

2009 Wheat Variety Trials Conducted in the Texas High Plains *Brent Bean*¹

2008-2009 Wheat Crop in Review

This year was a disappointment for most wheat farmers in the Texas Panhandle. Drought in the fall and through most of the winter and early spring resulted in many dryland fields being plowed up. Conditions were somewhat better north of Amarillo, but good dryland fields were still hard to find. Even irrigated wheat suffered due to a lack of fall and winter precipitation. Our old nemesis Russian wheat aphid also played a major role in reducing wheat yield potential throughout the area. This was probably the worst year for Russian wheat aphid in the last 20 years. The final weather issue in many fields was damage caused by a late freeze in April. Diseases in general were not a major problem in 2009, but wheat streak mosaic and triticum mosaic infection were significant in a few fields.

Lack of adequate fertilization also tended to hurt wheat yield potential, especially in irrigated fields. Nitrogen deficiency symptoms were observed in the fall and early winter in many fields. In many cases compost had been applied prior to planting. However, the nitrogen released from the compost was not adequate to prevent nitrogen deficiency in the wheat crop. It was also observed, especially in wheat no-tilled behind corn, that fields were deficient in phosphorus. Those fields where phosphorus was applied at planting had a much better stand of wheat than in similar fields where no phosphorus was applied. Care should be taken when planting late and in no-till conditions that adequate phosphorus is present.

Variety Trial Results and Recommendations

Irrigated Trials

Variety trials were planted and harvested at five locations around the Texas Panhandle and at the New Mexico State University station near Clovis (Table 1). Four varieties clearly stood out in this year's trials. *Hatcher* (CSU), *Bill Brown* (CSU), *TAM 111* (TAMU), and *Dumas* (AgriPro) averaged over 58 bu/acre across the five locations, with *Hatcher* averaging 69.8 bu/acre. Both *Hatcher* and *Bill Brown* have Russian wheat aphid resistance, which likely contributed to these two varieties topping the trial. This is the first year *Bill Brown* has been in our trials. Not only did these four varieties have the highest yield when averaged across locations, but were in the top 25% in yield in four of the five sites. Other varieties that averaged in the top 25% were *Billings* (OSU), *T81* (Trio), *Duster* (OSU), *TAM 203* (TAMU), *Endurance* (OSU), and the experimental *TX02A252*(TAMU), and *OK04525*(OSU). *Billings* was released this year by OSU, and a decision to release the Texas AgriLife Research experimental *TX02A252* soon. This variety also yielded well in last year's trial.

Dryland Trials

Of the nine trials planted, five were harvested. The others were abandoned due to poor stand establishment, drought, and high variability within a trial site. In the five trials reported, the top five varieties were easily identified as *Hatcher*, *TAM 112*, *TAM 111*, *TX02A0252*, and *Bill Brown*. *Hatcher*

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

has proven itself in previous years as a good dryland variety. It performed exceptionally well this year averaging almost five bushels more than its nearest competitor, likely because of its Russian wheat aphid resistance. *Hatcher* and *Bill Brown* were the only two varieties in our trials with Russian wheat aphid resistance. Similar to the irrigated trials, *Endurance* and *Dumas* also yielded in the top 25% at most of the locations.

Recommendations

Varieties recommended here are those that have consistently performed well over at least a three year period. Those varieties that perform well under full irrigation also tend to be the same varieties that yield well under dryland. In our environment, even those varieties grown under full irrigation are going to be subject to heat stress and likely some periods of drought. Over the last four years, *Hatcher* and *TAM 111* have consistently been top varieties in all of our trials. These varieties should be considered for all environments in the Texas Panhandle. *TAM 112* is a very good dryland or limited irrigated variety. Under full irrigation some lodging can occur, and thus it does not make the list for full irrigation. *Endurance* and *Duster* are very seldom the top variety in any given trial, yet these Oklahoma State varieties consistently are in the top 25% of most trials. *Endurance* is especially a good choice as a dual-purpose wheat for grazing and grain production. This was not a good year for *Fuller*. However, its performance in previous years warrants it remaining in the recommended list for dryland production. Likewise, *TAM 304* did not yield as well in 2009 as in previous years, but its history warrants it being considered under full or limited irrigation. Planting *Dumas* has long been recommended under full irrigation and is still a consistent performer under those conditions.

