Prairie Red is a Colorado wheat that is essentially TAM 107 with Russian wheat aphid tolerance. Custer is an Oklahoma variety that is a cross between TAM 105 and Chisholm and is generally considered a good dual purpose wheat. Trego is an hard white winter wheat that has consistently been a top yielder in Panhandle trials. However, Trego should only be grown on a contract basis since it must be kept separate from hard red winter wheats. This is the first year we have had Stanton in our uniform variety trial. Stanton, released by Kansas in 2000, is similar to TAM 107 but has leaf rust and Russian wheat aphid tolerance. Jagger is a very popular variety in Kansas. Many

¹Professor and Extension Agronomist, Amarillo.

producers in the Panhandle elected to plant Jagger this last growing season because of its excellent yield potential under both dryland and irrigated conditions. Although Jagger did not perform as well this year, it still was one of the top yielding varieties. Its biggest negative is that it tends to break dormancy early in the spring making it susceptible to late freezes. Jagalene is an AgriPro wheat that is a cross between Jagger and an older variety that was popular a few years ago called Abilene. Jagalene should maintain the yield potential of Jagger while holding its winter dormancy. TAM 111 is the newest variety to be released by Texas A&M. The variety should have excellent drought tolerance and has yielded well in tests in Texas and Kansas. TAM 111 should be available to seedsmen next year and to farmers in 2004.

Irrigated

Irrigated varieties that were in the top 20% at both the Hart and Dalhart locations were Cutter and Jagalene. Jagalene is discussed under the dryland section. Cutter is similar to Jagalene in that one of its parents is Jagger. The other parent is the popular Ogallala variety. Other varieties in the top 20% at one of the two locations were 2145, Above, AP 502 CL, Dumas, Trego, Ogallala, Stanton, TAM 105, TAM 302, and TAM 111. 2145 was released by Kansas in 2001. This is the first year we have included this variety in our uniform variety trial. 2145 has Abilene as one of its parents and has leaf rust and soil-borne mosaic resistance. Dumas is a new release from AgriPro that has performed well under irrigation in our trials the last two years. TAM 302 has also been a high yielding irrigated wheat, however, its test weight is consistently low.

Standability is an important consideration under full irrigation. None of the top yielding wheats had a significant lodging problem in 2002.

When choosing a variety data should be examined over multiple years. Three of the trials have been located with the same producer for at least two years. The table shows the average yield of the top varieties in those trials. County extension agents at these locations will have the complete summary for the 2 and 3 year averages.

TOP YIELD AVERAGES BY LOCATION OVER MULTIPLE YEARS

Silverton		Canadian		Hart/Dimmitt	
3-Yr Avg		3-Yr Avg		2-Yr Avg	
Scout 66	35 bu	Jagger	61 bu	Dumas	126 bu
TAM 105	34 bu	TAM 105	55 bu	Jagger	125 bu
Jagger	34 bu	Custer	52 bu	TAM 400	125 bu
TAM 110	34 bu	Tonkawa	52 bu	TAM 201	123 bu

Variety Recommendations

Each year is different. For this reason, always look at yield data from at least three years before selecting a variety for planting. It is also a good idea to plant more than one variety since varieties perform differently under various environmental conditions. Some varieties also tend to perform better in different parts of the Panhandle. Additional information on this years trials as well as results from previous years can be viewed at the following web site:

<http://amarillo.tamu.edu/amaweb/Programs/Agronomy/publications/Wheat/index.htm>

When considering a variety, characteristics such as plant height, disease and insect tolerance, coleoptile length (determines how deep the variety can be planted), and fall grazing potential should be considered along with yield data. Under dryland conditions it is hard to go wrong with Custer, Jagger, TAM 105, or TAM 110. All four varieties have good yield histories under a wide range of conditions.. Custer and Jagger are considered good grazing wheats, and TAM 110 has greenbug tolerance. Under full irrigation Jagger, Ogallala, TAM 110, TAM 200 and TAM 202 should perform well under a wide range of conditions. Other irrigated varieties to consider are TAM 302 and 2137.

<i>Variety Recommendation</i>	
Irrigated	Dryland
Jagger	Custer
Ogallala	Jagger
TAM 110	TAM 105
TAM 200	TAM 110
TAM 202	

If next year some of the newer varieties continue to perform as well as they have the last two years my variety recommendation list will likely change. Varieties to keep an eye on are Dumas, Jagalene, Cutter, TAM 400, and Stanton.

