

2007 Wheat Variety Trials Conducted in the Texas and New Mexico High Plains

*Brent Bean*¹

2006-2007 Wheat Crop in Review

The 2007 wheat crop will certainly be one to tell the grandkids about. Record dryland yields coupled with a very good wheat price made for an excellent year. The fall started out with good moisture conditions that were maintained in most areas throughout the growing season. An extremely hard freeze that occurred over the Easter weekend caused major damage to the Kansas crop. We probably avoided severe damage in our area by only a couple of degrees. There were a few isolated fields with significant injury, but for the most part the region escaped damage. Lodging was more prevalent than in most years. This was likely due to wheat being taller than normal, large full grain heads, and in some cases, weakening of the stalk caused by the Easter freeze.

Stripe rust, leaf rust, and powder mildew were a concern in some fields. These are all 'wet weather' diseases. Anytime we are fortunate to have spring moisture conditions like we had in 2007, we are potentially going to have infestations of these diseases. These can be controlled with timely fungicide applications, and in fact, many producers did have their fields sprayed. In many cases the applications were likely unwarranted given the degree of infection and the stage of growth of the wheat. That being said, many producers wanted to err on the side of caution due to the obvious potential of the wheat crop.

Variety Trial Results and Recommendations

The 2006 and 2007 years were two extreme growing seasons on opposite ends of the spectrum. In 2006, conditions were very dry in the spring leading to poor wheat yields. As already discussed, 2007 was just the opposite. These two extremes gave us an excellent opportunity to evaluate wheat variety performance.

Irrigated Trials

TAM 111 had the overall best yield average of all hard red winter wheats, only being bested by *Aspen* (by 6 bushels) a white wheat (Table 1). Other varieties topping the irrigated trials were *Fuller* (KSU), *Dumas* (AgriPro), and *Duster* (OSU). These varieties yielded in the top 25% in at least three of six irrigated locations. Other noteworthy varieties were *T81* (Trio), and *Overley* (KSU). *TAM 304* (TAMU) finished just out of the top 25 and will be marketed by Scott Seed in Hereford. Over the last three years, *TAM 111* has been the most consistent irrigated wheat, yielding in the top 25% in 13 of 19 locations. The variety has stripe rust resistance, good straw strength, and is unlikely to shatter. *Fuller* is a Kansas State University wheat that we have tested the last two years. It has *Jagger* in its background and has stripe rust resistance and some resistance to wheat streak mosaic. *Dumas* continues to consistently produce a high yield under irrigation and has very good straw strength. *Duster* is an Oklahoma State University variety that has yielded well in trials the last two years. *T81* is a variety produced by Trio Research Inc. in Wichita, KS. *T81* has produced above average yields in the irrigated trials the last three years. *Overley* yielded well in 2005 and 2007, but not particularly good in 2006. Its strength is stripe rust resistance and excellent grain quality.

¹ Professor and Extension Agronomist, Texas A&M Research and Extension Center, 6500 Amarillo Blvd. West, Amarillo, TX, 79106, b-bean@tamu.edu.

Dryland Trials

Many of the varieties that performed well under irrigation also yielded well in dryland trials. Topping the trials were *Fuller*, *Hatcher* (CSU), *TAM 111*, *TAM 112* (TAMU), *Keota* (Westbred) and *TAM 304* (Table 2). Both *Fuller* and *TAM 111* were in the top 25% in five of six locations. *Hatcher* is a Colorado State variety that has yielded well the last two years. *TAM 112* is a green bug tolerant variety that had an excellent year in 2006. *Keota* has only been tested for two years, but it is one to keep an eye on in 2008. *TAM 304* will likely not yield as well in a dry year like what was experienced in 2006. Other varieties with high yields over multiple locations were *Duster* and *TAM 203*, which was released in 2007 and will be marketed by AgriPro.

