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AGRICULTURAL EXTENSION DIVISION  
UNIVERSITY OF MINNESOTA

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MINNESOTA FARM BUSINESS NOTES

No. 125

April 20, 1933

Prepared by the Division of Agricultural Economics  
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MARKETING MINNESOTA POTATOES  
Prepared by D. C. Dvoracek

Minnesota is one of the important late potato producing states of the United States, ranking third among the eighteen surplus late potato producing states in 1932 with a production of 29,716,000 bushels. The state was surpassed by Maine with a production of 39,480,000 bushels and Michigan with 29,900,000 bushels. Potatoes, however, are of relatively minor importance as a source of farmers' income for the state as a whole. In 1931, potatoes ranked eleventh in importance with a gross income of \$5,612,000 which was 2.4 per cent of the total farm income from sale of farm products of \$235,540,000. Among the eight important field crops, however, potatoes ranked fifth as a source of income with 11.7 per cent of the total gross income (from cash crops) of \$48,060,000. Thus it is evident that potatoes are of no small importance as a cash crop in Minnesota.

Table 1.

| Production and Carlot Shipments of Minnesota Potatoes |            |           |            |                        |
|---|------------|-----------|------------|------------------------|
| Year  | Production | Shipments |            |                        |
|   |            | Carloads  | Bushels*   | Per cent of production |
| 1922-23   | 43,740,000 | 28,931    | 17,358,600 | 39.7                   |
| 1923-24   | 40,698,000 | 33,602    | 20,161,200 | 49.5                   |
| 1924-25   | 44,880,000 | 31,695    | 19,017,000 | 42.4                   |
| 1925-26   | 26,772,000 | 23,163    | 13,897,800 | 51.9                   |
| 1926-27   | 29,800,000 | 25,049    | 15,029,400 | 50.4                   |
| 1927-28   | 33,128,000 | 33,482    | 20,089,200 | 60.6                   |
| 1928-29   | 41,311,000 | 20,456    | 12,273,600 | 29.7                   |
| 1929-30   | 25,740,000 | 22,923    | 13,753,800 | 53.4                   |
| 1930-31   | 22,608,000 | 16,346    | 9,816,600  | 43.4                   |
| 1931-32   | 28,808,000 | 19,204    | 11,522,400 | 40.0                   |
| Average   | 33,748,500 | 25,485    | 15,291,960 | 45.3                   |

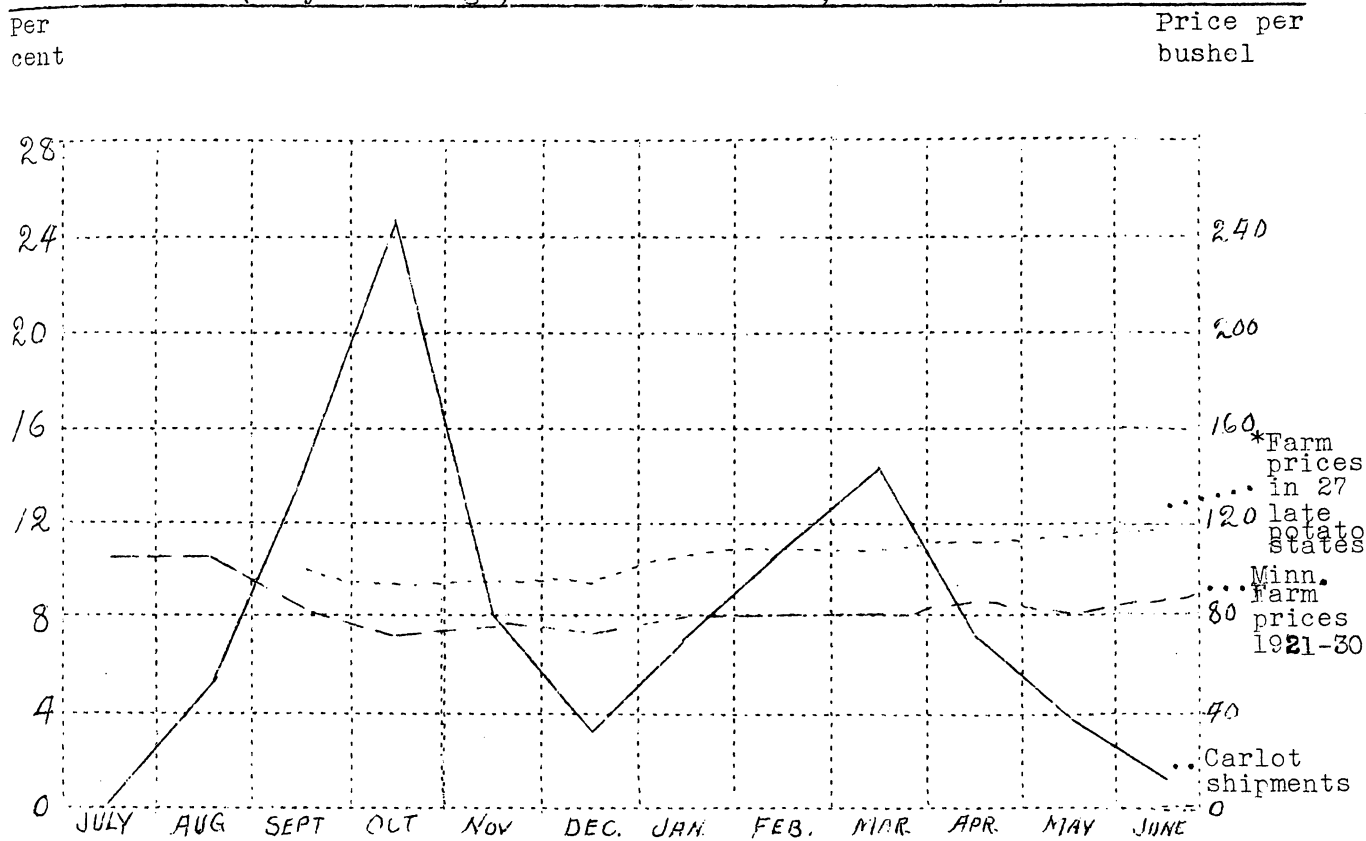
\*Car = 600 bushels.

