MONTHLY REVIEW

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FEDERAL RESERVE BANK OF MINNEAPOLIS

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Current conditions . . .

Even though agricultural income continues its substantial decline from year-earlier levels as a result of summer drouth, the economy of the Ninth district moved forward in recent weeks, generally paralleling that of the nation as a whole.

District personal income, one of the best available over-all measures of district performance, continued to exceed year-earlier estimates in July, August, and September at about the same rate as for the U. S., that is from 3.0 to 3.5 percent. Nonfarm employment has advanced, with employment in manufacturing and wholesale and retail trade up fairly sharply, but with declines occurring in construction, mining and transportation employment. On balance, preliminary district estimates indicate a fairly sharp run-up in the employment figures for the month of September, but the total is still below the pre-recession levels of a year earlier. Hours worked per week in many industries, however, have lengthened since early this year and this has strengthened weekly earnings to some extent. District department store sales in recent weeks have been only slightly above year-ago levels, but this is true nationally too. Bank debits varied substantially from area to area in the district during September but in total were the same as a year earlier. On a cumulative basis, however, for the first nine months of 1961, bank debits are ahead of last year by a margin of 5 percent.

The most recent data available on construction activity, including building permits and contract awards, indicate that only modest activity can be expected in this segment of the district's economy during the months ahead. Home building particularly has been in the doldrums even though mortgage credit has been generally available.

Activity in the iron ore mining regions continues to be sluggish as it has all season, with shipments relatively low and continuing low levels of employment in the industry.

With total district crop production off 25 percent or more this year compared with 1960, it is not surprising that the August cash farm income figures registered a 10 percent decline from a year earlier. The effect of the drouth on farm incomes will, of course, continue to be felt for some time.

In banking, a trend towards increased liquidity was noted during the third quarter of 1961. Bank loans declined noticeably during this period in both city and country banks, while deposits have increased to an all time high. At city banks, the loan-deposit ratio dropped from 61.4 in May of 1960 to 55.8 in June this year and to 49.5 in September. A 3.7 percentage point drop occurred at country banks from June to September. Borrowings at the Federal Reserve Bank of Minneapolis by the member banks have practically disappeared in recent weeks and several of the larger banks have become net sellers of Federal Funds.

The following selected topics describe particular aspects of the district's current economic scene:

HOUSING PRICES INCREASE

An increase in housing prices in the greater Minneapolis area for the first half of 1961 is reported by a recent Ninth district Federal Reserve Bank survey.

In 1957 and 1958, a major adjustment occurred

in prices paid for new houses in Minneapolis and its immediate suburbs. As a better balance was achieved between the supply of and the demand for new houses, the average price paid dropped sharply. The decline in prices paid was traced, in a large measure, to a shift in the market to smaller houses. Since the latter half of 1958, the average price paid for new houses has again inched up year after year due, in part, to the building of houses with more floor space. For instance, in the latter half of 1960, the average price rose to $17,300 as compared with $15,400 in the latter half of 1958. The small decline to $17,000 in the average price paid in the first half of 1961 cannot be viewed as significant until more data is available. In fact, the average price rose slightly between the first and second quarters.

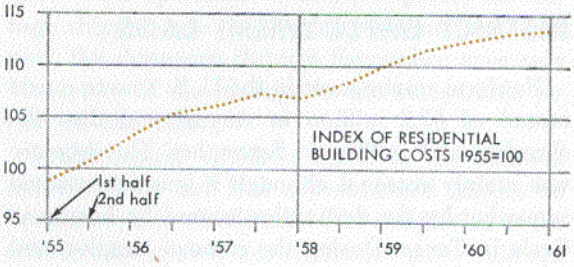
As in former surveys conducted by the Federal Reserve Bank of Minneapolis, housing transactions were first divided into the categories of new and used (those that have been lived in before) and then each series was divided into three brackets according to market price. Transactions were distributed according to sales price, the lowest 60 percent of the total number being classified as low-priced, the next 34 percent as medium-priced, and the top 6 percent as high-priced.

