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Performance of Wheat Varieties, Oklahoma - 1978 (Revised)

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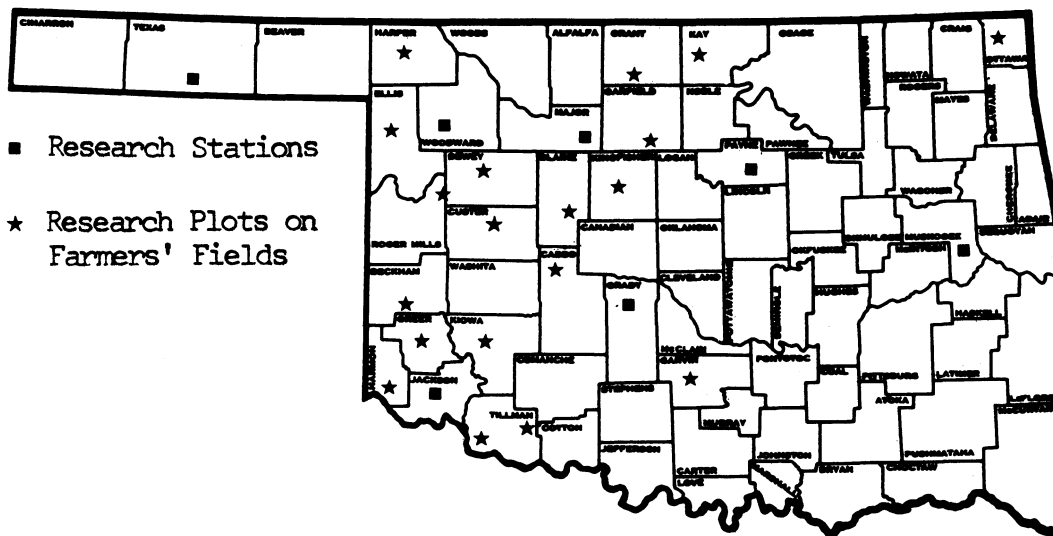
Wheat is one of the most widely adapted, cultivated crops in the world and as such is confronted with many adversities. In Oklahoma during the 1977-78 growing season the wheat plant was subjected to more than its share of problems. In many areas of the state at planting time the soil was too dry for seed to germinate. Much wheat was "dusted in." Then in late October it began to rain and it was too wet to seed for several days, therefore many acres were planted in November and some in December. Greenbugs were a problem in some areas in the fall as well as the fall army worm. Then the snow came and in the northern half of the state snow covered the wheat fields for over 30 days. Rains and melting snow during this time largely ran off because of frozen soil beneath the snow. As it began to warm in the spring and the wheat began to joint there were the greenbugs again and the weeds—cheat, jointed-goatgrass, wild oats, mustard and many other annual and perennial weeds. Then the dry weather returned and thousands of acres of wheat were pastured out and plowed up.

Near harvest the rains came and it rained for several days and in some areas over a six

month supply fell in one week. Finally the sun shone and the ground began to dry and combines by the thousands began to move and within a short time "Oklahoma Wheat Harvest - 1978" was over.

The Agronomy Department at Oklahoma State University, in cooperation with local, area and state extension personnel conducted 19 off-station wheat variety tests primarily in the western half of Oklahoma during the 1977-78 season. In addition wheat variety tests were conducted on seven research stations. Yield ranged from very low in West Central Oklahoma to high in the North Central portion of the state.

Tables 1 through 5 show the actual yield and percentage yield as compared to Triumph 64 of the 16 entries. Table 6 shows the average yield of the 16 entries at all 26 locations in Oklahoma in 1978. There were fourteen varieties and two hybrid wheats tested during 1978. Each variety was replicated 4 times at each location and the yields from the four replications were averaged to determine the varietal yield at each location. Figure 1 shows the location of each wheat variety test.



