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OSU Current Report

Cooperative Extension Service • Division of Agriculture • Oklahoma State University

Performance of Wheat Varieties in Oklahoma - 1989

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The 1988-89 wheat growing season will be remembered as one of extremes. Soil surfaces were very dry going into September, but a hurricane in mid September dumped 2-5 inches of rain in all but northwest Oklahoma and gave excellent soil moisture for wheat planting. Excellent stands were obtained in most places except where very heavy straw residues had not been worked into the soil due to the dry summer. October and November were dry in most areas especially in the northwest. Early planted wheat quickly used up what soil moisture was present and except for a band through the central part of the state forage production was limited by lack of water. Temperatures were extremely moderate in December, January and early Februrary only to be followed by an abrupt deep freeze in late Februrary. Because of the mild winter outstanding stocker cattle gains were made on wheat pasture where water did not limit wheat growth.

Greenbugs were a severe problem from early November until the deep freeze especially in western counties including the panhandle. Many fields were sprayed as many as three times for greenbugs. The deep freeze burned all wheat leaves in most fields in Oklahoma and killed some tillers on many plants of many varieties. Some varieties which are not adapted to Oklahoma were killed. See comments on the variety test information table and footnotes on yield tables about severest damage on the variety trials. The freeze was followed by a cool March resulting in jointing being slightly later than usual. April set records for no rainfall in many areas and record high temperatures especially in the last week. Therefore, heading occurred at normal times even though jointing was late. The dry April and early May also reduced yield potential. Rains came in late May and prevented a disaster, but did not quit for harvest. June was the wettest month in recorded history and harvest was delayed and very difficult due to wet fields. Also hail shattered the grain from many acres. In the end we realized once again how much a wheat plant can compensate for adverse conditions and still produce a reasonable yield.

This report contains the results of only eight hard red winter wheat variety trials. Eighteen were planted. Two were abandoned early, one because it was washed out by heavy rain and the other because of salt spots at the location. Three, Forgan, Arnett and Buffalo, received severe hail at maturity which shelled most of the grain. Four more, Purcell, Apache, Ringling and Cherokee, were not included because the data were so variable that the results were not reliable. Finally Retrop had no grain to harvest due to drought stress.

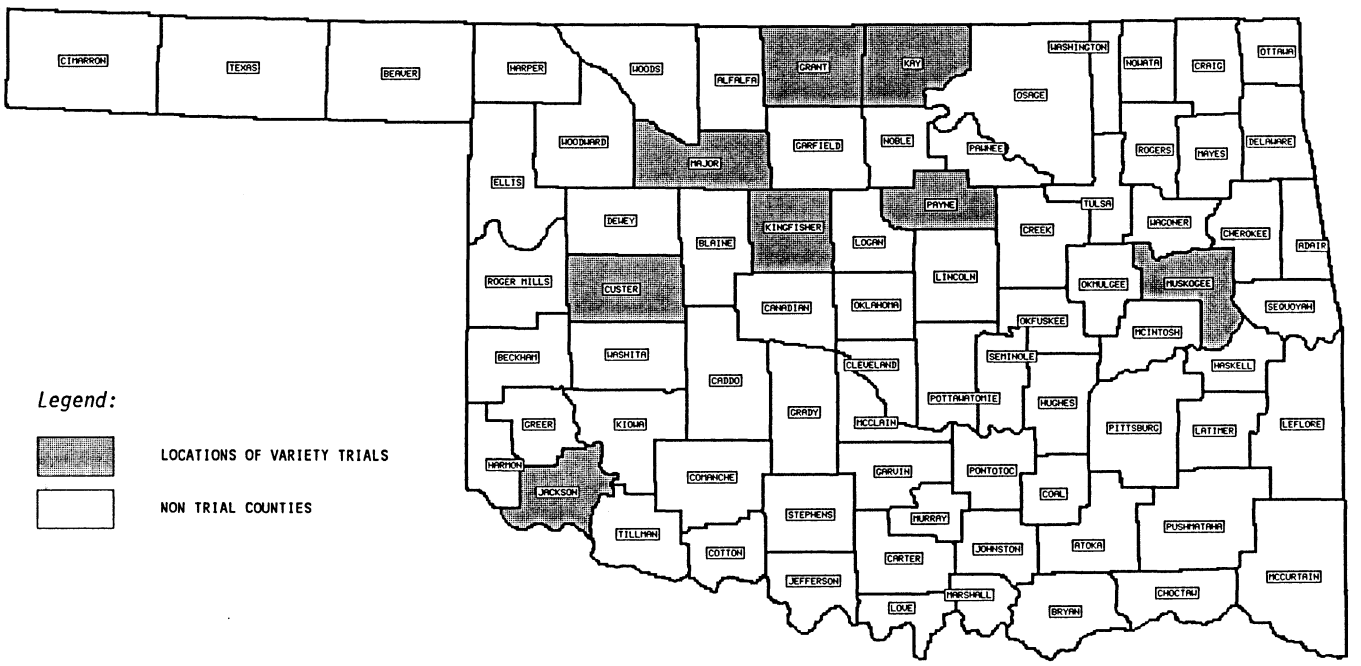
The purpose of this testing program is to provide Oklahoma wheat