Variety Recommendations		
Full Irrigation	Limited Irrigation	Dryland
TAM 111	TAM 111	TAM 111
Hatcher	TAM 112	TAM 112
TAM 304	Hatcher	Hatcher
Dumas	TAM 304	Endurance
Endurance	Endurance	Fuller
Duster	Duster	

Other Comments

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

Acknowledgments

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Table 1. Irrigated Wheat Variety Trials Harvested in 2009 in the Texas and New Mexico High Plains.

Brent Bean^{1,2}, Jackie Rudd², Ravindra Devkota², Bob Villarreal², Rex Kirksey³

Variety	Company	AVG	Bushland	Etter	Dalhart	Perryton	Clovis
		bu/Acre					
Hatcher	CSU	69.8	70.6	41.2	79.4	78.0	79.9
Bill Brown	CSU	62.7	62.0	38.1	72.9	60.2	80.2
TAM 111	TAMU	59.0	61.9	37.8	52.5	56.1	86.5
Dumas	AgriPro	58.4	46.7	32.6	54.3	66.0	92.3
OK03522 (Billings)	OSU	55.5	56.2	36.7	36.7	57.0	90.8
T81	Trio	54.6	59.6	27.1	45.5	53.2	87.4
Duster	OSU	54.3	56.2	31.3	39.5	60.9	83.6
TAM 203	TAMU	54.1	48.3	26.2	61.2	54.9	79.7
Endurance	OSU	53.5	52.3	31.1	46.6	58.6	79.2
TX02A0252	TAMU	53.5	64.6	32.5	36.2	57.8	76.4
OK04525	OSU	53.5	55.1	32.5	34.1	58.2	87.4
T136	Trio	53.4	52.9	30.0	50.1	58.8	75.4
TX01V5134RC-3	TAMU	52.6	49.4	29.0	50.3	56.0	78.3
OK05526	OSU	52.5	51.7	31.1	39.1	64.6	76.1
TAM 112	TAMU	52.4	44.1	32.7	47.3	51.2	86.8
Jagalene	AgriPro	51.3	48.0	26.4	37.8	53.2	91.0
Art	AgriPro	51.1	42.9	26.7	45.4	64.7	75.7
TAM 304	TAMU	50.6	42.6	31.1	43.4	51.4	84.4
Jagger	AgriPro	50.2	48.3	29.9	50.6	50.2	72.2
Santa Fe	Westbred	49.5	42.8	24.0	40.9	61.1	78.7
Armour	Westbred	49.2	48.6	26.7	32.4	60.9	77.5
TX04V075080	TAMU	49.0	51.6	25.6	40.8	53.9	73.1
AP06T3832	AgriPro	48.6	40.7	26.2	43.6	53.7	78.7
AP06TW4822 (W)	AgriPro	48.1	42.6	26.6	37.7	56.7	76.9
Deliver(BL)	OSU	46.8	44.8	26.3	49.6	49.8	63.7
Jackpot	AgriPro	45.6	47.3	26.4	37.3	48.4	68.5
Fuller	KSU	45.3	42.5	28.3	29.6	59.6	66.6
TAM 401 (BL)	TAMU	45.2	45.5	24.4	39.7	51.5	64.9
Bullet	OSU	44.9	46.3	24.8	33.8	45.6	73.7
AP06T3519	AgriPro	44.8	46.1	25.3	27.7	54.2	71.0
TAM W-101	TAMU	44.4	39.6	25.1	27.7	53.1	76.5
Overley	KSU	44.3	43.0	25.6	27.1	44.7	81.3
AP06TA4520 (BL)	AgriPro	43.7	41.1	24.5	24.8	56.3	71.9
Fannin	AgriPro	43.2	38.5	23.6	34.3	50.7	68.9
Doans	AgriPro	42.8	42.4	26.9	28.0	56.2	60.7
Shocker	Westbred	39.5	32.5	22.7	20.8	54.5	67.2
TX03A0148 (BL)	TAMU	33.7	45.5	22.4	11.7	37.8	51.0
Mean		50.0	48.5	28.6	40.8	55.7	76.6
CV (%)			10.2	7.5	20.4	10.80	8.4
LSD (5%)			8.21	3.57	14.0	9.80	10.6

¹ Texas AgriLife Extension, ² Texas AgriLife Research, ³ New Mexico State, Clovis

⁴ Bold numbers indicate top 25% yield by location.

