

WHEAT

In The Bimonthly Bulletin

1938 - 1951

By H. L. Walster¹

In September, 1938, the North Dakota Agricultural Experiment Station began the publication of its Bimonthly Bulletin. Because it appears six times a year it has largely replaced the regular bulletin series as a publication in which to tell the rapidly changing story about hard red spring wheat and durum, the major crop enterprises of North Dakota. Special investigations requiring longer treatment are reported in the regular bulletin series and in contributions to the scientific journals.

In the 13 years since 1938 the Bimonthly Bulletin has carried 18 articles on plant breeding; 18 articles on wheat varieties; 17 articles on wheat quality; 5 articles describing equipment used in testing wheat quality; 7 articles on the relation of soil management practices to wheat production; 8 articles on wheat insects; 12 articles on wheat diseases; 7 articles on wheat storage; 12 articles dealing with the economics of wheat; 4 articles on seed size and plant competition; 2 on weeds in wheat; 4 on feeding wheat to livestock and 6 on miscellaneous subjects, a total of 92 stories about wheat.

The following is a classified list of reports on wheat investigations which have been published in the Bimonthly Bulletin since 1938. They are classified as follows:

Wheat Breeding	Wheat Diseases
Wheat Variety Trials and Surveys	Storage Problems
Quality of Wheat	Economic Studies
Equipment for Quality Studies	Seed Size and Plant Competition
Soil Management	Weeds in Wheat
Insect Pests of Wheat	Feeding Wheat
	Miscellaneous Studies

WHEAT BREEDING

- Does Wheat Run Out.* L. R. WALDRON.—Vol. 1, No. 3, pp. 25-26, January, 1939.
- New Varieties of Rust Resistant Wheat.* L. R. WALDRON.—Vol. 1, No. 3, pp. 35-37, January, 1939.
- Durum Wheat Breeding.* GLENN S. SMITH.—Vol. 1, No. 4, pp. 10-12, March, 1939.
- North Dakota Wheat Breeders in Action.* H. L. WALSTER.—Vol. IV, No. 3, pp. 2-6, January, 1942.
- A New Wheat Variety for Western North Dakota (Vesta).* L. R. WALDRON.—Vol. IV, No. 4, p. 10, March, 1942.

¹Director, North Dakota Agricultural Experiment Station

- Seed of New Rust Resistant Durum Available.* T. E. STOA.—Vol. VI, No. 1, pp. 2-3, November, 1943.
- Two New Durum Varieties.* G. S. SMITH.—Vol. V, No. 4, pp. 2-3, March, 1943. Description of Carleton and Stewart and of their introduction.
- The Plant Breeder Serves North Dakota.* H. L. WALSTER.—Vol. VII, No. 2, pp. 28-30, November-December, 1944. Lists dates of introduction of varieties of wheat, durum, flax and corn hybrids.
- The New Mida Wheat Variety.* L. R. WALDRON.—Vol. VI, No. 4, p. 9, March-April, 1944.
- Flax, Wheat and Chromosomes.* L. R. WALDRON.—Vol. VII, No. 1, pp. 4-5, September-October, 1944.
- M. A. Carleton—Pioneer Wheat Scientist.* G. S. SMITH.—Vol. VII, No. 5, pp. 3-7, May-June, 1945.
- Increase of Wheat Yields Resulting from Modern Breeding.* L. R. WALDRON.—Vol. VIII, No. 2, pp. 14-16, November-December, 1945.
- Cadet—A New Beardless Wheat.* T. E. STOA.—Vol. VIII, No. 3, pp. 21-22, January-February, 1946.
- Breeding for Leaf Rust Resistance in Wheat.* L. R. WALDRON.—Vol. XI, No. 3, pp. 73-76, January-February, 1949.
- Portable Shelter for Field Crossing.* THOMAS CONLON.—Vol. XIII, No. 2, pp. 70-71, November-December, 1950.
- A Plant Breeder Works with 15B.* L. R. WALDRON.—Vol. XIII, No. 3, pp. 126-128, January-February, 1951.
- Breeding for Rust Resistance in Tropical Africa.* L. R. WALDRON.—Vol. XIII, No. 5, pp. 218-219, May-June, 1951.
- Seed Distribution in 1951.* T. E. STOA.—Vol. XIII, No. 6, pp. 236-239, July-August, 1951.

WHEAT VARIETY TRIALS AND SURVEYS

- Method of Release of New Wheat Varieties.* H. C. HANSON.—Vol. 1, No. 2, pp. 20-21, November, 1933.
- Which Rust Resistant Wheats Are Most Desirable.* T. E. STOA.—Vol. 1, No. 3, pp. 31-35, January, 1939.
- Small Grain Varieties for North Dakota.* T. E. STOA.—Vol. 1, No. 4, pp. 12-13, March, 1939.
- Distribution of Rival and Pilot Wheats.* T. E. STOA.—Vol. II, No. 2, pp. 4-6, November, 1939.
- The Comparative Performance of Some New Varieties of Hard Red Spring Wheat.* T. E. STOA, R. H. HARRIS AND L. D. SIBBITT.—Vol. II, No. 3, pp. 4-8, January, 1940. Reviews information on Nordhougen's New, Renown, Apex, Rival, Pilot, Brandon 123, Coronation, Regent, Marquillo, Hope, Marvel, Preston, Progress and "No. 1656."
- Cereal Crops in Western North Dakota.* R. W. SMITH.—Vol. II, No. 3, pp. 8-11, January, 1940. Reviews variety tests at Dickinson 1930-1939.
- Spring Wheat Varieties at the Mandan Station.* J. C. BRINSMADE.—Vol. III, No. 4, pp. 21-23, 1941. Reviews variety tests from 1930-1940.
- Which Variety of Wheat Should One Grow in 1942?* T. E. STOA AND L. R. WALDRON, R. H. HARRIS AND L. D. SIBBITT.—Vol. IV, No. 3, pp. 6-13, January, 1942. Reviews information on Thatcher, Nordhougen, Rival, Pilot, Regent, Renown, Ceres, Brandon 123, Premier, Merit and Vesta hard wheats, and Mindum, Monad, (D-1), Pentad (D-5), K-75, and Golden Ball durums.
- Progress in the Improvement of Wheat Varieties for North Dakota.* T. E. STOA AND L. R. WALDRON, R. H. HARRIS AND L. D. SIBBITT.—Vol. V, No. 3, pp. 3-11, January, 1943. Reviews yield and quality data on leading hard wheat and durum varieties.

- A Brief History of Wheat Variety Changes on Farms in North Dakota.* T. E. STOA.—Vol. VII, No. 6, pp. 21-26, July-August, 1945.
- Varieties of Wheat for North Dakota.* T. E. STOA AND L. R. WALDRON, R. H. HARRIS AND L. D. SIBBITT.—Vol. VIII, No. 3, pp. 10-20, January-February, 1946.
- Wheat Varietal Surveys.* J. A. CLARK.—Vol. VIII, No. 6, pp. 12-15. July-August, 1946.
- Stewart Durum Accepted in Canada.* H. L. WALSTER.—Vol. IX, No. 4, p. 104, March-April, 1947.
- Rescue Wheat.* T. E. STOA.—Vol. X, No. 2, pp. 43-45, November-December, 1947.
- Redman Wheat.* T. E. STOA.—Vol. XI, No. 2, pp. 27-28, November-December, 1948.
- Wheat Varieties—Which To Grow.* T. E. STOA AND L. R. WALDRON.—Vol. XI, No. 3, pp. 63-72, January-February, 1949.
- Wheat Varietal Surveys—North Dakota 1949.* J. A. CLARK.—Vol. XIII, No. 1, pp. 24-28, September-October, 1950.
- New Varieties of Wheat—Their Advantages and Limitations.* T. E. STOA.—Vol. XIII, No. 3, pp. 95-100, January-February, 1951. Summarizes available information about Lee and Rushmore hard wheats, about Nugget durum and about non-recommended varieties such as "Wahpeton" and others.

QUALITY OF WHEAT

Milling and Baking and Chemical Studies

- Factors Which Influence the Protein of Hard Red Spring Wheat.* R. H. HARRIS.—Vol. I, No. 1, pp. 10-12, September, 1938.
- Wheat Improvement and Wheat Quality.* R. H. HARRIS. (A Review). Vol. I, No. 6, pp. 4-6, July, 1939.
- The Vitamin Content of Wheat Germ.* MRS. DARLINE KNOWLES.—Vol. II, No. 2, pp. 11-12, November, 1939.
- The Quality of Thatcher Wheat Grown on Soil-less Culture.* E. A. HELGESON AND R. H. HARRIS.—Vol. III, No. 5, pp. 3-6, May, 1941.
- Comparative Baking Quality of Wheat Starches.* R. H. HARRIS AND L. D. SIBBITT. Vol. IV, No. 2, November, 1941.
- The Effect of Unfavorable Weather at Harvest Upon the Quality of North Dakota Wheat.* R. H. HARRIS.—Vol. V., No. 1, pp. 23-28, September, 1942.
- North Dakota Wheat Quality in 1942.* R. H. HARRIS.—Vol. V, No. 2, pp. 26-27, November, 1942.
- Comparative Yields and Quality Data for Five Hard Red Spring Wheat Varieties as Affected by Growth Location.* R. H. HARRIS, L. R. WALDRON, L. D. SIBBITT. Vol. VII, No. 5, pp. 8-11, May-June, 1945.
- Sick Wheat—What Do Scientists Know About It?* R. H. HARRIS.—Vol. XI, No. 1, pp. 17-18, September-October, 1948.
- New Durum Wheats Are High in Macaroni Quality.* L. D. SIBBITT AND R. H. HARRIS. Vol. XI, No. 2, pp. 45-48, November-December, 1948.
- The Quality Picture of North Dakota Hard Red Spring Wheats.* R. H. HARRIS AND L. D. SIBBITT. Vol. XI, No. 4, pp. 138-143, March-April, 1949.
- Observations on the Addition of Chemical Ingredients to Bread.* R. H. HARRIS.—Vol. XII, No. 3, pp. 81-83, January-February, 1950.
- Milk Products in Bread Making.* R. H. HARRIS.—Vol. XII, No. 5, pp. 149-154, May-June, 1950.
- Experimental Milling and Baking.* R. H. HARRIS AND L. D. SIBBITT.—Vol. XIII, No. 1, pp. 9-11, September-October, 1950.

- Effect of Drying Wet Wheat on Milling-Baking Quality.* R. H. HARRIS.—Vol. XIII, No. 2, pp. 89-90, November-December, 1950.
- Protein Content of North Dakota Wheat in 1950.* R. H. HARRIS AND L. D. SIBBITT. Vol. XIII, No. 2, pp. 109-112, January-February, 1951.
- Effect of Frost on Wheat.* R. H. HARRIS.—(Review). Vol. XIII, No. 3, p. 135, January-February, 1951.

EQUIPMENT FOR QUALITY STUDIES

1941 - 1951

- New Equipment for Wheat Quality Testing.* R. H. HARRIS.—Vol. IV, No. 1, pp. 4-6, September, 1941.
- A Method of "Finger-Printing" North Dakota Wheat Flours in Respect to Their Baking Strength.* R. H. HARRIS AND L. D. SIBBITT, O. BANASIK.—Vol. IV, No. 5, pp. 2-5, May, 1942.
- Micro-Processing Equipment for Durum Wheat.* R. H. HARRIS. Vol. IX, No. 4, pp. 105-108, March-April, 1947.
- A Semi-Automatic Apparatus for Determining Moisture Content in Cereal Production.* R. H. HARRIS AND L. D. SIBBITT. Vol. XI, No. 6, pp. 199-203, July-August, 1949.
- A New Fermentation Cabinet.* L. D. SIBBITT. Vol. XIII, No. 2, pp. 62-64, November-December, 1950. In addition to the equipment described above, the station has now installed a complete Brabender farinograph and extensograph for use in the more complete testing of wheat doughs. Description of the equipment and of tests made therewith will appear in later issues of this bulletin.

SOIL MANAGEMENT

- Continuous Wheat Culture Versus Rotation Wheat Culture.* H. L. WALSTER AND T. E. STOA. Vol. V, No. 1, pp. 2-8, September, 1942. Reviews the story of old Plot 2 from 1892 to 1942.
- Nitrogen Content of Mida Wheat Grown on Fargo Clay, 1941-1945.* Vol. IX, No. 2, pp. 35-39, November-December, 1946.
- What Is Happening to Our Soil Fertility.* C. C. VOLKERDING AND T. E. STOA. Vol. X, No. 1, pp. 3-12, September-October, 1947. Compares grain farming and livestock farming as to its effect upon yields of wheat and other crops and upon the total nitrogen and "available" phosphorus content of the soil and upon soil reaction (PH).
- Is Rock Phosphate a Good Fertilizer for North Dakota?* C. C. VOLKERDING AND T. E. STOA.—Vol. X, No. 1, pp. 13-17, November-December, 1947.
- Effect of Organic Amendments on Crop Yields at Mandan, North Dakota.* R. W. CARPENTER.—Vol. X, No. 3, pp. 87-89, January-February, 1948.
- Fertilizer Increases Wheat Yields at Langdon.* H. L. WALSTER.—Vol. XI, No. 3, p. 84, January-February, 1949.
- Effect of Rate, Method of Application and Source of Fertilizer on Yield of Wheat and Durum.* E. B. NORUM AND R. A. YOUNG.—Vol. XII, No. 4, pp. 125-128, March-April, 1950.

INSECT PESTS OF WHEAT

1941 - 1951

- The Effect of the Green Grain Bug Upon the Milling and Baking Quality of Wheat.* R. H. HARRIS AND L. D. SIBBITT, J. A. MUNRO AND H. S. TELFORD.—Vol. III, No. 5, pp. 10-14, May, 1941.
- Wheat Stem Sawfly and Harvest Loss.* J. A. MUNRO.—Vol. VII, No. 4, pp. 12-16, March-April, 1945.
- Hessian Fly in the Spring Wheat of Southwestern North Dakota.* R. W. SMITH.—Vol. VIII, No. 4, pp. 3-6, March-April, 1946.

- Host and Distribution Notes on Wheat Stem Sawfly.* R. L. POST.—Vol. VIII, No. 6, p. 23, July-August, 1946.
- The Wheat Stem Sawfly As Affecting Yield.* J. A. MUNRO, R. L. POST AND R. KNAPP.—Vol. X, No. 2, pp. 46-51, November-December, 1947.
- Wheat Stem Sawfly.* J. A. MUNRO, W. NOSTDAHL AND R. L. POST.—Vol. XI, No. 3, pp. 85-91, January-February, 1941.
- Greenbug Outbreak in 1949.* J. A. MUNRO AND E. G. DAVIS.—Vol. XII, No. 1, pp. 3-8, September-October, 1949.
- Wireworm Control by Seed Treatment.*—J. A. MUNRO.—Vol. XIII, No. 4, pp. 178-179, March-April, 1951. Describes the use of lindane powder for treating seed wheat to control wireworms in field. See also article on Stored Grain Pests under "Storage Problems."

WHEAT DISEASES

- Barberry Eradication Helps to Control Black Stem Rust.* E. A. HELGESON.—Vol. I, No. 2, pp. 3-4, November, 1938.
- Seed Treatments for Cereal Crops.* W. E. BRENTZEL.—Vol. I, No. 4, pp. 17-20, March, 1939.
- Crop Production and Disease Control—Wheat.* H. L. BOLLEY.—Vol. I, No. 4, pp. 30-31, March, 1939.
- Wheat Stem Rust and Old and New Varieties in 1940.* L. R. WALDRON.—Vol. III, No. 1, pp. 7-8, September, 1940.
- Leaf Rusts in North Dakota.* W. E. BRENTZEL.—Vol. III, No. 6, pp. 23-27, July, 1941.
- Races of Smut and Resistance of Hard Wheat Varieties.* W. E. BRENTZEL.—Vol. III, No. 4, pp. 5-7, March, 1941.
- Seed Treatment for Damaged and Sprouted Wheat.* W. E. BRENTZEL.—Vol. IV, No. 4, pp. 16-20, March, 1942.
- Common Head Diseases of Wheat.* W. E. BRENTZEL.—Vol. VI, No. 1, pp. 22-24, September 1, 1940.
- Can We Increase the Yield of Cereals by Reducing Root-Rot Injury?* R. SPRAGUE.—Vol. VI, No. 2, pp. 20-25, November, 1943.
- Controlling Root Rots of Cereals and Grasses.* R. SPRAGUE.—Vol. IX, No. 2, pp. 40-45, November-December, 1946.
- Treating Seed Wheat Increases Yields.* W. E. BRENTZEL.—Vol. XI, No. 3, pp. 79-81, January-February, 1949.
- Forecasting Loose Smut in Wheat.* W. E. BRENTZEL.—Vol. XIII, No. 5, pp. 210-212, May-June, 1951.