During the ten years 1922-31 inclusive, the annual production of potatoes varied due to changes in acreage and crop yield from 22,608,000 bushels in 1930 to 44,880,000 bushels in 1924, with an average annual production of 32,276,000 bushels. The carlot shipments varied from 16,346 cars in 1930-31 to 33,602 cars in 1923-24 with an average annual carlot shipment of 25,485 cars. During this same period an average of 45.3 per cent of the reported production was shipped in carlots. The percentage shipped varied from 29.7 per cent in 1928-29 when the production was well above the average to 60.6 per cent in 1927-28 when the production was nearly

normal. These percentages, when compared with the annual production, do not show that a larger proportion of a small crop or a smaller proportion of a large crop is always shipped. As an example, in 1924-25, when the largest crop in ten years was produced, 42.4 per cent of it was shipped. This was less than the average proportion. It suggests that there are other factors that influence the proportion of a crop marketed besides its volume. Some of these factors may be the size of crop of potatoes in other states and the location of such crops.

Chart 1.

Carlott Shipments and Farm Prices of Potatoes  
(10-year average, 1921-22 to 1929-30, inclusive)



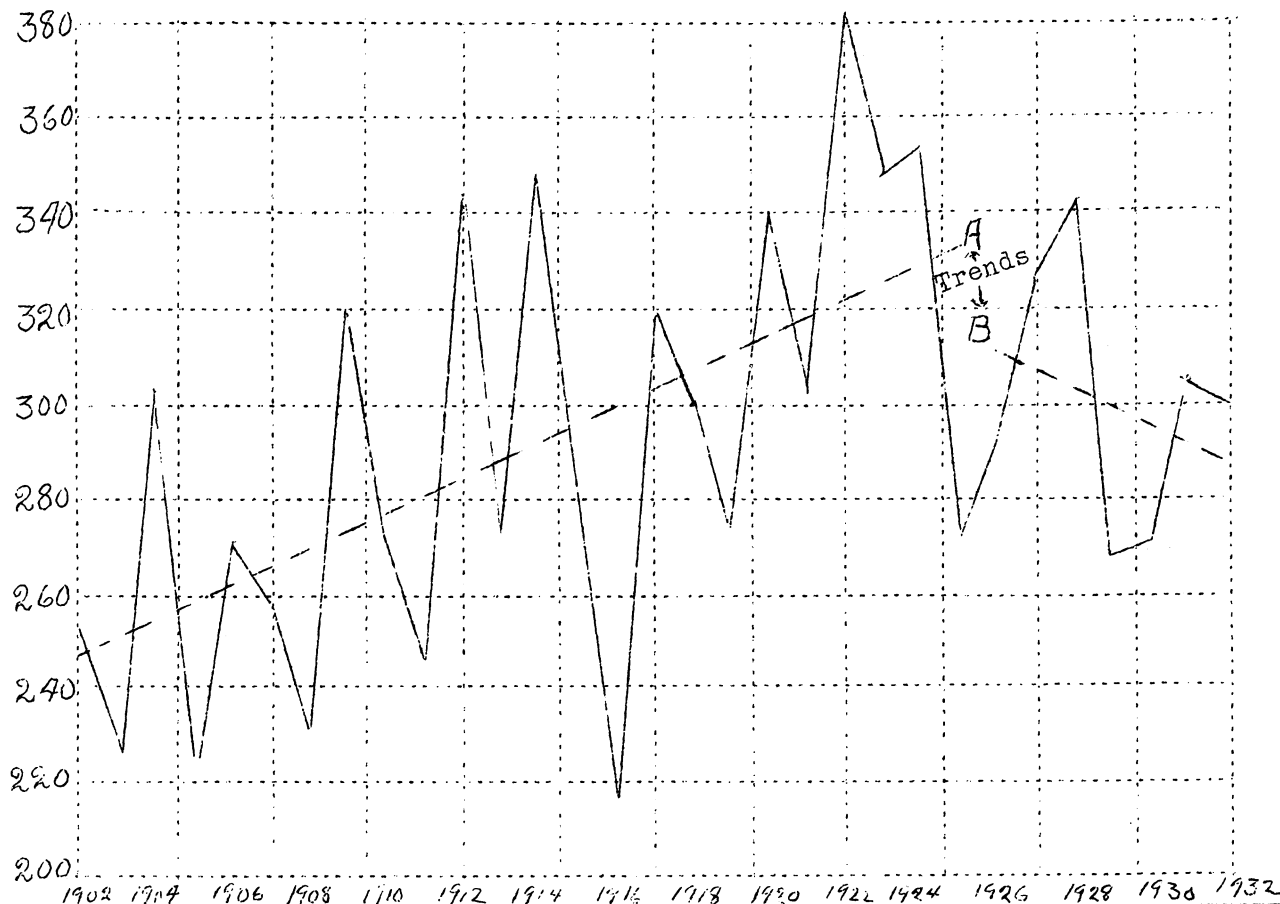
\*Per cent of nine month yearly average for 1902-1926.

The marketing of potatoes as indicated by carlott shipments is distinctly seasonal. Two peaks of shipments occur during the year--one in October and one in March. The average monthly shipment expressed as a per cent of the total for the season taken from a ten-year period, 1921 to 1930 inclusive, varies from 0.59 per cent in July to 24.3 per cent