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WHEAT GRAIN VARIETY TESTS AT DEKALB AND MOUNT PLEASANT FOR 1991-92

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Background. Wheat grain yield variety performance trials were planted in northeast Texas at DeKalb and Mount Pleasant. These trials were planted to compare yield potential, local adaptation, and disease resistance of released varieties as well as experimental soft red winter wheat lines. Wheat tests were planted on prepared seedbeds. The soil near the Mount Pleasant site was a poorly drained clay on the Carl Snyder farm. The test site near DeKalb was a well drained sandy loam soil on the Chris Moser farm. The tests were planted in late October and harvested near June 1. Fertility application at Mount Pleasant was 28 lbs of N, and 72 lbs P_2O_5 /ac applied preplant. The wheat was top-dressed with 45 lbs/ac of nitrogen twice, on January 17 and March 10, 1992. At DeKalb, the test site had no preplant fertilizer. This test was top-dressed with 70 lbs N/ac on Feb. 20 and 58 lbs/ac on March 10, applied as urea.

Research Findings. The 1991-92 growing season was extremely wet and unusually warm during the fall and winter. These conditions favored buildup of several fungal diseases. A fairly dry period during April and early May resulted in an excellent growing and grain fill period, which resulted in exceptionally high grain yields. Grain yields were above average (Table 1). Varieties at Mount Pleasant which averaged over 100 bu/ac were McNair 1003, Saluda, Pioneer 2548, Coker 87-13WH, FFR-525W, Pioneer brand 2555, and experimentals TX86-106H, and TX85-264. These were followed closely by several other lines. The higher yielding varieties at DeKalb were Pioneer brand 2548, Pioneer brand 2551, Coker 87-13WH, Coker 9024, and Coker 9835. The two location means indicate there was a large number of high yielding varieties in 1992, as most yielded above 70 bu/ac. Cool weather in April and May resulted in a long grain filling period with little disease stress, and accounted for the high grain yields. Test weight, and plant height are a mean from both tests. Heading date, lodging, powdery mildew, and leaf rust ratings are from the Mount Pleasant experiment. Test weights were quite low for all varieties in 1992. Plant heights were taller than normal, which probably increased the lodging in the taller lines. These lines are normally about 10 inches shorter than plant heights recorded in 1992. Tallest varieties should be avoided to reduce lodging. Entries which had a powdery mildew or leaf rust rating of 3 or higher were susceptible to these diseases. Yield losses might occur during years when the diseases are severe.

Application. These data should be useful in determining which varieties have best potential for grain yield, and disease resistance in northeast Texas.

Table 1. Uniform soft wheat elite tests at Mt. Pleasant and DeKalb, Texas for 1991-92.

Variety	Yield		2 Location Mean	Test Wt. lbs/bu ^a	Heading Date*	Plant Height ^a	Lodging %*	Powdery Mildew*	Leaf Rust*
	Mt. Pleasant	DeKalb							
Pioneer 2548	103.3	74.9	89.1	55	4-10	48	0	0 ¹	1 ¹
Coker 87-13 WH	103.7	65.7	84.7	56	4-12	47	5	0	0
TX 82-11	96.0	68.7	82.3	54	4-15	45	0	0	0
TX 82-58	96.2	68.4	82.3	58	4-12	50	0	0	0
FFR-525W	102.8	61.6	82.2	56	4-11	50	0	0	0
Pioneer 2551	94.4	68.9	81.6	54	4-14	48	0	2	1
TX 86-106-H	101.4	51.2	81.5	54	4-10	47	10	0	0
TX 89D2148	99.0	62.8	80.9	56	4-10	47	5	0	0
Coker 9024	93.5	67.8	80.6	54	4-14	49	5	0	0
Coker 9835	96.0	65.2	80.6	54	4-02	45	5	0	0
TX 82-50-1	93.5	67.6	80.5	53	4-15	47	0	0	0
Coker 9543	99.1	61.9	80.3	56	4-15	35	0	0	0
TX 82-118	89.0	68.7	78.8	58	4-12	43	0	0	0
Pioneer 2555	100.0	56.8	78.4	54	4-03	47	0	0	2
Coker 747	89.5	66.3	77.9	57	4-12	39	20	0	0
Florida 302	99.6	55.8	77.7	54	4-03	47	0	0	2
Coker 68-15	92.8	60.4	76.6	58	4-08	38	0	4	0
Coker 9803	94.7	57.9	76.3	57	4-12	47	0	0	0
McNair 1003	108.6	43.2	75.9	55	4-03	49	5	0	4
Coker 762	86.9	63.5	75.2	53	4-07	38	5	0	0
Coker 833	91.5	57.5	74.5	54	4-16	39	0	0	0
TX 85-264	106.9	42.1	74.5	53	4-02	46	30	0	1
Saluda	104.6	42.9	73.7	56	4-10	47	85	0	7
TX 89D2153	96.8	49.5	73.1	54	4-14	47	0	0	0
TX 89D2152	90.4	53.7	72.0	54	4-18	39	0	0	0
TX 83-4-2	86.0	57.4	71.7	57	4-14	44	50	0	1
Bradford	89.8	51.0	70.4	56	4-08	47	90	0	0
TX 84-146-2	75.7	61.2	68.4	56	4-12	42	10	0	0
TX 83-70	75.1	58.5	66.8	54	4-11	37	0	0	1
Magnum	93.2	39.0	66.1	56	4-10	41	0	2	0
TX 89D9636	82.4	48.6	65.5	56	4-16	37	0	0	0
TX 89D6436	78.3	51.6	64.9	51	4-20	40	0	1	0
TX 83-50	86.4	40.1	63.2	56	4-04	41	0	0	0
TX 89D9623	78.0	41.2	59.6	57	4-11	44	10	0	0
Coker 9733	82.3	33.8	58.0	57	4-01	44	0	0	1
TX 88D3193	73.2	41.3	57.2	56	4-19	46	0	0	0
FFR EX 801	70.4	43.7	57.0	57	3-24	35	0	0	0
TX 89D9615	68.8	43.3	56.0	56	4-11	43	20	0	0
TX 89D9112	69.9	36.5	53.2	57	4-10	44	90	0	0
TX 89D9616	66.4	35.3	50.9	56	4-09	44	20	0	0
Mean	90.1	54.6	72.5	65	--	44	12	1	1
LSD (0.05)	13.3	15.9							
CV	9.1	17.9							

Planting date October 18, 1991. Harvest date June 5, 1992. Fertilizer application rate: Preplant 28 lb N and 72 lb P₂O₅/ac. Topdressed with two applications of 45 lb/ac actual N as ammonium nitrate on January 17 and March 10, 1992. Herbicide applied at two leaf stage of wheat: 1/3 oz/ac Glean.

¹Disease ratings were on a scale of 0-9; where 0=no disease and 9=dead plants.

^aMean of both locations.

*These data are from Mt. Pleasant.