The new houses in the low-priced bracket include many of those constructed by large builders for the concentrated market. The houses sold in this bracket ranged up to $16,000 in the twelve month period ending July 1, 1961. The average price paid for new houses in this bracket has slowly risen from $13,300 in the first half of 1959 to $14,000 in the latter half of 1960. There was only a slight decrease in the first half of this year. The price range in the medium bracket extended up to $28,900. In this bracket the average price of new houses has risen slowly from $17,000 in the first half of 1958 to $20,000 in the latter half of 1960. The average price declined to $19,600 in the first half of this year. In the high bracket, which includes mostly custom built houses, the range in price paid is usually great. The average price on these houses has risen from $26,300 in the first half of 1958 to $35,300 in the latter half of 1960. The average was $34,500 in the first half of this year.

As may be observed on the accompanying chart, the average prices paid for new and used houses since 1958 have remained within close range of each other. The average price paid for used houses

Average prices of new and used homes sold in Minneapolis area, 1955-61.

Residential building costs in Minneapolis area, 1955-61.



has ranged from $300 to $600 lower than on new houses indicating that the spread between these prices may have stabilized.

Shortly after mid-year, the market began to strengthen for used houses. Several real estate firms in the greater Minneapolis area have reported a rise in sales and the Federal Housing Administration office has received more applications for mortgage insurance on such houses. Along with these developments, real estate men report a firming of prices. The average price paid for such houses rose by $300 between the first and second quarters of this year and may have risen further in the third quarter. If the margin in the price between used and new houses is maintained, prices may also firm on the latter.

Construction costs, obviously, are the major factor in the trend of prices paid for houses. Boeck and Associates' index of residential building costs rose by 6 percent from 1958 through the first half of 1961. When the average price paid for all houses is deflated by this increase in costs, the average price has risen by approximately $300 over this two and one-half year period.

DISTRICT EMPLOYMENT LAGS

Nonfarm employment in the U. S. rose to a new record of 62.2 million in August and then declined to 61.4 million in September. The decrease was mainly seasonal although it was accentuated somewhat by the destruction caused by hurricane Carla in Texas. During the summer, employment in nonagricultural establishments exceeded the prerecession high.

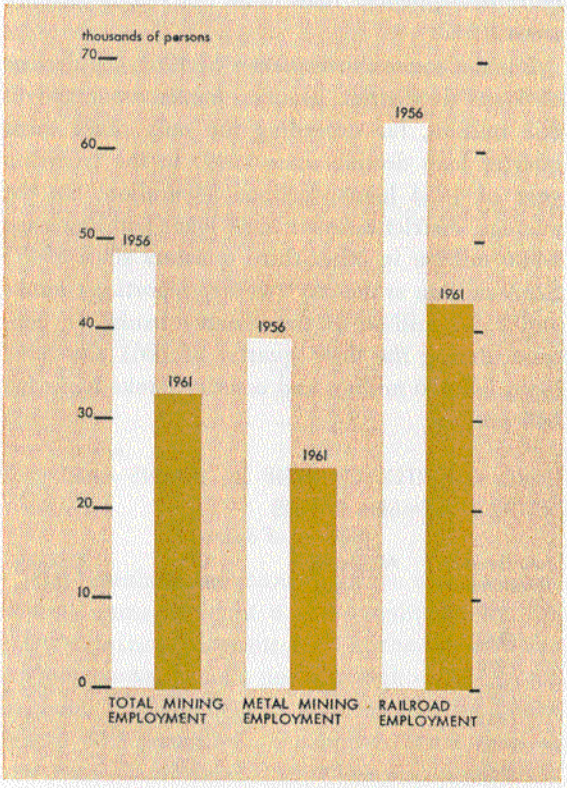
In the Ninth district, nonfarm employment has risen more slowly than in the nation as a whole, and by September had not equaled the prerecession highs of mid-1960. Since January, employment has been above that of a year ago in finance, government service, insurance and real estate. In manufacturing, employment has been above the year-ago figures in each month since July, but it was not until September that employment in retail and wholesale trade exceeded that of a year ago, according to preliminary estimates. Employment in September was still down materially in construction, mining and transportation.

The industrial recovery has boosted employment in manufacturing firms in the district as well as in other parts of the nation. Seasonally adjusted employment in the district has risen each month since February and has exceeded the year-ago level beginning in July. The rise in factory workers has been concentrated in durable goods industries which, in this district, are located largely in Minnesota. In soft goods industries, the rise in employment has been at a slower rate and has not yet reached the prerecession level.