Recommendations

Varieties that are placed in the recommended list in the text box are those that have consistently performed well over the years at multiple locations in the Panhandle. The varieties also cannot have significant deficiencies such as lodging or poor grain quality. Clearly the last three years *TAM 111* has been the best variety to plant in both dryland and irrigated trials. *Dumas* has provided consistently high yields under irrigation. *Jagalene* and *Cutter* were very disappointing varieties in 2007. However, their performance in previous years warrants keeping them in the recommended list. The poor performance of these two varieties in 2007 serves as a good example of why it is important to plant more than one variety. *TAM 112* with its greenbug tolerance and moderate level of resistance to wheat streak mosaic has helped make it a consistent performer, particularly under dryland conditions. Varieties making the list for the first time are *T81*, *TAM 304*, *Endurance*, *Fuller*, and *Hatcher*. *TAM 304* has finished in the top 25% in over half of the irrigated trials the last three years. It has good leaf rust resistance and moderate stripe rust resistance. Test weight tends to be lower than average. *Endurance* from Oklahoma State is considered a dual-purpose wheat that is later in maturity than most of the other varieties. Although it is not going to lead many trials it always seems to be in the top 33% in yield. Normally I do not put a variety on the recommended list until we have tested it for at least three years. However, because of the performance of *Fuller* and *Hatcher* in two completely different environments (2006 and 2007), I feel comfortable in recommending them after only two years of trial data.

| Variety Recommendations | | |
|-------------------------|--------------------|-----------|
| Full Irrigation | Limited Irrigation | Dryland |
| TAM 111 | TAM 111 | TAM 111 |
| Dumas | Dumas | TAM 112 |
| T81 | T81 | Endurance |
| Jagalene | Jagalene | Fuller |
| TAM 304 | TAM 304 | Hatcher |
| | Endurance | Cutter |

White Wheats

Take note of the performance of the white wheats in this year's trial. *Aspen* was exceptional and *RonL* and *Guymon* have yielded well the last two years.

Other Comments

Yield data from previous years, variety descriptions, and other information can be found at the following website under publications: <http://amarillo.tamu.edu/programs/agronomy>.

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Table 1. Irrigated Wheat Variety Trials Harvested in 2007 In the Texas and New Mexico High Plains.

