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2004-2005 Wheat Crop in Review

The year began with excellent moisture throughout most of the Texas High Plains region. As a result, the wheat crop got off to a great start with excellent early season forage produced for graze-out or dual purpose fields. Adequate moisture was received in most areas to sustain the wheat crop through the winter months. Some counties experienced enough dry weather in the spring to dampen yield prospects, but overall moisture conditions were good through most of the growing season. In the fall, some wheat fields were infected with wheat streak mosaic and an unusually high incidence of High Plains disease. For the most part, these diseases were not significant enough throughout the area to reduce yield to any great extent. A few growers did have to spray for greenbug and Russian wheat aphid during the spring. Infestations of Russian wheat aphid were more common than we have seen in recent years.

The most significant event affecting the 2005 wheat crop was the infection of fields with stripe rust in the fall, which is very unusual for our area. However, we did not worry too much about the rust, because we would have had to have an exceptionally wet, cool spring for the rust to significantly affect yield. Stripe rust is relatively new to the Panhandle, showing up in a few fields three years ago. It has now become the dominant rust in our area. Stripe rust looks very similar to leaf rust, except the rust pustules tend to line up between the leaf veins, giving it a striped appearance. Stripe rust will thrive in 46-58 degrees when moisture is present on the leaves. The moisture can come from heavy morning dews, rainfall or sprinkler irrigation. In contrast, leaf rust prefers a little warmer conditions and will thrive in 70 degree temperatures. Unfortunately, we did experience unusually cool, damp weather for about three weeks just prior to and during wheat heading. These conditions, along with the abundance of stripe rust inoculum, caused an outbreak of stripe rust throughout the region that we had never seen before. Old timers tell me they have seen similar outbreaks of leaf rust years back, but stripe rust is much more aggressive than leaf rust.

As a result of the stripe rust infection, many producers elected to spray fungicide to protect their yield potential. In most cases, this likely proved to be a wise investment if the fungicide was applied soon enough. **When comparing stripe rust tolerant varieties TAM 111 and Jagger to the susceptible variety TAM 110, yield was reduced 37 percent in dryland trials and 23 percent in irrigated trials by stripe rust.** In those trials with the highest infection level, yield appeared to be reduced about 20 bushels under both dryland and irrigated conditions.

Variety Trial Results and Recommendations

Clearly those varieties with stripe rust tolerance were the stars in 2005. The most tolerant varieties were TAM 111, AgriPro 4342, Overley, and Fannin. These were followed by Cutter, Jagger, 2145, Deliver, Jagalene, HG-9 and T 81, with moderate tolerance to moderately susceptible tolerance.

Irrigated Trials

In the irrigated trials, TAM 111 for the second year in a row was clearly the best variety (Table 1). TAM 111 had the highest yield average across locations by more than 8 bushels, while yielding in the top 20 percent in five of the six locations. TAM 111 is one of the newest varieties to be released by Texas A&M and is being marketed by AgriPro. It is a relatively tall variety, but has good straw strength. Seed should be available this fall, but growers would be advised to book seed early. Other varieties that yielded in the top 20 percent of at least three of the six locations were T 81, Texas A&M experimental TX01D3232, AgriPro 4342 (experimental), Overley, Jagger and Jagalene. T 81 is a variety from Trio Seed in Colorado with TAM 107 in its background. This is the first year for us to look at T 81. The two experimentals will not be available for at least a couple of years. Jagger and Jagalene are varieties that have performed well in our trials for a number of years. Overley was released by Kansas State in 2003 and has both Jagger and TAM 107 in its pedigree. In 2004, our irrigated Overley yields were only average.

Variety Recommendations		
Full Irrigation	Limited Irrigation	Dryland
Dumas	Dumas	Cutter
TAM 111	TAM 111	TAM 111
Jagalene	TAM 110	TAM 110
	TAM 112	TAM 112
	Jagalene	

Dryland Trials

Similar to the irrigated trial, those varieties with stripe rust tolerance tended to yield the best (Table 2). Varieties that yielded in the top 20 percent in at least three of the six locations were AgriPro 4342, Overley, TAM 111, T 81, Cutter, Fannin and the A&M experimental TX00V1117. Fannin is an AgriPro release with reported excellent fall forage production. This is only our second year of widespread testing of Fannin. In 2004, yield of Fannin was only average. Overley has been in our trials for the last two years and was in the top 20 percent of dryland varieties in both years.

