

WISCONSIN DAIRYING

BULLETIN No. 120 WISCONSIN DAIRY STATISTICS

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WISCONSIN CROP AND LIVESTOCK REPORTING SERVICE
State Capitol, Madison

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PREFACE

FOR many years dairying has held a place of primary importance in Wisconsin's agriculture. During the past decade about one-half of the farm income has been derived from the sale of milk, and, in addition, there is considerable income from cattle, calves, and other livestock partly fed on dairy by-products. The whole livestock industry of the state is rather closely associated with the dairy industry. With changing economic conditions and prices, readjustments of various kinds are necessary in dairying as well as in other enterprises. In order to make such adjustments, however, there has been a widely felt and rapidly growing need for more exact information on the industry. Perhaps no phase of agriculture of equal importance has had so little attention from the standpoint of detailed statistical and economic treatment.

In an effort to meet this need for summary data of an historical nature, as well as for current statistical information, investigation work in Wisconsin has been considerably expanded during the past year by the joint efforts of the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics of the United States Department of Agriculture and the Wisconsin Department of Agriculture and Markets. A special fund made available to the Division of Crop and Livestock Estimates in 1930 made possible more statistical investigations in dairying by that division. Likewise, the Wisconsin Department of Agriculture and Markets after the consolidation of 1929 centralized its work in dairy statistics in its Division of Agricultural Statistics, and greatly expanded this field in order to meet the growing need. Since Wisconsin outranks all other states in dairy production special interest has centered around this new work.

The United States Bureau of Agricultural Economics necessarily covers all states, but because of its size and importance the dairy industry in Wisconsin has received a little more attention during the past year than that of states having less dairying. Methods have been developed for the collection of current information which

will enable the division to publish regularly statistical material which it is expected may be used by the industry in forecasting production and trends so that adjustments can be made by producers sufficiently early to take advantage of changing conditions. In Wisconsin a staff of dairy reporters similar to the list of crop reporters has been appointed, and these men have been functioning for over a year. In addition, the methods of collecting dairy plant reports have been modified so that reports on manufactured products will be made more frequently and published in more detail.

Acknowledgment for contributions to the progress of the work presented in this bulletin must be made to many persons and organizations. Former agricultural statisticians in Wisconsin—W. E. Callender, Joseph A. Becker, and Paul O. Nyhus have done much to build up an organization for the handling of statistical data in the state. Without the background of these efforts, the assembling of the material in this bulletin could hardly have been accomplished. Other workers in the United States Department of Agriculture, particularly J. B. Shepard, Dr. O. E. Baker, Dr. O. C. Sline, Dr. P. F. Brockman, and E. E. Vial, as well as the workers in the Division of Dairy and Poultry Products, have made valuable contributions which were used in bringing together this publication. Special credit for support and encouragement must be given to the Commissioners of the Wisconsin Department of Agriculture and Markets whose interest in the dairy industry led them to support the development of the statistical work in this field, and to make provision for the publication of this bulletin. The records of the Dairy and Food Division and particularly the help of Harry Elster have been of great value. Assistance with special material on Wisconsin was obtained from Dr. Loyal Durand, Jr., and many of the illustrations were prepared by the help of students of Dr. V. C. Finch of the Department of Geography, University of Wisconsin. The clerical staff in the Wisconsin office has worked long and faithfully to compile the tables and materials herein presented. Generous service on the part of

dairy reporters, crop reporters, dairy plants, and others from whom information on dairying and livestock has been obtained, has been particularly valuable in compiling the basic statistics in this summary. Mrs. Elsie Iwen Kibling prepared the cover design and lettered most of the maps and charts.

Of the various new things which are now being developed in the field of dairy statistics, only a few have progressed sufficiently far for preliminary summary in this publication, the disposition of milk on farms, prices and price indexes, trends in milk production by months, and other items are being offered, though many of them are being summarized in a preliminary manner. Most of the items being assembled by the newer efforts in the field of dairy statistics as well as much of the analytical work will, however, have to be left for treatment in later publications. The section on prices of dairy products represents some of the work developed during the past year.

The Wisconsin Crop Reporting Service represents the Wisconsin field office of the Division of Crop and Livestock Estimates of the United States Bureau of Agricultural Economics, and the Division of Agricultural Statistics of the Wisconsin Department of Agriculture and Markets. The merging of the interests of these two organizations into a single unit has made available much greater resources than could be commanded by each unit separately, and such progress as has been made in agricultural statistics in Wisconsin in recent years has come in a large part from the combined efforts of the two departments.

Special credit must be given to John Callahan, State Superintendent of Public Instruction in Wisconsin for the printing of enough copies of this bulletin and others from this department for school use. The Department of Public Instruction is providing for teaching purposes one copy of this bulletin for each school library in Wisconsin.

Madison, Wisconsin
March, 1931.

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PART 1. WISCONSIN DAIRYING

VISITORS to rural Wisconsin are particularly impressed with the well kept countryside of the state's dairy regions. The fine herds of cattle, large barns, silos, and crossroads cheese factories are characteristic of our agriculture. Indeed, dairy farming has become the chief business of the state. Farmers have learned to depend upon it for most of their income, and their entire crop system is built around a form of livestock husbandry in which dairying predominates. From the standpoint of commerce, the industry is also outstanding. The value of manufactured dairy products has exceeded 200 million dollars annually since the war, and outranked all other items of commercial production. In 1890 dairy products ranked seventh among our manufactured commodities, in 1900 they ranked fourth, in 1910 third, in 1920, and since that time they have ranked first. Wisconsin dairy manufactures have been more than a third larger in value than motor vehicles, our second ranking industry, and nearly four times as large as lumber and timber products, once the leading industry.

Farm Income in Wisconsin

Income from milk has accounted for about half of the Wisconsin farmers' total income for a number of years. The dairy industry has become the leading market outlet for most of the crop production in the state. Its trend far overshadows all other separate items in the state farm income, and the ups and downs of Wisconsin agriculture are essentially those of her dairy industry.

Not only is the dairy income the item of first importance for the state as a whole, but it is the predominating farm enterprise in practically the entire state. There are no county areas where dairying does not rank first as a source of farm income. For the state as a whole over 52 per cent of the farmers' money income in

1929, the last year for which figures are now available, was obtained from milk. In addition to the income from milk, the sale of cattle and calves, hogs, poultry, eggs, and other livestock items brought the total from livestock to over 84 per cent. The production of cattle and calves and to some extent that of hogs and poultry are commonly a part of the dairy enterprise. Such by-products as skim milk and whey are usually utilized as animal feed on the farm, and dairying, therefore, not only provides over half the farmers' money income as a direct result of the sale of milk, but is also responsible indirectly for a considerable portion of the additional one-third derived from livestock items other than milk.

Cash crops, while important on some farms and in some localities of the state, do not have in Wisconsin the same significance that they hold in most of the other states. For the state as a whole they accounted for

only 15.6 per cent of the estimated money income of the farms in 1929. The crops produced are largely utilized on the farms as feed, and relatively only a small part of the total production fails to find its market in the form of livestock and livestock products.

A study of the United States map on page 33 showing the leading sources of farm income in the various states indicates the relative importance of dairying in Wisconsin as compared with other states. Only one other state—Vermont—obtains a larger portion of its farm income from dairying than does Wisconsin. It is of interest to note on this map the position of Wisconsin both from the standpoint of total farm income, as well as the portion obtained from milk and other livestock items. The preponderance of dairying and livestock in the farm income of the Upper Mississippi Valley and the states to the east of this region is a leading factor in the relative agricultural stability which this region has achieved.

Agricultural History in Wisconsin

Wisconsin's peculiar leadership in dairying is not accidental. Back of it lies an interesting and rather complex history wherein the interplay of many factors has brought about the present system of agriculture in the state. While the state now leads in dairying, this has only been true in the last few decades, the leadership in the industry residing for a long time in the East, particularly in New York.

Wisconsin's agricultural development began something over a century ago. The earliest settlers did not come to this region because of their interest in farming, but rather for fur trading and mining, the fur trade with the Indians having attracted the French and English for a hundred years or more before any agri-

SOURCES OF FARM INCOME WISCONSIN-1929

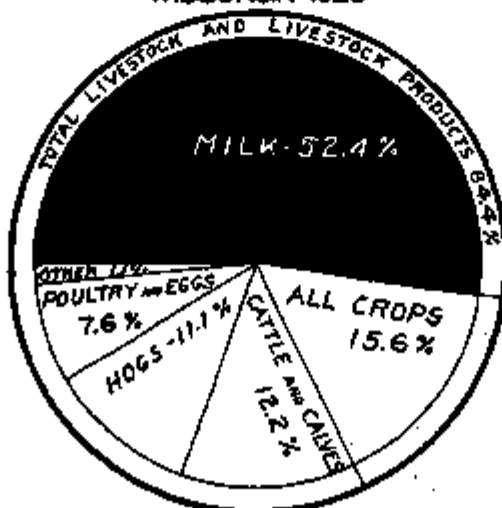


Fig. 1. Of the Wisconsin cash farm income milk contributed over 52 per cent in 1929. All livestock items accounted for 84.4 per cent of the total leaving only 15.6 per cent to be obtained from crops.

TABLE NO. 1. WISCONSIN: FARM VALUE, GROSS INCOME, AND CASH INCOME FROM FARM PRODUCTION, BY COMMODITIES, 1928-1929*

In Thousands of Dollars

Commodity	CROPS			LIVESTOCK AND LIVESTOCK PRODUCTS		
	1928 (Revised)			1929 (Preliminary)		
	Farm value	Gross income	Cash income	Farm value	Gross income	Cash income
Corn.....	75,720	833	649	65,866	617	583
Wheat.....	2,324	1,638	1,478	2,497	1,553	1,657
Oats.....	48,339	1,465	1,455	37,436	750	750
Barley.....	17,753	2,438	2,456	14,623	1,462	1,452
Rye.....	1,978	1,168	1,128	2,546	1,768	1,720
Buckwheat.....	280	261	227	271	183	146
Flaxseed.....	284	227	227	227	213	213
Linseed and split.....	63	9	9	64	13	13
Popcorn.....	7,023	7,023	7,023	7,222	7,222	7,222
Tobacco.....	72,287	3,616	3,616	82,787	3,794	3,794
Hay.....	117	117	117	97	97	97
Hemp.....	538	808	802	1,399	1,142	1,142
Cloverseed, red and white.....	38	32	32	31	26	26
Timothy seed.....	258	228	206	308	274	262
Dry edible beans.....	74	31	31	64	14	14
Soybeans.....	11,474	7,194	4,787	24,893	20,166	13,193
Potatoes, white.....	12,611	12,611	11,374	12,078	12,078	10,580
Trunk crops.....	2,117	2,033	1,093	2,274	2,206	603
Apples.....	42	41	22	45	44	12
Pears.....	32	33	5	21	20	3
Cherries.....	1,980	1,980	1,710	1,222	1,222	910
Strawberries.....	1,335	1,335	1,300	1,865	1,865	1,840
Small fruits.....	831	821	493	727	727	707
Cranberries.....	800	800	800	567	567	567
Sugar beets, for sugar.....	543	543	543	392	392	392
Sorghum sirup.....	179	108	63	199	118	69
Maple sugar and sirup.....	396	806	297	324	324	225
Forest production.....	13,066	13,066	6,533	13,510	13,510	6,755
Farm gardens.....	10,009	10,009	9,384	9,384	9,384	9,384
Nursery products.....	284	284	284	284	284	284
Greenhouse products.....	2,095	2,095	2,095	2,095	2,095	2,095
Total.....	285,230	72,399	56,515	285,439	86,408	69,743

LIVESTOCK AND LIVESTOCK PRODUCTS

Cattle and calves.....	49,896	51,958	51,333	50,274	47,196	46,490
Hogs.....	43,745	47,519	40,128	45,706	50,376	42,405
Sheep and lambs.....	2,531	2,549	2,307	2,745	2,456	2,406
Horses.....	1,822	1,822	1,822	1,311	1,311	1,311
Chickens.....	13,174	13,447	9,687	14,849	14,198	9,101
Poultry (chickens).....	25,367	24,419	18,790	26,451	25,506	19,771
Wool.....	217,140	209,800	198,960	217,932	210,366	200,382
Bees.....	1,178	1,178	1,178	922	922	922
Beeswax.....	895	395	308	978	978	895
Deer.....	10	10	10	25	25	25
Total.....	354,651	356,371	321,673	342,249	351,867	322,406
Grand Total.....		422,769	372,698		438,275	382,145

*Estimated by the United States Bureau of Agricultural Economics.

cultural development took place. The first large population groups assembled in the lead mining regions of Southwestern Wisconsin between 1820 and 1830, but extensive agricultural development did not occur until somewhat later. After the Black Hawk War in 1832 had made much of Southern Wisconsin relatively safe for settlers, emigrants appeared in increasing numbers, and agriculture became more and more the attraction which brought newcomers into the territory.

The early agriculture had little in common with that which we find predominating the state today. The first objective of the agricultural pioneer was to grow what was needed to support his own family and livestock. Production for market was very much less important than it has become with the development of more specialized and commercialized forms of

agriculture. The production for market by the pioneer farmers consisted mainly of wheat, and this crop spread rapidly over the southern counties. In 1860 Wisconsin stood second only to Illinois in the total quantity of wheat produced. Wheat growing was essentially a pioneer industry and it expanded with the advance of the frontier. It flourished particularly in the southern portion of the state where much of the land was less heavily timbered than was the case further north where land clearing was much more difficult because of the heavy timber.