Brent Bean¹, Jackie Rudd², Ravindra Devkota², Calvin Trostle¹, Rex Kirksey³

| Variety | Company | Location Avg. | Clovis | Castro Co. | Bushland | Etter | Perryton ⁴ | Gains Co. |
|------------------------------------|----------|-----------------|--------------|--------------|--------------|-------------|-----------------------|-------------|
| | | Yield, bu/Acre* | | | | | | |
| Aspen (white) | Westbred | 82.4 | 108.9 | 102.8 | 102.8 | 60.4 | 55.0 | 64.5 |
| TAM 111 | TAMU | 76.7 | 93.5 | 91.4 | 87.1 | 73.4 | 56.4 | 58.3 |
| T81 | Trio | 75.1 | 94.0 | 95.1 | 89.2 | 63.4 | 54.8 | 54.1 |
| Fuller | KSU | 73.9 | 89.7 | 90.7 | 90.6 | 60.0 | 56.3 | 56.3 |
| Dumas | AgriPro | 73.4 | 90.4 | 87.8 | 83.3 | 65.2 | 58.0 | 55.7 |
| Bullet | OSU | 72.9 | 91.2 | 88.2 | 83.8 | 62.0 | 59.1 | 53.3 |
| Duster | OSU | 72.8 | 88.8 | 77.9 | 92.6 | 64.6 | 58.0 | 55.1 |
| TX01V6008 | TAMU | 71.7 | 71.9 | 100.3 | 91.0 | 56.8 | 54.6 | 55.9 |
| Overley | KSU | 71.4 | 87.5 | 94.1 | 79.8 | 54.3 | 56.4 | 56.3 |
| TX03M1096 | TAMU | 71.4 | 83.5 | 87.1 | 87.0 | 67.8 | 55.6 | 47.3 |
| Shocker | Westbred | 71.2 | 99.4 | 94.7 | 82.8 | 51.6 | 55.4 | 43.5 |
| TAM 304 | TAMU | 70.5 | 95.1 | 89.5 | 82.6 | 59.1 | 52.3 | 44.4 |
| TAM 203 | TAMU | 69.7 | 72.9 | 91.1 | 89.5 | 56.5 | 57.5 | 51.0 |
| Endurance | OSU | 69.5 | 82.5 | 86.1 | 89.5 | 52.1 | 54.5 | 52.0 |
| TX99A0153-1 | TAMU | 69.0 | 74.1 | 79.4 | 94.9 | 50.6 | 55.9 | 59.4 |
| Hatcher | CSU | 68.7 | 70.0 | 68.3 | 96.5 | 66.9 | 54.7 | 55.8 |
| Keota | Westbred | 68.5 | 73.0 | 77.4 | 88.8 | 66.0 | 54.2 | 51.5 |
| AP 04T8211* | AgriPro | 68.4 | 83.4 | 72.3 | 90.3 | 57.6 | 56.8 | 50.3 |
| Guymon (white) | OSU | 68.4 | 73.2 | 74.1 | 80.6 | 67.6 | 54.7 | 60.4 |
| Deliver | OSU | 68.3 | 78.8 | 80.9 | 81.5 | 51.7 | 56.7 | 60.4 |
| RonL (white) | KSU | 68.3 | 62.4 | 76.6 | 90.8 | 73.8 | 55.3 | 50.8 |
| Santa Fe | Westbred | 68.2 | 77.1 | 81.6 | 90.0 | 52.1 | 55.5 | 53.1 |
| Doans | AgriPro | 67.2 | 81.3 | 81.7 | 75.0 | 55.9 | 59.1 | 49.9 |
| Kojack | AgriPro | 65.8 | 89.8 | 80.2 | 82.4 | 46.9 | 50.3 | 45.4 |
| TAM W-101 | TAMU | 64.0 | 61.2 | 63.8 | 71.3 | 65.9 | 55.6 | 65.9 |
| Blend (TAM 111, TAM 112, Jagalene) | Blend | 63.5 | 64.8 | 65.7 | 78.5 | 68.5 | 56.5 | 46.9 |
| TAM 112 | TAMU | 63.4 | 63.7 | 52.7 | 78.0 | 73.8 | 56.0 | 56.0 |
| TAM 110 | TAMU | 62.7 | 70.4 | 68.9 | 76.1 | 64.5 | 48.2 | 47.9 |
| Cutter | AgriPro | 62.6 | 65.4 | 77.1 | 74.0 | 53.8 | 52.3 | 53.1 |
| TX01A5936 (white) | TAMU | 62.4 | 57.4 | 69.2 | 83.5 | 50.2 | 51.4 | 62.6 |
| Sturdy 2K | TAMU | 62.3 | 70.5 | 79.0 | 74.2 | 55.6 | 56.8 | 37.4 |
| Fannin | AgriPro | 62.1 | 71.3 | 68.7 | 74.2 | 57.1 | 58.7 | 42.7 |
| Coronado | AgriPro | 62.0 | 72.5 | 67.1 | 76.8 | 50.6 | 53.3 | 51.6 |
| Jagalene | AgriPro | 61.4 | 61.8 | 84.3 | 75.4 | 53.8 | 50.2 | 42.7 |
| Neosho | AgriPro | 61.3 | 70.4 | 78.7 | 74.5 | 60.5 | 30.4 | 53.6 |
| Jagger | KSU | 59.6 | 60.5 | 65.5 | 83.8 | 46.7 | 52.5 | 48.5 |
| Longhorn | AgriPro | 59.4 | 72.1 | 70.7 | 64.9 | 50.7 | 54.4 | 43.5 |
| TAM 105 | TAMU | 59.2 | 62.8 | 61.8 | 72.1 | 57.0 | 50.8 | 50.9 |
| AP 04TA9029* | AgriPro | 58.4 | 73.6 | 77.4 | 58.5 | 51.4 | 57.8 | 31.5 |
| Mean | | 67.3 | 77.4 | 79.3 | 82.3 | 58.8 | 53.3 | 52.0 |
| CV (%) | | | 14.85 | 10.7 | 7.4 | 14.0 | 11.5 | 12.6 |
| LSD (5%) | | | 18.7 | 13.8 | 9.9 | 13.3 | 10.0 | 10.6 |