Other Comments

In the list of varieties recommended in the text box is TAM 112. This variety should replace TAM 110 in a couple of years. It is similar to TAM 110, in that it is greenbug tolerant, but has a higher yield potential and better milling and baking qualities.

Although it may be wise to choose a variety with some stripe rust tolerance, it is unlikely we will experience again anytime soon the widespread infection levels that we saw in 2005. However, I do believe stripe rust is here to stay and we will likely be able to find it in the Panhandle at some level every year. For it to be a significant problem, we will again have to have the weather conditions (prolonged cool, wet weather in the spring) to cause it to rapidly spread.

Keep in mind that all varieties have their positive and negative characteristics. For a brief discussion of each variety in this year's trials, go to <http://amarillo.tamu.edu/programs/agronomy/publications/Wheat/index.htm>. You can view previous years' wheat variety test results also at this site.

Table 1. 2005 Irrigated Wheat Variety Trials in the Texas and New Mexico High Plains.

Variety	High Plains Irrigated Locations								
	Rank/40	Average	Dalhart	Perryton	Dimmitt	Bushland	Etter	Clovis	Avg TW
TAM 111	1	86.2	120	95	82	80	77	64	61.9
T 81	2	78.0	110	84	58	69	74	73	61.5
TX01D3232	3	77.7	103	81	65	41	81	96	59.8
Agri-Pro 4342	4	76.7	107	85	59	52	84	73	62.9
Overlay	5	74.3	111	75	63	47	74	75	61.1
Jagalene	6	74.2	106	86	64	54	62	73	61.4
Jagger	7	73.0	107	85	57	60	78	52	59.7
TAM 105	8	72.4	105	69	62	44	72	83	59.9
TX00V1117	9	72.3	110	80	66	43	71	64	61.2
Cutter	10	72.3	113	75	58	57	77	53	61.9
TX00D1390	11	71.4	97	86	70	44	72	61	60.3
Endurance	12	70.3	108	71	55	43	67	78	58.8
Dumas	13	70.2	117	76	55	34	63	77	59.9
Ogallala	14	69.7	103	81	57	41	68	68	62.4
TAM 303	15	68.9	103	78	52	43	75	64	58.9
Deliver	16	68.6	105	75	57	54	60	61	61.7
OK 101	17	67.8	97	67	57	39	66	81	59.5
Cisco	18	66.8	109	66	54	38	65	69	58.2
Thunderbolt	19	66.6	105	67	58	34	62	74	61.6
2145	20	66.6	97	72	60	33	59	80	60.0
TAM 110 CL	21	66.1	95	64	59	35	63	81	57.9
OK 102	22	66.0	100	65	57	33	57	84	59.3
Platte	23	65.6	93	68	42	43*	69*	80	na
TAM 110	24	65.5	105	61	56	36	67	68	57.6
TAM 107	25	63.8	103	57	49	30	68	76	57.8
2174	26	63.6	104	63	49	30	55	80	59.6
Longhorn	27	62.5	88	61	60	26	69	70	60.8
Coronado	28	62.4	102	68	44	27	57	78	58.3
AP502 CL	29	61.4	100	61*	57	31	50	69	56.9
Fannin	30	60.6	93	62	61	55	49	44	61.5
Stanton	31	60.2	103	62	49	26	54	66	59.9
Trego	32	59.0	96	63	62	23	40	70	59.4
TAM 202	33	58.5	97	59	48	24	63	60	58.8
TAM W 101	34	58.0	89	63	47	32	57	61	59.6
Abilene Ag Exp	35	57.9	98	59*	43	37	68	44	61.4
Scout 66	36	57.4	81	70	48	34	62	49	61.1
Sturdy 2K	37	57.0	104	42	58	32	48	60	59.8
TAM 112	38	56.7	96	64	58	28	53	41	59.2
Lockett	39	56.0	87	60	50	34	58	48	59.0
HG-9	40	55.4	87	58	44	36	60	47	61.5
Grand Mean		66.4	101.3	69.6	56.2	39.9	64.4	67.3	60.0
CV			6.0	7.2	12.4	8.2	12.7	15.5	
LSD (5%)			9.8	8.3	11.3	5.3	11.5	17.0	