In spite of the fact that the more open land such as the prairies and the partly timbered areas could be turned into farms more easily, it is an historic fact that the prairies were not the first areas to be settled for the reason that most of the pioneers had to provide for shelter, building material,

fuel, and other items furnished by the timber. Hence, settlement at the edge of the prairies where both open and timbered lands were available was common. Nearness to springs or other water supply was also important. Heavily timbered areas, on the other hand, were often avoided by early settlers because of the difficulty of clearing such land, and later it was noted that settlements flowed more easily into the hardwood regions than the areas of pine forests because of the extreme slowness with which the pine land is normally cleared, pine stumps lasting for a long time while hardwood stumps decay more quickly.

It is noteworthy that in general the first lands to be settled in Wisconsin were the limestone lands located in the southern and eastern parts which have long been looked upon as the leading agricultural areas. These were settled intensively by farmers

from eastern states, largely New York, Pennsylvania, and Vermont, and by immigrants from Europe, notably Scandinavians, Germans, English, and Irish. So thoroughly were many of the older counties settled that their rural population has not changed greatly in the last fifty or sixty years. The western part of the state, which is largely an unglaciated upland, was for the most part settled somewhat later and less densely. In fact, rural population in that region has never attained the density found in the older southeastern counties. Most of this region was covered with hardwood forests and it was relatively easier to clear this area than the pine regions farther north.

Central Wisconsin is a large, rather level and sandy plain partly glaciated and once largely covered with pine timber. The soil in this region, while it varies somewhat, is sandy for the most part. This area probably served as a barrier to prevent the development of regions to the north of it until a considerably later period. Much of the northern part of the state was settled relatively late. It seems to have been slightly off the first main line of advance in America's historic conquest of the West, and hence it was settled in a sort of backwash on the part of the western frontier.

The frontier, as it was seen throughout the agricultural development of Wisconsin, is still preserved in some parts of the relatively undeveloped new north. In this region, which was quite largely a pine forest, the early development was more that of the lumber industry than of agriculture; and with the coming of the railroads and other means of transportation and the demand created for lumber by the settlement of the agricultural regions to the south and west the lumber industry flourished. Agriculture in much of this area has never attained the height of development that is found in the older southern counties, though Wisconsin's greatest farm advance in re-

cent decades has been made in the area of silt loam soil in North Central Wisconsin. So marked is this development that in 1925 Marathon, a large north central county, had much the largest rural population in the state.

The soil factor in Wisconsin's agricultural development has been important. So numerous and varied are the soils of the state as to make the detailed soil map an unusual mosaic of colors. It happens that the areas of limestone soil are found largely in the southern and eastern part of the state, and these were settled earliest. The prairies were almost entirely in these silt loam regions—much of which was of oak, maple, and other hardwood timber which was relatively more easy to remove. Most of the limestone regions had been fully populated by 1870, while most of the lake shore counties of Southeastern Wisconsin were largely settled before 1850—the nearness to markets being an important factor in the selections of these older areas.

The Rise and Decline of Wheat

Wheat was the principal cash crop of the early pioneers. It had a rapid rise and for forty or fifty years was the most important grain crop. Then a rapid decline came and at present wheat growing is a very minor industry in the state. The early market was the home market, local mills taking a considerable amount of the product, and eastern states which no longer produced as much wheat as needed took the remainder. By 1860, however, export trade had developed and the foreign market became the determining factor in the western wheat price. It happened also that at

about this time England required a great deal of foreign wheat, having long ceased to produce enough for her own use. It has already been noted that many of the early Wisconsin farmers who came from eastern states were wheat farmers. Wheat having failed to thrive on their own old farms, they took up its production on the virgin soils of Wisconsin.

Under the stimulus of wheat culture, land clearing progressed rapidly and the breaking of prairies made farms available at a rapid rate. To be sure, the early pioneer had many difficulties in marketing his wheat after he produced it. For a number of years before the railroad building in the fifties nearly all the wheat had to be marketed at Milwaukee or other lake shore ports, which meant a long overland team haul for the crops, thus limiting the farmer's output to the amount that he could haul to market. With the coming of the railroads and the construction of somewhat better highways, the wheat production expanded greatly. The Census of 1850 gave Wisconsin a wheat production of 4,286,000 bushels for 1849. By 1855 this had risen to about 9,000,000 bushels, and in 1860 the record crop of over 27,000,000 bushels is said to have been harvested. Following this period, however, various things happened to the great wheat crop. Rust, smut, blight, chinch bugs, and winter-killing became serious and the huge crop of the "Golden Year" of 1860 was never again to be equalled in Wisconsin, though a production of 26,000,000 bushels was reached in 1873, since which time the decline has been rapid.

Other crops gradually replaced wheat. Corn and oats, which were much less important to the early pioneers, gradually found more of a place in the crop system. It is noteworthy that the combined production of these two crops increased over twelve-fold in the thirty-year period, 1850 to 1880. Hay production advanced nearly seven-fold dur-

USES OF DAIRY BY-PRODUCTS

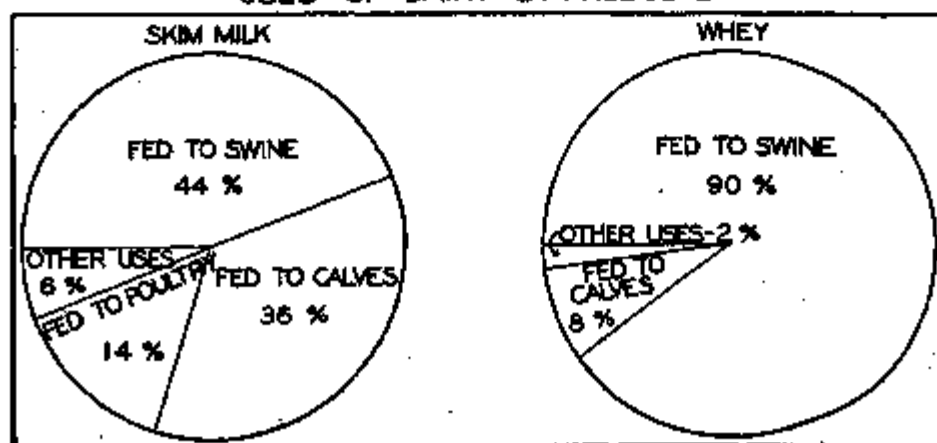


Fig. 2. Dairy by-products such as skim milk and whey are important items of feed on many Wisconsin farms though more and more of these products are being condensed. Ninety per cent of the whey and 44 per cent of the skim milk on farms was fed to swine by Wisconsin dairy reporters last year. Calves received 36 per cent of the skim milk and 8 per cent of the whey. In addition to that used on farms the state produced in 1929 over forty-two million pounds of powdered skim milk and 361,000 pounds of powdered whey. Slightly over 6,717,000 pounds of condensed skim milk was also produced in 1929.

TABLE NO. 2 GROSS FARM INCOME SOURCES, AMOUNT PER FARM AND PER ACRE—ESTIMATES BY COUNTIES 1927*

County	Estimated total gross farm income 1927	Estimated Gross Income From			Per cent of Gross Income From			Gross income per farm	Gross income per acre land in farms
		Milk	Livestock and livestock products, other than milk	Crops	Milk per cent	Livestock and livestock products, other than milk %	Crops per cent		
Barron.....	\$9,728,800	\$5,658,800	\$2,325,800	\$1,887,800	58	25	17	\$2,184	\$22.32
Bayfield.....	2,211,900	1,205,600	530,300	576,100	54	23	23	1,016	11.78
Burnett.....	3,487,800	1,364,200	742,600	880,500	39	20	41	1,345	11.28
Chippewa.....	8,437,500	4,868,300	2,322,700	1,251,500	58	27	15	2,277	16.78
Douglas.....	1,788,400	1,076,200	479,100	234,100	60	27	13	756	9.96
Polk.....	7,677,300	4,370,500	2,775,400	831,900	56	35	10	1,886	16.22
Rusk.....	2,556,400	1,538,200	708,300	314,900	60	28	12	1,141	12.56
Sawyer.....	1,001,800	530,700	289,800	171,400	53	30	17	846	9.53
Washburn.....	1,967,000	1,007,700	632,600	326,700	51	32	17	1,334	10.40
Northwest District.....	38,232,700	21,615,500	10,883,600	5,734,600	56.5	28.5	15.0	1,609	15.58
Ashland.....	1,260,900	781,200	343,800	235,700	58	25	17	986	11.57
Clark.....	10,734,900	5,529,800	2,187,300	997,800	51	30	9	2,024	21.88
Iron.....	418,900	215,900	98,300	108,000	62	22	26	707	9.79
Lincoln.....	2,530,000	1,552,600	645,200	332,100	61	26	13	1,336	13.91
Marathon.....	12,789,000	7,762,400	2,196,300	1,810,800	61	25	14	1,900	19.06
Oneida.....	845,000	318,800	179,500	847,200	36	21	41	1,134	11.60
Pierce.....	2,089,700	1,300,800	518,700	270,200	64	24	11	971	10.80
Taylor.....	3,487,400	2,080,000	986,200	451,200	59	28	13	1,239	14.81
Vilas.....	400,600	160,600	135,200	104,800	40	34	26	847	10.53
North District.....	34,574,300	20,678,900	9,295,700	4,607,700	59.4	26.9	13.3	1,553	16.92
Florence.....	448,700	252,400	109,600	106,700	52	24	24	978	10.28
Forest.....	628,600	232,900	169,300	161,400	47	27	26	987	9.44
Laporte.....	3,185,800	1,427,100	861,600	1,006,600	47	22	31	1,632	16.98
Marquette.....	6,627,200	1,845,100	948,100	839,000	51	28	23	1,254	12.26
Oconto.....	5,085,100	2,819,800	1,412,400	795,900	56	26	18	1,618	16.17
Shawano.....	7,797,000	4,541,200	2,342,900	912,900	58	30	12	2,004	16.80
Northeast District.....	20,732,900	11,235,500	5,474,900	3,532,500	54.2	27.4	18.4	1,641	15.89
Buffalo.....	6,280,000	2,759,300	8,120,300	500,400	43	49	8	8,073	15.90
Dunn.....	3,873,600	4,244,700	3,154,500	869,400	52	53	10	2,346	17.34
Essex.....	4,977,200	2,250,100	1,818,000	908,100	45	37	18	2,069	16.82
Jackson.....	5,073,500	2,311,600	2,019,500	742,600	46	40	14	2,006	18.70
La Crosse.....	4,700,100	2,388,400	1,819,500	622,200	59	39	11	2,795	18.18
Monroe.....	7,811,200	4,388,600	2,532,800	882,800	56	34	11	2,208	18.70
Portage.....	3,268,600	924,600	1,088,700	275,400	41	47	12	2,173	16.28
Pierce.....	8,744,200	3,032,400	2,854,000	725,800	35	44	11	2,196	19.71
St. Croix.....	3,027,400	4,307,400	3,019,800	800,400	42	58	10	2,809	19.14
Traverse.....	3,275,500	3,987,400	3,333,800	1,155,800	48	58	14	2,614	18.36
West District.....	62,735,300	29,601,300	24,756,200	7,378,800	48.8	39.5	11.7	1,374	17.22
Adams.....	1,840,300	708,100	657,700	474,500	38	36	26	1,326	6.86
Green Lake.....	4,204,300	1,759,600	1,682,100	761,600	42	40	18	2,800	20.13
Juneau.....	3,531,700	3,060,300	1,280,700	590,300	53	32	15	1,738	13.13
Marquette.....	2,714,200	1,197,900	873,300	541,100	44	36	20	1,922	10.53
Portage.....	5,145,000	2,290,000	1,348,900	1,526,100	44	26	30	1,800	12.64
Waupaca.....	7,962,100	4,349,000	1,977,000	1,436,100	57	25	18	2,231	19.97
Waushara.....	3,976,500	1,785,900	1,095,600	1,062,100	45	27	28	1,675	11.96
Wood.....	6,587,700	3,481,100	1,679,300	478,300	63	28	9	1,758	17.39
Central District.....	35,331,900	17,823,300	10,597,600	6,911,800	50.4	30.6	19.6	1,661	14.22
Brown.....	7,110,800	4,096,500	1,799,000	1,214,300	58	25	17	2,091	24.00
Calumet.....	6,120,900	3,351,800	1,458,300	1,275,800	56	24	21	2,929	32.18
Door.....	4,294,500	1,967,100	954,400	1,378,000	46	23	32	1,912	18.00
Fond du Lac.....	12,274,600	6,429,400	4,194,100	1,711,100	52	24	14	3,016	26.87
Kewaunee.....	4,486,800	2,388,000	1,270,200	731,800	56	28	16	2,212	21.87
Manitowish.....	9,314,100	5,741,800	2,607,800	1,564,600	59	28	13	2,525	27.63
Outagamie.....	8,716,800	4,970,200	2,668,600	1,079,100	57	31	12	2,376	25.16
Sheboygan.....	9,442,100	5,236,300	2,918,900	1,368,900	56	31	14	2,584	31.34
Winnebago.....	7,060,000	3,777,400	2,436,200	847,400	53	35	12	2,610	28.23
East District.....	69,318,900	33,864,400	20,170,800	11,084,500	54.9	29.1	16.0	1,484	26.63
Crawford.....	4,176,800	1,755,200	1,693,400	786,700	42	40	18	2,072	12.39
Grant.....	11,810,800	4,829,800	5,506,100	972,200	37	45	8	2,872	17.35
Iowa.....	7,259,800	3,856,800	2,996,800	408,900	53	41	6	3,064	17.18
Lafayette.....	6,812,200	2,918,000	2,584,000	310,900	43	52	5	2,877	18.12
Richland.....	6,884,800	3,706,300	2,349,700	326,800	58	37	5	2,625	18.38
Sauk.....	9,620,200	4,763,600	4,043,800	813,000	50	42	8	3,883	19.38
Vernon.....	9,817,800	4,673,800	2,689,100	2,204,400	49	28	23	3,323	19.74
Southwest District.....	55,581,700	26,063,100	23,589,700	5,769,900	46.8	42.8	10.4	2,646	17.79
Columbia.....	8,774,400	3,089,800	4,182,300	1,522,800	35	48	17	2,751	12.25
Dane.....	18,973,700	8,185,800	7,585,800	2,192,600	43	40	17	3,118	26.81
Dodge.....	15,225,100	7,954,700	6,804,700	1,955,700	49	35	16	3,093	28.41
Green.....	9,501,000	5,859,200	8,870,800	271,000	56	41	3	3,954	27.09
Jefferson.....	9,198,000	5,090,500	8,428,200	679,300	56	37	7	2,766	28.22
Rock.....	11,109,000	5,214,000	4,690,500	1,204,500	47	42	11	2,973	26.67
South District.....	72,761,200	34,913,500	29,042,300	8,825,400	47.9	48.0	12.1	3,118	26.89
Kenosha.....	3,841,800	2,184,800	1,128,000	539,000	57	29	14	2,833	26.40
Kenosha.....	2,603,700	1,177,900	728,400	998,000	45	23	27	2,053	29.72
Ozaukee.....	4,291,100	2,271,200	1,154,000	955,000	58	27	20	2,466	31.34
Radisson.....	5,419,300	2,581,300	1,882,700	806,700	53	31	17	2,447	36.11
Walworth.....	3,866,400	4,988,000	2,993,100	993,300	67	35	8	3,242	27.03
Washington.....	7,623,200	3,567,300	2,430,800	1,403,100	49	32	19	2,692	28.60
Waukesha.....	6,842,400	6,778,000	2,868,100	1,193,800	62	25	13	3,610	29.77
Southeast District.....	41,690,900	22,914,500	12,484,800	6,292,400	55.0	29.9	15.1	2,647	28.43
State.....	\$430,979,800	\$223,842,800	\$144,711,800	\$60,436,800	52.0	34.8	14.0	\$2,242	\$19.72

