



Irrigated Wheat Grain Yields: 2004-2006 Three-Year Results, Gaines Co., Texas

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Irrigated grain trials for wheat have been conducted for three years in Gaines Co. Several producers in Gaines Co. have dropped one year of cotton from the 3-year rotation with peanuts and added wheat instead. This reduces the number of acres of summer irrigation. But as one producer in Gaines has noted, "It is not enough to break even on the wheat, and just reduce summer irrigation and improve our rotation. I need to make some money on the wheat crop."

Trials were located near Seagraves in 2004 (drilled 11/13; avg. yield, 37.2 bu/A; avg. test wt. 50 lbs./bu) and west of Seminole in 2005 (drilled 12/13; avg. yield, 50.7 bu/A; avg. test wt. 58 lbs./bu) & 2006 (drilled 11/23; avg. yield, 50.9 bu/A; avg. test wt. 59 lbs./bu). They were replicated 4X and harvested with a small combine.

Wheat varieties that performed well (51-54 bu/A; avg. = 46.2 bu/A) in the three-year period included:

Dumas	TAM 111	Jagalene	Jagger	Cutter	TAM 112
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These yield results are consistent with other Texas A&M trials in the northern South Plains and Panhandle. Dumas, Jagalene, and TAM 111 are currently suggested 'top picks' for any level of irrigation in the Texas High Plains. All of these varieties are medium maturity but have a mixed bag of susceptibility or resistance to leaf rust and stripe rust. Recent varieties that have also tested well based on two-year results include AgriPro AP02T4342, Endurance, and Fannin. Jagger has been a 'top pick' in the past but due to its earliness and susceptibility to late freeze injury has some risk and is generally being replaced.

Of tested varieties Cutter, TAM 111, and TAM 112 have been noted for their performance in strictly dryland production in other areas of West Texas.

Varieties that did not do well in the trial over the three-year period (<41 bu./A) included the beardless wheats, TAM lines (other than TAMs 110, 111, and 112), and NK 812. We typically see a 10-20% grain yield drag in most years with beardless wheat vs. modern grain varieties, and we do not recommend them if you are fairly sure you are going to grain rather than grazing out. TAM 110 remains a recommended wheat in general for dryland and limited irrigation, and it is greenbug resistant. This early maturity wheat, however, is showing signs of becoming highly susceptible to leaf rust. Old TAM standbys 200 and 202 are not widely available anymore and they are no longer tested.

Seeding rate for irrigated wheat was tested using Dumas for 30, 60, 90, and 120 lbs./A. No trend was observed in grain yield. Extension suggests 60 lbs./A is a good base seeding rate for irrigated grain, but rates should increase for late plantings, and if fall grazing is involved consider 120 lbs./A.

Good seed quality—test weight of ≥ 58 lbs./bu and germ $\geq 85\%$ —is a key for Gaines Co. wheat production as many acres are planted late in cooler conditions after cotton or peanut harvest.

For further info. on the Gaines Co. wheat trials or variety disease susceptibility, including mosaics and rusts, contact Calvin Trostle. Thanks to Larry Day, Seminole, for hosting the 2005-2006 trial.

Gaines Co. Irrigated Wheat Grain Trials, 2004-2006

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Year 1--plant 11/13/03, harvest 6/9/04; Year 2--plant 12/13/04, harvest 6/20/05; Year 3--plant 11/23/05, harvest 6/5/06.