WEST CENTRAL TABLE 1

GRAIN YIELD (BUSHEL PER ACRE) AND PERCENT OF TRIUMPH 64 FOR ENTRIES IN WHEAT VARIETY TESTS GROWN IN WEST CENTRAL OKLAHOMA, 1978

	Taloga		Leedey		Custer		Delhi		Geary		Hinton		Chickasha		Average Yield
	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	
TAM W101	31.9*	172	39.4*	109	50.9*	104	32.2*	111	39.9*	119	47.1	114	37.5*	90	39.8
Newton	25.8	139	39.8*	110	49.7	102	30.9*	107	38.0*	113	48.8	118	42.8*	103	39.4
Payne	23.8	129	39.8*	110	52.6*	108	31.6*	109	36.9	110	45.5	110	41.4*	99	38.8
Lancota	19.8	107	37.4*	104	49.5	101	30.3	104	38.7*	115	53.8*	130	38.6*	93	38.3
Vona	26.3	142	39.8*	110	55.2*	113	31.3*	108	37.3*	111	44.8	108	38.6*	93	37.8
Lindon	26.0	141	38.8*	107	46.1	94	30.1	104	36.3	108	42.2	102	45.3*	109	37.8
Dekalb 589	24.8	134	36.2*	100	48.9	100	27.1	93	36.7	109	42.1	102	41.6*	100	36.8
Sturdy	19.1	103	34.6*	96	51.7*	106	25.2	87	35.9	107	43.7	106	43.8*	105	36.3
Triumph 64	18.5	100	36.1*	100	48.8	100	29.0	100	33.6	100	41.3	100	41.7*	100	35.6
Centurk	23.2	125	40.2*	111	43.2	89	32.1*	111	29.5	88	37.0	90	39.2*	94	34.5
Osage	21.5	116	35.2*	98	45.5	93	34.7*	120	32.0	95	41.4	100	27.1	65	33.9
Scout 66	22.3	121	35.3*	98	43.4	89	28.6	99	28.8	86	39.0	94	40.2*	96	33.9
Pioneer 915A	24.0	130	34.8*	96	40.1	82	29.3	101	30.6	91	40.3	98	37.9*	91	33.9
Larned	23.6	128	32.5	90	42.2	86	31.5*	109	28.9	86	37.9	92	37.6*	90	33.5
Sage	15.9	86	30.0	83	39.2	80	34.2*	118	33.2	99	43.1	104	32.5	78	32.6
Rall	21.1	114	30.0	83	40.9	84	31.7*	109	30.1	90	38.5	93	34.5	83	32.4
Average	23.0 Bu.		36.2 Bu.		46.7 Bu.		30.6 Bu.		34.2 Bu.		42.9 Bu.		38.8 Bu.		
L.S.D. (.05)	4.4 Bu.		6.4 Bu.		4.3 Bu.		4.0 Bu.		2.8 Bu.		2.2 Bu.		10.0 Bu.		
C. V.	13.7 %		12.3 %		6.3 %		9.2 %		5.6 %		3.5 %		18.0 %		

*Entries in first level statistical significance.

SOUTH WEST TABLE 2

GRAIN YIELD (BUSHEL PER ACRE) AND PERCENT OF TRIUMPH 64 FOR ENTRIES IN WHEAT VARIETY TESTS GROWN IN SOUTH WEST OKLAHOMA, 1978