Not only has there been a rise in manufacturing employment, but also the workweek has been lengthened. Hours worked per week in the district rose from an average of 40.0 in February to 40.9 in June and have remained approximately at that figure in subsequent months. The lengthening of the workweek has been quite general, occurring in all district states except Montana where the important lumber industry has been confronted with a weak demand for its products. As a result of the rise in weekly hours and some increases in hourly rates, weekly earnings in the district have averaged approximately $3.00 higher than a year ago.

After a slow start last spring and summer in the district, construction activity has expanded here as well as in the nation. Seasonally adjusted employment in construction declined in April and May and then increased slowly through September. Employment during the summer months was below the level of a year earlier. Layoffs during the early summer were due in part to a labor dispute in the special trades contracting category in the Twin Cities, but more important has been the lag in highway and other types of heavy construction projects. A large number of highway projects were completed in 1960 and the initiation of new ones this year was delayed. This accounts for much of the slack in the early part of the year.

Contraction in mining and railroad employment in the Ninth District, May 1956-May 1961.



The volume of contract awards indicates that no sharp rise in construction can be expected before winter weather slows down activity. The number of contracts awarded for all types of nonresidential building was down again in August following a high volume in both June and July. The percent change from a year ago in the number of dwelling units authorized by building permits in the district decreased materially all year until September when the trend was reversed. Although liberal mortgage terms have brought more buyers into the market, prospective buyers have not been so responsive to easier financing terms as formerly.

Technological advances and geographic shifts of industries have a direct impact on individual firms in certain industries and an indirect impact on limited geographic areas. These changes do not occur evenly across the national economy.

In the Ninth district, technological advances made in copper mining have resulted in a steady drop in employment in the industry during the past five years, while the production of copper has been quite steadily maintained. In 1956, district copper production aggregated 158,000 short tons, and in 1960, 149,000 short tons.

In the iron ore industry, a geographic shift has been taking place in the source of supply for U. S. iron and steel plants as an increasing tonnage of ore has been imported from foreign mines. In 1956, 63 percent of the ore consumed in U. S. iron and steel plants was supplied from U. S. mines in the Lake Superior region. The percentage has declined steadily and in 1960 stood at 52 percent. However, the geographic shift that has taken place in the industry is seen more clearly by the decline in the tonnage of ore supplied from this region. In 1956, shipments aggregated 77.6 million long tons, and in 1957, 84.6 million long tons. The 1959 strike in the steel and iron ore industry reduced shipments to 46.8 million long tons, but in 1960, when operations were unhampered, the tonnage shipped rose only to 69.6 million tons. This year, the shipments through September were only 70 percent of the tonnage in the comparable period of last year.

Technological advances made in the railroad industry have also had a pronounced impact on limited areas in the district. The completion of the shift to diesel power has eliminated many railroad shops and the building of modern freight yards has consolidated the assembling of freight trains to fewer communities.

These developments in mining and in railroading have resulted in a steady decline in labor requirements. From May 1956 (just before a strike was called in the iron ore industry) to May 1961, employment in all types of mining declined by 15,700 workers, a decrease of nearly one third in the employed force. Employment declined in coal

mining, quarrying and in petroleum and natural gas, but the number of workers in these industries was small in 1956. In metal mining, which is primarily copper and iron ore, employment has declined by 14,400 workers, or 37 percent. In the railroad industry, the displacement of labor was even greater. In the five-year period, employment dropped by 20,300 workers, or nearly one third.

In the above industries, a total of 36,000 workers were displaced in the district in a period of five years. The contraction in payrolls of these primary industries has depressed activity in other industries. The market for houses declined sharply in communities where there were no other growing industries. As workers secured employment in other communities and moved their families, the volume of transactions in retail stores and service outlets fell off.

The technological innovations and the geographic shifts in these industries have now slowed down and, in some instances, have been completed. Thus, labor displacement has lessened and job opportunities again depend largely on the scale of operations as it is determined by the demand for specific products and services.