*Estimates made by the Wisconsin Crop Reporting Service for 1927. No revisions of the data have been made since the original computation though some changes in basic statistics are recorded elsewhere. From Bulletin No. 20 and Supplement No. 1 to Bulletin No. 94, Wisconsin Department of Agriculture.

ing the same period.

In the transition from wheat to a livestock agriculture Wisconsin was not situated so as to compete well with the corn belt proper in the production of corn, hogs, and beef. Nevertheless, when grain production became too unsatisfactory an alternative opportunity was found in a livestock husbandry in which dairying predominates. This industry helps to

maintain the fertility of the soil and makes it relatively easy to rebuild lands partly worn out by prolonged cropping. Once established, dairying has shown a singular permanence and stability. It has supported a large rural population with farms rather small in size, the average for Wisconsin at the last census being 113 acres. Clearly, dairying so far has developed less rapidly and has been less easily

overdone than most other types of agriculture, and this in turn has accounted quite largely for the fact that agriculture in Wisconsin has since the war been somewhat more stable than farming in general.

With crops holding a minor place as a source of farm income, the steadiness of the livestock industry has become particularly effective in Wisconsin's farming system.

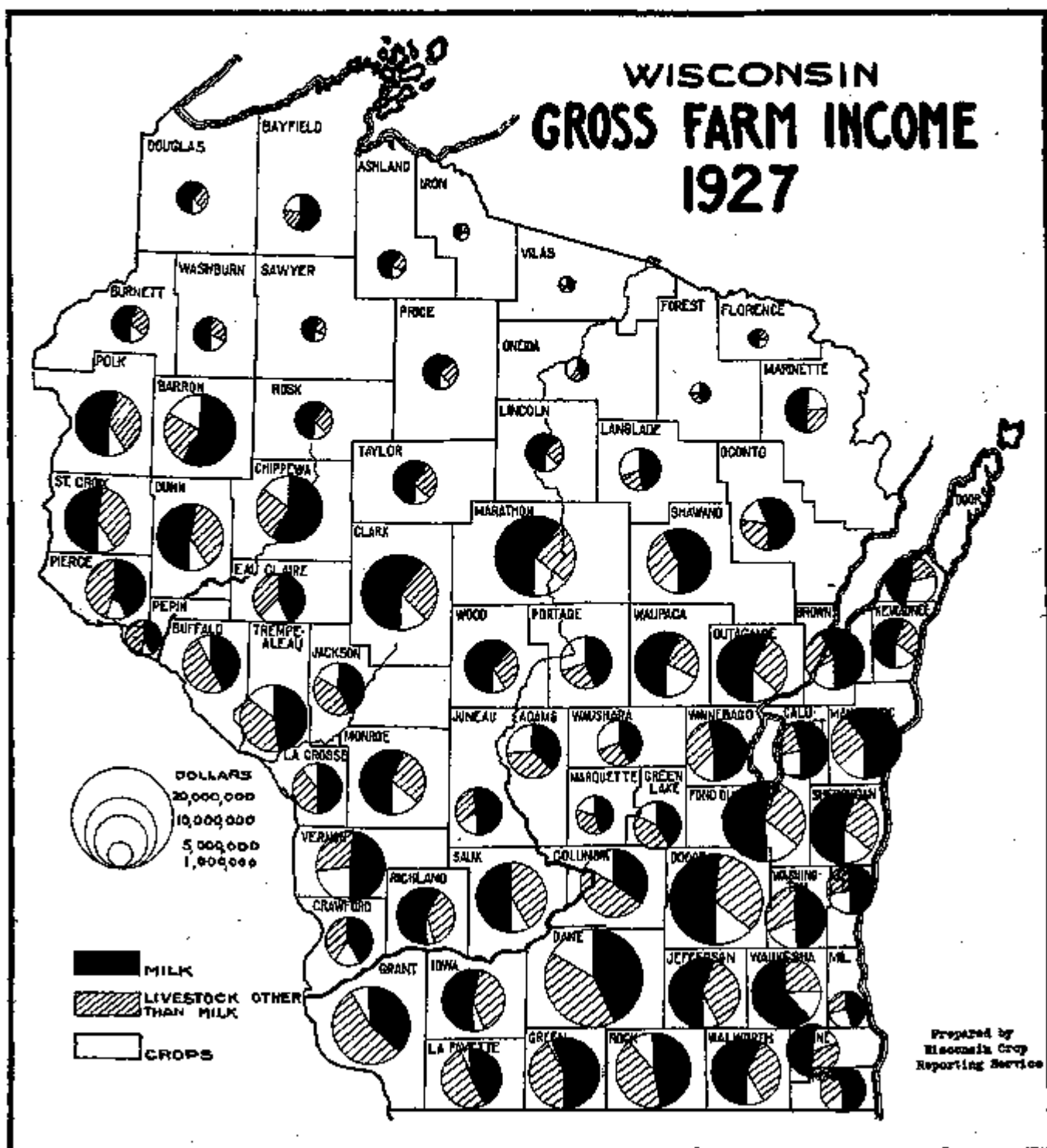


Fig. 8. Farm income is greatest in the southern and southeastern parts of Wisconsin and also in a belt across the north central part of the state. Milk and livestock hold a leading part in all counties. The state has few areas where cash crops are more than a fourth of the farm income.

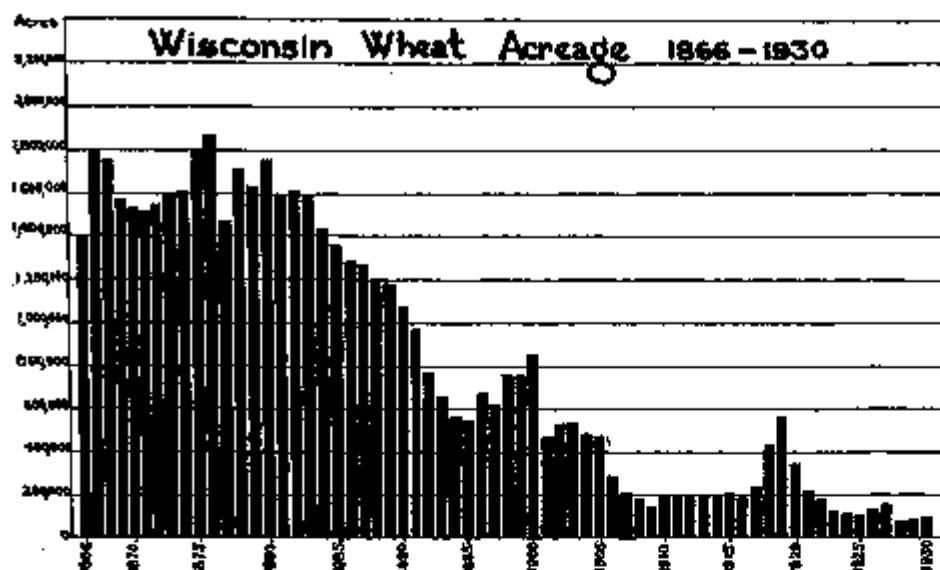


Fig. 4. Wheat, though once the leading grain crop in Wisconsin, has declined steadily since 1880 as the livestock industry increased in importance. War prices in 1917-1918 brought an appreciable upturn in acreage but this proved only temporary. Many factors combined to reduce the wheat acreage, and it was largely replaced by feed grains and hay.

Fig. 5. Oats, an important feed crop of Wisconsin, has increased in acreage steadily and is now about five times the acreage of 1870. Over 80 per cent of this crop is usually fed to livestock. It is the most important grain crop now grown in the state. The acreage of oats is close to two and one-half million and except for hay it is the leading crop in the state.

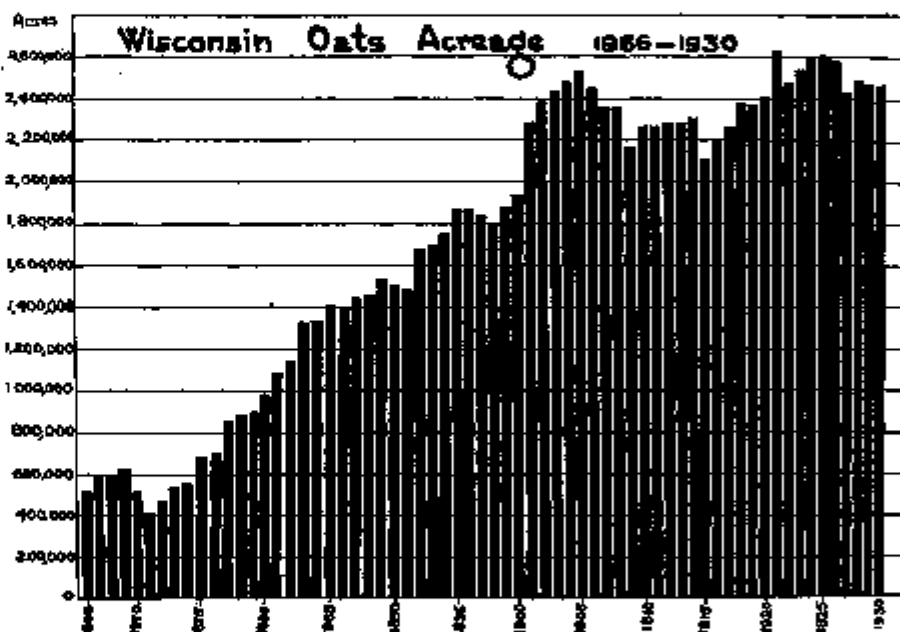
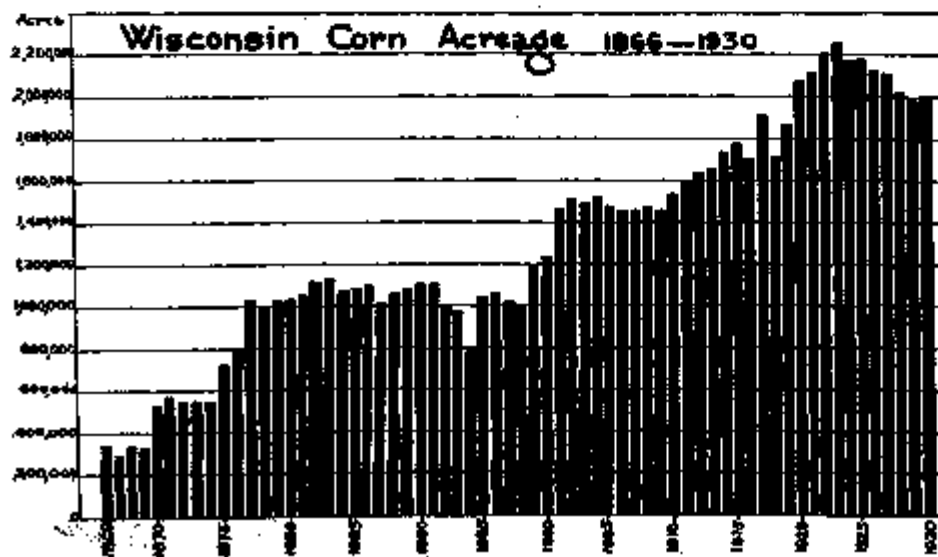


Fig. 6. Wisconsin's corn is one of the most important mainstays of her dairy industry with over one-half of the crop going into the silo to be used largely as dairy feed. The acreage increased steadily from 1888 to 1923 and has averaged well over two million acres since 1920. Among the crops in the state corn is exceeded in acreage only by hay and oats. From the standpoint of total feed produced it probably ranks second only to hay.



