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The Oklahoma
**SMALL GRAIN
TESTING PROGRAM**

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The Oklahoma Small Grain Testing Program

By ROY M. OSWALT and A. M. SCHLEHUBER*

The Oklahoma Small Grain Testing Program was started in the fall of 1946 as an outgrowth and expansion of the Oklahoma Farm Wheat Improvement Program started in 1937. The expanded and revised program now includes fall-sown oats and barley along with wheat in the statewide variety testing. This bulletin describes the purpose and plan of operation of the Oklahoma Small Grain Testing Program, and also summarizes the wheat variety comparisons made under the Oklahoma Farm Wheat Improvement Program.

Purpose and Plan of the Oklahoma Small Grain Testing Program

The Oklahoma Small Grain Testing Program is designed to secure information on the grain yield, quality, and varietal adaptation of small grains in the different parts of the State. As in the wheat improvement program, field days will be held at each test location just prior to harvest. These field days give interested persons an opportunity to see how the different varieties perform under local conditions.

The Small Grain Testing Program includes two types of tests: "Experiment Station Supervised Tests," and "Observational Tests." Land for the Station Supervised tests is secured by the county agricultural agent or other person in charge, and the seed bed is prepared by the farmer on whose land the test is located. Station personnel makes the plans for the tests, and plants, cares for, harvests, and threshes them. For the Observational Tests, the Experiment Station supplies seed and plans for planting and harvesting but all other work connected with the plot is supervised by a county agricultural agent, vocational agriculture teacher, or other interested person.

Locations of both the Station Supervised and Observational tests for 1946-47 are shown in the map on page 4. Table I shows exact locations, seeding dates, and general condition at planting time for the 12 Station Supervised plots. Similar in-

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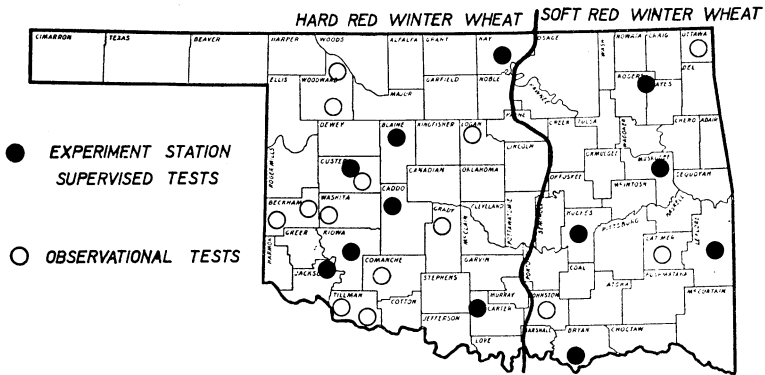


Fig. 1.—Locations of 1946-47 Oklahoma Small Grain Variety Tests.

formation for the 14 Observational tests is given in Table II. The number of Station Supervised tests had to be limited so all could be handled by present personnel of the Small Grains Section of the Station's Department of Agronomy, but an effort was made to cover the maximum possible number of soil types and climatic conditions in the important wheat-, oats-, and barley-growing areas of the State.

Each of the 12 Experiment Station Supervised Tests planted in the fall of 1946 includes 26 varieties of small grain—13 of wheat, 7 of oats, and 6 of barley (see Table III). The design of these tests is shown in Figure 2. Four replications of each variety were planted in 18-foot, three-row plots, 12 inches apart. Sixteen feet of the center row of each plot will be brought to the Station at Stillwater for threshing and computation of data. The plots are arranged so as to be conveniently used for field day demonstration. Enough space was allowed around the test plots so visitors can observe the varieties without injury to the plants.

Summary of Results

In the Oklahoma Farm Wheat Improvement Program

In the Oklahoma Farm Wheat Improvement Program, which is now merged into the Small Grain Testing Program, 135 tests were made in the hard red winter wheat area of the State between 1937-38 and 1945-46. During this period, also, some fifteen thousand farmers' samples of wheat were grown and graded as to purity and disease.

Field days were held in the spring each year at most of the test plots. At these field days, farmers and other interested persons were able to see pure varieties growing side by side. They also heard the grade given each farmer's sample, and the reason for the grade.

YIELDS

Average yield, number of years grown, and the relative performance of 12 varieties of hard red winter wheat grown in wheat improvement tests through 1946 are shown in Table IV. The tests are grouped by areas so that the performance of a variety or varieties can be studied in areas with similar soil and climatic conditions. Each variety is compared to Tenmarq, because Tenmarq has been grown over the entire wheat section of Oklahoma.

