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SPECIAL ARTICLE

State University Develops New Hog Breed

Minnesota No. 1 Promises a Better Carcass Quality, with More Lean and Less Fat; Large Litters and Economical Gain Typical of Breed

BY crossbreeding, inbreeding, and intensive selection, a new breed of hogs, Minnesota No. 1, has been developed in the phenomenally short period of approximately 10 years. Most of the long-established hog breeds in the United States took 40 or 50 years for development.

The new breed was officially launched last August 24 at the Grand Rapids, Minnesota, agricultural experiment station. Probably the major share of credit for development of the new breed is due Dr. L. M. Winters of the animal husbandry department at Minnesota's University Farm. Dr. Winters long ago recognized the need for livestock bred and maintained on the basis of performance. To accomplish this he set as an objective a five-point goal to be used as a measuring stick in the development of the new breed.

First, the average litter must be large. During the nine years the Minnesota No. 1 has been under test the average number of pigs born alive has been 9.82. Although not strictly comparable, data from the Department of Agriculture show that in Minnesota the average number of pigs saved per litter was between 6 and 6½ for the last 10 years. If this high rate of reproduction continues, and there is reason to believe it will under good management, the Minnesota No. 1 should become known as a great "sow" breed.

Second, pigs farrowed must have the ability to survive. The litters that were saved in 1945 for improvement of the breed averaged 11 pigs farrowed, and about 8½ were saved. This indicates the ability of the sows to feed big litters well.

Third, the rate of gain must be high. The record here is excellent. Over the nine years of record, weight per pig at 56 days has been 32 pounds. At 168 days the average weight has been 211 pounds.

Fourth, gains must be put on economically. The record here is little short of phenomenal — 100 pounds of gain from 313 pounds of feed on pasture for the nine-year average. Some feeding trials in which the Minnesota No. 1's were crossed with other inbred hogs are reported with 301 pounds of feed on pasture for a 100-pound gain.

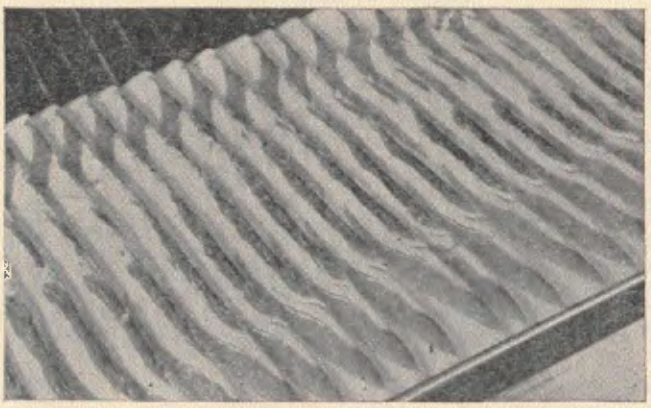
Fifth, there must be more lean and less lard—in other words a high grade carcass. Here again the new breed gives promise of being superior. Packers are enthusiastic about the Minnesota No. 1 carcass. They say the bacon, loins, and hams are of high quality and the carcass is notably low in lard. This latter point is significant because lard eventually must meet price competition of cheaper vegetable fats, and this normally tends to bring lard prices down to relatively low levels.

NEW HOG NOT A HYBRID

Many have erroneously called the new hog breed a hybrid. It is not, however. Methods used by Dr. Winters and his co-workers in developing the breed were similar to methods used by the small-grain plant breeders—crossing followed by inbreeding and selection. Selection of the "best from the best" all along has been an important part in the development of the Minnesota No. 1.

The first cross was made in 1936 with the Danish Landrace hog, famed for its meat superiority, and the British Tamworth, noted for its ability to farrow large litters and raise them. After a couple of crops from this cross the pure Landrace and Tamworth stock was discarded. From then on the stock has been inbred. By continuous, careful selection the breed has rapidly developed until the goals of performance or standards as listed above have become established. In fact, after only 10 years the No. 1 is said to breed remarkably true to type. It is as much a purebred as the older established hog breeds.

The new hog is red with occasional black spots. This is the color of the Tamworth first parent. The

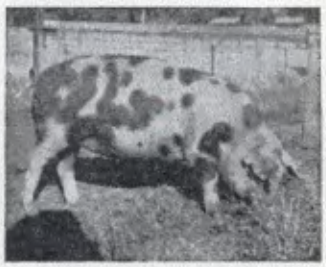


More lean and less fat in bacon is something the consumer wants, and the No. 1-No. 2 cross produces it.

A Minnesota No. 1 gilt.

An inbred Poland China gilt.

A Minnesota No. 1 and Minnesota No. 2 cross.



Minn. No. 2 boar on a cross between Minn. No. 1 and inbred Poland.

(All photos courtesy University of Minnesota)

white color of the Landrace has been bred out because it is susceptible to sunscald and therefore objectionable.

The Minnesota No. 1 is a long-bodied, short-legged hog with relatively fine but strong bone structure. The ham is full, the shoulder light, and a relatively straight back is preferred to a high arch. A few have faulted the hog because some have a slight dip back of the shoulders and because it gives the appearance of being shallow bodied. These criticisms have been met by showing that this dip does not show up in the carcass and that the length of the body makes the hog look thinner than is really the true situation. The face is long but the jowl is exceptionally clean, which cuts down carcass waste. The ears are thin and fairly erect. The skin is relatively thin.