Wisconsin Crop System Based on Dairying

Nine out of every ten acres of cropped land in Wisconsin are used for the production of feed crops, the bulk of which are used for the feeding of dairy cattle. Of the area devoted to the principal crops for the state as a whole about 36 per cent has in recent years been in hay, 26 in oats, 22 in corn, 7 in barley, and the remaining 19 per cent divided by a number of other crops. Hay ranks first in acreage in all but a few south central counties where the agriculture is more of the corn belt type, and where corn ranks first in acreage. Even in these corn counties, tame hay ranks second in most cases.

Even though Wisconsin is not an important producer of grain crops for market, the state nevertheless ranks high in the production of feed crops. With the corn and oats averaging well over two million acres annually and tame hay well over three million acres, the aggregate production of these feed crops becomes a large item. The five-year average corn production exceeds seventy-seven million bushels; that of oats 105 million bushels, barley about twenty million bushels, and tame hay 5,911,000 tons.

Since much of Wisconsin is north of the corn belt proper the utilization of corn for silage is particularly important. There are over 115,000 silos in the state and between forty and fifty per cent of the corn is grown for silage purposes. Wisconsin has more silos than any other state and grows more silage corn.

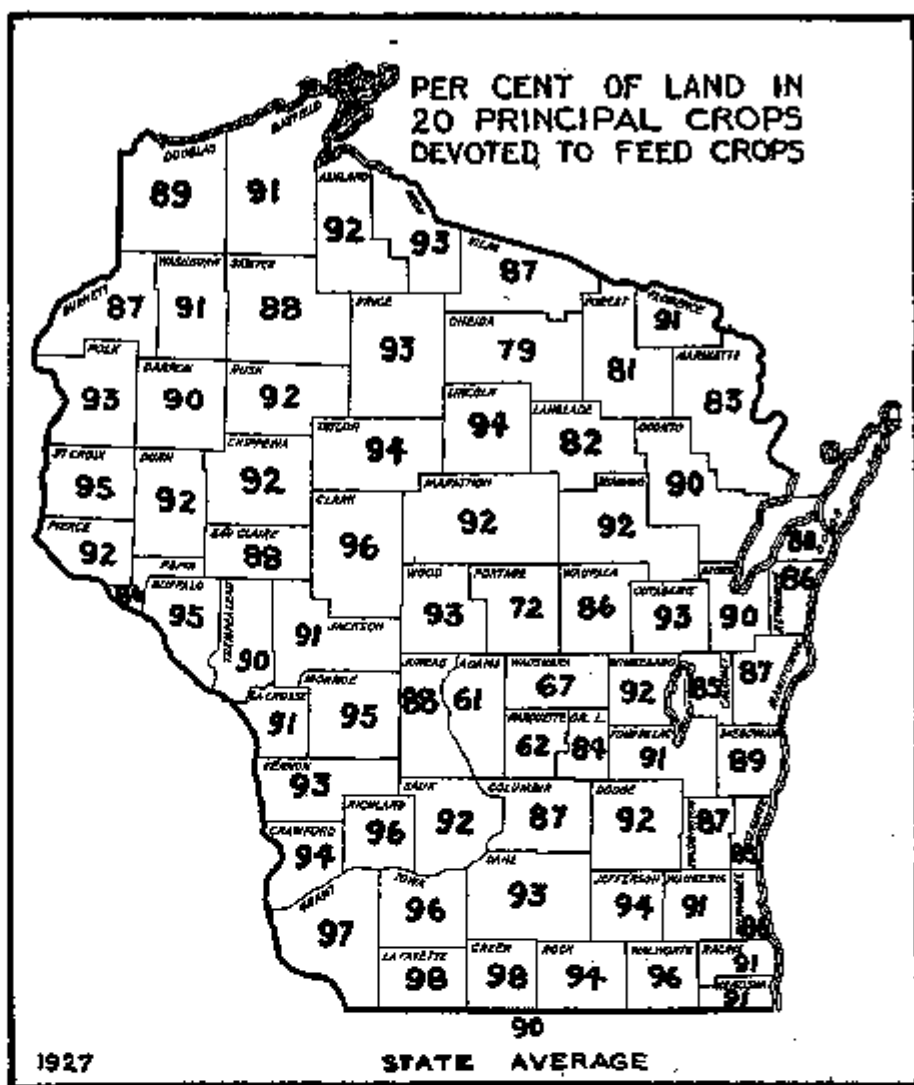


Fig. 1. Wisconsin's crop system produces essentially feed crops. Ninety per cent of all the cropped land in the state is devoted to the growing of animal feed leaving only a relatively small portion available for cash crops.

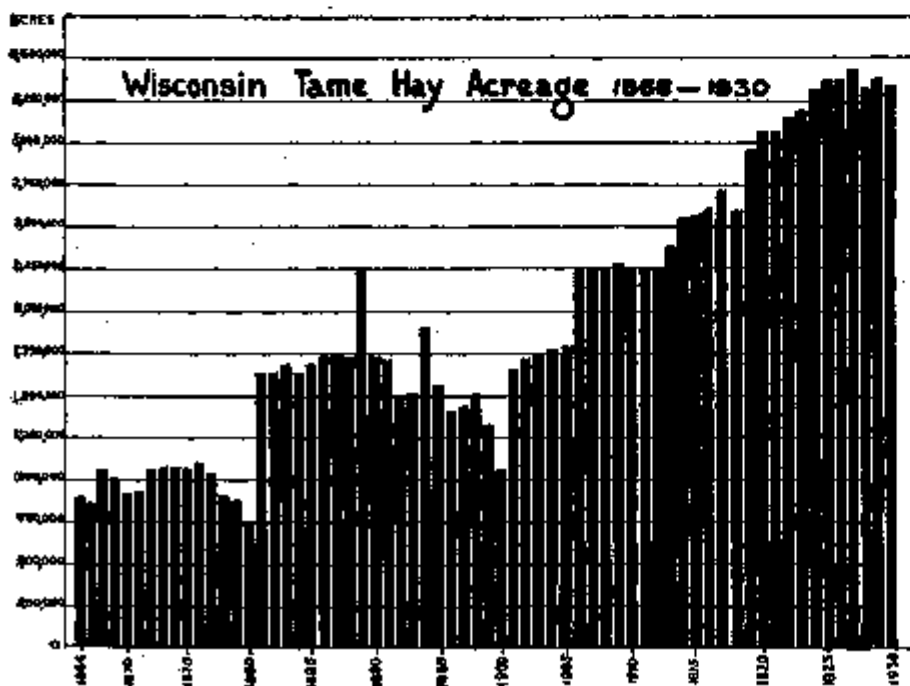


Fig. 8 With the increase in importance of the livestock industry in Wisconsin since 1890 has come a marked increase in tame hay acreage. A decline occurred in the period just preceding 1900, but since then the increase has been steady. Tame hay is grown largely for livestock feed, about 93 per cent being used for this purpose. Wisconsin's 1923 crop was 7,320,000 tons, a record high production for the state and greater than the production of any other state that year. Hay is cut on nearly three and one-half million acres of land in Wisconsin each year and about 86 per cent of the cropped land is used for hay. Wild hay has become a minor item as the tame hay has expanded in acreage. Alfalfa now accounts for about one-sixth of all the hay acreage in the state.

though New York uses a higher percentage of its corn acreage for silage (see map of the United States, page 91).

While significant portions of the corn grown in all counties are used for silage, the northern and eastern counties use the highest percentages of their acreage for this purpose. In contrast with the use of corn for silage, the largest acreages for grain are found in the southwestern and south central counties and also on the sandy soils of Central Wisconsin and the region along the Mississippi River. The hog industry is important in these areas and takes a larger part of the corn acreage. Corn for forage and other uses which covers very largely corn cut green and fodder corn, as well as corn which is grazed or hogged off, requires about nine per cent of the state's acreage (see Figure 10).

Pastures

In common with other states in the northeastern hay and pasture region Wisconsin has a large acreage of land devoted to pasture. Wisconsin has a land area of about 35,864,100 acres. In 1925, 21,850,858 acres, or nearly 62 per cent, of this was in farms, and of the land in farms 8,671,556 acres were in pasture. Accordingly, about 24.5 per cent of the state's land area was in pasture in 1924. Of the land in farms nearly 40 per cent was in some form of pasture.

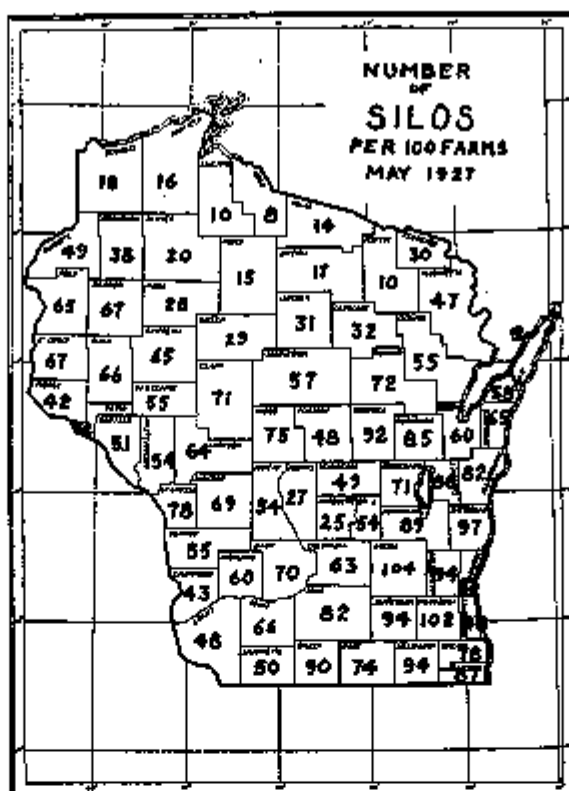


Fig. 9. Silos have been important in Wisconsin's dairy industry, and by their use the corn acreage has been greatly expanded, as well as pushed farther northward. There are approximately 65 silos for every 100 farms in the state, the greatest density being found in South-eastern Wisconsin.

Of the Wisconsin land in pasture, nearly 20 per cent was classed as plowable pasture, 51 per cent as woodland, and the remaining 29 per cent was classed as other pasture. This compares with 29 per cent of plowable, 19 per cent woodland, and

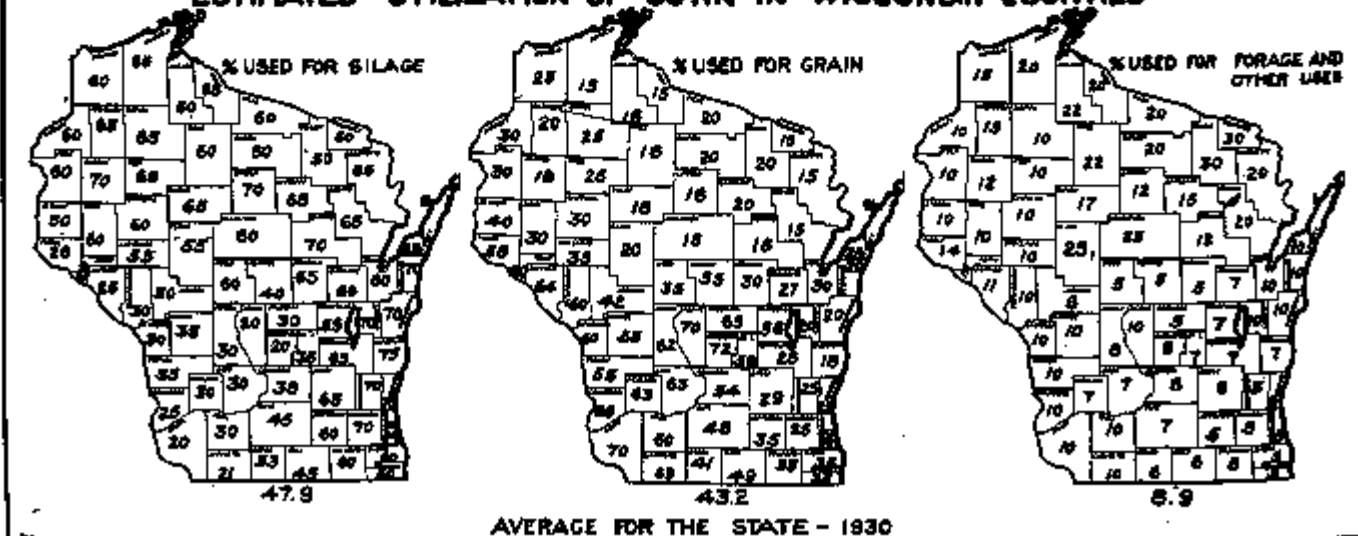
52 per cent other for the pasture in the United States farms (see Figure 82).