Pawnee and Comanche have consistently outyielded Tenmarq at almost all of the individual test locations and in all areas.

In making yield comparisons between varieties, the average yield recorded in Table IV can be used safely only when the varieties in question have been grown in all of the same tests. When comparing yields of varieties not grown in all of the same tests, the column headed "percentage of Tenmarq" should be used.

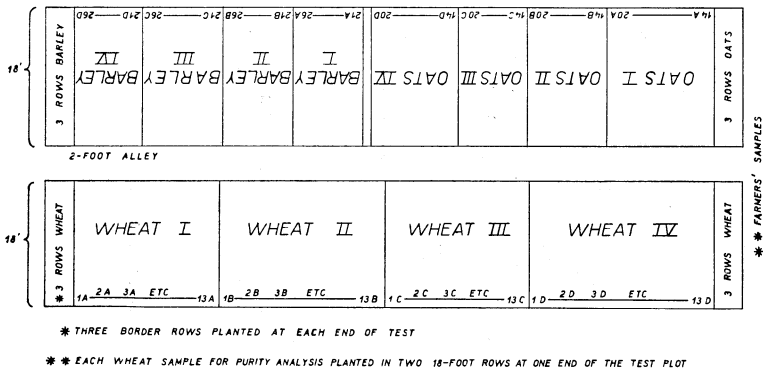


Fig. 2.—Plot diagram for pure varieties of small grain in the Oklahoma Small Grain Testing Program 1946-47 for all nurseries except those in Blaine and Caddo counties. See Table III for varieties.

TABLE 1.—Location, Date of Seeding, and Condition of the 12 Experiment Station Supervised Tests in the 1946-47 Oklahoma Small Grain Testing Program.

County	Location	Farm	Date seeded	Condition of test plot at time of seeding
Kay Blaine	Ponca City—8 mi. W., Hy. 60	O. A. Bellinghausen	Sept. 30	Good tilth; good moisture
	Okeene—6 mi W., 2 mi. S.	L. C. Westfahl	Oct. 1	Good tilth; good moisture; some volunteer wheat
Custer Jackson	Thomas—W. edge on Hy. 33	-----	Oct. 1	Good tilth; good moisture
	Blair—2 mi. S. on Hy. 283	Irrigation Experiment Station	Oct. 2	Good tilth; low moisture
Kiowa	Hobart—2 mi. E., 6 mi. S. on Hy. 183	Babbs Elevator	Oct. 3	Good tilth; low moisture
Caddo	Hinton—4 mi. N. on Hy. 281	Morris King	Oct. 4	Good tilth; fair moisture
Rogers	Chelsea—2 mi. E. on Hy. 66	Walter Snyder	Oct. 7	Good tilth; low moisture
Muskogee	Muskogee—1 mi. S., 2 mi. E.	W. G. Human	Oct. 8	Poor tilth; low moisture
Hughes	Holdenville—7 mi E. on Hy. 270	T. G. Hedley	Oct. 9	Fair tilth; low moisture
Carter	Ardmore—8 mi. W. on Hy. 70	Southern Okla. Soil Improvement Station	Oct. 14	Good tilth; good moisture
Bryan	Durant—12 mi. S. on Hy. 299	J. H. Cox	Oct. 16	Fair tilth; low moisture
Le Flore	Heavener—2 mi. N., ½ mi. E. on Hy. 270	Eastern Okla. Soil Improvement Station	Oct. 17	Fair tilth; low moisture

TABLE II.—Location, Small Grains in Test, and Personnel in Charge of 14 Observational Tests in the 1946-47 Oklahoma Small Grain Testing Program.

County	Town	Small Grains in Test	Person in Charge
Beckham	Sayre	Wheat and oats (2 tests)	P. G. Scruggs, County Agent
Comanche	Lawton-Cameron Junior College	Wheat	Claude Livingston, Agronomy
Custer	Thomas	Wheat	C. B. McNeill, E. B. McNeill Grain Co.
Grady	Minco	Wheat, oats, and barley	J. T. Newman, Veteran Instructor
Johnson	Tishomingo-Murray Jr. College	Wheat, oats, and barley	Chester Canode, Agronomy Instructor
Latimer	Wilburton-Eastern A. and M. Junior College	Wheat, oats, and barley	H. A. Lane, Agriculture Instructor
Logan	Marshall	Wheat, oats, and barley	Raymond Bryson, Vocational Agriculture Instructor
Ottawa	Miami-Northeastern A. and M. College	Wheat, oats, and barley	Myrl Gray, Agriculture Instructor
Tillman	Frederick	Wheat, oats, and barley	S. E. Lewis, County Agent
Tillman	Grandfield	Wheat, oats, and barley	W. E. Brown, Vocational Agri. Inst.
Washita	Sentinel (Port School)	Wheat	Estel Brizel, Vocational Agri. Inst.
Woodward	Mutual	Wheat	J. D. Edmonson, County Agent
Woodward	18 Mi. N. Mooreland	Wheat	J. D. Edmonson, County Agent

TABLE III.—Varieties, Plot Numbers, and Planting Order Used in the Oklahoma Small Grain Testing Program, 1946-47.