Common Bunt and Increasing Problem

Common bunt, also called stinking smut and covered smut, has become an increasing problem for a few producers the last couple of years. Common bunt is NOT KARNAL BUNT. Wheat seed infested with bunt spores will have a fishy odor. A bunt ball, full of black spores replaces healthy kernels in the spike. Once these bunt balls burst, black spores contaminate surrounding kernels. Smutted grain is often discounted in value and may not be accepted at the market. Common bunt persist as spores on seed and in the soil. Cool fall temperatures favor infection. Under the right conditions the wheat plant becomes infected as the seedling emerges from the soil.

Currently I am not aware of any varieties that are resistant to common bunt. From a cultural standpoint producers should avoid planting seed that originated from contaminated fields. Seed is the primary method that common bunt is spread. For those fields with a history of common bunt there are some seed treatments that are available that should provide some measure of control. In infested fields, early planting when soil temperatures are warm , should decrease the degree of infection of emerging seedlings.

Texas Cooperative Extension and Texas Agricultural Experiment Station
2001 - 2002 Wheat Variety Trials
DRYLAND

Investigators: Brent Bean, Mark Lazar, Jackie Rudd, Matt Rowland, Gary Peterson, Jonny Simmons

Entry No.	Variety	Wheat Yield*					
		bu/Acre					
		Silverton	Canadian	Bushland	Etter	Claude	Average
1	2137	20.5	15.3	21.2	10.0	29.3	19.3
2	2145	20.1	10.0	22.8	10.8	24.0	17.5
3	2174	20.9	27.8	21.6	10.5	32.0	22.6
4	Above	25.6	29.7	24.0	10.6	42.1	26.4
5	AP 502 CL	26.5	32.8	22.5	10.5	37.6	26.0
6	Custer	20.2	28.3	24.2	9.0	35.3	23.4
7	Cutter	17.4	14.2	23.5	10.7	29.6	19.1
8	Dumas	17.2	23.6	23.2	11.9	24.7	20.1
9	Jagalene	21.1	28.9	24.3	9.4	33.7	23.5
10	Jagger	21.7	21.1	24.7	8.8	26.6	20.6
11	Trego (White wheat)	18.5	36.8	24.4	10.4	37.2	25.5
12	Intrada (White wheat)	18.7	28.0	23.9	10.3	27.6	21.7
13	Platte (White wheat)	21.4	30.6	20.9	7.2	25.3	21.1
14	Kalvesta	14.4	23.1	22.2	10.7	30.2	20.1
15	Lockett	9.4	7.3	18.6	5.9	27.4	13.7
16	Longhorn	10.3	17.3	19.2	7.5	25.6	16.0
17	Ogallala	16.2	17.9	22.7	10.0	23.6	18.1
18	OK101	15.2	19.8	21.9	9.6	31.6	19.6
19	Prairie Red	18.4	38.7	23.8	9.4	32.8	24.6
20	Scout 66	20.7	20.7	19.1	5.5	30.8	19.4
21	Stanton	26.8	28.4	25.6	7.8	28.8	23.5
22	TAM 105	22.6	39.8	20.7	9.4	29.4	24.4
23	TAM 107	22.8	32.4	20.4	7.2	34.2	23.4
24	TAM 109	15.4	31.1	20.2	7.3	21.5	19.1
25	TAM 110	22.4	28.5	23.1	12.9	32.5	23.9
26	TAM 200	15.6	28.6	22.6	8.3	28.4	20.7
27	TAM 201	13.0	29.4	17.1	2.4	20.4	16.5
28	TAM 202	15.8	26.4	25.8	9.2	28.4	21.1
29	TAM 302	12.0	34.9	21.4	6.7	22.0	19.4
30	TAM 400	16.2	26.8	21.8	8.1	24.5	19.5
31	Thunderbolt	14.5	20.2	22.4	10.4	27.5	19.0
32	Tonkawa	14.1	27.2	22.3	9.5	31.5	20.9
33	Triumph 64	19.1	20.1	19.5	6.1	29.0	18.8
34	TAM 111	25.1	25.8	24.2	7.9	29.6	22.5
35	Venango	20.1	17.5	22.7	10.5	28.3	19.8
	Average	18.6	25.4	22.2	8.9	29.2	20.9
	LSD (P=.05)	7.5	9.4	2.1	3.6	4.6	
	Standard Deviation	5.4	6.7	1.3	2.2	2.8	
	CV	28.1	26.1	5.8	25.1	9.3	

*Bold type indicates yield was in the top 20%.