STORAGE PROBLEMS

- Experiment in Grain Storage.* H. M. MCCOLLY.—Vol. I, No. 2, pp. 6-7, November, 1938.
- Snow Increases the Moisture Content of Grain.* THOS. E. LONG.—Vol. IV, No. 3, pp. 18-19, June, 1942.
- Timely Tips on Grain Storage.* T. E. LONG AND H. S. TELFORD.—Vol. V, No. 5, p. 27, May, 1943.
- Will Building Paper on the Floor of a Granary Impart an Odor to Grain?* T. E. LONG.—Vol. VI, No. 4, pp. 32-33, March-April, 1944.
- Sodium Bicarbonate Does Not Reduce the Moisture Content of High Moisture Wheat.* R. H. HARRIS.—Vol. VII, No. 5, p. 24, May-June, 1945.
- Stored Grain Pests.* R. L. POST.—Vol. XI, No. 2, pp. 55-56, November-December, 1948.
- Problems of Grain Drying.* R. H. HARRIS.—Vol. XIII, No. 3, pp. 129-130, January-February, 1951.

ECONOMIC STUDIES

1943 - 1951

- Crop Acreage Trends.* BEN KIENHOLZ.—Vol. VI, No. 1, pp. 16-22, September, 1943.
- What Are the Important North Dakota Crops.* PERRY V. HEMPHILL.—Vol. VII, No. 2, pp. 3-5, November-December, 1944. Ranks dollar value of North Dakota Crops in decade 1934-1943 and in 1943-1944.
- Wheat Production in War and Peace.* H. L. WALSTER.—(A Review). Vol. VIII, No. 1, pp. 21-22, September-October, 1945.
- Durum Wheat Acreages in North Dakota and Price Relationships.* L. R. WALDRON.—Vol. IX, No. 4, pp. 99-104, March-April, 1947.
- What Is Happening to Marketing Margins?* R. SCHICKELE.—Vol. XI, No. 1, pp. 15-16, September-October, 1948. Data on price spreads between farmers and consumers for white bread and flour.
- Long-Term Wheat Yields on Each of Six North Dakota Farms.* W. L. CAVERT. Vol. XI, No. 5, pp. 167-172, May-June, 1949.
- Consumption of Wheat Flour and Bakery Products by the American Housewife.*—R. H. HARRIS.—Vol. XI, No. 3, pp. 82-84, January-February, 1949.
- The International Wheat Agreement.* B. H. KRISTJANSON.—Vol. XI, No. 4, pp. 111-116, March-April, 1949.
- Variability of Farm Income.* R. SCHICKELE.—Vol. XI, No. 6, pp. 204-209, July-August, 1949.
- Livestock As Income Stabilizer.*—R. SCHICKELE.—Vol. XII, No. 6, pp. 198-203, July-August, 1950. Compares effect of yield variation on net income from grains on a small and a large family farm and shows the effect of livestock income on survival limits of yield on a small and a large farm.
- Prices of North Dakota Farm Products.* R. SCHICKELE.—Vol. XIII, No. 1, pp. 29-30, September-October, 1950. See also article by P. V. Hemphill, Vol. XIII, No. 2, p. 84. Reports yearly crop and livestock prices for 1929, 1932, 1935-39, 1947, 1948, 1949 and June, July and August prices for 1950.
- First Year of the International Wheat Agreement.* B. H. KRISTJANSON.—Vol. XIII, No. 3, pp. 113-114, January-February, 1951.

SEED SIZE AND PLANT COMPETITION

1942 - 1944

- The Effect of Light Weight and Heavy Weight Seed Wheat Upon the Yield of the Resulting Crop.* L. R. WALDRON.—Vol. IV, No. 3, pp. 15-18, January, 1942.
- Comparison of Large and Small Kerneled Wheat As to Yield Grown Alone and Intermixed in the Row.* L. R. WALDRON.—Vol. V, No. 6, pp. 27-32, July, 1942.
- Study of Two Hard Red Spring Wheat Varieties Grown Comparably But Differing in Kernel Weight.* L. R. WALDRON.—Vol. VI, No. 1, pp. 25-30, September, 1943.
- How Wheats Behave in Competition With One Another.* L. R. WALDRON.—Vol. VI, No. 6, pp. 7-14, July-August, 1944.