producers with current and reliable performance data on the varieties which are presently grown or are available for use in Oklahoma. When selecting varieties, it is recommended that specific emphasis be given to data from the region in which the wheat is to be grown and that multiple-year averages be consulted whenever possible. See previous years current reports for earlier data. Note that two year averages are given on all tables and the statewide yield table contains two and three year averages.

Karl and Pioneer 2180 are two new varieties which performed very well at nearly all locations. Karl was released from Kansas in 1988. Agripro Stallion and Pioneer 2157 are two varieties which have performed well for several years and repeated again this year. Karl, Pioneer 2157 and Agripro Stallion also had very good test weights, however, Pioneer 2180 did not have test weights as high as the above. Agripro Mesa and TAM 200 which performed well last year were damaged more by the freeze than some of the other varieties resulting in a lower yield at some locations especially Kingfisher. Note that TAM W-101 was also damaged by the freeze. This indicated how unique this freeze was because TAM W-101 does not have a history of susceptibility to freeze damage in Oklahoma. Thunderbird another variety which performed well last year, shattered grain very badly in several locations which reduced yield at these locations (see comments on the first table).

These data result from a cooperative effort between several individual wheat growers, the Oklahoma Agricultural Experiment Station, the Cooperative Extension Service and the Oklahoma Wheat Commission.

WHEAT VARIETY TRIALS IN OKLAHOMA - 1988-89



VARIETY TEST SITE INFORMATION

SITE	SOIL SERIES AND TEXTURE[1]	PLANTING DATE	SEEDING RATE[2]	HARVEST DATE	COMMENTS
Altus	Hollister CL	11-16-88	1,200,000	6-20-89	Planted late because of dry soil, drought in April, planted on fallow ground.
Apache	Hollister Sil	10-17-88	1,000,000	6-20-89	Extreme drought in April. Data not published due to extreme variability.
Arnett	St. Paul Sil	9-27-88	1,000,000	-	Drought in April, some freeze damage, hail shelled out grain before harvest.
Buffalo	Woodward L	9-28-88	1,000,000	-	Hail shelled out grain before harvest.
Cherokee	Dale Sil	9-22-88	1,500,000	6-21-89	Clipped to simulate grazing until March, drought in April. Data unpublished due to variability.
Custer City	St. Paul Sil	9-29-88	1,000,000	6-19-89	Grazed until March 13. Some freeze loss, drought in April.
Forgan	Richfield L	9-28-88	1,000,000	-	Hail shelled out grain before harvest.
Haskell	Taloka Sil	10-10-88	1,000,000	6-22-89	Heavy powdery mildew problem.
Kingfisher	Kirkland SL	10-19-88	1,000,000	6-20-89	Extensive freeze damage on some varieties Drought in April
Lahoma	Pond Creek Sil	10-12-88	1,000,000	6-16-89	Drought in April, no disease on flag leaves May 11.
Lamont	Pond Creek Sil	9-30-88	1,000,000	6-21-89	Grazed until March.
Perkins	Teller L	10-13-88	1,000,000	6-17-89	Drought in April.
Purcell	Bethany Sil	9-26-88	1,500,000	6-19-89	Clipped to simulate grazing until March, drought in April. Data not published due to variability.
Ringling	Wing L	9-9-88	1,500,000	6- 1-89	Clipped to simulate grazing until March, drought in April. Data not published due to variability.
Tonkawa	Bethany Sil	10-13-88	1,000,000	6-21-89	Soil-borne mosaic virus present.