In district agriculture, technological advances have reduced the number of farmers and farm workers year after year as new equipment has been substituted for labor. In addition to this long-term downward trend, drouth conditions in North Dakota, western South Dakota and eastern Montana last summer reduced the seasonal demand for farm labor. Fortunately, fall crops, such as corn and soybeans, were not damaged by the drouth and yields are above normal. Thus, the fall harvest has again raised the demand for farm labor in some regions of the district.

MEMBER BANK LOANS DECLINE

September reports from Ninth district member banks reveal a continuation of loan reductions contrary to the usual seasonal pattern. The decline was first evident in July when loans fell by more than in any July since 1947, and was again evident in August when loans fell by more than in all Augusts since 1947 except one. Loans fell by more in September than in all but one September since 1947.

For the entire third quarter of 1961, the decline of loans at district member banks amounted to $62 million, far exceeding the only other third quarter loan decline since 1947. In the recession year of 1954 loans declined $4 million. On the average, district member bank loans had increased $44.6 million in other third quarters since 1947; $25.9 million at the city (weekly reporting) banks and $18.7 million at the country banks. In contrast, during the third quarter of 1961 city bank loans fell $16 million and country banks loans fell $46 million.

THIRD QUARTER CHANGE IN LOANS[1] AT DISTRICT MEMBER BANKS

(millions of dollars)

July through September	All Member Banks	City Banks[2]	Country Banks
1948	43	16	27
1949	15	19	— 4
1950	74	46	28
1951	17	— 6	23
1952	72	44	28
1953	73	34	39
1954	— 4	— 5	1
1955	109	66	43
1956	23	9	14
1957	24	8	16
1958	47	34	13
1959	57	41	16
1960	30	30	0
1961	—62	—16	—46

[1] Exclusive of loans to banks.
[2] Weekly reporting banks.

The district member bank loan reduction was large not only in relation to the experience of other years, but also in relation to the behavior of loans at all member banks in the nation. In contrast to the postwar record decline of loans at district member banks in the third quarter, all member banks in the nation reported loans up in the period by $1.5 billion, a larger increase than

that registered in the same period of last year.

A remarkable feature of the district loans experience in the third quarter of 1961 was its geographic generality. The table below reveals that loans declined at country banks in every district state (or part state), whereas increases were registered, on the average, in the previous years since 1947.

THIRD QUARTER CHANGE OF DISTRICT COUNTRY MEMBER BANK LOANS

(millions of dollars)

	'47-'60 Average	1961
Ninth District	+ 18.7	— 45.8
Michigan	+ .8	— .5
Minnesota	+ 1.8	— 11.3
Montana	+ 6.2	— 8.2
North Dakota	+ 7.9	— 6.1
South Dakota	+ .8	— 19.1
Wisconsin	+ 1.2	— .6

The liquidation of loans, together with seasonal deposit gains, brought a sharp reduction in the ratio of loans to deposits both at the city and the country banks. From a postwar high of 51 percent in June, the loan-deposit ratio at country banks fell to 47.3 percent in September, lower than at any time since March 1960. The city bank ratio fell from 55.8 percent in June to 51.6 percent in September, the lowest ratio since March 1959. The postwar high for city banks was 61.4 percent registered in May 1960.

In the first two weeks of October, district city bank loans were down $15 million; in the comparable two week period last year loans fell $14 million. The latest drop, together with continued rising deposits, brought the city bank loan-deposit ratio below 50 percent.

Another indicator of improved liquidity was the September level of member bank borrowing from the Federal Reserve Bank of Minneapolis. Country bank borrowings averaged less than in any month since September 1954. During the entire third quarter, no reserve city bank in the district borrowed at the Federal Reserve. Not since the forties had these banks been absent from the discount window for such an extended period.

In the week ended October 4, both city and country member banks in the district reported record total deposits. In part, this record was produced by credits to Treasury tax and loan accounts on September 27 in payment for a new issue of Treasury Tax Anticipation Bills. Treasury balances reported by both the city and country banks were higher than at any time in several years.

Soybeans---a success story

Drive through Minnesota's Martin county today and you'll wind through miles of farmland. The fields of corn that line both sides of the road testify that corn is the county's biggest crop. But in recent years a crop that has been grown in small volume for a long time has rapidly been gaining prominence. That crop is soybeans, formerly used as a legume hay, but now used much more extensively for the bean itself.