As with the distribution of pastures in the United States (see map, Figure 82) there is much difference between different regions in Wisconsin as to the quantity and type of pasture in use (see Figure 11). The woodland pasture is the most important in acreage in all but the southern, south central, and southeastern counties. Plowable pastures, on the other hand, are more important in the areas where there is less woodland. The table on page 10 gives detailed data on the pasture acreage in various counties as reported by the last census.

The geographic situation of Wisconsin is favorable to dairying in various ways. The northern location provides a relatively cool summer climate and normally the amount and distribution of rainfall are adequate for the production of feed and forage crops. The rainfall in the state averages over thirty inches, of which over 80 per cent usually falls during the months from April to October, inclusive, which covers the growing season. The state has somewhat more rainy days and more cloudy weather than regions to the south and west, with less of a tendency to summer droughts. These conditions favor grasses, hay, and grain crops. Corn also does well, though because of a

ing season. The state has somewhat more rainy days and more cloudy weather than regions to the south and west, with less of a tendency to summer droughts. These conditions favor grasses, hay, and grain crops. Corn also does well, though because of a

ESTIMATED UTILIZATION OF CORN IN WISCONSIN COUNTIES



30. Over a million acres or nearly half of the corn in Wisconsin is annually used for silage. No other state grows as much silage corn as Wisconsin. In some of the older dairy sections three-fourths of the corn goes into the silos. About 43 per cent was estimated to have been used for grain in 1930 and less than nine per cent for forage and other uses.

shorter growing season and a somewhat cooler summer climate it is more difficult to mature it in many of the northern counties. To be sure, summer droughts frequently bring difficult pasture situations and reduce the seedings of clover and grasses so as to impair the productivity of hay and pasture during the following year. These difficulties, however, are not sufficiently serious to prevent the

state from devoting more land to hay and pasture than to any other type of production. The rough topography of most of the driftless region in Southwestern Wisconsin, as well as a considerable portion of the glaciated area, also predisposes the land surface to utilization for hay and pasture rather than to cultivated crops. In the glaciated area much of the low and marshy land, while unsuited for

most other forms of agriculture, does lend itself to utilization in the form of summer pasture.

It is not uncommon to see cattle grazing on lowlands, particularly in the glaciated parts of Wisconsin where the marshes furnish summer pasture though they have little value in other agricultural uses.

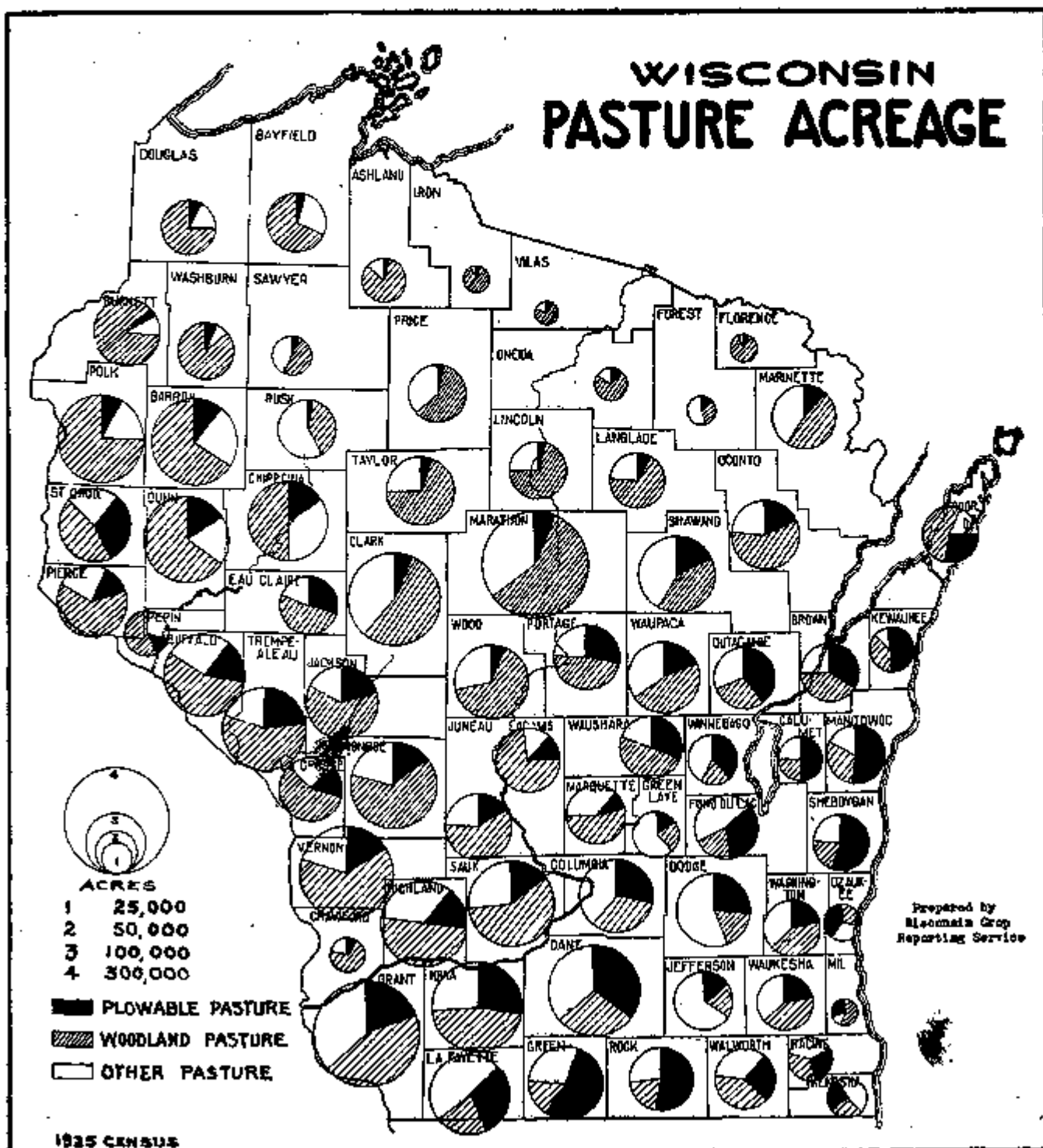


Fig. 11. Pasture is a form of land use which is of particular importance in Wisconsin, since for about five months of the year the large animal population of the state is dependent largely on grass. Plowable pasture is much more important in the southern than in the northern counties. All counties pasture much woodland.

TABLE NO. 3. WISCONSIN PASTURE, 1925 CENSUS

County	Pasture Acreage, 1924 Census				Per cent. of Pasture Classified as			Per cent of land in farms used for pasture	Per cent of Land Area		
	Total	Plowable	Woodland	Other	Plowable	Woodland	Other		In farms	In pasture	In crops and plowable pasture
	Acres	Acres	Acres	Acres	Per cent	Per cent	Per cent		Per cent	Per cent	Per cent
Barron.....	205,304	21,541	138,655	46,458	10.8	66.6	22.6	47.2	77	36.3	34
Bayfield.....	87,548	4,403	68,398	27,249	4.1	78.0	27.9	49.7	20	10.1	6
Burnett.....	108,177	4,844	92,375	10,958	4.5	85.4	10.1	49.4	40	19.7	11
Chippewa.....	178,626	27,349	93,118	58,161	15.3	52.7	31.8	39.8	68	28.6	33
Douglas.....	81,069	5,563	60,277	15,229	6.9	74.3	18.8	43.9	22	9.5	5
Polk.....	219,740	18,393	163,862	36,485	7.5	74.8	17.9	50.2	73	36.7	30
Rusk.....	98,747	1,624	88,731	50,892	1.7	40.0	58.3	47.8	34	16.3	8
Sawyer.....	45,480	2,412	23,286	19,862	5.3	51.4	43.3	43.2	12	5.4	3
Waushara.....	87,480	5,895	74,503	6,732	6.7	85.6	7.7	46.3	35	16.4	10
Northwest District.....	1,118,239	69,932	749,581	278,726	8.1	67.9	24.9	46.2	39.2	18.1	14.2
Ashland.....	54,382	1,797	46,010	7,585	3.3	82.8	13.9	46.2	17	7.9	5
Clark.....	251,596	15,690	141,490	94,519	6.2	68.2	37.6	51.2	62	32.3	28
Iron.....	18,254	698	15,974	1,837	3.8	87.5	9.2	42.9	8	2.6	2
Lincoln.....	87,041	3,319	69,973	24,749	3.4	71.1	25.5	53.4	31	16.6	9
Marathon.....	322,442	19,547	187,590	115,315	6.1	58.2	35.7	48.2	67	32.4	26
Oneida.....	27,904	3,746	19,760	4,408	13.4	70.8	15.8	88.3	10	3.7	4
Pierce.....	94,723	3,138	89,130	32,460	3.3	61.4	35.3	49.2	23	11.6	5
Taylor.....	124,540	6,248	87,070	31,231	5.0	69.8	25.1	52.0	28	19.6	17
Vilas.....	15,708	1,118	11,718	2,872	7.1	74.6	18.3	41.8	6	2.6	1
North District.....	1,406,594	55,882	635,695	315,621	5.5	63.1	31.4	49.3	32.1	15.8	11.1
Florence.....	20,096	985	17,886	1,243	4.9	88.9	6.2	40.0	14	6.3	4
Forest.....	22,478	3,188	17,189	12,102	13.6	80.8	55.8	35.2	10	3.8	3
Langlade.....	86,037	7,285	67,927	20,823	9.8	67.3	24.2	51.0	30	16.4	11
Manitowish.....	116,876	13,885	58,422	40,368	11.9	48.4	39.7	39.5	23	12.9	11
Oconto.....	125,487	22,639	79,822	22,900	19.1	63.6	18.3	40.8	43	17.3	20
Shawano.....	166,816	29,684	57,277	68,866	17.9	40.0	41.5	39.6	55	29.4	25
Northeast District.....	587,571	77,464	286,516	173,599	13.4	53.3	32.3	41.2	33.6	13.8	12.5
Buffalo.....	176,826	29,541	109,801	44,483	16.7	67.0	26.3	43.5	93	49.2	40
Dunn.....	205,782	31,711	140,427	33,445	15.4	68.2	16.4	42.6	78	37.0	41
Ray.....	92,479	27,517	47,894	17,368	29.7	51.8	18.7	30.9	72	22.6	42
Jackson.....	146,687	29,401	90,807	26,479	20.3	62.2	17.5	39.3	53	26.0	26
La Crosse.....	108,644	16,348	62,681	29,716	15.0	59.8	26.4	42.0	54	35.3	35
Monroe.....	220,170	32,662	141,012	46,555	14.6	64.0	21.2	47.1	78	35.7	24
Peppin.....	85,309	7,110	30,787	17,412	12.6	56.7	31.5	39.7	92	36.5	45
Pierce.....	142,848	19,651	96,149	39,738	13.9	63.2	22.0	41.7	95	29.8	55
St. Croix.....	146,612	46,916	65,964	38,633	32.0	46.0	23.0	34.9	89	31.1	43
Trempealeau.....	132,928	41,927	106,640	26,358	23.8	57.4	19.8	40.8	95	39.4	50
West District.....	1,477,949	282,624	876,662	319,463	19.1	59.3	21.6	40.6	82.7	33.5	42.1
Adams.....	116,480	15,062	84,968	15,400	13.0	73.6	12.4	42.9	61	26.6	22
Green Lake.....	60,239	10,089	12,207	37,042	18.7	21.9	61.4	28.9	51	28.2	43
Juneau.....	121,283	19,604	71,885	29,779	16.2	59.3	24.5	40.3	58	32.6	25
Marquette.....	98,322	3,322	66,214	33,086	2.0	57.3	33.7	38.1	38	32.6	30
Portage.....	116,371	31,970	56,312	28,289	27.4	49.3	24.2	29.1	77	29.0	40
Waupaca.....	140,900	26,299	67,267	47,384	18.7	47.7	33.6	35.3	82	28.2	39
Waushara.....	104,026	32,651	43,439	23,988	31.4	45.6	23.0	31.3	80	26.2	39
Wood.....	187,403	9,293	103,937	44,168	5.9	66.0	28.1	49.8	61	30.4	23
Central District.....	914,119	153,749	592,349	258,030	16.8	55.6	28.2	36.8	72.8	26.6	32.1
Brown.....	87,551	33,006	39,633	24,912	38.8	40.6	25.6	33.1	87	28.6	60
Calumet.....	52,574	28,519	13,186	13,069	50.3	24.9	24.8	27.6	62	25.5	64
Dodge.....	84,002	22,469	47,719	16,514	28.0	55.2	16.8	35.3	79	28.0	42
Grand du Lac.....	116,806	40,406	29,324	53,768	34.9	19.1	46.0	27.6	61	25.2	61
Kewaunee.....	56,422	20,642	20,198	6,582	62.6	35.8	17.6	27.6	95	26.9	65
Manitowish.....	95,315	51,933	30,798	17,164	54.0	30.8	17.2	28.3	61	25.9	62
Outagamie.....	106,447	42,883	31,286	32,328	40.8	29.8	30.4	30.8	84	25.7	64
Shaboygan.....	82,558	46,018	17,334	19,219	56.7	21.0	22.3	27.4	90	24.8	63
Winnebago.....	89,248	26,300	13,447	29,601	33.0	19.4	47.6	27.7	85	23.6	57
East District.....	769,923	320,689	242,868	212,378	41.9	36.4	27.7	29.4	88.2	25.9	58.4
Crawford.....	186,412	17,730	120,403	38,278	9.5	70.0	20.5	55.2	91	50.3	36
Grant.....	316,585	62,373	140,136	113,578	19.9	44.2	35.9	47.0	90	42.4	50
Iowa.....	224,127	60,041	104,239	50,827	26.8	46.5	26.7	53.1	84	44.8	46
Lafayette.....	174,091	32,938	86,183	54,925	30.4	30.8	48.8	46.3	91	42.4	58
Richland.....	199,972	39,068	99,120	65,784	18.3	56.3	33.4	56.7	92	52.2	41
Sauk.....	200,832	29,654	118,665	63,113	14.3	56.2	29.5	41.5	90	37.2	43
Vernon.....	244,383	38,795	152,834	58,454	15.9	63.3	21.8	60.8	82	40.6	43
Southwest District.....	1,543,953	293,144	781,522	469,287	19.8	39.4	38.4	49.4	98.6	44.5	45.6
Columbia.....	144,840	40,780	47,426	56,684	28.1	32.8	39.1	31.8	82	29.1	52
Dane.....	286,873	83,840	93,169	94,064	25.5	28.6	35.6	33.8	92	30.7	60
Dodge.....	147,907	68,784	25,331	78,792	29.0	17.1	53.3	39.5	87	25.8	56
Green.....	146,063	77,815	29,423	42,825	53.7	16.8	29.4	41.1	92	38.0	68
Jefferson.....	96,388	14,927	17,892	63,469	15.5	18.7	65.8	29.6	82	37.8	52
Rock.....	117,929	62,553	28,847	31,429	53.0	20.3	26.7	28.8	81	25.7	70
South District.....	687,419	322,959	287,290	356,789	36.4	23.4	40.2	32.2	94.9	29.3	59.7
Kenosha.....	41,387	10,397	11,636	19,304	25.1	28.2	46.7	28.4	81	22.9	55
Milwaukee.....	18,209	3,543	9,497	3,165	30.4	62.2	17.4	19.7	61	13.1	45
Osauckee.....	36,636	14,299	9,808	11,684	40.1	26.7	33.2	25.0	92	29.9	64
Racine.....	51,945	14,294	17,541	20,110	27.6	33.8	38.7	26.9	98	25.0	52
Walworth.....	101,619	24,062	39,629	37,006	24.6	39.0	36.4	31.7	89	26.4	60
Washington.....	82,934	18,592	36,333	31,040	21.6	41.9	37.3	32.7	95	31.2	58
Waukesha.....	38,474	19,329	38,468	30,685	22.6	41.6	35.9	26.7	91	24.3	58
Southeast District.....	428,189	187,419	168,726	154,053	28.4	27.8	34.6	28.4	87.9	25.1	57.6
State.....	5,671,856	1,783,243	4,431,416	2,536,897	19.4	51.1	29.3	39.7	61.8	24.5	31.5