There is a larger proportion of the higher-priced cuts of meat in the carcass of the No. 1 hog. Actual tests have shown the percentage of loin in the carcass to be substantially higher than loin cuts from other hogs. Moreover, packers have praised them for the length of side, lean bacon, and little trimming of both fat and lean that is necessary.

CONTINUED SELECTION NECESSARY TO MAINTAIN AND IMPROVE PERFORMANCE

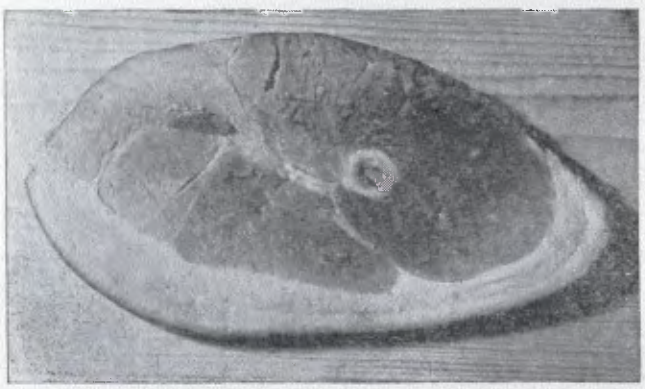
Dr. Winters is the first to recognize and urge that the Minnesota No. 1 be continually developed by selection, otherwise performance will slip. Plans are made to maintain an experimental herd at the Grand Rapids station as a nucleus herd for five to ten years, or until the breed is well established. The plan, as outlined by Dr. Winters in a recent letter to University experiment station workers, was to continue the college experimental herds but to cut down on the degree of inbreeding and to continue with rigorous selection on a performance basis.

Result of mating a Minn. No. 1 boar on an inbred Poland gilt.

Regardless of what happens in the future to the development of this new breed, the improved methods in animal breeding techniques used by the scientists will likely be used extensively in other livestock breeding work. Results secured with these new hogs show it is possible by careful inbreeding and selection to develop fairly rapidly a new line of animals that will breed more true to type and performance than was heretofore thought possible.

It is recognized that until farmers' herds of Minnesota No. 1's are well established it is important to be able to provide herd sires that carry the characteristics and standard of performance of the breed.

More requests for No. 1 breeding stock have been received than breeders have been able to supply, according to Dr. Winters. Members of the new breed association are hopeful, however, that this stock will get in the hands of farmers who will seriously attempt to build up superior herds that can be used for still wider distribution of good foundation stock.



A small bone and lots of meat is a characteristic of this ham, produced from a No. 1-No. 2 cross.

HIGHLY INBRED POLAND CHINA LINE DEVELOPED

One of the objectives in swine research at the Minnesota agricultural experiment station for many years has been to find out how to improve performance by inbreeding and selection for specific traits. This idea is not new, as most established hog breeds in the United States today are from a crossbreed foundation with some inbreeding, particularly in the early stages of development.

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BUSINESS

Non-Agricultural Jobs at Record Level

EMPLOYMENT in non-agricultural establishments in this district is now at a record-high peacetime level. The expansion in employment from the pre-war period is concentrated primarily in the manufacture and distribution of commodities.

In Minnesota, manufacturing industries during September employed 199,000 individuals, according to a report released by the Bureau of Labor Statistics in cooperation with the Minnesota Division of Employment and Security. This represented an increase of 81 percent over the number employed during April 1940.

An examination of the rise in employment among the various manufacturing industries indicates that most of the additional workers are engaged in the processing of food products. In September, 58,000 individuals were employed in such concerns throughout Minnesota as compared with nearly 34,000 in April 1940.

Percentage-wise, the largest increase in employment has taken place in the manufacture of electrical machinery. In September nearly 10,000 individuals were employed, which was approximately five times the number employed in April 1940. In the manufacture of iron, steel, and non-ferrous metals and of machinery other than electrical, employment has more than doubled since the pre-war period. In other manufacturing concerns, employment has risen from 12 percent in concerns producing lumber and other timber products to 85 percent in concerns producing stone, clay, and glass products.

In Montana, manufacturing establishments employed 16,400 individuals during August as compared with 12,757 during April 1940—an increase of nearly one-third.

The production of non-ferrous metals is the largest manufacturing industry in the state according to the number of workers employed. This industry, however, is not much larger now than it was prior to the war. In August of this year, the number employed was only 200 more than in April 1940. Most of the additional employment is concentrated in the food processing and lumber producing industries.

In North and South Dakota most of the expansion in manufacturing employment is concentrated in the food processing industry. Employment in this industry in North Dakota was nearly three-fourths larger and in South Dakota one-fourth larger, respectively, than previous to the war.

Employment in mining and quarrying in this district is also significantly above the pre-war level. In the four states wholly within this district, the number employed this summer was approximately 16 percent larger than in April 1940.

Estimates of employment in all non-agricultural establishments in Montana were released by the Unemployment Compensation Commission of Montana. These estimates provide some evidence of the expansion in industries other than manufacturing and mining of this district.

HIGH level of employment suggests a large volume of output.

September department store sales in the four large cities led the nation in the increase over a year ago.