[1] C = clay, L = loam, Si = Silt, S = Sand
[2] Seeding rate = seeds per acre planted with a cone planter, 1,000,000 seeds per acre is equivalent to 60 lb/A.
[3] All locations were continuous wheat, 4 rep tests, planted in 10" rows with enough nitrogen for at least 50 bu yields. All locations had some greenbugs and were sprayed for greenbugs except Purcell.

Altus Wheat Variety Trial

BRAND/VARIETY	HEAD DATE[1]	TEST WT	YIELD	2-YR AVE
		lb/bu	--------bu/a--------	
TAM 200	27	56.3	39.0	49.5
AGRIPRO MESA	24	58.2	38.7	53.5
CHISHOLM	21	57.2	38.5	48.6
AGRIPRO STALLION	22	57.2	38.3	48.6
TAM W-101	28	57.2	37.7	53.1
AGRIPRO ABILENE	28	58.1	37.5	39.6
PIONEER 2157	24	57.9	37.1	51.2
CENTURY	27	54.9	36.6	44.8
KARL	23	56.7	36.5	
PIONEER 2180	21	52.8	36.1	
AGRIPRO VICTORY	28	55.7	35.5	52.5
SIOUXLAND	25	54.9	34.4	41.7
AGRIPRO WRANGLER	21	53.6	34.0	48.1
DELANGE 7846	24	54.0	32.4	46.2
ARKAN	25	54.2	30.4	48.0
CODY	29	56.1	29.7	45.3
AGRIPRO THUNDERBIRD	27	57.8	21.9	50.6
MEAN	25	56.0	35.0	
$LSD_{.05}$	1	0.5	2.8	
CV(%)	1.7	0.6	5.6	

[1]Heading Date in days after March 31, 1989

CUSTER COUNTY WHEAT VARIETY TRIAL

BRAND/VARIETY	TEST WT	YIELD	2-YR AVE
	lb/bu	--------bu/a--------	
SIOUXLAND	59.9	46.0	48.1
KARL	59.9	45.9	
AGRIPRO STALLION	60.4	44.9	45.6
PIONEER 2157	60.9	44.0	45.7
CHISHOLM	60.2	43.3	42.0
AGRIPRO ABILENE	61.0	41.8	48.0
PIONEER 2180	58.0	40.4	
AGRIPRO MESA	60.6	39.6	47.6
DELANGE 7846	59.8	38.5	42.9
CODY	59.1	38.1	43.3
TAM 200	60.6	37.5	42.6
ARKAN	58.4	37.3	38.8
AGRIPRO VICTORY	59.4	36.5	45.2
TAM W-101	59.3	35.1	38.8
CENTURY	59.5	34.9	42.0
AGRIPRO WRANGLER	60.2	30.9	41.9
AGRIPRO THUNDERBIRD	60.1	30.1	37.5
MEAN	59.8	39.1	
$LSD_{.05}$	0.6	7.8	
CV(%)	0.7	14.1	

KINGFISHER WHEAT VARIETY TRIAL

BRAND/VARIETY	TEST WT	YIELD	2YR-AVE
	lb/bu	bu/a	bu/a
KARL	60.0	56.9	
AGRIPRO STALLION	60.2	50.0	45.5
CENTURY	58.7	47.0	43.1
SIOUXLAND	58.5	46.6	38.4
PIONEER 2180	58.3	46.1	
AGRIPRO WRANGLER	59.4	45.3	40.1
PIONEER 2157	60.3	44.5	41.2
AGRIPRO ABILENE	60.5	41.6	42.4
CHISHOLM	58.8	41.6	40.5
DELANGE 7846	59.4	41.4	38.8
AGRIPRO VICTORY	58.6	40.0	40.9
CODY	58.6	39.4	39.0
ARKAN	58.8	37.7	36.5
AGRIPRO THUNDERBIRD	59.5	37.0	37.1
AGRIPRO MESA	60.4	35.7	43.8
TAM W-101	57.8	26.9	36.3
TAM 200	59.8	25.6	31.4
MEAN	59.3	41.4	
LSD .05	0.7	7.8	
CV(%)	0.9	13.2	