The Development of the Livestock Industry

Cattle owned by the first settlers were largely driven in by drovers from Indiana and Illinois and sold to settlers as work or meat animals, or for breeding purposes. Gradually the numbers increased and the local production made unnecessary the bringing in of many more cattle from other states. For the most part the stock grazed on the unused land in the community, the cattle from different farms mingling freely during the day. Dairying among the early pioneers was not of much importance. Milk production was confined very largely to the spring and summer months and the outlet for dairy products was largely the local market. Butter was commonly exchanged at the grocery store for necessary commodities at a very low price, quotations from four to eight cents per pound being common. In some of the older counties dairying, however, got underway as early as 1860. Farmers from eastern states, particularly those from New York, had experience with the dairy industry in that state before coming to Wisconsin, and it was only natural for them to shift to dairying when wheat growing became less satisfactory as had been done in the East. Beside the influence of these men, there had developed definitely the need for some substitute industry to take the place of declining wheat. Leadership such as that of Governor W. D. Hoard, Dean W. A. Henry of the College of Agriculture, and Dr. S. M. Babcock was highly important. In addition, the presence of such elements as the Swiss, German, and Scandinavian in the state's population made possible the steady development of dairying for many of these immigrants had been accustomed to the care of animals in their native countries. The Wisconsin Dairymen's Association was organized in 1872 and was a strong factor in keeping the attention of the state on the development of the dairy industry.

Dairying in Wisconsin as in practically all other states was not the primary industry of the pioneers. Dairy products for market were commonly incidental to the production of milk, butter, and cheese for use on the farm, the women doing much of the work. Such dairy products as were produced over and above the needs of the farm were usually marketed at the local grocery store in exchange for things which the family needed in much the same manner as eggs were bartered for other products. The quality of the products was usually low and the

price received was likewise low. Cattle were given relatively little thought, they being allowed to shift for themselves throughout much of the year. Intensive winter feeding and care such as dairymen now give to their animals was unknown except for a few near the cities, who, because of special opportunities or inclination, paid more attention to the dairy phase of farming. So long as dairying was dependent for the most part upon the country store for its market outlet, there was no great incentive for its extension on a commercial scale. Some farms, particularly, those near the larger cities, early found a better market for their products, and under these conditions the expansion of dairy output, particularly butter and cheese production was encouraged. Because of the generally low quality of the products, the producer of high quality butter could usually find a more favorable market for his output. Where conditions permitted, butter of high quality could be stored in cool cellars or in springs during the period of high production in the spring and summer to be marketed in the fall and winter when prices were much more satisfactory. To be sure the total volume of dairy production on farms was small when compared with the huge factory output of today, but in the older parts of Wisconsin milk houses and spring houses dating back to pre-factory days are still to be found. They are evidence that dairying has long been important in the economy of some farms even though the industry formerly was much less general than it is now.

In this connection Schafer writes as follows:

"It is not surprising that the farmers of Kenosha County, almost equidistant

from Chicago and Milwaukee, should have been among the leading pioneers in improved dairying, as we find them to have been. For example, W. C. White of the town of Spring Prairie began butter dairying on a considerable scale as early as 1857, changing over to cheese a few years later. Others in the same county were almost equally prominent. The 1850 census presents the names of three Kenosha County farmers who, in the preceding year, made over 2,000 pounds of butter apiece. They were W. C. White, Pleasant Prairie, 2,800 pounds; Philip Gascoyne of Somers, 3,000; and Nicholas Kichtmeyer (probably Kichtmeyer), 2,100. The aggregate production of several Kenosha towns was very large, Brighton having 27,708 pounds, Bristol 47,410, Paris 56,258, Pleasant Prairie 68,567, Somers 66,627, Salem 47,880, Wheatland 22,133, and Randall 19,183. The heaviest production was in the two lake front towns of Pleasant Prairie and Somers; the lightest in the two westernmost towns, Wheatland and Randall. The aggregate butter production for the eight towns was 276,620 pounds. Fifteen other Wisconsin counties produced more than that amount of butter. But if the population is taken into account, Kenosha was the largest per capita producer of butter, with one exception, of the sixteen counties producing more than 800,000 pounds. The exception was Green County, which produced 444 pounds per capita as against 274 pounds for Kenosha. If, however, we limit the competition to rural population strictly, Kenosha's per capita production is a fraction of a pound higher than Green's. Contrary to current belief, Kenosha also produced more cheese than did Green County, or any other county. But the most significant fact revealed by the census is that a few farmers were really making a business of dairying.

"The counties in which by 1860 dairying was beginning to be carried on intensively were, in addition to the two named above, Racine County, which made approximately 35 pounds per capita of the rural population, and Milwaukee and Walworth, where the per capita production of butter was almost exactly 25 pounds. Each of these counties made a small amount of cheese, Walworth's quota being the largest of the three.

"Intensity of production, however, may mean merely what, for example, it meant in the case of Milwaukee County and less pronouncedly in Green County, namely, that practically all farmers kept a few cows and made butter or cheese of course wholly under the household system of manufacture. In view of the development which became so marked a few years later, it is interesting to scan the census of 1850 for evidence of a tendency to make dairying an exclusive or principal business, of proportions which would call for special methods prophetic of the factory system.

"We have already noted something of the kind among the butter makers of Kenosha County. Examples have also been found in other counties. In Walworth John W. Newton of the town of Geneva kept 23 cows, making 400 pounds of butter and 10,300 pounds of cheese. P. A. Price of Rock County, near Janesville, made from 50 cows 600 pounds of butter and 25,000 pounds of cheese. Milton Barber of Waikeshah, from 61 cows, made 10,000 pounds of butter and 10,000 pounds of cheese. J. V. Robbins of Burke, Dane County, had 115 cows and made 4,000 pounds of butter and 5,000 pounds of cheese. There was in Jefferson County three herds of 21, 24, and 22 cows producing respectively 8,000, 7,000, and 7,000 pounds of cheese, besides 600, 1,000, and 300 pounds of butter. One of these belonged to Asa Fawell. Fond du Lac also had three distinguished herds of 25, 31, and 27 cows credited with both butter and cheese. In Green County, George Lesler of New Glarus kept 23 cows, making 1,000 pounds of butter and 2,000 of cheese; there was a larger herd in the town of York, 36 cows, credited with 1,800 pounds of butter and 8,500 pounds of cheese. Sauk County had one large herd, 41 cows, but the product divided between butter and cheese was very light."

Schafer, Joseph. Agriculture in Wisconsin.

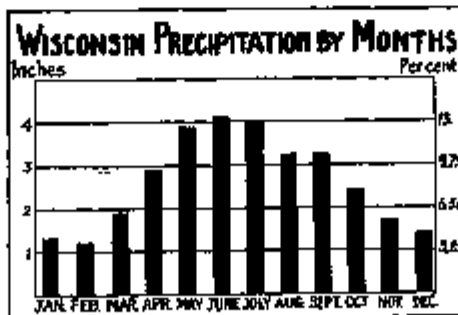


Fig. 12. Rainfall in Wisconsin is well distributed from the standpoint of crop production. The period of heaviest precipitation is from April to October, inclusive, covering virtually the growing season of the year. Eighty-two per cent of the rainfall of the year occurs during these seven months, which is particularly valuable to the dairy industry in which the production of feed crops and summer pasture play an important part.