in October and 14.2 per cent in March. The high proportion of shipment in the fall is due to heavy shipments from the field at or soon after digging to avoid storage at the shipping point. The spring peak of shipments comes from farm or local shipping point storage.

Prices of potatoes (1902-26) in the 27 late potato producing states, calculated as a per cent of a nine-month seasonal average, show a gradual incline from September to May, thus allowing for necessary carrying charges and costs of storage. Average Minnesota potato prices for the period 1921 to 1930 inclusive show the highest price in July and August with a sharp decline thru September to October and a slow rise to June. There apparently is little or no marked connection between rate of shipments and prices.

Chart 2.

Actual and Trend of Production of Potatoes in 27 Late Crop States  
1902-1932



Production of potatoes in the 27 late potato producing states has increased steadily from 1902 until 1925. This production increase, expressed by a straight line, rises from calculated production of 247 million bushels in 1902 to 333 million bushels in 1925, and is referred to the long time trend<sup>1/</sup> in production. Since 1926, potato production in the same group of states declined from a calculated production of 310 million bushels in 1926 to 287 million bushels in 1932. These two trend lines are indicated by lines A and B in Chart 2. They serve as a basis for designation of a crop as small, normal or large.<sup>2/</sup> Crops that were 72 to 91 per cent of the long time trend were designated as small crops. Crops that were 92 to 109 per cent of the trend were considered normal, and those that were 110 to 121 per cent of the trend were called large crops.