Standard seeding rate, 90 lbs./A

Variety§ (Beardless in bold)	Seed TestWt (lbs./bu)	Seeds per lb.	Feb. 3 2006		Plant Height (in.)	Harvest Test Wt. (lbs./bu)	Yield (10%H ₂ O) (bu/A)	05-06 2-Year Average			04-06 3-Year Average		
			Stand Rating†	Vigor Rating‡				Height (in.)	Test Wt (lbs./bu)	Yield (bu/A)	Height (in.)	Test Wt (lbs./bu)	Yield (bu/A)
AgriPro AP02T4342	60	12,100	2.3	2.6	28	60	49.2	28	61	59.0			
AP502 CL	54	17,000	2.0	2.1	26	57	54.5	25	55	46.8	28	55	46.4
Blend--TAMs 110 & 111, Jagalene	60	14,300	2.1	2.1	28	59	55.8						
Bullet	62	13,400	1.9	2.8	28	59	55.9						
Coronado	65	13,000	2.0	2.1	24	60	47.8	24	59	47.2	28	57	46.3
Cutter	60	15,000	2.1	2.3	29	59	55.9	28	60	57.0	31	56	50.8
Deliver	62	12,400	2.3	2.3	25	59	49.8	27	59	51.3			
Dumas	63	14,200	2.3	2.4	26	61	51.9	25	60	53.9	28	58	51.3
Duster	60	19,400	2.3	2.3	27	60	58.1						
Eldorado	62	12,700	2.3	2.1	29	59	44.8	31	59	48.5			
Endurance	54	16,700	1.8	2.4	27	59	56.7	27	58	56.2			
Fannin	60	14,700	2.4	2.9	27	62	48.3	28	61	54.5			
Guymon	63	14,100	2.3	2.4	26	62	50.1						
Hatcher	62	11,100	2.4	2.3	23	59	54.9						
Jagelene	61	14,100	2.1	2.5	26	60	53.5	26	61	58.5	29	57	52.5
Jagger	59	15,400	2.1	3.1	28	58	51.7	27	59	57.1	29	55	53.1
Keota	62	8,900	1.9	2.4	28	59	56.6						
Longhorn	62	17,700	2.5	2.8	28	58	45.2	29	58	45.3	31	54	38.9
Neosho	58	15,400	2.8	2.5	26	59	53.1						
NK 812	58	16,800	2.5	3.1	26	59	46.3	25	58	43.5	27	55	39.5
Ogallala	59	19,700	2.3	2.8	24	61	46.8	24	60	46.0	27	57	43.7
Overley	59	11,600	2.3	2.6	26	59	52.6	26	60	58.1	30	57	52.6
Santa Fe	60	14,000	2.5	2.5	25	59	46.4						
Sturdy 2K	58	14,200	2.0	2.4	25	58	46.3	27	59	52.9	30	55	47.1
T-81	61	15,000	2.3	2.4	27	59	45.9	27	59	52.2			
TAM 105	58	14,300	1.5	2.0	27	57	48.9	27	57	46.9	29	53	40.8
TAM 109	62	18,400	2.5	2.5	25	58	46.4	26	58	46.8	28	56	40.0
TAM 110	59	12,700	2.0	2.3	26	58	51.9	25	57	47.2	28	55	44.7
TAM 111	61	13,600	2.6	2.4	28	60	53.0	29	60	59.8	31	56	53.7
TAM 112	61	12,800	2.1	2.6	27	60	59.2	27	58	53.2	29	55	48.1
TAM 303	59	11,300	2.0	2.4	26	58	51.8						
TAM W 101	58	13,000	1.9	2.4	25	58	42.4	25	59	44.0	28	55	40.7
VNS Beardless	58	14,700	2.4	2.4	28	59	48.7	31	59	45.5	32	55	43.7
Dumas, 30 lbs./A	62	14,800	1.3	2.0	25	60	53.2						
Dumas 60 lbs./A	XXX	XXX	2.0	2.3	25	61	50.9						
Dumas 90 lbs./A	XXX	XXX	2.5	2.3	25	61	51.9						
Dumas 120 lbs./A	XXX	XXX	2.5	2.3	26	60	52.7						
Average	60	14,600	2.2	2.4	26	59	50.9	27	59	51.3	29	56	46.3
			Coefficient of Variation (CV)		7.5%	2.5%	10.8%						
			Fisher's Protected LSD (0.10)		1.6	1.2	4.8						

§Eight unreported experimental lines (Texas A&M, Kansas St., Okla. St., AgriPro) are figured into 2006 averages.

†Stand rating, 3 Feb 2006, 0 = none, 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent

‡Vigor/Biomass rating, 3 Feb 2006, 0 = none, 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent