

NEBRASKA WHEAT VARIETIES AND QUALITY , 1962 CROP.

Release - Immediate

BISON AND WARRIOR WHEAT GAIN: CHEYENNE AND NEBRED DECLINE

The 1962 survey of Nebraska Wheat Varieties, made by the State-Federal Division of Agricultural Statistics, showed further declines in popularity of the Cheyenne and Nebred varieties of winter wheat and gains for Bison and Warrior. Other varieties making moderate increases in the percentage of the total wheat planted are: Wichita, Triumph and Rodco. Spring wheat varieties have faded from the scene and Ponca, Pawnee Selection 33, and Comanche have lost popularity.

The acreage devoted to Pawnee and Bison was 24.9 percent of the total wheat planted in each case. For Bison, this represented a gain of 4.8 percentage points since 1961, but Pawnee slipped 2 percentage points to reach that level. The Pawnee variety hit a peak percentage of the total in 1954 at 35.7 percent. Bison wheat has had rapid acceptance in the State. It occupied 7.1 percent of the acreage in 1959 and 20.1 percent in 1961.

Cheyenne wheat, a long-time favorite in the western districts, lost 5.6 percentage points. At 21.7 percent, it was at the lowest percentage level since the 1939 survey was made. Nebred has yielded to Warrior in the western districts and to Bison in all sections of the State. Nebred wheat now has 11.9 percent of the acreage, compared with 26.6 percent in 1954.

STRONG GLUTEN VARIETIES REPRESENT TWO-THIRDS OF TOTAL

Strong gluten varieties of wheat considered excellent for flour used by commercial bakeries made up about two-thirds of the total State wheat acreage. Principal varieties in this class are Cheyenne, Nebred, Bison, Ponca and Warrior.

Mellow gluten wheats made up the bulk of the remaining acreage. Principal varieties in this group include Pawnee, Wichita, Triumph and Omaha. They have desirable characteristics for family flour and blending. Only a fraction of one percent of the acreage was devoted to weak gluten or objectionable varieties.

DISTRICT ESTIMATES REVEAL STRONG PREFERENCE

The estimated acreage of each variety harvested by Crop Reporting Districts show a wide range in preference for the different varieties of wheat. Pawnee wheat is heavily favored in the eastern districts, while Cheyenne is popular in the west. Over half of the wheat acreage in the Panhandle is Cheyenne and nearly 20 percent is Nebred. Warrior now claims 12 percent of the acreage in the Northwest District. The central districts prefer Bison. Most of the Wichita variety is found in the southern districts.

NEBRASKA--WHEAT ACREAGE HARVESTED BY VARIETIES, BY CROP REPORTING DISTRICTS, 1962

DISTRICTS	Pawnee	Cheyenne	Nebred	Bison	Warrior	Wichita	Other	All Varieties
	T h o u s a n d   A c r e s							
Northwest....	3	340	118	41	74	25	9	610
North Central	---	---	8	5	---	---	2	15
Northeast.....	18	---	4	3	---	---	5	30
Central.....	25	3	43	67	7	1	3	149
East Central.	300	2	29	69	---	1	76	477
Southwest....	8	210	71	169	21	29	15	523
South Central	84	14	28	221	1	22	18	388
Southeast....	271	2	15	120	---	29	131	568
State.....	709	571	316	695	103	107	259	2,760

The Nebraska wheat variety and quality surveys are made possible by matching funds provided jointly by the Nebraska Department of Agriculture and Inspection and the Agricultural Marketing Service, U. S. Department of Agriculture under provisions of the Agricultural Marketing Act of 1946.