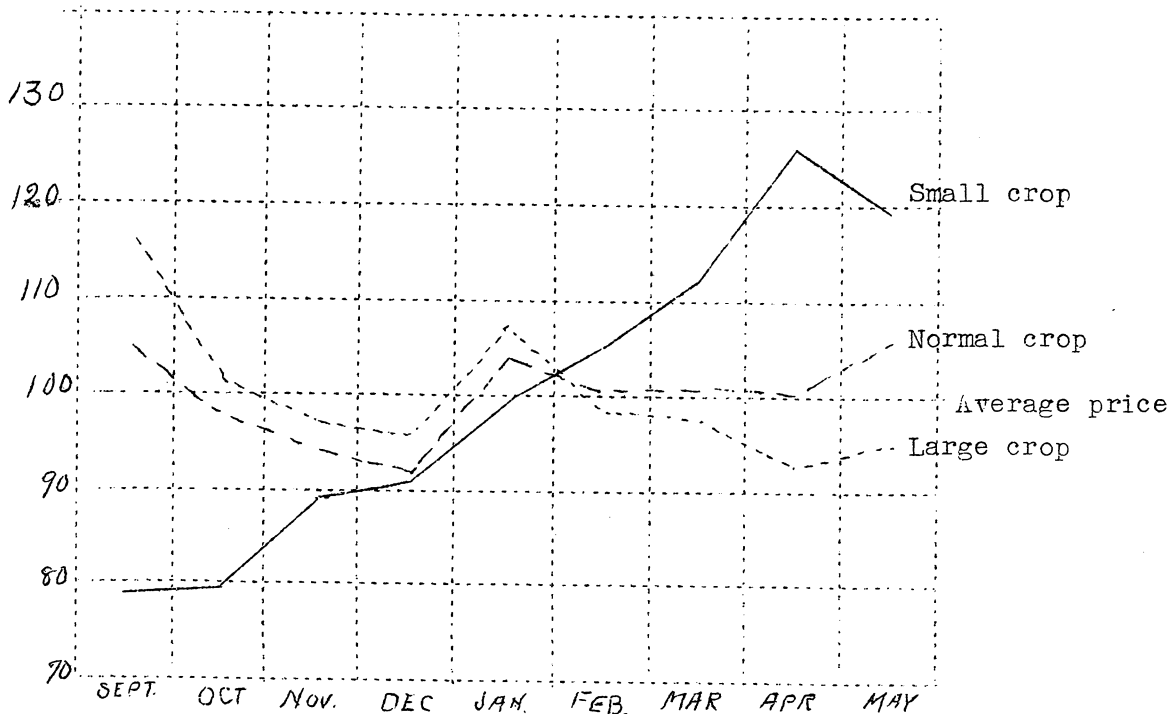
Size of crop seems to have some influence on seasonal prices. Chart 3 shows the seasonal price fluctuations of various sized crops, based on a nine-month season. The months of June, July and August were omitted as prices for these months cover both early and late potatoes. The seasonal trend of prices for a small crop as defined above shows a distinct rise from September to the following May. A normal crop is apparently sold at a price that is more or less stable for the season. A large crop, on the other hand, is evidently sold at a

<sup>1/</sup> Determined by method of least square with origin in middle of each series.

<sup>2/</sup> Each year's crop was calculated as a percentage of the long time trend.

Chart 3.

Average Seasonal Fluctuation of Potato Prices for Various Size Crops  
in 27 Late Potato States  
1902-1931



declining price. Both normal and large crops show a steady decline during the first three months of the season with a rise in January when the movement of potatoes is restricted by cold weather. The price of a large crop declines steadily from the high point in January while the normal crop maintains a more stable level until toward the end of the season.

Minnesota may be roughly divided into five general potato growing districts or areas. These areas are similar in general soil types and varieties of potatoes grown. The northeastern section includes 16 counties, embracing the area east of the Red River Valley and north of a line drawn roughly east and west along the northern boundary of Morrison County. This area grows Green Mountain, Burbank, Russet, Cobbler and Triumph potato varieties, under similar conditions and of a uniform quality. The Red River Valley includes ten counties east of the Red River. Red River Valley Early Ohio and Irish Cobbler potatoes are the main varieties grown. The Sandland area is composed of 13 counties in east central Minnesota north of the Twin Cities and south of the northeastern group. A rather wide variety of potatoes are grown in this group and includes Early Ohio and Rural New Yorkers, with Bliss Triumphs, Cobblers, and some Burbank Russets. The southern Minnesota group or district includes 47 counties where, with the exception of a few counties along the northern and southwestern boundary of the area, potato production is of relatively minor importance. Practically all varieties of potatoes grown in the state are found in this area, without a great deal of standardization of either variety or quality. The Hollandale district in Freeborn County is classed as a separate district because of the importance of potato production and the intensive productive methods on drained land. Cobbler potatoes are the most important variety. During 1930, the Sandland district led the other districts by producing 34 per cent of potatoes produced in the state, and shipped 36 per cent of all carlots shipped during that season. The Red River Valley produced 22 per cent of the state's potatoes during that year and led all districts in carlot shipments with 40 per cent of the total for the state.