* Bold numbers indicate top 25% yield by location.

¹Texas Cooperative Extension, ²Texas Agricultural Experiment Station, ³New Mexico Agricultural Experiment Station.

⁴Perryton yields were lower than expected likely because of late planting.

Table 2. Dryland Wheat Variety Trials Harvested in 2007 In the Texas and New Mexico High Plains.

Brent Bean¹, Jackie Rudd², Ravindra Devkota², Rex Kirksey³

| Variety | Company | Avg. Over Locations | Clovis | Bushland | Claude ⁴ | Hereford | Etter | Sherman Co. | Bushland Height |
|------------------------------------|----------|---------------------|-------------|-------------|---------------------|-------------|-------------|-------------|-----------------|
| | | Yield, bu/Acre * | | | | | | | inches |
| Aspen (white) | Westbred | 65.7 | 69.7 | 54.6 | 83.1 | 49.1 | 64.5 | 73.4 | 28 |
| TX99A0153-1 | TAMU | 65.1 | 67.6 | 52.7 | 89.9 | 34.9 | 59.4 | 86.1 | 28 |
| Fuller | KSU | 62.3 | 72.5 | 47.6 | 72.0 | 45.3 | 56.3 | 80.1 | 30 |
| Hatcher | CSU | 62.0 | 80.4 | 52.9 | 84.0 | 39.3 | 55.8 | 59.4 | 31 |
| TAM 111 | TAMU | 59.5 | 72.4 | 49.5 | 80.3 | 44.5 | 58.3 | 52.0 | 30 |
| TAM 112 | TAMU | 59.5 | 79.1 | 47.4 | 79.9 | 37.9 | 56.0 | 56.5 | 30 |
| TX01A5936 (white) | TAMU | 58.7 | 66.0 | 42.4 | 78.7 | 36.7 | 51.0 | 77.3 | 29 |
| Keota | Westbred | 58.2 | 66.5 | 43.4 | 69.6 | 45.3 | 51.5 | 72.6 | 32 |
| TAM 304 | TAMU | 58.0 | 67.7 | 46.8 | 83.1 | 32.2 | 62.6 | 55.3 | 27 |
| Blend (TAM 111, TAM 112, Jagalene) | Blend | 57.8 | 70.0 | 44.5 | 80.1 | 45.1 | 46.9 | 60.0 | 29 |
| Duster | OSU | 57.5 | 67.7 | 41.7 | 74.0 | 45.2 | 55.1 | 61.3 | 29 |
| Endurance | OSU | 56.5 | 68.7 | 53.1 | 68.5 | 38.8 | 52.0 | 58.1 | 29 |
| TAM 110 | TAMU | 56.4 | 74.6 | 46.3 | 76.7 | 40.2 | 47.9 | 52.7 | 31 |
| TAM 203 | TAMU | 56.2 | 69.3 | 44.1 | 62.3 | 32.7 | 65.9 | 62.8 | 29 |
| Guymon (white) | OSU | 56.1 | 63.3 | 43.4 | 76.8 | 39.4 | 60.4 | 53.5 | 28 |
| Neosho | AgriPro | 56.1 | 63.4 | 35.0 | 71.1 | 40.1 | 53.6 | 73.5 | 29 |
| Bullet | OSU | 56.0 | 66.3 | 46.5 | 73.6 | 37.6 | 53.3 | 58.8 | 31 |