NEBRASKA--WHEAT VARIETIES

Estimated percentages planted to each variety for selected years

Variety	1939	1944	1949	1954	1959	1961	1962
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Pawnee.....	----	.3	33.4	35.7	31.0	26.9	24.9
Cheyenne.....	14.8	22.7	25.2	27.5	28.9	27.3	21.7
Nebred.....	.2	15.3	26.1	26.6	25.1	17.0	11.9
Bison.....	----	----	----	----	7.1	20.1	24.9
Ponca.....	----	----	----	.2	2.4	2.2	2.1
Wichita.....	----	----	.2	1.5	1.4	2.0	3.8
Turkey.....	58.0	43.4	7.8	2.7	1.0	.4	.4
Triumph.....	----	----	.1	.3	.6	1.6	2.7
Comanche.....	----	----	.2	.7	.4	.3	.2
Pawnee Sel. 33..	----	----	----	----	.3	.5	----
Kiowa.....	----	----	----	----	.2	.3	.3
Omaha.....	----	----	----	----	----	.2	1.7
Warrior.....	----	----	----	----	----	.2	4.0
Nebraska 60.....	10.1	4.8	.7	.5	.2	.1	.1
Tenmarq.....	.2	2.8	1.4	.5	.2	.1	.1
Sioux.....	----	----	----	1.1	.1	.1	----
Rodco.....	----	----	----	----	----	.1	.3
Kanred.....	2.4	.8	.3	.2	----	----	----
Iowin.....	.1	.5	.1	.2	----	----	----
Blackhull.....	6.2	4.8	1.7	.2	----	----	----
Ottawa.....	----	----	----	----	----	----	.3
Apache.....	----	----	----	.3	----	----	----
Chiefkan.....	.1	.2	.4	.2	----	----	----
Stafford.....	----	----	----	.1	----	----	----
Mida.....	----	----	.7	.7	.1	.1	----
Rushmore.....	----	----	----	.2	----	----	----
Lee.....	----	----	----	----	----	.1	----
Selkirk.....	----	----	----	----	----	.1	----
Thatcher.....	.3	.9	.3	----	----	----	----
Rival.....	----	----	----	.1	----	----	----
Ceres.....	1.6	.8	.2	----	----	----	----
Vigo.....	----	----	----	.2	----	----	----
Unknown or not specified.	1.5	.1	.4	.2	1.0	.3	.6

NEBRASKA--WHEAT VARIETIES HARVESTED, 1962

Percentage of wheat acreage harvested, by leading varieties, by Crop Reporting Districts

District	Pawnee	Cheyenne	Nebred	Bison	Wichita	Warrior	Other <sup>/1</sup>
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Northwest.....	.5	55.7	19.4	6.8	4.1	12.1	1.4
North Central.....	----	----	53.4	35.7	----	----	10.9
Northeast.....	60.7	----	14.5	11.5	----	----	13.3
Central.....	16.5	1.8	29.0	44.8	---	4.9	3.0
East Central.....	62.8	.4	6.1	14.5	----	----	16.2
Southwest.....	1.6	40.2	13.6	32.3	5.5	4.0	2.8
South Central.....	21.8	3.5	7.2	56.9	5.6	.3	4.7
Southeast.....	47.7	.3	2.7	21.1	5.1	----	23.1
State.....	25.8	20.7	11.5	25.3	3.9	3.7	9.1

<sup>/1</sup> Includes Omaha, Ottawa, Comanche, Tenmarq, Turkey, Pawnee Selection 33; Kanred, Kiowa, Rodco, Triumph, Nebraska 60, and varieties unknown or not specified.

NEBRASKA--WHEAT YIELDS PER ACRE, BY VARIETIES, 1962  
by Crop Reporting Districts

District	Pawnee	Cheyenne	Nebred	Bison	Warrior	Wichita	Other	Total
	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.
Northwest.....	25.7	17.2	17.1	24.2	21.0	29.8	13.0	18.6
North Central.....	21.1	9.0	9.3	16.9	----	----	12.0	12.2
Northeast.....	15.0	----	10.3	14.6	----	----	16.2	14.4
Central.....	12.2	4.0	9.8	11.8	16.5	----	15.3	11.3
East Central.....	21.0	11.5	15.8	14.9	----	27.0	23.3	20.1
Southwest.....	25.1	23.3	19.4	19.7	26.4	23.5	18.3	21.7
South Central.....	19.4	14.2	16.3	14.5	10.5	18.9	17.1	16.0
Southeast.....	24.8	13.8	16.5	20.0	----	23.2	22.5	22.9
State.....	21.9	19.3	16.1	17.1	21.7	24.0	21.5	19.5