Yield of varieties in the top 20% are in listed in **BOLD**

* Estimated value. Variety was not grown at this location

Dalhart: sprayed for stripe rust

Perryton: sprayed late for stripe rust

Dimmitt: Two light hails, sprayed for stripe rust

Bushland : hail damage, stripe rust

Clovis: sprayed with a foliar fungicide

Table 2. 2005 Dryland Wheat Variety Trials in the Texas and New Mexico High Plains.

Variety	High Plains Dryland Locations								
	Rank/40	Average	Hereford	Clovis	Etter	Perryton	Canadian	Claude	Avg TW
Agri-Pro 4342	1	52.7	40	58	47	54	69	48	61.1
Overley	2	51.3	39	61	50	46	69	42	60.7
Jagger	3	50.6	35	59	52	58	55	45	59.3
TAM 111	4	50.1	44	56	34	57	64	47	61.7
T 81	5	49.8	37	59	54	50	55	44	60.3
TX00V1117	6	48.6	37	64	59	50	43	39	61.3
Cutter	7	48.4	41	52	46	51	56	44	60.6
Fannin	8	46.9	39	52	34	50	60	46	61.1
Deliver	9	45.5	33	49	49	46	56	40	61.4
TX00D1390	10	44.9	33	53	46	51	49	37	60.4
Endurance	11	44.9	29	55	54	51	45	36	60.6
TX01D3232	12	44.6	29	58	49	46	45	40	57.9
Jagalene	13	44.1	36	45	36	49	57	41	62.3
Ogallala	14	43.0	37	51	37	43	51	39	61.2
Dumas	15	42.3	31	56	47	51	35	35	61.2
TAM 303	16	41.9	34	53	42	50	38	35	58.1
HG-9	17	41.6	31	46	42	44	44	43	61.3
Coronado	18	41.3	25	51	50	50	35	38	59.8
TAM 105	19	41.1	27	52	54	45	38	30	59.9
Abilene Ag Exp	20	41.0	29	47	37	44*	47	43	61.0
Scout 66	21	40.8	33	48	42	46	38	38	60.8
Thunderbolt	22	40.7	29	43	44	48	43	37	62.1
Sturdy 2K	23	40.2	36	48	32	49	42	33	59.0
2145	24	39.9	29	52	36	41	47	34	60.2
TAM 112	25	39.8	29	60	43	50	27	30	61.3
Stanton	26	38.9	32	49	40	46	35	31	60.8
Cisco	27	38.6	25	50	45	44	37	31	60.1
OK 101	28	38.6	26	51	46	45	35	28	60.4
AP502 CL	29	38.1	26	54	48	49*	25	27	58.0
Lockett	30	38.0	29	48	42	45	31	33	59.5
TAM 110	31	37.7	25	48	52	46	28	28	58.8
Longhorn	32	37.4	22	50	47	49	28	28	60.5
TAM 110 CL	33	37.3	22	49	49	45	30	28	59.0
TAM 107	34	37.0	19	54	54	39	30	26	58.6
2174	35	36.5	25	46	41	46	31	31	60.0
TAM 202	36	36.1	20	51	49	47	24	26	59.3
Platte	37	36.0	24	46	38*	49	28	31*	na
Trego	38	35.3	31	50	32	45	27	27	61.1
OK 102	39	34.0	22	47	36	45	30	25	61.0
TAM W 101	40	33.5	23	41	38	37	32	30	60.7
Grand Mean		41.8	30.4	51.5	44.4	47.6	41.4	35.4	60.3
CV			13.6	12.3	18.4	6.9	8.1	8.1	
LSD (5%)			6.7	10.3	8.3	5.4	5.4	4.0	

Yield of varieties in the top 20% are in listed in **BOLD**

* Estimated value. Variety was not grown at this location

Canadian: stripe rust, leaf rust, lodging due to high winds

Clovis: sprayed with a foliar fungicide