A typical Martin county farmer who owns 320 acres would have planted his land in corn, alfalfa and small grains, two decades ago. The small amount of soybeans he did raise was used as hay. Today the same farmer would plant about 160

acres of corn and 100 acres of soybeans. Other crops are planted in lesser amounts.

What is the reason for the change?

For the typical Martin county farmer the answer is simple: next to corn, soybeans now provide the most profitable alternate use for land. Two developments account for the change: first, the increase in demand for soybeans and its products; and second, improved production techniques which enable farmers to grow more soybeans per acre and grow them where they were never grown before. The result is that more and more soybeans are produced every year, not only in Martin county, but also in wide areas of the Ninth district, notably southern and western Minnesota, eastern South Dakota and southeastern North Dakota.

This year's soybean crop in the Ninth district, a record crop, has already been hauled to market. Minnesota's production of soybeans this year is estimated to be 53,400,000 bushels. The picture is much the same nationally and it is estimated that total U. S. soybean production is up 25 percent from last year.

Rapid growth

The rapid growth in production of soybeans during recent years is an agricultural success story. Moreover, the already successful industry continues to grow at a high rate. In 1940, cash receipts from soybeans in the United States totaled 0.5 percent of all receipts from major commodities. By 1960 the percentage had increased to 3.2, making soybeans the fifth largest cash crop in the nation.

In the Ninth district, growth has been even more rapid. Average annual receipts from soybeans rose from $4 million, or 0.3 percent, of total cash income in the five-year period 1940-44, to over $103 million, or 3.6 percent, in the period from 1955 to 1959. Minnesota cash receipts advanced from 0.7 percent from 1940 to 1944 to 7.1 percent in the period from 1955 to 1959, while the increases in North and South Dakota, although on a somewhat smaller scale, also reflect the growing importance of the industry in the Ninth district economy.

From the Orient to the West

Soybeans were first grown and developed in southeastern Asia. Early records indicate that as far back as 3000 B.C., soybeans were an important part of the Chinese agricultural economy. No one knows exactly how the bean found its way to America, but it was probably introduced here at the beginning of 19th century.

Prior to 1941 the crop produced on more than half of the soybean acreage was used for hay, grazing or fertilizer. In 1960 only 4 percent of the 24 million acres devoted to soybeans was used for forage. Soybeans are now grown principally for the beans, which move to numerous market outlets in two forms, soybean oil, used for food and industrial purposes, and soybean meal, used mainly in livestock feeds.