WEEDS IN WHEAT

- The Effect of Three 2-4-D Compounds on Yield and Quality of North Dakota Wheats.* E. A. HELGESON, K. L. BLANCHARD AND L. D. SIBBITT. Vol. X, No. 5, pp. 166-171, May-June, 1948.
- Wild Oats Control, A Progress Report.* C. R. SWANSON AND E. A. HELGESON. Vol. XIII, No. 3, pp. 119-120, January-February, 1951.

FEEDING WHEAT

1943 - 45

Use of Screenings for Feed. O. A. STEVENS.—Vol. VI, No. 2, pp. 11-14, November, 1943.

A Comparison of Different Grains for Feed Production. R. W. SMITH AND T. E. STOA.—Vol. VI, No. 4, pp. 13-17, March-April, 1944. Reports yields, digestible protein and total digestible nutrients per acre of wheat, oats, barley and corn at Fargo and at Dickinson.

The Value of a Supplemental Mixture Fed with a Cereal Grain. J. H. LONGWELL AND W. H. HUBER.—Vol. VIII, No. 1, pp. 23-27, September-October, 1945. Reports results of supplementing a wheat ration for pigs with protein supplement.

Effect of Storage on the Feed Value of Hard Red Spring Wheat. J. H. LONGWELL.—Vol. VII, No. 6, pp. 3-5, July-August, 1945.

MISCELLANEOUS STUDIES

The Relation of Moisture Content to Freezing Injury in Rival and Mindum Wheats. E. A. HELGESON AND K. L. BLANCHARD.—Vol. IV, No. 4, pp. 15-16, March, 1942.

How Well Does Old Seed Germinate? (Abstract H. L. WALSTER).—Vol. VI, No. 2, pp. 10-11, November, 1943.

Wheat Questions. H. L. WALSTER AND STAFF IN GLEANINGS FROM ANNUAL REPORT.—Vol. VI, No. 3, pp. 13-17, January, 1944.

Duck Damage. STANLEY SAUGSTAD.—Vol. VII, No. 6, pp. 17-20, July-August, 1945. A study of damage to wheat fields by wild ducks.

A Possible Use for North Dakota Straw. W. J. PROMERSBERGER. Vol. VIII, No. 1, p. 14, September-October, 1945.

Comparative Study of 6 inch and 7 inch Spacings for Grain Drills. W. J. PROMERSBERGER AND C. M. SWALLERS.—Vol. XII, No. 4, pp. 120-124, March-April, 1950.

INDICATED PRODUCTION, AUGUST 1, 1951, WITH COMPARISONS¹

CROP	NORTH DAKOTA			UNITED STATES		
	Average 1940-49	1950	Indicated Aug. 1, 1951	Average 1940-49	1950	Indicated Aug. 1, 1951
	Thousand Bushels			Thousand Bushels		
Corn, All.....	25,856	25,042	26,972	2,980,777	3,131,009	3,206,992
Wheat, All.....	137,943	120,724	152,612	1,071,310	1,026,755	998,286
Durum.....	32,575	31,306	30,362	37,386	36,064	36,870
Other Spring.....	105,369	89,418	122,250	242,160	240,025	310,678
Winter.....				791,764	750,666	650,738
Oats.....	64,394	59,528	56,115	1,311,651	1,465,134	1,393,323
Barley.....	48,604	50,688	46,378	306,523	301,009	255,131
Rye.....	5,370	2,808	2,565	30,173	22,977	25,138
Flax.....	9,801	16,102	13,968	37,186	39,263	35,525
Potatoes.....	19,589	22,230	16,720	410,203	439,500	351,186
Soybeans.....	2 86	430	378	178,567	287,010	270,064
Buckwheat.....	62	60	45	6,976	4,749	4,053
Dry Field Peas ¹	2 127	16	42	5,935	2,979	3,729
Grain Sorghum.....	73	91	56	118,772	237,456	157,848
	Thousand Tons			Thousand Tons		
Hay, All.....	3,074	3,440	3,465	101,644	106,819	113,249
Alfalfa.....	271	501	627	33,946	41,029	45,365
Clo-Tim.....	6	8	6	30,008	29,636	31,336
Wind.....	2,074	2,312	2,289	12,351	12,509	13,441

¹Prepared by C. J. Heltemes, agricultural statistician in charge, Bureau of Agricultural Economics, USDA, Fargo, N.D. Office.