| RonL (white) | KSU | 55.7 | 63.7 | 34.5 | 78.4 | 47.8 | 50.8 | 59.0 | 25 |
| Dumas | AgriPro | 55.6 | 73.6 | 40.6 | 79.2 | 37.8 | 55.7 | 46.8 | 28 |
| Santa Fe | Westbred | 55.3 | 70.8 | 49.7 | 72.5 | 33.3 | 53.1 | 52.3 | 28 |
| T81 | Trio | 54.9 | 65.1 | 45.8 | 72.7 | 37.7 | 54.1 | 54.3 | 30 |
| Jagger | KSU | 53.5 | 74.5 | 46.5 | 67.5 | 33.1 | 48.5 | 50.9 | 31 |
| Kojack | AgriPro | 53.4 | 60.9 | 42.5 | 75.8 | 45.2 | 45.4 | 50.7 | 27 |
| TAM 105 | TAMU | 53.2 | 62.0 | 44.2 | 63.0 | 32.2 | 50.9 | 66.8 | 28 |
| Deliver | OSU | 52.6 | 63.1 | 45.1 | 78.9 | 26.2 | 60.4 | 41.7 | 30 |
| Jagalene | AgriPro | 52.5 | 75.0 | 39.0 | 68.4 | 34.0 | 42.7 | 56.1 | 28 |
| TX01V6008 | TAMU | 52.3 | 68.2 | 40.5 | 65.0 | 30.2 | 55.9 | 53.8 | 29 |
| AP 04T8211* | AgriPro | 51.5 | 68.7 | 49.7 | 78.2 | 23.0 | 50.3 | 39.0 | 29 |
| Shocker | Westbred | 51.1 | 68.7 | 49.3 | 68.5 | 27.3 | 43.5 | 49.3 | 30 |
| Overley | KSU | 51.0 | 65.1 | 47.0 | 66.8 | 24.5 | 56.3 | 46.3 | 31 |
| Coronado | AgriPro | 50.9 | 65.4 | 38.3 | 71.5 | 31.1 | 51.6 | 47.4 | 27 |
| TAM W-101 | TAMU | 49.9 | 53.4 | 39.5 | 61.1 | 41.5 | 44.4 | 59.6 | 31 |
| Doans | AgriPro | 49.1 | 62.8 | 35.1 | 76.6 | 27.0 | 49.9 | 43.2 | 31 |
| TX03M1096 | TAMU | 48.6 | 61.4 | 44.8 | 62.4 | 27.6 | 47.3 | 48.4 | 31 |
| Cutter | AgriPro | 48.2 | 62.1 | 33.5 | 70.3 | 31.8 | 53.1 | 38.2 | 29 |
| Fannin | AgriPro | 47.9 | 66.1 | 42.8 | 67.0 | 29.0 | 42.7 | 39.9 | 30 |
| Longhorn | AgriPro | 47.2 | 58.0 | 32.3 | 66.4 | 25.4 | 43.5 | 57.4 | 30 |
| Sturdy 2K | TAMU | 42.1 | 58.3 | 35.9 | 65.6 | 24.2 | 37.4 | 31.0 | 30 |
| AP 04TA9029* | AgriPro | 34.3 | 57.0 | 29.2 | 51.5 | 12.9 | 31.5 | 23.3 | 31 |
| Mean | | 54.1 | 67.0 | 43.8 | 72.1 | 35.1 | 52.0 | 55.4 | |
| CV (%) | | | 7.11 | 8.3 | 8.5 | 13.0 | 12.6 | 20.7 | |
| LSD (5%) | | | 7.8 | 5.9 | 10.0 | 7.4 | 10.6 | 18.7 | |

* Bold numbers indicate top 25% yield by location.

¹ Texas Cooperative Extension, ² Texas Agricultural Experiment Station, ³ New Mexico Agricultural Experiment Station

⁴ Claude location was sprayed with a fungicide to control rust.