TABLE NO. 4. NUMBER OF ALL CATTLE ON WISCONSIN FARMS BY COUNTIES—1860-1930¹

County	1930 ²	1925 ³	1920 ⁴	1910 ⁴	1900 ⁴	1890 ⁴	1880 ⁴	1870 ⁴	1860 ⁴
Baycon	75,300	68,274	65,285	45,273	23,498	13,198	6,954	207	
Bayfield	14,400	18,947	13,534	5,073	2,015	133	34	2	25
Burnett	17,800	16,634	20,088	15,008	10,798	5,121	3,355	495	
Chippewa	60,300	63,045	68,695	40,059	29,335	18,225	10,141	4,025	414
Douglas	13,300	14,343	10,199	4,183	1,881	285	199	22	75
Folk	66,100	61,688	68,919	48,484	31,789	17,192	8,164	2,101	453
Frank	25,400	22,495	18,001	6,487					
Sawyer	7,200	8,103	5,589	1,867	877	149			
Waushara	14,200	14,247	15,749	7,036	2,676	231			
Northwest District	294,560	297,378	263,837	171,449	102,844	54,478	27,647	6,850	999
Ashland	11,200	10,245	9,065	5,192	3,282	851		23	90
Clark	62,500	68,400	81,878	56,481	38,675	18,403	9,328	1,963	599
Iron	5,800	5,637	5,134	2,554	1,055				
Lincoln	21,200	19,715	17,738	9,119	6,056	2,361	849		
Marathon	104,100	95,182	97,444	58,089	48,892	21,464	10,468	4,055	553
Oconto	5,800	4,861	4,957	2,823	1,332	47			
Pierce	18,800	17,115	15,117	8,854	5,892	1,695	47		
Taylor	33,900	30,092	24,386	13,530	7,075	3,777	801		
Vilas	2,900	3,339	2,293	667	300				
North District	292,790	271,837	246,112	158,117	105,945	49,398	21,489	6,071	1,263
Flourens	3,000	3,295	3,431	1,847	810	208			
Forest	4,200	4,214	3,697	1,072	248	118			
Langlade	19,500	19,447	20,244	13,262	9,770	4,290			
Marquette	23,100	24,745	24,860	19,676	9,844	4,855	1,352		
Oneida	38,400	37,759	35,066	28,952	22,210	9,781	4,844	1,258	449
Sawano	56,400	55,638	54,108	45,192	35,267	19,944	8,103	1,465	136
Northeast District	144,600	145,896	149,996	104,623	74,537	37,273	14,624	2,733	585
Buffalo	44,300	45,596	50,805	42,329	35,879	26,874	17,842	12,314	3,092
Dunn	60,000	62,832	64,281	47,544	32,833	25,323	15,086	7,822	1,440
Eau Claire	31,600	34,277	43,808	26,281	21,948	16,209	8,982	4,842	1,061
Jackson	37,700	37,079	40,222	31,827	28,061	21,636	11,908	4,767	2,118
La Crosse	36,900	34,961	38,515	34,355	29,796	22,840	15,164	9,669	5,179
Monroe	64,200	68,814	69,723	59,175	43,183	28,564	19,137	11,204	2,998
Portia	14,000	14,263	14,430	11,438	7,062	5,235	4,076	1,032	1,032
Pierce	49,500	49,944	56,569	41,032	31,358	23,914	15,374	8,264	1,953
St. Croix	66,300	67,290	72,420	54,037	34,075	25,019	12,215	7,417	2,614
Traverse	61,700	60,438	62,437	53,950	45,628	37,773	19,406	8,865	2,274
West District	464,180	466,658	505,675	394,938	312,447	235,247	139,687	77,234	34,784
Adams	11,000	12,069	15,341	15,977	14,000	10,992	9,624	6,878	4,703
Green Lake	26,000	25,731	25,688	24,549	23,672	17,366	13,557	9,755	13,421
Juneau	31,500	29,399	33,065	27,976	26,116	17,228	12,814	6,833	4,298
Marquette	17,600	17,734	20,866	19,804	20,323	13,880	11,338	8,857	9,818
Portage	38,400	34,134	38,562	31,878	28,718	15,996	12,889	7,722	3,224
Waupaca	36,900	35,920	35,543	31,836	28,709	20,131	17,889	8,404	4,801
Waushara	26,500	25,623	26,639	28,652	24,410	19,568	15,695	7,790	7,842
Wood	44,900	43,685	43,424	32,561	22,060	11,393	5,228	1,718	422
Central District	259,940	248,365	265,118	232,533	190,417	131,554	98,882	67,946	48,326
Brown	53,700	48,510	50,176	43,920	39,555	28,266	17,311	8,952	2,126
Calumet	37,600	36,364	34,919	34,226	31,241	23,025	15,324	9,063	5,905
Dodge	26,600	26,070	27,523	24,764	23,261	14,819	6,696	1,982	428
Fond du Lac	79,500	77,842	74,546	73,470	66,275	56,104	38,224	27,623	27,969
Kewaunee	34,600	31,878	29,611	31,944	31,350	21,068	18,796	9,929	4,674
Manitowish	31,400	31,138	37,537	32,154	32,028	48,219	29,583	20,365	4,312
Outagamie	63,200	59,818	55,778	55,987	51,311	32,859	21,728	10,832	7,901
Shoshone	56,900	55,062	60,413	62,190	52,402	45,826	38,994	21,800	19,895
Winnebago	42,900	44,918	43,424	43,829	43,845	30,759	24,322	15,703	15,036
East District	456,308	442,913	434,954	432,473	402,171	292,699	203,640	123,266	90,174
Crawford	38,400	36,323	41,144	37,320	29,623	23,025	18,801	10,125	2,016
Grant	35,100	36,242	101,006	50,441	35,237	27,435	43,721	36,618	25,114
Iowa	63,500	65,271	74,153	77,749	81,229	57,471	39,407	27,824	16,848
Lafayette	60,100	58,215	66,222	74,664	76,547	58,305	40,459	26,873	17,576
Richland	35,200	49,965	54,560	42,047	31,249	19,771	11,500	6,485	
Sauk	63,900	63,825	69,519	64,680	57,303	38,997	29,355	15,351	14,341
Vernon	73,100	67,506	72,530	63,060	48,007	35,540	22,312	13,494	7,730
Southwest District	439,340	442,189	479,149	459,348	425,042	328,122	214,326	146,970	41,542
Columbia	53,300	54,508	58,308	49,900	54,252	41,552	33,564	20,287	23,082
Dane	110,600	113,132	117,911	115,403	114,748	82,997	59,712	37,011	26,225
Dodge	98,500	96,839	98,685	100,071	86,505	62,964	43,325	30,860	24,189
Green	64,900	64,201	63,455	60,427	71,282	57,018	45,131	26,980	21,390
Jefferson	63,200	64,673	66,615	64,591	61,267	46,400	35,192	23,670	22,332
Rock	57,000	62,191	65,198	63,944	67,012	50,404	44,825	27,713	27,959
South District	444,009	455,344	466,967	476,135	458,158	342,245	267,149	166,521	135,054
Kenosha	21,000	23,275	24,777	23,313	26,301	19,312	15,353	14,319	13,046
Milwaukee	10,800	13,781	16,183	14,764	16,483	17,141	13,287	10,385	10,209
Ozaukee	23,500	24,607	26,295	26,395	21,750	19,232	15,513	10,371	11,380
Racine	27,300	31,355	32,194	28,906	27,344	22,458	18,611	14,004	12,378
Walworth	67,200	56,961	62,310	50,737	55,723	42,040	30,373	21,039	21,354
Washington	44,600	41,618	41,072	38,656	36,323	30,032	26,373	16,373	15,787
Waukesha	56,200	59,124	57,908	51,473	41,956	32,199	25,743	19,418	21,487
Southeast District	240,609	259,721	269,738	246,338	229,680	182,984	142,294	105,793	118,914
State	3,620,640	3,619,473	3,050,829	2,680,074	2,314,185	1,647,947	1,129,141	693,294	521,864

¹United States census of 1850 shows a total of 183,433 cattle for Wisconsin. Because of major changes in county boundaries, county data are not comparable with later figures and have not been included. Much of county data for northern counties in 1850, 1870, and 1890 is similarly affected.

²January 1, 1930 estimates by Crop Reporting Service of Wisconsin and United States Departments of Agriculture.

³From United States Census of Agriculture, 1925.

⁴From United States Census reports 1900, 1910, 1920, 1890, 1880, 1870, and 1860.

⁵State total includes 704 cattle on Indian Reservations.

The Revolution in Dairying

Up to this time dairying as an industry was generally not commercially important in Wisconsin and such dairying as was done was largely of the household type, having changed little from the practice which had been common for hundreds of years. A complete change, however, has come to the dairy industry in the last fifty or sixty years. The introduction of the factory type of manufacture made possible large scale operations, and technical improvements which have re-made the industry and vastly increased its importance in the economics of our agriculture. In Wisconsin a number of forces were at work to bring about the change from the farm to the factory type of dairying and at the same time to expand greatly the relative importance of the industry. Since many of the settlers originally came from dairy regions in the East, particularly New York, they brought with them a knowledge of the industry as it has developed in these older regions, and were able to assume a leadership in the dairy enterprise in Wisconsin when the gradual failure of wheat made a change necessary. Certain leaders such as W. D. Hoard, and others devoted special attention to the expansion of dairying. This leadership together with the willingness to work so common among the Swiss, German, and Scandinavian farmers was particularly effective. The organization of the Wisconsin Dairymen's Association in 1872 brought a new force into the field which tried to solve particularly the problems of marketing.

It is difficult to measure the early influence of such leaders as Mr. Hoard and the members of the Wisconsin Dairymen's Association, as well as the leadership by the early work in the College of Agriculture, and forces such as the farmers' institutes which were helpful in spreading among the farmers knowledge which was helpful in changing gradually from the old type of grain farming to the newer system which emphasized dairying and livestock.

That the population factor in Wisconsin was important is unquestionably true. On this subject Shafer writes as follows:

"Native Americans, while keen, intelligent, and eager for the profits of every new adventure in agriculture, were by no means all willing to pay the price of success in dairying, which involved steady application to the business every day, week, and month in the year, which interdicted summer vacations, day and night fishing excursions, often even (before the

arrival of the auto) daytime visits to not distant friends. Many of them refused to be 'tied to a cow.' Such farmers made a principal share of the troops of emigrants who moved during the late seventies and the eighties to new wheat areas like the Dakotas, selling their farms to newly-arrived German, Scandinavian, or Bohemian immigrants. These new people became intermingled among those of the older American tradition who were willing to change their system of agriculture. Some rented farms, others hired out to Americans, but a goodly proportion bought farms either at once or after a few years' experience and saving.

"In the end they became the guarantors of prosperity in dairying. For, to begin with, they were accustomed to work, hard and persistently, the long year through. They craved no vacations aside from the usual holidays to which they were accustomed. To them it was no hardship to milk twice a day, feed and tend the cows, and deliver the milk at the factory. All that was 'in the day's work.' Secondly, in beginning farming under a wholly new environment such as this country presented, they became of necessity pupils in a school of practice, glad to receive helpful suggestions from any source. They developed, as it were, a habit of experimentation which, in the period when dairying methods were undergoing revolutionary changes, was highly important. Thirdly, they were generally thrifty, intent first on paying for their farms and then on amassing a competency. These motives made them keen to take advantage of every suggestion the profitability of which could be foreseen. They were less prompt than the Americans to enter upon ventures which seemed speculative, like paying high prices for purebred breeding stock, but when observation had proved the economy of such expenditures they gradually accepted them as a part of the better farming program."

Improvement in Cattle

In the beginning cattle served three general purposes—a source of power for farm work, beef animals,

and milk production. More and more the cattle in Wisconsin have been developed for milk production and their use for power has virtually disappeared, and the production of beef and veal is ordinarily a sideline to the dairy industry. In 1870 there were in the state's cattle population only 25 head classed as milk cows and heifers two years old and over for every one hundred people in the state. Gradually this number grew until at the present time we have about 70 milk cows per one hundred persons in the population of the state. Following the decline of wheat growing after 1880, the number of cattle in the state grew rapidly, particularly in the dairy type. The number of cows and heifers two years old and over kept for milk rose from 11.8 per thousand acres of land area in 1880 to 19.8 in 1890, and 24.8 in 1900, having more than doubled in the twenty-year period. Following 1900 the rise in numbers was even more rapid. By 1910 the number per thousand acres of land area was 28.2 and by 1920 it reached 51.8, having more than doubled in the twenty years from 1900 to 1920. Since 1920 the number has increased but at a somewhat slower rate. The estimated number per thousand acres at the beginning of 1930 was 57.8 head, or nearly three times as many as in 1890, forty years before. The rapid growth

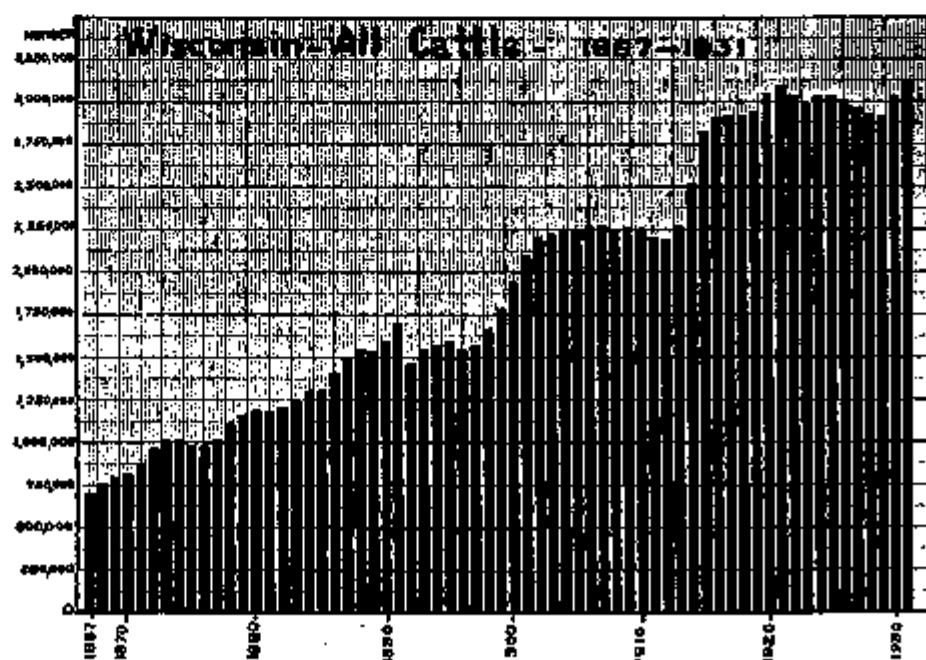


Fig. 13. The number of cattle on farms has increased almost continually since the beginning of agriculture in the state. Some decline occurred for several years following 1921. Expansion during 1880 and 1921 has raised cattle numbers to a record high point of 2,130,000 head.

¹Shafer, Joseph, Agriculture in Wisconsin.