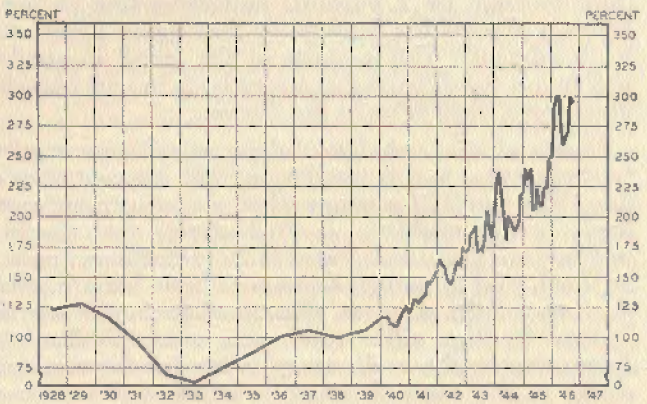
Department store stocks are still low in comparison with the high volume of sales.

The expansion in employment in Montana as compared with the pre-war level is scattered through in transportation; in wholesale and retail trade; in finance, insurance, and real estate; and in governmental agencies. The number of individuals employed on steam and electric railways, on trucking and warehousing, and on other types of transportation was 54 percent more than in April 1940. As compared with the employment previous to the war, the number employed in wholesale and retail trade was 51 percent larger and those employed by financial, insurance and real estate firms were 23 percent larger. The number of government workers in the state employed by local, state, and federal governments was almost double the number in the state during April 1940.

Bank debits reveal a rapidly rising volume of business transacted by checks. In September the amount of debits in 93 cities over the district was 161 percent above the 1935 to 1939 average. This amount was 3 percent larger than in August and 12 percent larger than in July after a correction had been made for the usual seasonal increase in business during the month.

Although business is brisk throughout the district, the practical cessation of livestock marketing was reflected in the volume of bank debits. In livestock

BANK DEBITS INDEX
Farming Centers 1935-39 = 100



producing areas and in meat processing centers, the amount of debits in September averaged less than in the preceding month.

Department store sales in this district during the present year have increased more than the average over the nation.

On the basis of weekly sales figures, for the first eight months of this year, sales over the nation were 30 percent larger as compared with the volume for the corresponding period of last year; while in the stores located in Duluth, Minneapolis, St. Paul, and Superior, the sales were 35 percent larger. The latter percentage was exceeded only by stores in the New York district with an increase of 37 percent in sales.

During September, stores in the four large cities of this district led the nation with a 43 percent increase in sales over a year ago. The average increase in sales over the nation was only 33 percent.

In the four weeks ending October 12, department store sales in the four large cities of this district were 33 percent above the corresponding period of last year.

On the basis of retail sales in department and general stores over the Ninth District, sales were 38 percent higher in September as compared with a year ago. For the first nine months of this year, the sales averaged 34 percent higher.

The stores located in Duluth, Minneapolis, St. Paul, and Superior reported an increase of 43 percent for September. Stores located in other cities and towns over the district reported an increase ranging from 16 percent for the plains region of Montana to 39 percent for the Upper Peninsula of Michigan.

Department store stocks rose steadily for several months through July. The index of stocks for the four cities at the end of February was 151 percent of the 1935 to 1939 average, and by the end of July the index had risen to 229 percent of the former average. At the end of August, the index dropped five points.

Department store stocks in this district during the third quarter did not rise steadily as they did during the preceding quarter. During July, after a seasonal adjustment was made, stocks, in terms of dollar volume, increased by 8 percent; during August, they declined by 3 percent; and according to preliminary figures for September they again increased by 4 percent. This pattern of the trend in stocks was found for department stores both in and outside of the four large cities in the district.

The preliminary index of department store stocks for September in this district was 125 percent above the 1935 to 1939 average after an adjustment was made for the usual rise in stock during that month. In department stores located in Duluth, Minneapolis, St. Paul, and Superior, the stocks have been higher in terms of the pre-war average than in the stores located in other cities and towns over the district. According to the preliminary index for September, stocks in the stores located in the four cities were 129 percent above the 1935 to 1939 average and in the stores located in other cities and towns were 123 percent over the former average.

In comparison with the high volume of sales, although stocks may be high in some departments, they are still low as an average of all departments. The dollar volume of sales in September in this district was 165 percent above the pre-war base period. A comparable differential between sales and stocks existed for stores in and outside of the four large cities in the district.

The increase in prices has a direct bearing on the

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Northwest Business Indexes

Adjusted for Seasonal Variation—1935-1939=100

	Sept. 1946	Aug. 1946	Sept. 1945	Sept. 1944
Bank Debits—93 Cities	261	253	221	184
Bank Debits—Farming Centers	296	300	225	189
City Department Store Sales	282	259	196	171
Country Department Store Sales	249	260	185	163
City Department Store Stocks	229	224	157	157
Country Department Store Stocks	223	212	169	190
Country Lumber Sales	102	125	131	91
Miscellaneous Carloadings	112	124	110	119
Total Carloadings (Excl. Misc.)	123	116	129	131
Farm Prices—Minn. (Unadj.)	222	241	170	164

Department Store Sales Indexes by Cities

1935-1939=100 Unadjusted

	Month of September			
	1946	1945	1944	1941
Minneapolis	326	223	189	140
St. Paul	275	192	172	147
Duluth-Superior	278	221	201	129

Sales at Department Stores

	Number of Stores showing Increase	Number of Stores showing Decrease	% Sept. 1946 of Sept. 1945	% Jan.-Sept. 1946 of Jan.-Sept. 1945
Total District	246	15	138	134
Mpls., St. Paul, Dul.-Sup.	24	1	143	135
Country Stores	222	14	129	132
Minnesota	70	4	129	127
Central	8	0	134	121
Northeastern	6	0	133	135
Red River Valley	4	0	135	134
South Central	19	2	129	122
Southeastern	13	0	131	131
Southwestern	20	2	120	126
Montana	35	1	124	137
Mountains	12	0	137	140
Plains	23	1	116	135
North Dakota	47	3	132	136
North Central	10	1	129	130
Northwestern	4	0	134	142
Red River Valley	19	0	137	137
Southeastern	12	2	122	131
Southwestern	*	*	.....	.....
Red Riv. Val.-Minn. & N. D.	23	0	136	137
South Dakota	20	2	126	133
Southeastern	5	1	123	136
Other Eastern	10	0	132	132
Western	5	1	118	126
Wisconsin and Michigan	50	4	132	127
Northern Wisconsin	14	1	129	130
West Central Wisconsin	28	2	131	126
Upper Pen. Michigan	8	1	139	131

*Not shown, but included in totals. Insufficient number reporting.

AGRICULTURE

Agricultural Prices Up 2½ Times Pre-War

HIGH consumer incomes, expansion in farm exports, and increased population boost demand for farm products.

Cash farm income for 1946 appears going to new record.

Feed supplies are adequate but distribution is uneven.

REFLECTING an increasing level of industrial activity and employment, the demand for farm products continues strong. The Department of Agriculture, however, sees some lessening in demand in 1947, particularly the latter half, and a decline of about 5 to 15 percent in agricultural prices and farm incomes.

From the postwar low point of 152 in February this year (1935-1939=100) the index of industrial production advanced to an estimated 176 for August. Continued expansion in industrial activity for the rest of 1946 and into 1947 has been forecast by the United States Department of Agriculture, assuming that large-scale and prolonged labor disputes do not occur.

Another indication of the strong demand for farm products is the increase in consumer incomes. For the period 1935-1939 the average annual income per consumer has been estimated at $521. In 1946 the average income per consumer is expected to total about $1,130. The average consumer is estimated by the Bureau of Home Economics to be buying 15 percent more food than he did before the war. Consumers have purchased more food even at the higher prices. Food was available even though some items were in short supply and many industrial products which the consumer would like to have purchased were not available.

In addition to higher individual incomes as a factor in increased demand for farm products, there has been a population increase of 9,000,000 since 1939. Also, agricultural exports have taken and continue to take a sizeable proportion of domestic food production. Agricultural exports were valued at over $2¼ billion in 1945 and are expected to approximate nearly $3 billion in 1946. This represents between 8 and 12 percent of cash farm income.

The meat shortage, for example, is partly due to exports of nearly 1½ billion pounds of meat in 1945 and 615 million pounds in the first half of 1946 out of a total estimated meat production of 21 to 23 billion pounds. Before the war very little meat was exported.

Exports of wheat for the 1946-1947 crop year may total nearly 250 million bushels compared with less than 50 million for a pre-war average.

Agricultural exports in 1947 are expected to average considerably smaller, according to the Department of Agriculture. Reduced exports would reflect improved world food conditions as well as the expiration of some of UNRRA's activities.

Summing up, it is the record-high consumer incomes, wartime expansion in agricultural exports, and increasing population that has sparked the relatively high demand for farm products.

The volume of agricultural production in 1946 is near a record level. The production of many farm products such as wheat and corn are at new highs. This record supply, coupled with the enormous demand, is expected to result in United States cash farm income in 1946 about 10 percent above last year, which will be a new high.

The feed situation is said to be more favorable for the current feeding season than any year since 1942. The Department of Agriculture has estimated the supply of feed grains to be 138 million tons, which is second only to the record tonnage of 1942-1943. The supply of feed grains per animal unit will be the largest on record and about 8 to 10 percent larger than in 1945-1946. Also, the quality of the record corn crop this year is expected to be excellent compared with the poor quality crop last year.

In spite of large supplies of feed, some feeders may have difficulty in getting adequate supplies during the next few months because of transportation difficulties.

High protein feeds continue short relative to the demand, and livestock producers may continue to have difficulty in securing desired quantities of these feeds.

Some reduction in numbers of hogs and chickens on farms has tended to reduce the number of grain-consuming animal units and thus further ease the feed supply situation. Offsetting this, at least in part, is the disappearance of grains in non-feed uses. Over 100 million bushels of corn may be exported, and the use of corn, oats, and barley for food and industrial uses may be expanded from last year's levels.

The Department of Agriculture has forecast feed-grain prices as follows for the year ahead:

"Feed-grain prices, generally, probably have passed their peak for the immediate postwar years. Nevertheless, prices probably will average slightly higher in the first half of the 1946-47 feeding season, beginning October, than in the first half of 1945-46. But prices are likely to average lower in May-September 1947 than in the corresponding period of 1946, when prices of corn, barley, and sorghum grains reached the highest levels since 1920. By December 1946, corn and sorghum grain prices will have declined substantially from the high levels that prevailed since early July. The decline will be limited, however, by the strong commercial demand and by Government price supports on corn at 90 percent of parity as of October 1. (Ninety percent

of parity for corn on September 15 was $1.15 per bushel.) Corn prices may be only moderately above support levels during much of 1946-47. Oats prices are not expected to change greatly from present levels."

Prices received by farmers are now substantially higher compared with the level on June 30, when the original price stabilization act expired. Farm prices advanced sharply during the nearly two-month interim without price control. With the reinstatement of price control in late August on livestock and meats, farm prices were rolled back but for the most part remained above the level that existed on June 30.

With the decontrol of livestock and meat prices on October 15, farm prices again advanced sharply. Hog prices at the St. Paul markets advanced $10.00 a hundredweight on the first day of decontrolled prices. Fat cattle prices advanced $5.00 to $6.00 per hundredweight. Livestock prices probably will fluctuate widely until supply and demand factors are better known and prices stabilize somewhat.

Prices received by farmers in the Ninth District on September 15 were nearly two and one-half times what they were on September 15 for the five-year average 1937-1941. Wheat prices, for example, averaged $1.77 a bushel in mid-September compared with 72 cents a bushel for the pre-war average on that date. Corn prices were $1.65 compared with the pre-war level of 57 cents. Other comparisons were: Oats, 66 cents compared with 25 cents; beef cattle, $14.93 compared with $7.73; and butterfat, 79 cents compared with 30 cents.

In mid-September the index of all farm prices for the United States was at 243. This is nearly two and one-half times the period of 1909-1914, which is taken as a base of 100. Farm prices are up 46 points from a year earlier, and the advance in farm prices which occurred in mid-October may boost the index substantially higher.

Costs of farming are increasing along with farm prices, but thus far costs have increased at a somewhat lower rate. Prices paid by farmers for commodities used in production and family maintenance, including interest and taxes, averaged 200 in mid-September, compared with 174 a year earlier and 128 for the five-year average, 1935-1939. (The base period of 100 is 1910-1914.)

The parity ratio, which is simply prices received by farmers divided by prices paid by farmers, equaled 122 in mid-September. With the recent increase in farm prices this parity ratio in the latter part of 1946 may be at an all-time high record. It is interesting to compare the present parity ratio with that for the 1935-1939 period, when it averaged only 84, and in the early Thirties, when it was in the lower 60's.

Cash farm income in the Ninth District continues to forge ahead, compared with a year earlier. During the first seven months this year, cash farm income was 13 percent up from a comparable period in 1945. All states in the district reported gains, with South Dakota leading with a 29 percent increase. Livestock and grain production in 1946 have been particularly favorable in this state and marketings have been heavy.

District cash farm income during the last half of 1946 should continue high, since prices of farm products have risen and marketings, although probably somewhat smaller than a year ago, are expected to be substantial.

For the United States as a whole, cash farm income in the first seven months this year was 5 percent above that of a year earlier. Gross farm income, production costs, and realized net income of farm operators are all expected to be at record-high levels in 1946, according to recent estimates of the Department of Agriculture.

The Department of Agriculture has forecast that cash farm income in 1947 would remain at a high level but probably would be about 5 percent below 1946. Since farm production costs are expected to increase in the months ahead, the Department estimated that net farm income in 1947 might decline by 10 to 15 percent. The assumptions used in making these estimates were that (1) price control would be continued until next June 30, (2) average crop yields in 1947 would be comparable to recent years, and (3) a relatively small decline in farm prices would occur.

Farm production costs have been going up steadily since the war started. Total farm production costs in 1945 were estimated at $11.4 billion for the country as a whole. In 1946 they may increase 10 percent, with a further increase of 5 percent in 1947, according to USDA estimates.

January-July Cash Farm Income[1]

(Thousands of Dollars)

State	1935-1939 Average	1945	1946	1946 in Percent of 1945
Minnesota	$ 180,401	$ 459,136	$ 494,308	108%
North Dakota	44,916	178,409	205,976	115
South Dakota	54,320	208,209	269,300	129
Montana	32,037	86,204	91,423	106
Ninth District[2]	355,582	1,042,175	1,178,071	113
United States	4,100,168	11,144,000	11,682,000	105

[1] Data from "The Farm Income Situation," United States Department of Agriculture.

[2] Includes 15 counties in Michigan and 26 counties in Wisconsin.

Average Prices Received by Farmers[1]

Commodity and Unit	Ninth District Sept. 15 1937-1941 Avg.	Ninth District Sept. 15 1945	Ninth District Sept. 15 1946	Parity Prices[2] United States Sept. 15, 1946
Crops				
Wheat, bushel	$ .72	$ 1.42	$ 1.77	$ 1.77
Corn, bushel	.57	1.01	1.65	1.28
Oats, bushel	.25	.49	.66	.798
Potatoes, bushel	.47	1.32	1.09	1.47
Livestock and Livestock Products				
Hogs, 100 lbs.	8.53	13.92	15.77	14.50
Beef Cattle, 100 lbs.	7.73	11.69	14.93	10.80
Veal Calves, 100 lbs.	9.22	13.18	14.83	13.50
Lambs, 100 lbs.	8.15	12.32	15.21	11.80
Wool, lb.	.27	.42	.43	.366
Milk, wholesale, 100 lbs.	1.60	2.75	3.81	3.30
Butterfat, lb.	.30	.52	.79	.523
Chickens, live, lb.	.133	.229	.259	.228
Eggs, dozen	.198	.318	.372	.456

[1] Data compiled from "Agricultural Prices," United States Department of Agriculture.

[2] The term parity as applied to the price of an agricultural commodity is that price which will give to the commodity a purchasing power equivalent to the average purchasing power of the commodity in the base period, 1910-1914.

BANKING

Increases in Deposits Quite General

NORTHWEST businesses and individuals, during the first half of 1946, added $170 million to their already substantial checking accounts, raising the total to $2,276 million on July 31, 1946, from $2,106 million six months earlier.

Public utilities and miscellaneous businesses experienced slight declines. Otherwise increases were quite general. The largest single increase was accounted for by farmers whose balances during the first six months of the year rose from $435 million to $490 million, a 13 percent expansion.

Retail and wholesale trade firms accounted for the next largest part of the increase, their balances rising $50 million during the half-year period to a total of $457 million.

Manufacturing and mining firms, after experiencing a sizeable drain on their cash resources during the latter part of 1945, were able to increase their balances from $212 million in January of this year to $247 million by the end of July, an expansion of $35 million.

It is difficult, however, to interpret the significance of this expansion without further information on holdings of other liquid assets, particularly short-term U. S. government securities, which have become an increasingly important liquid asset in recent years.

Assets and Liabilities of Ninth District Member Banks

(In million dollars)

	Sept. 30, 1946*	June 30, 1946	Dec. 30, 1945
Number of Banks	469	468	472
Assets			
Loans and discounts (including overdrafts)	543	459	452
U. S. Government obligations (direct and guaranteed)	1,998	2,071	2,158
Other investments	139	137	125
Cash and due from banks	834	767	849
Other assets	26	26	26
Total Assets	3,540	3,460	3,610
Liabilities and Capital Account			
Demand deposits (individual partnerships, corporations)	1,663	1,546	1,499
Time deposits (individual, partnerships, corporation)	848	823	760
Deposits of U. S. (including postal)	206	305	550
Other deposits	625	598	618
Total deposits	3,342	3,272	3,427
Other liabilities	17	11	14
Capital stocks	62	62	61
Surplus and undivided profits	105	101	95
Reserves	14	14	13
Total capital account	181	177	169
Total Liabilities and Capital Account	3,540	3,460	3,610

* Preliminary figures, based on call report tabulations.

NORTHWEST businesses and individuals added $170 million to checking accounts during first half of 1946.

Farmers' balances show 13 percent increase.

Large loan increase shown in call report tabulations.

Substantial expansion of commercial loans and reduction in governments experienced during September.

Country member bank deposits were up, mostly in Montana.

The accompanying table presents information on the ownership of these deposits annually since 1943, the first year such a study was conducted.

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Tabulation of the September 30 call report revealed substantial readjustments in member bank assets and liabilities for the first nine months of 1946. First, loans and discounts increased $91 million, or 20 percent. Second, because of the Treasury's debt retirement program, bank holdings of U. S. Government securities declined during the period by $160 million, reversing a persistent war-time upward trend. Third, member banks have expanded their holdings of investments other than U. S. Government securities by $14 million, or slightly over 11 percent.

Deposits of the U. S. Government were drastically reduced. These deposits declined from $550 million at the beginning of the year to $206 million as of September 30. Most of these funds were utilized by the U. S. Treasury in the debt redemption program which began in March of this year.

Demand deposits of individuals and businesses experienced a $164 million expansion, and time deposits rose $88 million. While these increases were substantial, they were not enough to offset completely the decline in deposits of the U. S. Treasury, with the result that total deposits declined by $85 million.

Capital funds were augmented materially, rising from $169 million at the beginning of the year to $181 million at the end of September.

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A further substantial expansion of commercial loans and a substantial reduction in holdings of U. S. government securities characterized banking developments in this region during the last month. Commercial loans of the weekly reporting member banks, which have been rising rapidly since spring, expanded another $12 million during the month ending October 16, to a record high of $177 million. This is 75 percent above the year's low-point reached in April and 46 percent above a year ago. Other

loans increased $3 million to make a total loan expansion of $15 million during the month.

The $40 million decline in holdings of U. S. Government securities by the weekly reporting member banks was just double the decline of the previous month and, with the exception of May and June, was the largest monthly reduction of the year. The $28 million decline in holdings of U. S. Treasury notes and the reduction of $12 million of U. S. Treasury certificates of indebtedness constituted the entire decrease and, of course, stems from the Treasury's debt retirement program. A decline of $8 million in U. S. Government bonds was exactly offset by a corresponding expansion of U. S. Treasury bills.

Deposits declined slightly. The substantial further reduction of war-loan balances was slightly more than matched by an increase of demand deposits of individuals and businesses.

Borrowings fluctuated from a low of $10 million during the month to a high of $20 million but remained at about the same level in mid-October as a month earlier.

Country member bank deposits continued to expand. During the last half of September they averaged $32 million higher than during the corresponding period for August. The increase was almost entirely accounted for by an expansion of $13 million in Montana, $9 million in North Dakota, and $8 million in South Dakota. In other areas there was virtually no change.

The reserve position of all Ninth District member banks during the last half of March is shown in the accompanying table.

Ownership of Ninth District Demand Deposits*

(In million dollars)

	July 31, 1946	Jan. 31, 1946	July 31, 1945	July 31, 1944	July 31, 1943
Manufacturing and Mining	$ 247	$ 212	$ 220	$ 230	$ 190
Public Utilities	101	113	96	110	110
Trade	457	407	350	280	260
Other Nonfinancial	100	95	99	120	100
Insurance	42	34)		40	30
All Other Financial	90	79)	106	70	60
Trust Funds	33	19)		20	10
Nonprofit	83	90	58	40	40
Personal	1,122	1,056	883	620	510
a. Farmers	490	435	403	**	**
b. Others	632	621	480	**	**
Foreign	1	1	.....	.....	.....
TOTAL	$2,276	$2,106	$1,812	$1,530	$1,310

*Demand deposits of individuals, partnerships, and corporations. Estimates based on sample of cooperating Ninth District banks.
**No breakdown available.