Variety	C. I. No.	Replication			
		1	2	3	4
		Plot numbers			
For western Oklahoma, or hard red winter wheat area					
Blackhull	6251	1A	1B	1C	1D
Cheyenne	8885	2A	2B	2C	2D
Chiefkan	11754	3A	3B	3C	3D
Comanche	11673	4A	4B	4C	4D
Early Blackhull	8856	5A	5B	5C	5D
Pawnee	11669	6A	6B	6C	6D
Red Chief	12109	7A	7B	7C	7D
Reliant	12144	8A	8B	8C	8D
Tenmarq	6936	9A	9B	9C	9D
Triumph	12132	10A	10B	10C	10D
Turkey	1558	11A	11B	11C	11D
Westar	12110	12A	12B	12C	12D
Wichita	11952	13A	13B	13C	13D
For eastern Oklahoma, or soft red winter wheat area					
40-169R	-----	1A	1B	1C	1D
Cheyenne	8885	2A	2B	2C	2D
Austin	12346	3A	3B	3C	3D
Comanche	11673	4A	4B	4C	4D
Clarkan	8858	5A	5B	5C	5D
Pawnee	11669	6A	6B	6C	6D
Denton	8265	7A	7B	7C	7D
Fulcaster	6471	8A	8B	8C	8D
Tenmarq	6936	9A	9B	9C	9D
Triumph	12132	10A	10B	10C	10D
Turkey	1558	11A	11B	11C	11D
Kawvale	8180	12A	12B	12C	12D
Wichita	11952	13A	13B	13C	13D
OATS					
(All tests)					
Forkedeer	3170	14A	14B	14C	14D
Letoria	3392	15A	15B	15C	15D
Stanton	3855	16A	16B	16C	16D
Tennex	3169	17A	17B	17C	17D
Traveler	4206	18A	18B	18C	18D
Winter Fulghum	2500	19A	19B	19C	19D
Wintok	3424	20A	20B	20C	20D
BARLEY					
(All tests)					
Fayette (Manchuria)	245	21A	21B	21C	21D
Mich. Winter	2036	22A	22B	22C	22D
Reno	6561	23A	23B	23C	23D
Tenn. Winter 52	3543	24A	24B	24C	24D
Tenkow	646	25A	25B	25C	25D
Ward	6007	26A	26B	26C	26D

YIELDS BY AREAS

Southwest.—Comanche slightly outyielded Pawnee in the southwest area of the state. In that area, Comanche was 17 percent higher in yield than Tenmarq in 28 tests, while Pawnee was 13 percent higher than Tenmarq in 19 tests. Triumph, an early-maturing variety, was 30 percent higher than Tenmarq in 15 tests.

Northwest.—In the northwest area, Pawnee has been slightly higher in yield than Comanche. Pawnee was 9 percent higher than Tenmarq, while Comanche was 6 percent higher. The relative yields of Wichita (113%) and Reliant (111%) slightly exceeded those for Comanche and Pawnee, but the testing period has been shorter. Consequently the yield figures for Wichita and Reliant are not nearly so reliable as they are for Comanche and Pawnee. Triumph, in 13 tests, yielded 7 percent more than Tenmarq in northwest Oklahoma. The other seven varieties yielded from 1 percent (Early Black-hull) to 15 percent (Turkey) below Tenmarq.

North Central.—The north central area shows Comanche and Pawnee 15 and 26 percent higher in yield, respectively, than Tenmarq. Reliant with 115 percent and Triumph with 110 percent of the yield of Tenmarq have also performed well in the north central area.

Central.—Pawnee, Triumph, and Comanche have high yields in the central area. Pawnee is 16 percent higher than Tenmarq in 15 tests, Triumph 11 percent higher in 13 tests, and Comanche 8 percent above Tenmarq in 19 tests. Reliant, a late-maturing variety with high susceptibility to loose smut, has also performed well in central Oklahoma.