WHEAT YIELDS VARY CONSIDERABLY IN 1962

Dry spring weather, stem rust, high temperatures and other detrimental factors resulted in below average wheat yields per acre in 1962 throughout the State. The crop of 53,820,000 bushels averaged only 19.5 bushels per acre, which was the lowest yield since 1956. Test weights and protein content showed wide variation and were below average also.

Yields per harvested acre of the different varieties of wheat were developed from growers reports on the special wheat survey made in late 1962. These yields represent the over-all average by districts and for the State. They do not offer a valid comparison of yields by varieties such as is obtained by growing the different varieties under similar or controlled conditions of experimental plots. They do, however, reflect the harvested yields obtained under all the varied conditions experienced throughout the area where specific varieties are grown.

In 1962, early maturing varieties, though hampered by dry weather and retarded early growth, escaped the severe ravages of stem rust, which hit the late maturing varieties a staggering blow.

Of the important varieties, the average yield for Wichita was the highest in 1962. Nebred yields per acre were the lowest for the State as a whole and mostly below every crop reporting district average yield. Pawnee and Warrior wheats exceeded the State average yield per acre, but Cheyenne and Bison fell slightly below the average over-all yield. Omaha wheat made a good showing at the State level. Other minor varieties exceeding the over-all average State yield were Triumph, Ottawa, Ponca, and Rodco.

NEBRASKA: WHEAT QUALITY, 1962 CROP

Variety	Reported Test Weight per bu. /1 Pounds	Reported Protein Content /1 Percent	Sedimentation Value /2
Pawnee	56.8	10.6	30.0
Cheyenne	54.9	10.5	32.4
Nebred	53.3	11.1	31.6
Bison	55.8	11.8	46.7
Warrior	56.1	10.9	34.2
Wichita	59.2	11.9	37.7
Nebraska total			
All Varieties	55.9	11.1	36.7

/1 As reported by wheat growers on annual wheat survey.

/2 As determined from 4,414 samples of farm stored wheat tested by the Agricultural Stabilization and Conservation Service. Sedimentation classified by varieties where reported. About 19 percent of the samples could not be classified by varieties.

WHEAT QUALITY 1962 CROP /1

State	Test Weight per bu. Pounds	Protein Content Percent	Sedimentation Value
Colorado	61.2	12.14	42.7
Kansas	61.1	11.7	49.

/1 Colorado data obtained from samples of wheat collected at county elevators.

Kansas data were obtained from carlot shipments to terminal markets.

WHEAT QUALITY BELOW AVERAGE IN 1962

While comparable statistics are lacking on quality of the Nebraska wheat crop in previous years to make precise comparisons, it is evident that quality of the 1962 crop was below average in all sections of the State and for most varieties grown. Yield and test weight data from state-wide variety test plots showed 1962 was below average in all sections of the State.

The average reported test weight of 55.9 pounds, is recognized as fairly low for the State. Test weights showed a wide range as expected, considering the heavy widespread stem rust infection. Early maturing varieties suffered from warm, dry weather, which cut test weight, while the later maturing varieties were plagued by rust and hail. Hessian fly infestation caused damage in local areas in southern Nebraska.

Protein content was reported by wheat growers at 11.1 percent for the State as a whole. While no over-all averages are available for past comparisons, the State is a recognized producer of high protein wheat and most qualified observers would expect the long-time State average to exceed the reported protein content of 11.1 percent for 1962. Sedimentation values, as obtained from tests made of farm-stored wheat, also emphasize the low quality crop of 1962.