Table 2.

Production, Consumption, Surplus, Carlot Shipments of Potatoes  
in Minnesota by Districts for 1930-1931\*

| District         | Production    |                               | Consumption |               | Seed Req. 1931 |               | Surplus   |               | Carlot Shipments |      |               |
|------------------|---------------|-------------------------------|-------------|---------------|----------------|---------------|-----------|---------------|------------------|------|---------------|
|                  | Bus.<br>(000) | % of<br>total<br>for<br>state | Bus.<br>%   | % of<br>prod. | Bus.<br>%      | % of<br>prod. | Bus.<br>% | % of<br>prod. | No.              | Bus. | % of<br>prod. |
| Red River Valley | 4958          | 21.9                          | 437         | 8.8           | 1168           | 23.6          | 3353      | 67.6          | 6511             | 3906 | 78.8          |
| N.E. Minnesota   | 4217          | 18.7                          | 1384        | 32.8          | 778            | 18.4          | 2055      | 48.8          | 1885             | 1132 | 26.8          |
| Sandland         | 7640          | 33.8                          | 2980        | 39.0          | 1358           | 17.7          | 3314      | 43.3          | 5907             | 3544 | 46.4          |
| South. Minnesota | 4843          | 21.4                          | 2804        | 57.9          | 889            | 18.4          | 1149      | 23.7          | 883              | 530  | 10.9          |
| Hollandale       | 950           | 4.2                           | 862         | 9.1           | 139            | 14.6          | 724       | 76.3          | 1169             | 701  | 73.8          |
| State            | 22608         | 100.0                         | 7692        | 34.0          | 4332           | 19.2          | 10584     | 46.8          | 16355            | 9813 | 43.4          |

\*Consumption estimated by multiplying population of counties in district or state by 3 bushels, the average per capita consumption of potatoes. Seed requirements were obtained by multiplying the 1931 acreage planted to potatoes by 12 bushels, the average amount of seed planted per acre.

Nearly one-half (46.8 per cent) of the potatoes produced in Minnesota in 1930 were in excess of estimated domestic requirements for consumption and seed planted for the 1931 year crop. This does not mean that Minnesota does not ship in any potatoes from other states at certain seasons of the year or of some particular quality. Based on the average per capita consumption of potatoes of 3 bushels, 34 per cent of the potatoes produced were consumed while 19.2 per cent of the 1930 crop was used to plant the 1931 crop. Carlot shipments were 43.4 per cent of the production, and make up that proportion of the crop that may be considered as commercial surplus for the various producing areas. The Red River Valley had the largest proportion of surplus with 67.6 per cent of its production, and is the most important surplus potato producing section. Hollandale in Freeborn County has the largest surplus production but it involves a relatively small area and volume of production. Altho the Sandland district produces a larger share of the total production for the state, its surplus is less (43.3 per cent of production) because of the local markets found in the Twin Cities. Southern Minnesota, as a whole, had the smallest surplus of 23.7 per cent of production. Twenty-three of the counties in this district produced less than their consumption and seed requirements, being supplied by adjacent counties of the same district that produced a surplus. The Red River Valley shipped potatoes in excess of their surplus. This may be due to the fact that some of the potatoes shipped from Valley points in Minnesota were grown in North Dakota. The excess of shipments from the Sandland district may be explained by the quantity of potatoes consumed in this area that were grown in some other district or state.

From a cooperative standpoint, potato marketing is definitely disorganized except for the Hollandale and Northeastern districts. Approximately 135 local potato marketing associations were operating in 1921. The number of such associations at present is conspicuous because of their absence. This is due not to a lack of need for such organizations but rather to the failure of two state wide potato marketing associations about ten years ago. The association at Hollandale district is operating successfully, handling the majority of potatoes sold since its organization ten years ago. The Northeastern section is developing a district potato marketing association from a small group of local associations. The success of the Hollandale and Northeastern districts suggests the thought that future development in potato marketing will be based on building district associations to serve areas that are alike in these soil types, varieties produced, and type of agriculture in general. They thus have common marketing problems. These district associations may later be federated into state or regional associations.