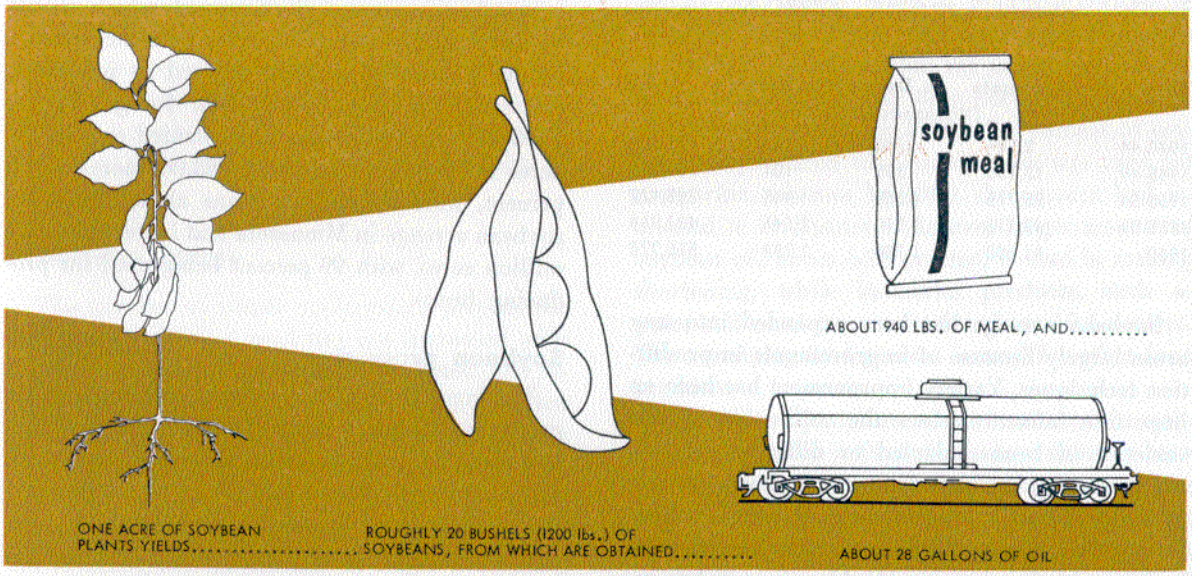
Never a serious surplus

The first big rise in demand for soybeans came during World War II when all fat and oil imports from the Far East were cut off and domestic production of these commodities became necessary. Simultaneously, consumer income began to rise, causing a greater demand for meat and other livestock products and resulting in an increased need for the animal protein feeds, including those made from soybeans.

After the war, market outlets for soybean oil and meal did not diminish; instead, the increased importance of such derivative products as margarine and shortening and the continued demand for protein feeds led to an expansion of the market for the soybean and its products. The result is that to date there has never been a serious surplus of soybeans in the United States.

Import to export

The increase in domestic demand and production was followed by an increase in foreign de-



mand, and, as a result, one of the major developments in the United States soybean industry has been its shift from an import to an export status. Until 1937, imports of soybeans and soybean oil predominated over exports, but since that time shipments abroad have increased at a rapid rate, while imports have dwindled to an almost negligible amount. Average yearly exports in the period between 1939 and 1944 totaled 2.7 million bushels, while in the 1954-59 period an average of 82 million bushels was exported annually. Over 40 percent of the 1959 soybean crop was sent abroad, 141 million bushels as beans and the equivalent of another 86 million bushels as soybean oil.

European countries received about 74.5 percent of our total soybean exports in 1958-59, while Asiatic countries imported about 11.4 percent. Major importers of U. S. soybean oil are Spain, Italy, Poland, Yugoslavia, Turkey and Japan.

Acres and acres of beans

Soybean acreage in the United States has grown rapidly since 1940, keeping pace with the increase in demand. A gain of 124 percent was recorded in the past ten years, from 10.5 million acres harvested in 1949, to 23 million harvested in 1960.

The Corn Belt, which has always been the major production area for soybeans, continues to rank first, but its relative importance has decreased. In 1940, the Corn Belt states produced 71 percent of the total crop, while in 1960 they accounted for 58 percent. At the same time, other regions have shown significant gains in acreage. For example, the Delta States (Arkansas, Missouri and Louisiana) accounted for 15 percent of the total 1960 acreage, as compared with 6 percent in 1940.

Ninth district production of soybeans has also grown rapidly. In the period between 1940 and 1944, this region accounted for only 1.8 percent of the total U. S. production, whereas by 1960 the percentage had risen to 8.2. Table 1 shows the increase in average annual production of soybeans in three Ninth district states and the United States, from 1940 to 1960.

TABLE 1—AVERAGE ANNUAL SOYBEAN PRODUCTION

Years	Minnesota	So. Dakota	No. Dakota	U.S.
	(thousands of bushels)			
1940-44	2,584	130	40	151,004
1945-49	12,330	399	101	208,885
1950-54	25,715	1,559	445	298,422
1955-59	49,376	2,599	2,646	483,914
1960	41,800	1,700	2,288	558,778

Soybean acreage has been expanded into new areas largely because of improvements in production techniques. Variety improvement has been an important influence, since the cultivation of new varieties of beans adapted to different climatic conditions has enabled farmers to grow soybeans in areas where they had never been grown before. In addition, variety improvement has made soybean production more profitable, since it has resulted in increased yields in all areas where soybeans are grown.

Mechanization has been another important factor, increasing yields at the same time that it has lowered the cost of production. A major advantage favoring the addition of soybeans as a farm enterprise is that the same equipment used to handle small grains can be used in handling soybeans. Furthermore, the net returns from soybeans in the regions where they can be grown are generally substantially above the returns from small grains.

The increase in yields which has resulted can be seen in Table 2, which shows the average annual yield per acre obtained in Minnesota, South Dakota, North Dakota and the United States as a whole.