	Hobart		Pauls Valley		Chattanooga		Frederick		Gould		Mangum		Altus		Average Yield
	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	
Vona	51.2*	123	39.0	98	41.6*	100	31.2	102	12.2	78	25.4	103	56.7*	135	36.8
Payne	46.6	112	39.8*	101	39.9*	96	33.9*	111	15.5	99	28.9*	117	51.4	123	36.6
TAM W101	51.3*	123	28.6	72	42.5*	103	34.7*	114	15.6	99	31.9*	129	51.0	122	36.5
Newton	54.1*	130	27.6	70	34.2	83	34.1*	112	16.7	106	23.8	96	55.7*	133	35.2
Dekalb 589	36.1	87	43.4*	110	43.6*	105	33.0	108	12.8	82	27.5	111	43.2	103	34.2
Triumph 64	41.7	100	39.6	100	41.4*	100	30.5	100	15.7	100	24.7	100	41.9	100	33.6
Lindon	49.2	118	32.4	82	35.2	85	32.8	108	12.3	78	23.8	96	49.6	118	33.6
Sturdy	42.1	101	41.5*	105	39.8*	96	27.1	89	9.6	61	27.6	112	45.8	109	33.4
Centurk	48.0	115	20.9	53	31.9	105	31.9	105	16.5	105	27.6	112	54.5*	130	33.2
Larned	47.8	115	17.5	44	33.2	80	36.2*	119	20.1*	128	27.0	109	50.9	121	33.2
Rall	49.6*	119	16.0	40	32.1	78	37.3*	122	18.9*	120	26.7	108	47.5	113	32.6
Pioneer 915A	48.8	117	24.3	61	35.8	86	31.3	103	16.1	103	23.0	93	47.4	113	32.4
Scout 66	46.6	112	14.6	37	32.3	78	35.1*	115	18.8*	120	28.9*	117	48.8	116	32.2
Lancota	45.6	109	23.1	58	31.8	77	33.8*	111	16.9	108	25.8	104	48.3	115	32.2
Osage	46.1	111	18.2	46	35.2	85	34.2*	112	17.2	110	25.0	101	48.0	115	32.0
Sage	46.5	112	17.8	45	32.8	79	33.8*	111	20.3*	129	19.8	80	47.1	112	31.2
Average	47.0 Bu.		27.8 Bu.		36.8 Bu.		33.2 Bu.		16.0 Bu.		26.1 Bu.		49.2 Bu.		
L.S.D.	4.5 Bu.		3.7 Bu.		3.5 Bu.		3.6 Bu.		2.6 Bu.		4.2 Bu.		4.1 Bu.		
C. V.	6.7 %		9.4 %		6.6 %		7.5 %		11.3 %		11.3 %		5.8 %		

*Entries in first level statistical significance.

CENTRAL

TABLE 3

GRAIN YIELD (BUSHEL PER ACRE) AND PERCENT OF TRIUMPH 64 FOR
ENTRIES IN WHEAT VARIETY TESTS GROWN IN CENTRAL OKLAHOMA, 1978

	<u>Stillwater</u>		<u>Lahoma</u>		<u>Lamont</u>		<u>Douglas</u>		<u>Kingfisher</u>		<u>Ponca City</u>		Average Yield
	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	
Vona	33.0*	93	38.0*	121	38.5*	121	26.0	138	33.5*	125	31.1*	98	33.4
Newton	23.5	81	33.3*	106	33.0	103	27.5*	146	27.6	103	36.4*	114	31.1
TAM W101	29.3	83	36.8*	118	29.9	94	24.2	128	27.0	100	35.5*	112	30.5
Dekalb 589	36.4*	103	34.6*	111	33.5	105	18.4	97	27.6	103	31.6*	99	30.4
Lindon	29.9	84	33.6*	107	33.9*	106	26.5*	140	28.4	106	28.8*	91	30.2
Osage	32.3*	91	27.0	86	31.6	99	26.9*	142	24.4	91	34.2*	108	29.4
Triumph 64	35.4*	100	31.3	100	31.9	100	18.9	100	26.9	100	31.8*	100	29.4
Larned	28.8	81	29.2	93	29.2	92	27.6*	146	24.6	91	28.3*	89	28.0
Centurk	34.3*	97	23.9	76	34.2*	107	23.4	124	26.6	99	25.7	81	28.0
Rall	27.6	78	27.4	87	28.7	90	29.9*	158	25.4	94	28.6*	90	27.9
Payne	29.9	84	36.1*	115	30.3	95	17.8	94	25.9	96	26.7*	84	27.8
Lancota	22.0	62	36.7*	117	31.2	98	23.4	124	24.0	89	27.4*	86	27.5
Sturdy	29.0	82	34.6*	111	28.3	89	19.0	101	24.7	92	26.7*	84	27.1
Sage	27.1	77	31.6	101	27.3	86	23.5	124	21.3	79	31.2*	98	27.0
Pioneer 915A	23.5	66	27.7	88	30.5	96	21.4	113	23.7	88	30.9*	97	26.3
Scout 66	26.1	74	27.1	86	26.0	82	25.3	134	23.4	87	25.7	81	25.6
Average	29.6 Bu.		31.8 Bu.		31.1 Bu.		23.7 Bu.		25.9 Bu.		30.0 Bu.		
L.S.D.	4.7 Bu.		5.0 Bu.		4.9 Bu.		3.8 Bu.		3.9 Bu.		10.2 Bu.		
C. V.	11.2 %		11.0 %		11.1 %		11.3 %		10.6 %		23.8 %		