HASKELL WHEAT VARIETY TRIAL

BRAND/VARIETY	HEAD DATE[1]	TEST WT	YIELD	2-YR AVE
		lb/bu	bu/a	
DELANGE 7846	25.8	57.4	50.4	51.0
KARL	25.0	57.9	47.1	
PIONEER 2180	23.0	56.3	44.4	
TAM 200	26.3	57.7	42.9	50.2
AGRIPRO ABILENE	28.5	58.4	41.2	49.4
PIONEER 2157	26.3	56.4	40.3	48.6
AGRIPRO THUNDERBIRD	27.0	56.8	40.2	46.7
AGRIPRO STALLION	26.0	56.6	40.2	48.3
PIONEER 2172	25.5	55.6	38.2	46.0
DELANGE 7837	25.3	54.4	36.8	41.4
CENTURY	28.0	52.8	36.3	41.3
TAM W-101	27.0	57.0	36.2	43.6
AGRIPRO MESA	24.5	56.6	35.8	48.9
AGRIPRO VICTORY	27.5	53.1	35.1	44.9
CHISHOLM	24.0	55.8	33.9	44.7
SIOUXLAND	28.0	55.0	33.9	41.5
AGRIPRO WRANGLER	25.5	53.9	32.5	41.1
PONY	26.0	53.8	31.9	42.1
CODY	31.5	54.6	31.7	42.6
ARKAN	25.0	53.7	31.3	40.6
MEAN	26.3	56.0	38.0	
LSD .05	0.6	1.2	6.7	
CV(%)	1.6	1.5	10.5	

[1]Heading Date in days after March 31, 1989

TONKAWA WHEAT VARIETY TRIAL

BRAND/VARIETY	TEST WT	YIELD	2-YR AVE
	lb/bu	bu/a	
KARL	58.9	54.1	
AGRIPRO ABILENE	60.6	49.3	45.7
AGRIPRO THUNDERBIRD	59.7	47.4	48.4
PIONEER 2180	57.6	45.2	
AGRIPRO STALLION	59.7	43.1	45.9
AGRIPRO VICTORY	57.3	42.7	45.8
AGRIPRO MESA	59.8	42.1	46.9
ARKAN	57.5	41.8	42.9
DELANGE 7846	58.4	41.8	45.2
CODY	58.4	39.9	35.5
PIONEER 2157	59.4	39.7	40.1
AGRIPRO WRANGLER	58.4	38.6	37.6
CHISHOLM	58.4	38.4	36.8
SIOUXLAND	58.2	38.0	35.7
CENTURY	57.7	36.3	34.4
TAM 200	59.6	33.1	36.4
TAM W-101	58.5	31.1	35.1
MEAN	58.7	41.3	
LSD .05	1.0	7.2	
CV(%)	1.2	12.2	

PERKINS WHEAT VARIETY TRIAL

BRAND/VARIETY	HEAD DATE[1]	TEST WT	YIELD	2-YR AVE
		lb/bu	bu/a	
PIONEER 2180	23.0	55.9	44.1	
DELANGE 7846	24.8	57.1	41.8	39.4
AGRIPRO VICTORY	30.0	57.7	41.5	38.7
PIONEER 2157	25.0	59.2	40.8	36.7
AGRIPRO STALLION	24.3	58.4	40.4	37.6
KARL	22.5	58.6	38.8	
TAM 200	29.0	58.4	38.2	38.9
ARKAN	24.0	57.2	38.2	31.3
CHISHOLM	22.8	57.8	38.1	34.9
SIOUXLAND	26.0	57.0	35.0	30.9
AGRIPRO MESA	25.0	58.6	34.2	35.0
TAM W-101	32.0	58.1	31.8	30.5
AGRIPRO WRANGLER	23.8	57.0	31.5	30.9
AGRIPRO ABILENE	29.0	57.9	31.3	34.8
CENTURY	27.0	55.3	31.1	34.0
AGRIPRO THUNDERBIRD	27.0	59.1	30.6	33.3
CODY	29.8	55.1	23.2	27.7
MEAN	26.2	57.6	35.9	
LSD .05	0.6	0.8	6.5	
CV(%)	1.6	1.0	12.7	