TABLE 2—SOYBEAN YIELDS PER HARVESTED ACRE (Annual Average)

Years	Minnesota	South Dakota	North Dakota	U.S.
	(bushels)			
1940-44	14.8	10.4	7.0	18.1
1945-49	16.7	14.2	11.5	19.7
1950-54	18.7	15.8	13.0	20.3
1955-59	19.5	12.5	14.5	22.6
1960	20.0	17.0	13.0	23.8

Another important development which should be mentioned in regard to acreage is the increase in the amount of acreage devoted to producing soybeans for beans rather than forage. In the 1940-44 period, soybeans were planted on 328,000 acres in Minnesota, of which 183,000 acres, or 55 percent, were devoted to beans alone. By 1960, soybean acreage in Minnesota had increased to 2.1 million acres, with 99 percent being used for producing beans.

Soybean processing

The importance of the soybean lies mainly in the products which are derived from it, soybean oil and meal. In order to obtain these products, three processing techniques, known as the hydraulic, the expeller, and the solvent methods, have been developed. In the hydraulic process, which was the first to be developed but has now been largely superseded by the others, the soybeans are heated to high temperatures, then rolled into flakes and cooked. Very high pressure is next applied, so that the oil is gradually squeezed out. It is then recovered and piped into tanks for refinement. The residue is ground to produce the soybean meal. Using this process, approximately 8.5 pounds of oil and 48.5 pounds of meal can be obtained from each bushel of soybeans.

The expeller process first came into general use around 1930. Using it, about 9 pounds of oil and 48 pounds of meal per bushel of soybeans can be obtained. The oil is removed from the heated soybean by a continuous pressing process and is piped off for filtering to remove impurities before being placed in storage. The residue is ground into soybean meal.

The solvent method is now the most commonly used process, due to the fact that it is the most efficient, providing for a recovery of from 95 to 98 percent of the oil content of the bean. The soybeans are first heated and flaked, then treated with organic solvents. After the combined oil and solvent mixture has been drained and distilled, the solvent liquid is recovered and returned to the

tanks, while the crude soybean oil is run through a series of filters on its way to storage tanks. The flakes from which the oil has been removed are ground and toasted to make the soybean meal. Using this method, about 11 pounds of oil and 47 pounds of meal can be produced from a bushel of soybeans.

Processing plants

The number of plants equipped to process the soybean for oil and meal has not increased with soybean production as might be expected, but instead has shown a slight decline in the past ten years. The reason for this is simply that fewer mills are necessary because the average annual quantity processed by each mill has grown due to the improvement in soybean processing techniques and the resulting cost advantages of larger processing installations. Between 1952 and 1956, soybean mills in the United States increased their average annual processing from 1.3 million bushels per mill to 2.9 million bushels, a gain of 123 percent. At the same time, the number of mills has again grown slightly, so that at present there are 148 processing plants in the United States. Of these, nine are located in the Ninth district (eight in Minnesota and one in North Dakota). Minnesota ranks fifth in the nation in the number of plants, while Iowa, with twenty-two, has the largest number.

Soybean products

After soybean oil and meal have been obtained through processing, they are used in the manufacture of various products, both edible and industrial. Margarine is one of the most important of the edible products, but the use of soybean oil in its manufacture has only become widespread since the late 1930s. In 1940, 17.5 percent of soybean oil produced for domestic use was used for margarine, whereas by 1960, the amount had increased to 31.4 percent. An even larger amount of soybean oil, about 33.8 percent, is used in making shortening, while industrial products, such as paint and varnish, account for about 10.4 percent. The remaining 24.4 percent is used for other food products.

The relatively new use of soybean meal in making high-protein animal feeds has already been mentioned, and most of the soybean meal produced is used for that purpose. A small amount is also utilized in the manufacture of various protein products, such as spaghetti and cereal, as well as in other products used industrially.

Four major manufacturers of soybean products are located in the Ninth district, all of them in Minnesota. These companies produce such edible products as soybean oil, cereals and lecithin, as well as industrial products like glue, plywood, adhesive, industrial flour, laminating and industrial oil.

Martin county farmers along with other soybean farmers in the Ninth district find they have a ready local market for soybeans, and they have discovered how soybeans can become one of their most profitable crops. The Martin county soybean farmer and his counterparts in other areas of the nation have helped make the soybean story a success story.

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