Pawnee and Red Chief were grown in the same tests in central Oklahoma; therefore a direct yield comparison can be made for each location and for the area as a whole. The average yield of Pawnee was 22.1 bushels per acre compared with 20.5 bushels for Red Chief. In addition, Pawnee has outyielded Red Chief at each location in the central area, the difference ranging from 0.8 bushel at Geary (Blaine county) to 3.5 bushels on the sandy land at Hennessey (Kingfisher county).

West Central.—In the west central area the number of tests has been rather limited, particularly for the newer varieties. The number of tests in this area varies from only two

for Triumph, Reliant, and Wichita to six for the older varieties such as Turkey and Tenmarq. From the limited data in this area, and the data from locations immediately adjacent, it appears that Comanche and Pawnee in the medium-maturing class and Triumph in the early-maturing class are well adapted to the west central area.

State Summary.—The relative yields of the five top ranking varieties are summarized by areas in Table V. Pawnee ranks first in the north central and central areas, third in the northwestern and west central areas, and fourth in the southwestern area. Comanche ranks second in the north central and southwestern areas, fourth in the central area, and fifth in the northwestern area. Triumph is first in the southwestern area, second in the central, fourth in the northwestern and north central, and fifth in the west central.

For all locations throughout the state for the entire testing period (1938-1946) the rank of the leading varieties is:

Pawnee—119 percent of Tenmarq.

Triumph and Reliant—115 percent of Tenmarq.

Comanche—113 percent of Tenmarq (see Table IV).

TEST WEIGHTS, 1946 HARVEST

Test weights in pounds per bushel of the wheats harvested in 1946 are shown in Table VI, which also shows the 1941-44 average. The data for 1946 are arranged in descending order of test weight for the 17 locations and range from an average of 62.4 pounds per bushel in Grant (Nash) and Logan (Marshall) counties to 57.5 bushels in Pottawatomie county (Shawnee). The average test weight for all varieties at all locations was high for the 1945-46 season, being 60.9 pounds per bushel. As in previous years Red Chief and other Black-hull types were high in test weight. However, from the data presented in Tables IV and V it can be seen that the yields per acre of such varieties as Comanche, Pawnee, and Triumph are enough higher at almost all locations to more than compensate for this difference in test weight.

TABLE IV.—Average and Relative Yield of Twelve Varieties of Hard Red Winter Wheat Tested in the Oklahoma Farm Wheat Improvement Program by Locations and Areas, 1938-1946.

	Tenmarq			Turkey			Cheyenne			Blackhull		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
Northwest Oklahoma												
Texas (Goodwell)	1	28.4	100	1	33.5	118	1	37.7	133	1	25.0	88
Beaver (Forgan & Beaver)	5	21.1	100	5	18.3	87	5	20.8	98	4	19.3	89
Harper (Buffalo)	1	31.9	100	1	19.5	61	1	16.4	51	1	20.1	63
Ellis (Shattuck & Arnett)	3	28.9	100	3	26.3	91	2	29.0	100	3	26.1	90
Woods (Alva)	3	24.8	100	3	20.2	82	3	22.0	89	3	22.2	90
Woods (Freedom)	6	25.1	100	6	20.6	82	6	22.9	91	6	21.0	84
Woodward (Mooreland)	1	15.7	100	1	11.0	70	1	16.5	105	1	15.6	99
Woodward (Mutual)	1	25.1	100	1	22.5	90	1	24.7	98	1	23.5	94
Total No. of Tests	21			21			20			20		
Average		24.7	100		21.0	85		23.0	94		21.6	87
North Central Oklahoma												
Alfa (Cherokee)	3	25.3	100	3	22.5	89	3	22.2	88	3	20.7	82
Grant (Medford)	6	26.0	100	6	22.0	85	6	25.5	98	6	22.3	86
Grant (Nash)	6	19.1	100	6	16.0	84	6	18.4	96	6	16.4	86
Kay (All tests)	6	20.6	100	6	17.8	86	6	21.3	103	5	20.8	103
Garfield (Enid)	3	28.3	100	3	23.7	84	3	25.6	90	3	27.1	96
Garfield (Covington)	6	18.0	100	6	16.0	89	6	19.8	110	6	16.2	90
Noble (Perry)	5	15.3	100	5	16.1	105	5	16.1	105	5	14.7	96
Togan (Marshall)	1	22.8	100	1	21.0	92	1	20.4	89	1	22.0	96
Total No. of Tests	36			36			36			35		
Average		21.2	100		18.6	88		21.0	99		19.2	91
Central Oklahoma												
Blaine (Okeene)	5	19.0	100	5	15.6	82	5	18.0	94	4	17.6	93
Blaine (Geary)	3	15.6	100	3	13.8	89	3	16.2	104	3	15.6	100
Kingfisher (Hennessey)												
Hard Land	2	23.1	100	2	22.3	97	2	23.7	103	2	22.5	98
Sandy Land	2	17.1	100	2	16.6	97	2	19.6	114	2	19.2	112
Canadian (El Reno)	3	22.6	100	3	16.0	71	3	17.6	78	3	18.0	80
Caddo (Hinton)	5	17.6	100	5	16.2	92	5	18.0	102	5	17.1	97
Kingfisher (Kingfisher)	1	3.0	100	1	1.5	50	1	3.2	107	1	2.4	80
Total No. of Tests	21			21			21			20		
Average		18.1	100		15.6	86		17.6	97		17.1	94