[1]Heading Date in days after March 31, 1989

TEST WEIGHTS FOR WHEAT VARIETY TRIALS

BRAND/VARIETY	ALTUS	CUSTER	HASKELL	KING	LAHOMA	LAMONT	PERKINS	TONKAWA	STATE AVE
	lb/bu								
AGRIPRO ABILENE	58.1(2)[1]	61.0(1)	58.4(1)	60.5(1)	60.6(2)	56.4(17)	57.9(8)	60.6(1)	59.2
AGRIPRO MESA	58.2(1)	60.6(4)	56.6(7)	60.4(2)	60.6(3)	58.8(4)	58.6(3)	59.8(2)	59.2
PIONEER 2157	57.9(3)	60.9(2)	56.4(9)	60.3(3)	60.3(4)	58.0(10)	59.3(1)	59.4(6)	59.0
TAM 200	56.3(9)	60.6(3)	57.7(3)	59.8(6)	61.1(1)	58.3(7)	58.4(5)	59.6(5)	59.0
AGRIPRO THUNDERBIRD	57.8(4)	60.1(8)	56.8(6)	59.5(7)	59.5(10)	58.1(8)	59.1(2)	59.7(4)	58.8
KARL	56.7(8)	60.0(9)	57.9(2)	60.0(5)	59.4(11)	59.1(2)	58.6(4)	58.9(7)	58.8
AGRIPRO STALLION	57.2(6)	60.4(5)	56.6(8)	60.2(4)	60.0(5)	57.9(12)	58.4(6)	59.7(3)	58.8
CHISHOLM	57.2(7)	60.2(7)	55.8(11)	58.8(10)	59.1(12)	58.5(5)	57.8(9)	58.4(10)	58.2
TAM W-101	57.2(5)	59.3(14)	57.0(5)	57.8(17)	59.7(8)	57.8(13)	58.1(7)	58.5(8)	58.2
DELANGE 7846	54.0(15)	59.8(11)	57.4(4)	59.4(8)	59.8(6)	57.8(14)	57.1(12)	58.4(9)	58.0
SIOUXLAND	54.9(13)	59.9(10)	55.0(12)	58.5(15)	59.8(7)	58.4(6)	57.0(13)	58.2(13)	57.7
AGRIPRO VICTORY	55.7(11)	59.4(13)	53.1(16)	58.6(13)	58.6(16)	59.0(3)	57.7(10)	57.3(17)	57.4
AGRIPRO WRANGLER	53.6(16)	60.2(6)	53.9(14)	59.4(9)	59.5(9)	57.3(16)	57.0(14)	58.4(12)	57.4
CODY	56.1(10)	59.1(15)	54.6(13)	58.6(14)	58.7(15)	57.5(15)	55.1(17)	58.4(11)	57.3
PIONEER 2180	52.8(17)	58.0(17)	56.3(10)	58.3(16)	58.9(14)	59.3(1)	55.9(15)	57.6(15)	57.2
ARKAN	54.2(14)	58.5(16)	53.7(15)	58.8(11)	58.3(17)	58.1(9)	57.2(11)	57.6(16)	57.0
CENTURY	54.9(12)	59.5(12)	52.8(17)	58.7(12)	59.0(13)	57.9(11)	55.3(16)	57.7(14)	57.0
MEAN	56.0	59.8	56.0	59.3	59.4	58.1	57.6	58.7	
$LSD_{.05}$	0.5	0.6	1.2	0.7	0.8	1.4	0.8	1.0	
CV(%)	0.6	0.7	1.5	0.9	0.7	1.7	1.0	1.2	

[1]Rank of the variety within this location.