# MINNESOTA FARM PRICES FOR MARCH 1933

Prepared by Adena E. Erickson

The index number of Minnesota farm prices for the month of March 1933 was 35.5. When the average of farm prices of the three Marches 1924-25-26 is represented by 100, the indexes for March of each year from 1924 to date are as follows:

|                   |                             |
|-------------------|-----------------------------|
| March 1924 - 84.0 | March 1929 - 107.6          |
| " 1925 - 105.0    | " 1930 - 97.3               |
| " 1926 - 111.4    | " 1931 - 68.0               |
| " 1927 - 108.9    | " 1932 - 47.5*              |
| " 1928 - 101.2    | " 1933 - 35.5* *Preliminary |

The price index of 35.5 for the past month is the net result of increases and decreases in the prices of farm products in March 1933 over the average of March 1924-25-26 weighted according to their relative importance.

## Average Farm Prices Used in Computing the Minnesota Farm Price Index, March 15, 1933, with Comparisons\*

|             | Mar. 15,<br>1933 | Feb. 15,<br>1933 | Mar. 15,<br>1932 | Av. Mar.<br>1924-25-<br>26 | % Mar. 15,<br>1933 is<br>of Feb.<br>15, 1933 | % Mar. 15,<br>1933 is<br>of Mar.<br>15, 1932 | % Mar. 15,<br>1933 is of<br>Mar. 15,<br>1924-25-26 |
|-------------|------------------|------------------|------------------|----------------------------|--|--|--|
| Wheat       | \$.36            | \$.34            | \$.55            | \$1.38                     | 106  | 65   | 26   |
| Corn        | .14              | .13              | .34              | .65                        | 108  | 41   | 22   |
| Oats        | .10              | .10              | .21              | .36                        | 100  | 48   | 28   |
| Barley      | .16              | .16              | .38              | .60                        | 100  | 42   | 27   |
| Rye         | .21              | .20              | .35              | .84                        | 105  | 60   | 25   |
| Flax        | .93              | .92              | 1.21             | 2.44                       | 101  | 77   | 38   |
| Potatoes    | .23              | .23              | .33              | .83                        | 100  | 70   | 28   |
| Hogs        | 3.15             | 2.80             | 3.80             | 9.97                       | 113  | 83   | 32   |
| Cattle      | 3.25             | 3.35             | 4.00             | 5.90                       | 97   | 81   | 55   |
| Calves      | 4.35             | 4.80             | 5.10             | 9.16                       | 91   | 85   | 47   |
| Lambs-sheep | 4.15             | 4.34             | 5.33             | 11.53                      | 96   | 78   | 36   |
| Chickens    | .073             | .075             | .108             | .173                       | 97   | 68   | 42   |
| Eggs        | .09              | .10              | .10              | .20                        | 90   | 90   | 45   |
| Butterfat   | .17              | .17              | .21              | .46                        | 100  | 81   | 37   |
| Hay         | 5.76             | 5.84             | 9.70             | 11.08                      | 99   | 59   | 52   |
| Milk        | .82              | .92              | 1.17             | 2.13                       | 89   | 70   | 38   |

\*Except for milk, these are the average prices for Minnesota as reported by the United States Department of Agriculture.

## Indexes and Ratios of Minnesota Agriculture

|  | Mar.<br>1933 | Feb.<br>1933 | Mar.<br>1932 | Av. Mar.<br>1924-26 |
|--|--------------|--------------|--------------|---------------------|
| U. S. farm price index                                 | 35.5         | 34.5         | 43.3         | 100.0               |
| Minnesota farm price index                             | 35.5         | 34.8         | 47.5         | 100.0               |
| U. S. purchasing power of farm products                | 53.3         | 52.2         | 60.0         | 100.0               |
| Minnesota purchasing power of farm products            | 53.8         | 52.7         | 65.1         | 100.0               |
| U. S. corn-hog ratio                                   | 15.6         | 15.2         | 12.1         | 13.8                |
| Minnesota corn-hog ratio                               | 22.5         | 21.5         | 11.2         | 15.6                |
| Minnesota egg-grain ratio                              | .450         | .526         | .270         | .262                |
| Minnesota butterfat-feed ratio (one month<br>previous) | .370         | .426         | .250         | .305                |