Texas Cooperative Extension and Texas Agricultural Experiment Station
2001 - 2002 Wheat Variety Trials
Irrigated

Investigators: Brent Bean, Mark Lazar, Jackie Rudd, Calvin Trostle, Matt Rowland, Gary Peterson, Jonny Simmons

Entry No.	Variety	Hart ¹⁾				Dalhart ¹⁾			
		Yield* bu/Ac	Height Inches	Test Wt. lb/bu	Lodged %	Yield* bu/Ac	Height Inches	Test Wt. lb/bu	Lodged %
1	2137	123.2	41.5	62.3	0.0	62.7	25.0	57.6	
2	2145	128.9	38.5	62.4	0.0	58.8	21.8	57.6	
3	2174	114.2	39.3	62.4	0.0	62.1	24.8	59.7	
4	Above	127.4	38.3	61.6	2.5	76.7	24.0	58.7	
5	AP 502 CL	128.2	39.0	61.0	5.0	66.0	23.3	57.5	
6	Custer	120.0	39.8	62.8	8.8	65.6	25.0	59.9	
7	Cutter	128.6	42.0	63.5	2.5	75.0	26.0	59.4	
8	Dumas	130.3	38.5	64.0	0.0	69.2	24.8	59.5	
9	Jagalene	126.9	39.0	62.8	7.5	73.8	25.8	60.5	
10	Jagger	130.4	38.3	61.9	10.0	72.9	26.0	58.5	
11	Trego (White wheat)	104.5	38.5	61.9	35.0	77.7	24.8	61.2	
12	Intrada (White wheat)	119.1	36.5	65.1	23.8	71.1	24.0	60.8	
13	Platte (White wheat)	123.7	37.0	61.0	1.3	60.9	22.0	60.1	
14	Kalvesta	113.9	37.3	61.9	26.3	68.5	24.5	59.2	
15	Lockett	91.7	38.3	59.6	37.5	65.7	26.5	58.7	10
16	Longhorn	96.9	42.3	62.5	0.0	65.2	27.0	60.4	
17	Ogallala	131.6	38.0	63.5	0.0	61.7	23.3	59.4	
18	OK101	124.3	39.3	62.9	0.0	71.9	27.3	58.7	
19	Prairie Red	111.0	38.3	60.9	27.5	72.3	24.8	59.2	
20	Scout 66	81.0	41.3	61.0	83.8	62.1	29.3	60.8	
21	Stanton	125.1	43.3	62.4	0.0	73.6	24.8	60.4	
22	TAM 105	123.1	39.0	60.8	0.0	75.2	24.5	59.8	
23	TAM 107	114.3	39.3	61.4	0.0	65.8	24.0	57.8	
24	TAM 109	101.1	35.8	58.4	1.3	64.4	23.5	60.4	
25	TAM 110	119.1	38.8	61.2	5.0	69.0	24.3	57.7	
26	TAM 200	121.3	35.8	63.8	16.3	71.8	24.0	60.9	
27	TAM 201	121.0	32.0	62.6	0.0	68.6	22.8	59.2	
28	TAM 202	118.5	35.5	62.8	1.3	73.3	25.5	60.5	
29	TAM 302	118.4	39.5	59.4	6.3	74.0	25.8	56.5	
30	TAM 400	126.4	38.0	64.3	27.5	68.4	22.8	61.2	
31	Thunderbolt	114.4	41.8	62.4	0.0	67.2	27.8	61.3	
32	Tonkawa	109.5	42.5	62.8	0.0	67.5	26.0	60.8	
33	Triumph 64	78.3	45.8	62.6	26.3	54.6	29.8	60.7	
34	TAM 111	127.8	41.5	62.1	2.5	67.2	25.0	59.5	
35	Venango	124.9	40.5	62.7	0.0	63.8	24.0	59.9	
	Average	117.1	39.1	62.1	10.2	68.1	25.0	59.5	
	LSD (P=.05)	11.8	2.5	1.1	21.7	10.7	28.7	1.4	
	Standard Deviation	8.4	1.8	0.8	15.5	7.6	20.5	1.0	
	CV	7.2	4.7	1.3	149.7	11.2	77.4	1.6	

*Yields are reported at 13.5 % moisture. Bold type indicates yields in the top 20%.

¹⁾The Hart location received 19.5 inches of irrigation water and the Dalhart location received 17.5 inches.