* % Tq.=Percent of Tenmarq grown same years.

TABLE IV—Continued.

	Tenmarq			Turkey			Cheyenne			Blackhull		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
West Central Oklahoma												
Custer (Thomas)	1	23.0	100	1	31.2	136	1	26.4	115	1	22.8	99
Dewey (Selling)	3	13.0	100	3	7.4	57	3	12.0	92	3	9.8	75
Washita (Cordell)	2	10.4	100	2	9.5	92	2	11.6	112	2	12.5	120
Total No. of Tests	6			6			6			6		
Average		13.8	100		12.1	88		14.3	103		12.8	93
Southwest Oklahoma												
Comanche (Lawton)	2	14.3	100	2	11.7	82	2	12.9	91	2	15.8	110
Comanche (Indiahoma)	3	15.6	100	3	14.7	94	3	19.9	128	3	14.3	91
Caddo (Anadarko)	3	18.6	100	3	15.8	85	3	13.0	70	3	15.9	86
Cotton (Walters)	2	15.1	100	2	12.7	84	2	16.0	106	2	15.0	100
Kiowa (Hobart)	7	20.2	100	7	13.9	69	7	18.1	90	7	15.7	78
Tillman (Frederick)	8	15.8	100	8	12.5	79	8	17.9	113	8	14.4	91
Tillman (Grandfield)	7	15.8	100	7	13.8	87	7	15.2	96	7	12.6	80
Total No. of Tests	32			32			32			32		
Average		16.8	100		13.6	81		16.7	99		14.5	86
Other Tests												
Grady (Chickasha & Amber)	3	16.3	100	3	17.0	104	3	17.5	107	3	15.8	97
Logan (Guthrie)	5	14.7	100	5	17.2	117	5	13.7	93	5	13.7	93
Oklahoma (Wheatland & Edmond)	2	29.0	100	2	27.1	93	2	26.4	91	2	26.5	91
Pottawatomie (Shawnee)	4	14.3	100	4	13.3	93	4	14.0	98	4	15.2	106
Carter (Lone Grove)	3	13.7	100	3	12.8	93	3	11.3	82	3	12.1	88
Rogers-Mayes (Pryor)	1	12.0	100	1	5.0	42	1	10.6	88	1	13.9	116
Tulsa-Wagoner (Broken Arrow)	1	16.7	100	1	16.1	96	1	16.6	99	1	16.9	101
Total No. of Tests	135			135			134			132		
Weighted Average		19.2			16.7			18.4			17.3	
Percent of Tenmarq grown same years			100			87			97			90

* % Tq.=Percent of Tenmarq grown same years.

TABLE IV—Continued.