BL = beardless, W = white variety

Table 2. Dryland Wheat Variety Trials Harvested in 2009 in the Texas Panhandle.

Brent Bean^{1,2}, Jackie Rudd², Ravindra Devkota², Bob Villarreal²

Variety	Company	AVG	Bushland	Etter	Claude	Sherman	Perryton
		bu/Acre					
Hatcher	CSU	39.1	19.9	23.3	54.8	28.3	69.3
TAM 112	TAMU	34.4	20.2	20.9	51.5	21.8	57.4
TAM 111	TAMU	33.8	19.1	19.0	52.0	17.6	61.5
TX02A0252	TAMU	33.8	18.2	17.8	54.9	20.1	57.9
Bill Brown	CSU	33.5	20.9	19.1	47.8	20.3	59.4
Endurance	OSU	31.9	19.2	13.5	50.5	15.0	61.3
Dumas	AgriPro	31.9	15.6	19.0	50.5	19.1	55.2
TX01V5134RC-3	TAMU	31.6	18.6	15.9	44.3	22.3	57.2
Duster	OSU	31.2	21.4	17.3	46.7	16.4	54.3
OK04525 (Billings)	OSU	31.2	18.2	20.8	44.2	16.6	56.1
AP06T3519	AgriPro	30.7	15.3	15.2	50.8	15.5	56.7
OK05526	OSU	30.6	17.2	18.2	46.1	17.3	54.1
Jagalene	AgriPro	30.3	19.1	15.5	47.8	13.1	56.3
T81	Trio	30.2	17.5	14.2	45.7	18.6	55.2
Overley	KSU	30.0	17.3	18.2	43.6	15.7	55.2
Armour	Westbred	29.9	15.5	17.2	47.1	12.0	57.6
Santa Fe	Westbred	29.8	15.6	15.9	46.5	18.5	52.4
Art	AgriPro	29.6	11.0	15.0	49.0	16.8	56.4
Jagger	KSU	29.3	17.6	14.0	46.0	15.3	53.4
OK03522	OSU	29.2	16.3	17.3	44.9	14.8	52.5
TAM 304	TAMU	28.6	15.1	19.5	40.6	17.4	50.2
AP06T3832	AgriPro	28.3	17.2	12.3	46.3	12.5	53.4
Doans	AgriPro	28.3	13.2	16.9	43.1	12.1	56.4
Fannin	AgriPro	28.0	14.5	15.4	42.4	16.1	51.6
AP06TW4822 (W)	AgriPro	27.7	16.7	12.9	45.7	12.7	50.6
Jackpot	AgriPro	27.4	14.8	17.4	38.6	17.8	48.4
TAM W-101	TAMU	27.2	16.2	10.9	44.6	16.3	48.2
Bullet	OSU	27.2	14.4	12.2	40.8	18.9	49.7
Deliver (BL)	AgriPro	27.2	15.1	13.3	45.3	12.2	50.0
AP06TA4520 (BL)	AgriPro	27.1	16.0	14.4	41.5	16.3	47.3
Fuller	OSU	27.1	15.8	11.8	43.2	13.8	50.8
TX04V075080	TAMU	26.8	14.0	12.1	46.5	16.7	44.7
TAM 401 (BL)	TAMU	26.5	12.4	14.4	40.7	15.0	50.1
TAM 203	TAMU	26.3	14.9	13.6	44.0	13.3	45.9
Shocker	Westbred	24.2	12.3	13.2	39.9	10.5	45.0
TX03A0148 (BL)	TAMU	23.4	11.2	13.3	36.5	11.5	44.5
T136	Trio	23.1	15.3	15.8	43.5	17.7	51.5
Mean		29.4	16.3	15.8	45.6	16.4	53.4
CV (%)			9.8	18.3	6.0	16.7	7.1
LSD (5%)			2.6	4.9	4.5	4.5	6.2

¹ Texas AgriLife Extension, ² Texas AgriLife Research, ³ New Mexico State, Clovis

⁴ Bold numbers indicate top 25% yield by location.

BL = beardless, W = white variety