*Entries in first level statistical significance.

NORTH WEST TABLE 4

GRAIN YIELD (BUSHEL PER ACRE) AND PERCENT OF TRIUMPH 64 FOR
ENTRIES IN WHEAT VARIETY TESTS GROWN IN NORTH WEST OKLAHOMA, 1978

	<u>Woodward</u>		<u>Buffalo</u>		<u>Arnett</u>		<u>Goodwell</u>		Average Yield
	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	
Vona	54.8*	123	19.2*	127	11.6*	91	89.9*	168	43.9
Newton	59.8*	134	13.9	92	10.1	80	82.1*	154	41.5
Payne	53.7*	121	16.6*	110	9.8	77	84.8*	159	41.2
TAM W101	54.8*	123	15.9*	105	6.1	48	85.4*	160	40.6
Lindon	56.0*	126	14.8	98	7.9	62	83.4*	156	40.5
Larned	48.2	108	16.5*	109	7.1	56	73.9	138	36.4
Lancota	47.7	107	14.2	94	5.6	44	77.4	145	36.2
Centurk	51.2*	115	14.8	98	8.3	65	70.0	131	36.1
Osage	44.8	101	14.0	93	9.2	72	74.2	139	35.6
Sage	43.2	97	14.9	99	8.7	69	73.4	137	35.1
Rall	45.3	102	17.5*	116	8.6	68	68.3	128	34.9
Pioneer 915A	42.7	96	12.3	81	9.6	76	70.7	132	33.8
Sturdy	42.7	96	12.2	81	6.8	54	71.3	134	33.3
Scout 66	42.2	95	17.1*	113	7.7	61	63.1	118	32.5
Triumph 64	44.5	100	15.1	100	12.7	100	53.4	100	31.4
Dekalb 589	40.6	91	13.7	91	7.4	58	58.5	110	30.1
Average	48.3 Bu.		15.2 Bu.		8.6 Bu.		73.7 Bu.		
L.S.D.	8.9 Bu.		3.7 Bu.		2.5 Bu.		10.0 Bu.		
C. V.	12.9 %		17.0 %		20.7 %		9.5 %		

*Entries in first level statistical significance.

EASTERN TABLE 5

GRAIN YIELD (BUSHEL PER ACRE) AND PERCENT OF TRIUMPH 64 FOR ENTRIES IN WHEAT VARIETY TESTS GROWN IN EASTERN OKLAHOMA, 1978