Data for the Colorado and Kansas 1962 wheat crop have been included in this report to furnish state comparisons for wheat grown in the Central Plains. In Kansas, the state average sedimentation value from tests made at terminal markets was identical to the average sedimentation from tests made on farm-stored wheat.

NEBRASKA: WHEAT--REPORTED TEST WEIGHT PER BUSHEL BY VARIETIES AND  
by Crop Reporting Districts, 1962

Crop Reporting Districts	Pawnee	Cheyenne	Nebred	Bison	Warrior	Wichita	Other Varieties	All Varieties
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Northwest	59	54	54	58	56	60	55	54.8
North	/1	--	45	48	/1	--	52	46.8
Northeast	52	/1	46	/1	--	--	57	52.6
Central	48	/1	47	51	51	/1	48	49.0
East Central	56	/1	54	55	--	56	57	55.9
Southwest	58	56	56	58	58	59	58	57.0
South Central	56	54	54	55	55	58	56	55.3
Southeast	59	/1	56	57	--	60	60	58.8
State	56.8	54.9	53.3	55.8	56.1	59.2	58.3	55.9

/1 Relatively small acreage. Included in State average.

NEBRASKA: SEDIMENTATION VALUE OF FARM STORED WHEAT BY VARIETIES 1962 CROP /1

Variety	Number of Samples Tested	Average Sedimentation Value	Variety	Number of Samples Tested	Average Sedimentation Value
Bison	846	46.7	Kiowa	16	47.0
Cheyenne	816	32.4	Triumph	129	46.8
Comanche	16	32.6	Rodeo	18	55.2
Nebred	429	31.6	Wichita	108	37.7
Omaha	50	44.1	Warrior	95	34.2
Ottawa	7	41.6	Concho	3	39.0
Pawnee	950	30.0	Unknown	832	38.1
Ponca	99	40.3	All Varieties	4,414	36.7

/1 Summary of 4,414 samples of farm-stored wheat tested by the Agriculture Stabilization and Conservation Service in connection with Commodity Credit Corporation loan applications, 1962.

SEDIMENTATION VALUE

The sedimentation test is designed to indicate strength and quality of wheat for bread-baking purposes by measuring combined quantity and quality of the gluten in wheat. Gluten proteins absorb water and swell when treated with lactic acid under certain conditions. The amount of water absorbed and the extent of swelling depend on the quantity and quality of gluten in the wheat sample. Low sedimentation with values of 39 or below are usually low in protein and considered weak in gluten. Values from 40 to 59 usually indicate good quality gluten, and values above 60 usually have high protein and superior gluten qualities.

The U. S. Department of Agriculture in the 1962 Crop Loan Program used the sedimentation test to establish premium loan rates for the 1962 wheat crop based on sedimentation value. Premiums on wheat were 3 cents on sedimentation values of 40 to 42, inclusive, and one cent for each point of sedimentation value up to a maximum premium of 25 cents, which was offered for wheat with sedimentation values of 64 or more.

Gluten protein as reflected in the sedimentation value of wheat is basically determined by (1) the variety and (2) the conditions under which the crop is grown. Some authorities on the subject are of the opinion that the environment under which the crop is grown may have a greater influence than variety on sedimentation values in wheat. Hence, cultural practices, soil fertility, heat, drought, disease, the amount and timeliness of rainfall, and other factors can affect the gluten quality in the grain and thereby influence the sedimentation value.

In view of this information, it is evident that the relative sedimentation values of any variety may vary from year to year, from field to field, and from one area of the State to another, depending on how it responds to the prevailing conditions which modify protein quantity and quality. For example, heat and low humidity during the ripening period may adversely affect protein quality and thus sedimentation to varying degrees, depending on relative maturity of the crop at the time the condition occurs. In 1962, the sedimentation of certain varieties may have been distorted by rust damage or protein levels within the area where they are principally grown. Also, it is quite possible that there are still unknown factors controlling sedimentation which may vary from one variety to another.