Assets and Liabilities of Ninth District Weekly Reporting Member Banks

(In million dollars)

	10/16/46	9/18/46	Change
Assets			
Commercial, industrial and agricultural loans	$ 177	$ 165	$+12
Other loans	134	131	+ 3
Total loans	311	296	+15
U. S. Treasury bills	12	4	+ 8
U. S. Treasury certificates of indebtedness	79	91	—12
U. S. Treasury notes	120	148	—28
U. S. Treasury bonds	637	645	— 8
Total U. S. Government securities	848	888	—40
Other investments	59	60	— 1
Cash, due from banks, and reserves	440	418	+22
Miscellaneous assets	16	16	0
Total assets	1,674	1,678	— 4
Liabilities			
Demand deposits of individuals, partnerships, and corporations	746	724	+22
Demand deposits of U. S. government	106	127	—21
Other demand deposits	469	476	— 7
Time deposits	231	229	+ 2
Total deposits	1,552	1,556	— 4
Borrowings	19	20	— 1
Miscellaneous liabilities	11	11	0
Capital accounts	92	91	+ 1
Total Liabilities and Capital Accounts	1,674	1,678	— 4
Excess reserves	3	5	— 2

Daily Average Reserve Position for All Ninth District Member Banks for the 15-Day Period Ending September 30, 1946

	Average Reserves Carried (000)	Average Reserves Required (000)	Average Excess Reserves (000)
Reserve city banks	$178,221	$175,623	$ 2,598
Other city banks	28,813	27,356	1,457
Total city banks	207,034	202,979	4,055
Total country banks	199,385	163,610	35,775
Total Ninth District—1946	406,419	366,589	39,830
Total Ninth District—1945	361,677	318,574	43,103

BUSINESS (From Page 377)

rise in the dollar volume of inventories held at the end of the month. However, an increase in the physical volume has also taken place. This was especially marked during July. When the index of stocks was deflated by the index of retail prices, compiled by the U. S. Department of Commerce, it was evident that probably over one-half of the increase in the dollar volume represented a larger quantity of merchandise.

The physical volume of sales since the first of the year has ranged from one-half to three-fourths larger than the average from 1935 to 1939. The physical volume of stocks, on the contrary, has never exceeded the pre-war average by more than 45 percent, and at the end of February—the low-point in the year—it was only 6 percent above the former base period.

NATIONAL SUMMARY OF BUSINESS CONDITIONS

COMPILED BY THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, OCTOBER 28, 1946

INDUSTRIAL production continued with little change in September and the early part of October. Department store sales have shown no further rise from the high level reached at the end of August, although there is usually a considerable increase at this season. Wholesale prices of livestock and meats advanced sharply after the removal of price controls in the middle of October, while prices of cotton and grains declined.

INDUSTRIAL PRODUCTION—The Board's seasonally adjusted index of industrial production was maintained in September at the August rate, which was 177 percent of the 1935-39 average. Following the re-establishment of federal price controls on livestock at the beginning of September, curtailment in marketings resulted in a sharp drop in activity at meatpacking plants; this decline offset, in the total index, further small gains in output of numerous other manufactured products and minerals. After the middle of October, when controls were removed, slaughter operations showed a sharp increase.

Output of durable manufactures rose 2 percent in September, reflecting chiefly further gains in activity in the machinery and transportation equipment industries. Output of non-ferrous metals also continued to rise in September and was at the highest level since the end of the war. Iron and steel production was maintained at about the August rate. In the first four weeks of October, activity at steel mills advanced slightly, averaging for this period a scheduled rate of 90.3 percent of capacity. Production of lumber and other materials continued to increase in September. Except for the sharp drop in meat production, there was little change in output of non-durable goods.

Output of minerals rose slightly in September as increased production of coal and of metals more than offset a slight decline in output of crude petroleum.

CONSTRUCTION—Value of construction contracts awarded, as reported by the F. W. Dodge Corporation, declined further in September. Nonresidential building awards dropped one-fifth to the lowest level since the end of the war, reflecting chiefly a sharp decline in contracts for factory construction. Residential awards were maintained at the high levels prevailing in July and August.

EMPLOYMENT—Employment in non-agricultural establishments advanced somewhat further in September, after allowing for seasonal changes, reflecting continued gains in industries manufacturing durable goods and in trade and service lines. The number of persons unemployed remained at about 2 million.

DISTRIBUTION—Department store sales, which were in exceptionally large volume in August, increased by less than the usual amount in September and the early part of October. The Board's seasonally adjusted index was 269 in September as compared with 290 in August and an average level of 257 during the first 7 months of the year. Since the middle of September, sales have been considerably reduced in two important areas by industrial disputes, but sales in most other districts of the country have also shown a smaller rise than is usual during this season of the year.

Loadings of most classes of railroad revenue freight were maintained at an exceptionally high rate in September and the early part of October. Shortages of freight cars persisted during this period, which is the seasonal high point of the year, limiting to some extent the distribution of commodities.

COMMODITY PRICES—In the middle of October, federal price ceilings were removed from livestock and meats and it was indicated that the controls remaining over most other commodities would be discontinued. During the subsequent week, prices of livestock, meats, and some other agricultural commodities showed sharp advances and exceeded the previous peaks reached during the lapse of price control in July. Wholesale prices of various other commodities, including cotton, grains, butter, and eggs, declined but were still above the levels prevailing at the end of June. Wholesale prices of industrial products have generally continued to show relatively moderate advances in recent weeks.