HARD RED WINTER WHEAT VARIETY TRIAL GRAIN YIELDS

BRAND/VARIETY	ALTUS	CUSTER	HASKELL	KING[1]	LAHOMA	LAMONT	PERKINS	TONKAWA	STATE AVE	2-YR AVE	3-YR AVE
	bu/a										
KARL	36.5(9)*	45.9(2)	47.1(2)	56.9(1)	45.7(6)	54.8(7)	38.8(6)	54.1(1)	47.5	-	-
PIONEER 2180	36.1(10)	40.4(7)	44.4(3)	46.1(5)	53.0(1)	61.0(1)	44.1(1)	45.2(4)	46.3	-	-
AGRIPRO STALLION	38.3(4)	44.9(3)	40.2(7)	50.0(2)	36.5(15)	56.7(5)	40.4(5)	43.1(5)	43.8	46.2	40.4
PIONEER 2157	37.1(7)	44.0(4)	40.3(6)	44.5(7)	43.5(9)	58.8(2)	40.8(4)	39.7(11)	43.6	45.4	40.3
DELANGE 7846	32.4(14)	38.5(9)	50.4(1)	41.4(10)	46.2(5)	50.1(12)	41.8(2)	41.8(8)	42.8	44.5	-
AGRIPRO ABILENE	37.5(6)	41.8(6)	41.2(5)	41.6(8)	38.8(14)	51.8(10)	31.3(14)	49.3(2)	41.7	45.3	-
SIOUXLAND	34.4(12)	46.0(1)	33.9(13)	46.6(4)	46.5(4)	52.0(8)	35.0(10)	38.0(14)	41.6	39.5	35.8
CENTURY	36.6(8)	34.9(15)	36.3(9)	47.0(3)	49.5(3)	55.0(6)	31.1(15)	36.3(15)	40.8	41.2	37.1
AGRIPRO VICTORY	35.5(11)	36.5(13)	35.1(12)	40.0(11)	43.9(8)	51.0(11)	41.5(3)	42.7(6)	40.8	44.6	-
TAM 200	39.0(1)	37.5(11)	42.9(4)	25.6(17)	51.7(2)	52.0(9)	38.2(7)	33.1(16)	40.0	45.2	-
AGRIPRO MESA	38.7(2)	39.6(8)	35.8(11)	35.7(15)	42.5(10)	49.1(16)	34.2(11)	42.1(7)	39.7	46.8	-
CHISHOLM	38.5(3)	43.3(5)	33.9(14)	41.6(9)	33.5(16)	49.3(14)	38.1(9)	38.4(13)	39.6	42.5	39.0
ARKAN	30.4(15)	37.3(12)	31.3(17)	37.7(13)	42.1(11)	49.6(13)	38.2(8)	41.8(9)	38.6	40.5	-
AGRIPRO WRANGLER	34.0(13)	30.9(16)	32.5(15)	45.3(6)	40.6(13)	49.2(15)	31.5(13)	38.6(12)	37.8	41.0	35.7
TAM W-101	37.7(5)	35.1(14)	36.2(10)	26.9(16)	45.3(7)	57.1(3)	31.8(12)	31.1(17)	37.7	41.9	36.5
CODY	29.7(16)	38.1(10)	31.7(16)	39.4(12)	41.5(12)	48.1(17)	23.2(17)	39.9(10)	36.5	39.0	-
AGRIPRO THUNDERBIRD[2]	21.9(17)	30.1(17)	40.2(8)	37.0(14)	26.0(17)	57.0(4)	30.6(16)	47.4(3)	36.3	42.9	-
MEAN	35.0	39.1	38.0	41.4	43.0	53.1	35.9	41.3			
LSD$_{.05}$	2.8	7.8	6.7	7.8	10.5	12.3	6.5	7.2			
CV(%)	5.6	14.1	10.5	13.2	17.2	16.2	12.7	12.2			

*Rank within a location
[1]Freeze damage reduced stand to less than 50% for TAM W-101 and TAM 200 and near 50% for Mesa at the Kingfisher location.
[2]Thunderbird was badly shattered at many locations.

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