Thus, it appears too early to arrive at positive conclusions on the sedimentation value of any single variety and growers are cautioned against use of the figures in the sedimentation summary as a basis for selecting the variety to be grown on their own farm. The grower's chances for top yields and high sedimentation lie in choosing a variety recommended by the Nebraska Agricultural Experiment Station and by using good cultural practices.

NEBRASKA: SEDIMENTATION VALUE OF FARM STORED WHEAT,  
By Counties, 1962 Crop /1

COUNTY AND DISTRICT	Number of Samples Tested	Average Sedimentation Value	COUNTY AND DISTRICT	Number of Samples Tested	Average Sedimentation Value
Banner.....	29	30.0	Butler.....	37	39.3
Box Butte....	151	27.8	Cass.....	14	26.1
Cheyenne.....	117	33.8	Colfax.....	4	29.4
Dawes.....	31	32.3	Dodge.....	30	21.5
Deuel.....	104	37.8	Douglas.....	1	17.5
Garden.....	56	34.2	Hamilton.....	30	37.1
Kimball.....	16	33.6	Lancaster....	59	31.1
Morrill.....	73	30.2	Merrick.....	6	47.2
Scotts Bluff.	4	26.2	Nance.....	14	33.9
Sheridan.....	118	32.7	Platte.....	14	29.8
Sioux.....	---	---	Polk.....	26	30.9
NORTHWEST....	699	32.3	Sarpy.....	---	---
Arthur.....	---	---	Saunders.....	20	23.7
Blaine.....	---	---	Seward.....	95	33.3
Boyd.....	---	---	Washington...	1	40.0
Brown.....	---	---	York.....	32	35.9
Cherry.....	3	25.8	EAST.....	383	32.2
Garfield.....	---	---	Chase.....	223	44.0
Grant.....	---	---	Dundy.....	83	46.5
Holt.....	2	38.2	Frontier....	77	40.5
Hooker.....	---	---	Hayes.....	197	43.6
Keya Paha....	3	25.8	Hitchcock....	223	42.7
Logan.....	5	49.5	Keith.....	175	31.9
Loup.....	---	---	Lincoln.....	161	37.9
McPherson....	---	---	Perkins.....	370	33.0
Rock.....	---	---	Red Willow...	163	37.3
Thomas.....	---	---	SOUTHWEST....	1,672	38.8
Wheeler.....	---	---	Adams.....	38	38.4
NORTH.....	13	36.8	Franklin....	27	41.3
Antelope.....	---	---	Furnas.....	107	35.3
Boone.....	---	---	Gosper.....	61	43.0
Burt.....	---	---	Harlan.....	130	37.0
Cedar.....	---	---	Kearney.....	38	33.1
Cuming.....	---	---	Phelps.....	87	32.9
Dakota.....	---	---	Webster.....	32	46.8
Dixon.....	---	---	SOUTH.....	520	37.3
Knox.....	---	---	Clay.....	42	35.5
Madison.....	1	17.5	Fillmore....	122	38.6
Pierce.....	---	---	Gage.....	134	35.8
Stanton.....	---	---	Jefferson....	206	39.3
Thurston....	---	---	Johnson.....	27	40.5
Wayne.....	---	---	Nemaha.....	23	46.7
NORTHEAST....	1	17.5	Nuckolls....	48	46.0
Buffalo.....	6	31.5	Otoe.....	23	36.6
Custer.....	28	28.4	Pawnee.....	17	44.1
Dawson.....	19	44.5	Richardson...	10	46.1
Greeley.....	---	---	Saline.....	322	36.7
Hall.....	1	54.0	Thayer.....	56	46.6
Howard.....	4	31.4	SOUTHEAST....	1,030	38.8
Sherman.....	1	22.5			
Valley.....	4	26.4			
CENTRAL.....	63	33.9	NEBRASKA.....	4,381	36.7

1 As determined from farm stored wheat tested by the Agricultural Stabilization and Conservation Service.

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\* A C K N O W L E G M E N T S \*  
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