	Chiefkan			Early Blackhull			Comanche			Pawnee		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
Northwest Oklahoma												
Texas (Goodwell)	1	38.4	135	1	48.3	170	1	38.4	135	1	49.4	174
Beaver (Forgan & Beaver)	4	21.7	100	4	21.5	99	4	23.4	108	4	24.5	113
Harper (Buffalo)	1	28.6	90	1	26.2	82	1	38.0	119			
Ellis (Shattuck & Arnett)	3	31.1	108	3	28.2	98	3	29.5	102	3	31.5	109
Woods (Alva)	3	20.0	81	3	20.6	83	2	26.0	95	1	28.8	83
Woods (Freedom)	6	22.4	89	6	23.6	94	6	25.8	103	5	25.2	102
Woodward (Mooreland)	1	15.8	101	1	15.5	99	1	15.6	99	1	16.4	104
Woodward (Mutual)	1	27.4	109	1	30.1	120	1	28.9	115	1	24.5	98
Total No. of Tests	20			20			19			16		
Average		24.2	97		24.7	99		26.8	106		27.4	109
North Central Oklahoma												
Alfalfa (Cherokee)	3	26.9	107	3	23.1	91	2	22.1	113			
Grant (Medford)	6	25.3	97	6	25.0	96	5	27.8	128	4	33.0	138
Grant (Nash)	6	18.0	94	6	20.6	108	6	19.7	103	5	22.7	107
Kay (All tests)	6	23.2	113	5	22.7	113	5	24.7	121	3	34.3	137
Garfield (Enid)	3	28.1	99	3	27.5	97	2	23.9	109	1	21.7	116
Garfield (Covington)	6	17.4	97	6	18.0	100	6	20.1	112	5	20.7	119
Noble (Perry)	5	16.0	104	5	17.3	114	4	16.0	125	2	20.5	177
Logan (Marshall)	1	23.3	102	1	25.1	110	1	24.0	105	1	25.1	110
Total No. of Tests	36			35			31			21		
Average		21.4	101		21.7	103		22.0	115		25.7	126
Central Oklahoma												
Blaine (Okeene)	5	18.6	98	5	20.2	106	4	19.0	100	4	21.2	112
Blaine (Geary)	3	15.4	99	3	17.5	112	2	22.7	123	1	21.9	116
Kingfisher (Hennessey)												
Hard Land	2	24.7	107	2	25.1	109	2	25.3	110	2	27.2	118
Sandy Land	2	20.3	118	2	19.1	112	2	22.7	133	2	23.9	140
Canadian (El Reno)	3	19.3	86	3	19.0	84	3	21.8	96	1	27.9	119
Caddo (Hinton)	5	17.6	100	5	19.0	107	5	19.3	109	5	19.0	108
Kingfisher (Kingfisher)	1	3.4	113	1	.8	27	1	3.6	120			
Total No. of Tests	21			21			19			15		
Average		18.0	99		18.8	104		20.1	108		22.1	116

* % Tq.=Percent of Tenmarq grown same years.

TABLE IV—Continued.

	Chiefkan			Early Blackhull			Comanche			Pawnee		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
West Central Oklahoma												
Custer (Thomas)	1	24.6	107	1	31.8	138	1	32.2	140	1	28.3	123
Dewey (Seiling)	3	12.1	93	3	13.9	107	2	10.9	83	1	15.6	137
Washita (Cordell)	2	14.1	136	2	15.3	147	1	18.4	114	1	20.8	129
Total No. of Tests	6			6			4			3		
Average		14.8	107		17.4	126		18.1	111		21.6	128
Southwest Oklahoma												
Comanche (Lawton)	2	13.4	94	2	11.1	78	1	11.4	139			
Comanche (Indiahoma)	3	17.9	115	3	20.6	132	3	24.8	159	2	25.0	167
Caddo (Anadarko)	3	21.4	115	3	18.9	102	3	21.1	114	1	20.4	112
Cotton (Walters)	2	15.2	101	2	19.5	130	2	19.4	129	2	17.5	116
Kiowa (Hobart)	7	17.2	86	7	18.9	94	5	20.8	107	4	20.1	94
Tillman (Frederick)	8	15.5	99	8	18.2	115	7	16.7	108	5	15.6	116
Tillman (Grandfield)	6	13.7	89	7	18.7	118	7	17.9	113	5	19.3	113
Total No. of Tests	31			32			28			19		
Average		16.2	96		18.4	109		19.1	117		18.9	113
Other Tests												
Grady (Chickasha & Amber)	3	15.6	96	3	15.0	92	2	21.6	109			
Logan (Guthrie)	5	13.2	90	5	14.5	98	5	17.1	116	3	20.0	130
Oklahoma (Wheatland & Edmond)	2	22.0	76	1	7.9	99	2	25.9	89			
Pottawatomie (Shawnee)	3	19.7	119	3	21.3	130	3	22.4	136	2	28.7	228
Carter (Lone Grove)	3	9.8	72	3	14.0	102	3	18.6	136	2	17.5	114
Rogers-Mayes (Pryor)												
Tulsa-Wagoner (Broken Arrow)												
Total No. of Tests	130			129			116			81		
Weighted Average		19.0			19.9			21.2			23.3	
Percent of Tenmarq grown same years			98			104			113			119

* % Tq.=Percent of Tenmarq grown same years.

TABLE IV—Continued.