Member bank reserve balances in September and the first half of October fluctuated somewhat, reflecting Treasury debt retirement operations and quarterly income tax collections. Required reserves increased somewhat in the first half of September and subsequently showed little change. Reserve Bank holdings of Government securities increased late in September and subsequently declined.

Commercial and industrial loans at weekly reporting banks in 101 leading cities continued to expand rapidly during September and early October. Real estate and consumer loans increased further, while loans for purchasing or carrying securities continued to decline. Holdings of Government securities were reduced considerably during the period, reflecting largely Treasury cash retirement of certificates on October 1.

SPECIAL ARTICLE

(From Page 375)

The emphasis at the Minnesota station, however, has been on an intensive inbreeding and selection program to establish a set of desirable performance characteristics in the genetic make-up of the hog that will breed true—in other words a purebred animal that possesses desirable characteristics and transmits them faithfully to succeeding generations.

Since 1924, inbreeding and selection on the basis of performance has been practiced at Minnesota with a group of Poland China hogs. Performance goals or objectives are the same as indicated above for the Minnesota No. 1—fertility, survival, rate of growth, economy of gain, and body conformation. Results have been highly gratifying.

MINNESOTA NO. 2 A BREED POSSIBILITY

About five years ago Dr. Winters crossed this highly inbred line of Poland Chinas with the Yorkshire, a thin-skinned bacon breed, high in pork yield and low in lard, and a good "sow" breed. This cross is known as the Minnesota No. 2 line. It is not yet considered as "finished" or ready for breed registry. It is far enough along, however, to indicate that it possesses most, if not all, of the desirable characteristics of the No. 1 breed.

It is slightly longer of leg and shorter of body than the No. 1. Animals are spotted black and white in color and have erect ears and a slightly dished face. These hogs are high in fertility and feed their litters well, a trait inherited from the Yorkshire parentage. Carcass quality promises to be equal to that of the No. 1, but so far rate and economy of gain appear to be somewhat lower. By further inbreeding and selection Dr. Winters hopes to improve these characteristics.

CROSSING MINNESOTA NO. 1 WITH NO. 2 GIVES HYBRID VIGOR

It is to be emphasized that neither the No. 1 nor No. 2 hog is a hybrid. The reason they are not is that both lines have been purified to a high degree from the original cross by inbreeding and selection. In fact they are said to have a greater degree of breed purity than most of the established breeds.

By crossing the No. 1 with the No. 2, or by crossing either of these with established breeds, a hybrid hog is produced that holds remarkable possibilities in commercial pork production.

Dr. Winters, writing in Minnesota Farm and Home Science for February 1946, states:

"The crosses give the best indication of what can be expected of these inbred lines for commercial pork production. The crosses between the lines have given exceptionally good results. This is especially true of the crosses between the Minnesota No. 1 and the inbred Poland China lines. Last year the Poland China-Minnesota No. 1 crosses averaged 215 pounds at 154 days and made 100 pounds gain (weaning to finish) on 301 pounds of feed. In addition they yielded beautiful carcasses. Only a few crosses have been made using the No. 2, but these preliminary trials indicate that the 2's and 1's cross to good advantage. Only one litter of the straight No. 1-No. 2 cross has been produced. More will be produced next year. This litter averaged 214 pounds at 145 days and yielded carcasses very high in the more valuable cuts and low in fat.

"The figures given in this paper on performances are those obtained in our trials and are no warranty that the same results will be obtained by everyone else. Breeding or heredity merely makes certain attainments possible. To reach these possible attainments the heredity must be complemented with suitable rations and management. The job of feeding and care is done better on some farms and poorer on others than we are able to do, so it is impossible to state what these lines will do on specific farms."

Crossbreeding for the market has been practiced for years, but increased attention has been given it in recent years. The usual practice has been to use a purebred boar with a sow of different breed, or preferably with a crossbred sow. Purebreds are an essential in successful crossing. In breeding practice the boar is usually the purebred half of the cross. The higher the characteristics and performance of the purebred boar used in the cross the more successful will be the results. In 1943 the University of Minnesota Agricultural Extension Service published a bulletin, "Crossbred Swine," which stressed the idea that the key to successful crossbreeding is use of good purebred boars.[1]

If crossbreeding continues in popularity as now seems likely, it is easy to visualize an increasing demand for purebred No. 1 and No. 2 boars as well as sows. In fact many farmers may find it profitable to specialize in the production of purebred stock. Such stock should find a ready market among farmers who "cross" for commercial pork production.

Hog production is an important enterprise in the Ninth District, particularly in the important corn-producing areas. In Minnesota during 1945, for example, the sale of hogs accounted for 26 percent of the farmers' income from livestock and livestock products and 19 percent of farmers' total cash farm income. In South Dakota the percentage was 27 percent and 16 percent.

This development in swine breeding, which promises increased efficiency in pork production, is therefore important to the economy of the district. These new and improved techniques in swine breeding are also applicable to other lines of livestock. It may be we are on the threshold of rapid and widespread improvement in livestock breeding techniques.

—F. L. Parsons.

[1] This bulletin "Crossbred Swine," Extension Bulletin No. 180, Agricultural Extension Service, University Farm, St. Paul, Minnesota, is available upon request.