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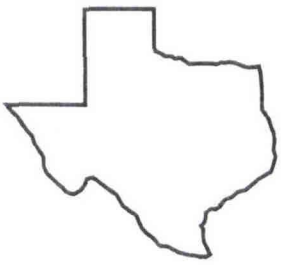

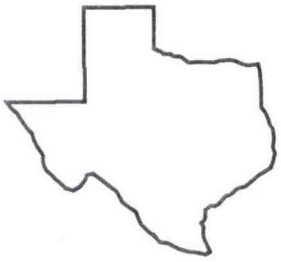

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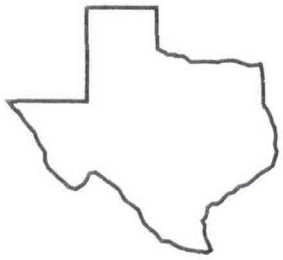

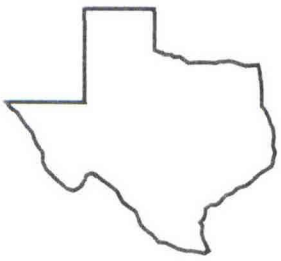

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POTENTIAL OF HARD RED WINTER WHEAT IN EAST TEXAS

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Background. Most of the wheat acreage in Texas is planted to hard red winter wheat. In East Texas soft red winter wheat (SRWW) is normally planted. Hard red winter wheat has the desirable flour characteristics for making bread, while soft wheat has the desirable flour characteristics for making biscuits, crackers, and cookies. If the incorrect flour is used to produce and bake a product, the loaf of bread will not rise correctly or the cookie may spread too much and the baked product will not reach its expected quality. Reasons for growing SRWW in East Texas are recommended varieties of SRWW are normally better adapted to the high rainfall climate and have more disease resistance. For example powdery mildew, leaf rust, and septoria leaf spotting diseases all require periods of high humidity to attack and damage the plant. Therefore, wheat breeders from the Eastern US have had to concentrate much of their breeding effort against these diseases, whereas wheat breeders located in dry areas of west Texas or Oklahoma, have bred wheat for winter hardiness, moisture stress, greenbug resistance, stem and leaf rust resistance, as well as hard wheat flour quality. Therefore, when unadapted varieties or in this case unadapted classes of wheat are brought into new areas, they normally do not yield as well as the adapted class of wheat. Soft wheat developed in the Southern US also has the potential to produce good forage when utilized as a grazing crop.

Research Findings. The 1992-93 growing season was wet and favored disease buildup of several wet weather diseases. Grain yields were about average for hard wheats in East Texas (Table 1). The higher yielding varieties were 'Tomahawk', 'Longhorn', 'Larned', 'Siouxland 89', and '2163'. Highest yielding experimentals were TX91V3308 and TXTX90D9277. Test weights were below average due to diseases. Leaf rust disease levels were quite high on many entries and reduced grain yields on susceptible lines. Powdery mildew was observed on several entries. Septoria glume blotch was quite severe and reduced yields and test weight on most of the entries since HRWW normally has little resistance or tolerance to this disease. No winterkill or lodging occurred. Plant height was below normal for all lines. This was likely due to the sandy soil which is very low in native fertility.

Application. These data show the potential of hard red winter wheat in northeast Texas. Wheat grain yields of soft wheat grown adjacent to the hard wheat, were very high in 1993 due to their better adaptation. Lower wheat yields than shown in Table 1 can be expected in normal years. Soft wheat grain yield data from other locations are presented elsewhere in this report.

Uniform hard wheat elite test Overton, Texas 1992-93

Variety	Yield bu/A	Test Weight lbs/bu	Heading Date	Height (in)	Lodging %	Powdery Mildew (0-9)[1]	Leaf Rust (0-9)[1]	Septoria Nodorum (0-9)[1]
TX91V3308	50.5	53	4-19	33	0	2	2	4
Tomahawk	50.5	54	4-20	34	0	1	2	4
TX90D9277	44.3	56	4-15	32	0	4	1	5
Longhorn	43.4	56	4-23	37	0	0	2	3
TX91V4928	42.6	55	4-15	31	3	0	7	5
TX91V5739	41.9	54	3-12	30	5	0	1	5
Larned	40.2	56	4-24	42	3	4	6	5
Siouxland 89	40.1	54	4-14	40	0	0	7	4
2163	38.5	54	4-16	31	0	0	3	3
TX86D1332	37.6	57	4-16	32	0	3	2	6
Karl	37.3	56	4-14	32	0	1	5	5
TX89A7137	36.7	53	4-13	30	0	0	8	5
TAM 202	36.0	50	4-14	31	0	0	6	5
Waco	35.1	55	4-9	29	0	0	3	5
TX90V7911	34.9	51	4-20	32	0	4	4	5
TX89A7141	33.2	51	4-14	30	3	0	8	5
TAM 107	32.9	50	4-13	29	0	0	8	6
TX91V4931	30.1	51	4-16	30	15	0	7	5
Chisholm	30.1	48	4-13	29	0	4	6	7
2158	29.7	52	4-15	30	0	4	5	6
2180	29.4	52	4-10	28	0	5	3	6
TX88A6480	27.1	45	4-11	28	3	5	8	6
TAM 105	26.1	48	4-25	32	10	3	8	5
TAM W-101	23.8	49	4-18	29	0	6	7	5
TAM 109	22.6	46	4-23	30	0	5	5	5
Collin	22.4	46	4-8	24	0	2	5	8
TX88A6533	22.3	48	4-24	28	0	5	7	5
TX90V8410	21.8	52	4-20	31	0	3	5	6
TAM 201	21.4	42	4-12	28	0	2	7	6
Thunderbird	21.1	52	4-15	32	0	4	7	6
Sturdy	18.6	46	4-15	29	5	4	5	7
TAM 200	16.5	50	4-15	27	10	1	6	6
TX87U7003	16.2	45	4-10	29	5	5	2	6
Mesa	15.3	50	4-13	29	3	5	8	7
Mean	31.5	51	-	31	2	2	5	5
LSD (0.05)	5.4							
CV	10.6							

Planting date October 12, 1992. Harvest date May 31, 1993. Fertilizer application rate: Preplant 25 lb N, 100 lb P_2O_5 and 100 lb of K_2O/A. Topdressed with 48 lb N, 18 lb P_2O_5 and 36 lb of K_2O/A on December 8, 1992. This test was topdressed again with 75 lb/A of N as ammonium nitrate on February 26, 1993. Herbicide applied postemergence at two leaf stage of wheat: 0.5lb/A Hoelon plus 0.3oz/A Glean. Second application on February 11 1993 0.25 lb/A hoelon plus 0.25 oz/A Glean.

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