	Red Chief			Triumph			Reliant			Wichita		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
Northwest Oklahoma												
Texas (Goodwell)	1	38.6	136	1	45.6	161	1	44.2	156	1	48.2	170
Beaver (Forgan & Beaver)	4	21.6	100	3	21.1	109	4	21.0	109	3	23.5	120
Harper (Buffalo)												
Ellis (Shattuck & Arnett)	3	25.9	89	3	30.1	104	3	30.6	106	2	29.4	101
Woods (Alva)	1	32.0	93									
Woods (Freedom)	5	21.8	88	4	19.5	93	4	21.5	102	2	25.9	99
Woodward (Mooreland)	1	17.8	113	1	14.7	94				1	15.8	101
Woodward (Mutual)	1	27.5	110	1	28.4	113				1	23.4	93
Total No. of Tests	16			13			12			10		
Average		24.3	97		24.6	107		25.5	111		26.8	113
North Central Oklahoma												
Alfalfa (Cherokee)												
Grant (Medford)	4	25.7	108	4	26.2	110	4	28.4	119	3	29.0	113
Grant (Nash)	5	22.3	106	5	22.2	105	5	22.0	104	3	22.7	96
Kay (All tests)	3	26.8	107	3	24.0	96	3	29.3	117	3	25.7	102
Garfield (Enid)	1	16.3	87	1	14.4	77	1	18.4	98			
Garfield (Covington)	5	19.5	112	5	20.5	118	5	19.8	113	3	21.7	106
Noble (Perry)	2	12.3	106	2	20.5	177	2	17.7	153	2	15.6	135
Logan (Marshall)	1	25.4	111	1	24.4	107	1	26.9	118	1	23.2	102
Total No. of Tests	21			21			21			15		
Average		21.8	107		22.4	110		23.4	115		23.4	106
Central Oklahoma												
Blaine (Okeene)	4	19.7	104	4	20.7	109	4	21.6	114	2	23.7	103
Blaine (Geary)	1	21.1	112									
Kingfisher (Hennessey)												
Hard Land	2	24.4	106	2	25.2	109	2	24.6	107	2	25.2	109
Sandy Land	2	20.4	119	2	20.2	118	2	19.3	113	2	17.6	103
Canadian (El Reno)	1	26.8	114	1	19.4	83	1	23.8	101			
Caddo (Hinton)	5	18.4	104	4	20.9	121	4	18.6	107	3	21.6	103
Kingfisher (Kingfisher)												
Total No. of Tests	15			13			13			9		
Average		20.5	108		21.3	111		20.9	109		22.0	105

* % Tq.—Percent of Tenmarq grown same years.

	Red Chief			Triumph			Reliant			Wichita		
	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.	No. Yrs. Grown	Av. Yield	* % Tq.
West Central Oklahoma												
Custer (Thomas)	1	33.0	143	1	37.2	162	1	34.5	150	1	35.6	155
Dewey (Selling)	1	10.1	89									
Washita (Cordell)	1	17.3	107	1	19.8	123	1	20.1	125	1	16.5	102
Total No. of Tests	3			2			2			2		
Average		20.1	120		23.5	120		27.3	140		26.2	133
Southwest Oklahoma												
Comanche (Lawton)												
Comanche (Indianoma)	2	19.8	132	2	24.2	162	2	23.2	155	2	24.0	161
Caddo (Anadarko)	1	21.1	116									
Cotton (Walters)	2	17.2	114	2	21.1	140	2	19.9	132	2	16.7	111
Kiowa (Hobart)	3	22.3	98	3	21.5	118	3	17.9	98	2	17.2	92
Tillman (Frederick)	4	15.5	107	4	19.1	143	4	16.2	121	3	14.6	100
Tillman (Grandfield)	4	19.1	108	4	19.1	113	4	17.3	103	3	17.4	98
Total No. of Tests	16			15			15			12		
Average		18.8	108		20.5	130		18.3	116		17.6	109
Other Tests												
Grady (Chickasha & Amber)												
Logan (Guthrie)	3	10.9	71	3	15.0	97	3	17.6	114	3	18.3	118
Oklahoma (Wheatland & Edmond)												
Pottawatomie (Shawnee)	2	15.5	123	2	20.5	163	2	22.4	177	2	16.3	129
Carter (Lone Grove)	2	13.8	90	2	15.8	104	2	19.5	128	2	15.0	99
Rogers-Mayes (Pryor)												
Tulsa-Wagoner (Broken Arrow)												
Total No. of Tests	78			71			70			55		
Weighted Average		20.6			21.8			21.9			21.8	
Percent of Tenmarq grown same years			104			115			115			110

* % Tq.=Percent of Tenmarq grown same years.