	Miami		Haskell		Average Yield
	Yield Bu/A	% TRI 64	Yield Bu/A	% TRI 64	
Sturdy	37.0*	101	41.2*	109	39.1
Dekalb 589	37.1*	101	38.9*	103	38.0
Triumph 64	36.7*	100	37.7*	100	37.2
Payne	33.4*	91	40.9*	108	37.2
Osage	37.4*	102	36.1*	96	36.8
TAM W101	34.7*	95	37.9*	101	36.3
Lindon	33.8*	92	33.8	90	33.8
Centurk	35.0*	95	32.1	85	33.6
Pioneer 915A	35.5*	97	30.0	80	32.8
Newton	31.5*	86	32.6	86	32.1
Rall	32.2*	88	31.5	84	31.9
Scout 66	33.3*	91	28.8	76	31.1
Vona	30.5	83	31.7	84	31.1
Lancota	26.3	72	31.8	84	29.1
Larned	26.3	72	30.8	82	28.6
Sage	27.9	76	27.4	73	27.7
Average	33.0 Bu.		34.0 Bu.		
L.S.D.	6.1 Bu.		5.6 Bu.		
C. B.	13.0 %		11.7 %		

*Entries in first level statistical significance.

AVERAGE TABLE 6

GRAIN YIELD (BUSHEL PER ACRE) FOR 16 ENTRIES AT 26 LOCATIONS IN OKLAHOMA, 1978

Variety	Yield (Bu/A)
Vona	36.9
TAM W 101	36.6
Newton	36.1
Payne	35.9
Lindon	35.0
Dekalb 589	33.7
Sturdy	33.2
Lancota	33.1
Triumph 64	33.1
Osage	32.8
Centurk	32.8
Larned	32.2
Rall	31.8
Pioneer 915A	31.6
Scout 66	31.1
Sage	30.9

TABLE 7

LOCATION, SEEDING DATE, HARVEST DATE, AND GROWING CONDITIONS OF THE 26 WHEAT VARIETY PLOTS IN 1978

Location	Soil Series	*Seeding Date	Harvest Date	Growing Conditions
Altus	Hollister-Tillman Loam	10-15-77	6-21-78	Good
Arnett	Richfield Clay Loam	9-20-77	6-26-78	Weedy and Dry
Buffalo	Carey Silt Loam	9-20-77	6-26-78	Dry
Chattanooga	Foard Silt Loam	11-22-77	6-16-78	Good
Chickasha	Reinach Silt Loam	10-11-77	6-15-78	Good
Custer City	St. Paul Silt Loam	10-22-77	6-19-78	Good
Delhi	Weymouth Clay Loam	10-27-77	6-13-78	Good
Douglas	Kirkham-Refro Silt Loam	10- 3-77	6-25-78	Weedy-Cheat
Frederick	Tipton Fine Sandy Loam	11- 4-77	6-12-78	Good
Geary	Bethany Silt Loam	10-25-77	6-20-78	Good
Goodwell*	Richfield Clay Loam	10-10-77	6-27-78	Good
Gould	Tillman Clay Silt Loam	10-11-77	6-12-78	Extremely dry
Haskell	Taloda Silt Loam	10-18-77	6-14-78	Good
Hinton	Pond Creek Silt Loam	10-25-77	6-14-78	Good
Hobart	Enterprise Fine Sandy	10-11-77	6-16-78	Good
Kingfisher	Kingfisher Silt Loam	9-21-77	6-21-78	Good
Lahoma	Pond Creek Silt Loam	10-25-77	6-27-78	Good
Lamont	Reinach V.F. Sandy Loam	9-22-77	6-25-78	Good
Leedey	Pratt Loamy Fine Sand	10-26-77	6-23-78	Weedy
Mangum	St. Paul Silt Loam	11-17-77	6-23-78	Good
Miami	Taloka Silt Loam	10-13-77	6-27-78	Good
Pauls Valley	Dale Silt Loam	11-23-77	6-20-78	Good
Ponca City	Lela Clay	9-23-77	6-25-78	Good
Stillwater	Norge Loam	10-18-77	6-26-78	Good
Taloga	Enterprise V.F. Sandy Loam	10-26-77	6-22-78	Weedy-Cheat
Woodward	Woodward Sandy Loam	9-29-77	6-23-78	Good

*Irrigated plot.

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