TABLE V.—Summary of the Relative Yields of the Five Top-ranking Varieties of Wheat for Five Areas in Oklahoma.

Area	RANK				
	1	2	3	4	5
	Variety, number of tests (in parenthesis), and yield (in percent of Tenmarq)				
Northwest	Wichita (10), 113	Reliant (12), 111	Pawnee (16), 109	Triumph (13), 107	Comanche (19), 106
North Central	Pawnee (21), 126	Comanche (31), and Reliant (21), 115	-----	Triumph (21), 110	Red Chief (21), 107
Central	Pawnee (15), 116	Triumph (13), 111	Reliant (13), 109	Comanche (19), and Red Chief (15), 108	-----
West Central*	Reliant (2), 140	Wichita (2), 133	Pawnee (3), 128	Ey. Bkhl. (6), 126	Triumph (2), and Red Chief (3), 120
Southwest	Triumph (15), 130	Comanche (28), 117	Reliant (15), 116	Pawnee (19), 113	Ey. Bkhl. (32), and Wichita (12), 109

* The number of tests in the west central area is not adequate to provide a reliable comparison between varieties as to rank and relative performance. See Table IV for the number of tests for varieties not listed in this table.

TABLE VI.—Test Weights in Pounds per Bushel of Wheat Varieties Grown at 17 Locations in Oklahoma, 1945-46 and 1941-44 Average.

County and Location	Ten-marq	Tur-key	Chey-enne	Black-hull	Chief-kan	Early Black-hull	Coman-che	Paw-nee	Red Chief	Tri-umph	Rel-lant	Wich-ita	Loca-tion Av.
Grant (Nash)	61.0	61.0	61.0	62.0	63.0	63.0	62.5	63.0	64.0	62.5	63.0	63.0	62.4
Logan (Marshall)	61.5	61.0	62.0	62.5	62.5	63.0	62.0	62.5	64.0	62.0	63.0	63.0	62.4
Woodward (Mutual)	61.0	62.0	61.0	63.0	63.0	63.0	62.0	62.0	64.0	62.0	---	62.0	62.3
Woodward (Mooreland)	61.5	60.0	61.0	62.5	62.0	62.0	62.0	62.0	63.5	61.0	---	62.5	61.8
Woods (Freedom)	61.0	60.5	61.5	61.5	62.0	61.5	61.5	61.0	64.0	61.5	61.0	---	61.5
Blaine (Okeene)	60.5	60.5	61.5	62.0	62.0	61.0	62.0	62.0	64.0	60.0	62.5	60.0	61.5
Garfield (Covington)	59.5	60.0	60.5	61.0	62.0	62.5	61.0	61.0	63.5	62.0	61.5	63.0	61.5
Grant (Medford)	58.5	59.0	60.0	61.0	62.5	63.0	60.5	62.0	63.0	63.0	62.0	62.5	61.4
Cotton (Walters)	59.0	61.5	61.5	61.0	61.5	61.0	62.0	61.5	63.0	60.0	61.0	60.0	61.0
Tillman (Frederick)	59.0	60.0	60.5	60.5	61.5	61.0	60.0	61.0	63.0	60.0	62.5	60.0	60.8
Kay (Weigle farm)	59.0	60.0	59.0	61.0	61.0	62.0	59.0	61.0	63.0	61.0	61.0	61.0	60.7
Caddo (Hinton)	60.5	60.0	60.0	61.0	62.0	60.0	61.0	61.0	63.0	58.5	61.5	60.0	60.7
Beaver (Beaver)	59.0	59.0	61.0	60.5	61.0	60.5	60.0	59.0	61.5	61.5	60.5	62.5	60.5
Custer (Thomas)	59.0	60.0	60.0	60.0	61.0	60.5	60.5	61.5	62.5	59.5	61.5	59.0	60.4
Logan (Guthrie)	60.5	58.0	57.0	60.0	58.0	60.5	59.0	59.0	60.5	60.0	58.0	60.5	59.3
Tillman (Grandfield)	58.5	58.5	60.0	60.0	60.5	60.0	59.0	57.0	61.0	59.0	59.5	59.0	59.3
Pottawatomie (Shawnee)	53.0	56.0	56.5	57.0	58.0	59.5	56.0	59.0	59.5	58.5	59.5	58.0	57.5
Variety Average, 1946	59.5	59.8	60.2	61.0	61.4	61.4	60.0	60.9	62.8	60.7	61.2	61.0	60.9
1941-44 Average	55.4	55.9	56.6	57.4	58.8	58.9	59.0	58.0	61.2	59.0	59.6	60.9	