TABLE NO. 5. NUMBER AND VALUE OF LIVESTOCK ON WISCONSIN FARMS BY CLASSES, 1867--1931

Year	Farm Value—January 1.					Number on Farm—January 1.					Farm Price per Head—January 1.				
	All livestock	All cattle	Other cattle	Swine	Sheep	Horses and mules	Cows and heifers two years old and over kept for milk	Other cattle	Swine	Sheep	Horses and mules	All cattle	Cows and heifers two years old and over kept for milk	Other cattle	Swine
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Head	Head	Head	Head	Head	Dollars	Dollars	Dollars	Dollars
	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted
1867	42,123	10,015	8,580	9,602	2,799	19,092	707	466	975	1,490	355	23,200	28,223	20,000	4,000
1868	46,700	10,440	8,754	9,946	2,865	19,610	763	494	1,015	1,560	381	23,684	28,689	20,372	4,040
1869	48,257	10,711	8,907	10,117	2,930	19,831	794	504	1,030	1,575	386	23,944	28,944	20,640	4,040
1870	48,277	10,711	8,907	10,117	2,930	19,831	794	504	1,030	1,575	386	23,944	28,944	20,640	4,040
1871	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1872	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1873	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1874	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1875	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1876	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1877	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1878	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1879	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1880	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1881	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1882	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1883	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1884	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1885	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1886	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1887	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1888	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1889	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1890	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1891	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1892	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1893	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1894	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1895	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1896	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1897	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1898	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1899	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1900	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1901	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1902	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1903	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1904	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1905	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1906	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1907	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1908	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1909	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1910	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1911	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1912	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1913	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1914	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1915	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1916	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1917	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1918	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1919	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1920	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1921	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1922	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1923	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1924	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1925	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1926	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1927	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1928	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1929	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1930	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040
1931	51,006	11,117	9,315	10,402	3,015	20,117	830	530	1,060	1,610	396	24,216	29,216	20,912	4,040

* Preliminary. † Compiled from records of Division of Crops and Livestock Statistics, Bureau of Agricultural Economics, United States Department of Agriculture.

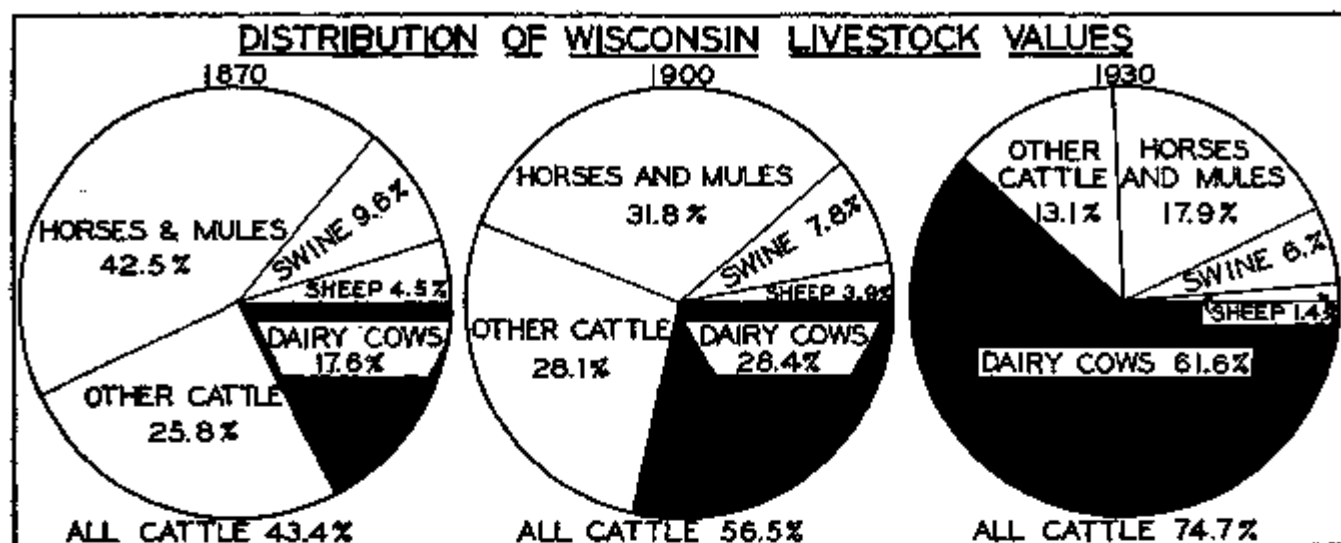


Fig. 14. The development of Wisconsin dairying has been accompanied by a remarkable increase in the relative value of dairy cows, which now make up almost two-thirds of the value of Wisconsin livestock. The motorization of farm operations has decreased the number and value of horses on the farms of the state.

of cow numbers in Wisconsin is the basis for many of the agricultural adjustments which have been made in the past thirty or forty years. The trend in numbers of milk cows in the state is shown in the maps on page 17. Below is given a table showing the change since 1870 in number of cows and heifers two years old and over kept for milk and also the number per one hundred people in the population of the state, and per one

TABLE NO. 6. WISCONSIN CATTLE NUMBERS HAVE GROWN RAPIDLY SINCE 1870.

Years	Cows and heifers 2 years old & over kept for milk Total No.	Cows and heifers 2 years old & over per 1000 acres of land area	Cows and heifers 2 years old & over per 100 population
1870	270,000	7.4	25.60
1880	420,000	11.8	31.92
1890	690,000	15.8	41.10
1900	870,000	24.8	42.34
1910	1,290,000	36.2	54.84
1920	1,832,000	51.8	69.60
1930	2,043,000	57.8	69.61

thousand acres of land area by decades from 1870 to 1930.

As is true generally, the early cattle in Wisconsin could not well be classified under any particular breed. They were largely mixed cattle with the Shorthorn blood predominating. With the development of dairying as an industry, however, the specialization in breeds of dairy cattle of European origin gained headway in Wisconsin. The various breeds found

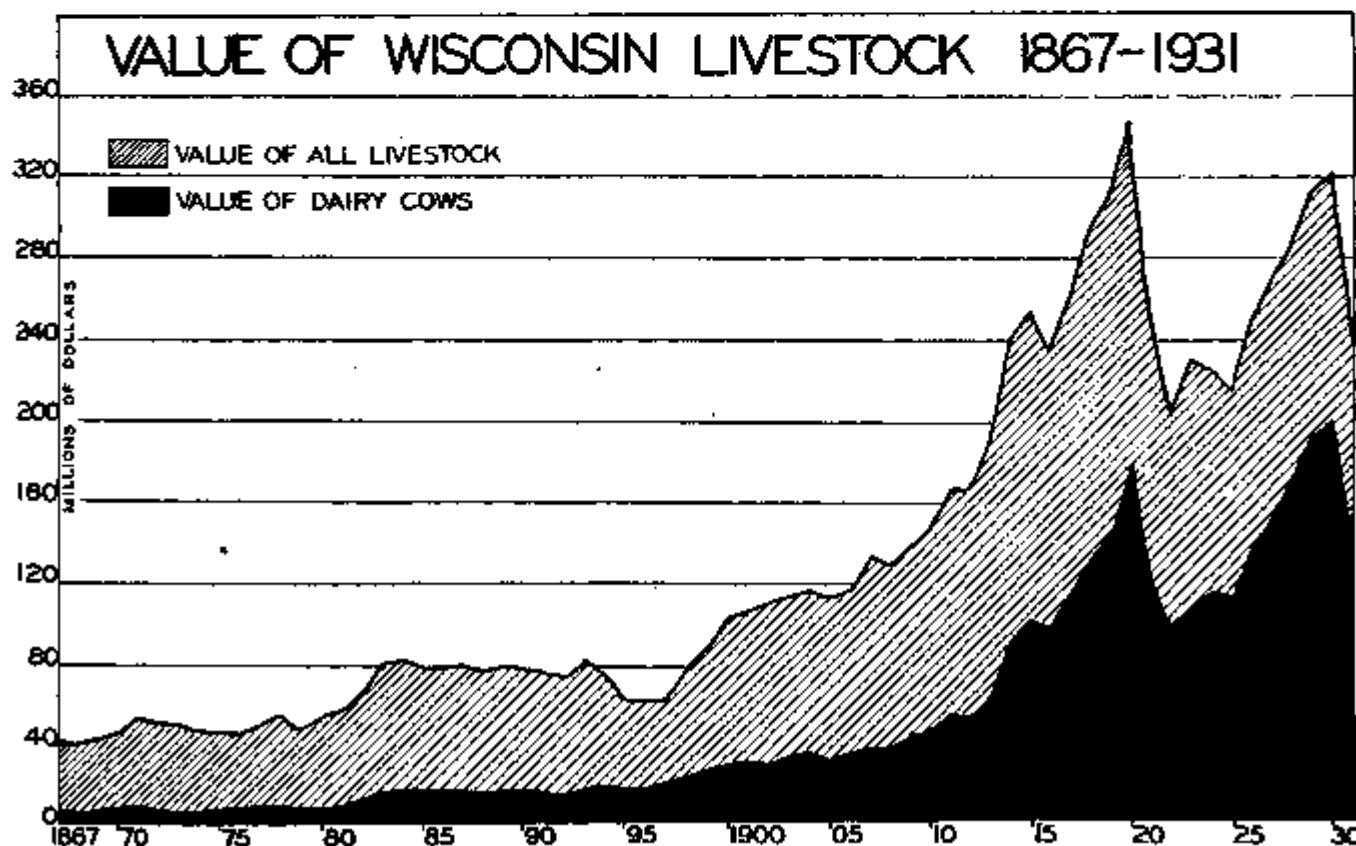


Fig. 15. The rising price level following 1900 together with increasing numbers of livestock brought Wisconsin livestock values to a 1920 peak of \$347,000,000. Dairy cows have made an ever increasing proportion of the total value. The 1930 peak in dairy cow values surpassed the war-time peak of 1920.

TABLE NO. 7. NUMBER OF DAIRY COWS ON WISCONSIN FARMS BY COUNTIES, 1860-1930*

County	1930 ^a	1925 ^b	1920 ^c	1915 ^d	1910 ^e	1890 ^f	1880 ^g	1870 ^h	1860 ⁱ
Barron	51,400	44,170	37,587	24,100	9,270	5,212	1,042	49	6
Bayfield	9,800	9,855	8,874	2,534	823	78	19	2	1
Burnett	11,700	12,138	10,597	7,915	4,305	2,057	868	182	119
Chippewa	40,500	40,361	33,709	21,637	10,870	7,641	3,026	1,469	37
Douglas	9,800	9,261	5,868	2,319	872	130	91	11	204
Folk	43,400	40,170	35,327	23,811	12,531	7,136	3,139	854	
Frank	16,500	14,479	9,818	5,237	285	26			
Sawyer	4,700	4,851	7,719	892	285	26			
Waushara	9,100	8,895	6,936	3,625	969	96			
Northwest District	174,408	153,799	144,853	90,066	39,798	22,274	10,457	2,544	286
Ashland	7,400	6,881	5,365	2,782	1,289	343		6	38
Clark	69,600	61,888	52,577	33,571	14,306	7,382	8,185	705	170
Iron	2,800	2,845	1,435	416	104				
Lincoln	14,500	12,875	10,877	4,846	2,344	1,054	881		
Marathon	66,900	61,708	54,800	31,284	15,519	8,830	8,070	1,831	221
Oneida	4,100	2,783	2,517	1,479	562	41			
Price	12,900	11,181	8,452	4,359	1,580	659	19		
Taylor	28,100	19,288	14,497	8,001	2,823	1,446	268		
Vilas	2,000	1,587	1,170	347	117				
North District	260,000	185,394	152,729	87,066	38,734	19,735	7,443	2,042	419
Flora	2,800	2,189	1,757	709	318	110			
Forest	2,800	2,209	1,767	565	111	44			
Laporte	13,200	12,961	11,411	7,215	3,232	1,445	109		
Marquette	18,800	17,742	14,858	8,338	4,033	1,802	829		
Oconto	26,700	28,420	22,387	15,709	8,054	3,835	1,784	532	140
Shawano	40,100	39,514	30,874	24,932	13,638	7,573	3,145	832	42
Northeast District	162,868	161,842	85,474	57,465	29,394	14,814	5,540	1,104	123
Buffalo	27,700	27,349	26,293	21,983	14,239	12,450	8,626	2,671	940
Dunn	39,500	40,262	36,339	24,399	12,360	10,875	6,816	2,813	278
Eau Claire	18,600	21,741	18,300	14,417	8,704	7,781	4,097	1,854	299
Jackson	25,100	23,805	22,229	17,077	10,929	9,628	4,654	2,011	708
La Crosse	28,700	22,470	22,315	20,446	12,912	11,107	6,330	4,488	2,129
Monroe	41,200	38,990	36,280	30,323	18,405	11,878	7,551	4,621	1,009
Pepin	8,500	8,555	7,741	6,503	4,062	3,455	2,275	1,298	308
Preced	29,600	26,581	23,525	18,579	10,896	10,584	6,802	2,436	758
St. Croix	40,900	39,584	35,876	25,218	13,212	11,650	6,824	2,222	826
Traverse	39,000	35,502	30,702	25,611	17,875	17,596	7,561	3,587	771
West District	293,808	284,922	268,109	285,221	125,484	186,254	56,585	20,091	8,345
Adams	7,100	8,411	8,225	9,101	5,371	4,382	3,496	2,578	1,785
Green Lake	17,200	15,125	15,080	14,576	10,843	7,379	5,713	4,363	4,507
Juneau	30,800	19,338	13,748	15,345	10,715	7,156	4,919	2,845	1,464
Marquette	11,100	11,183	11,482	10,287	7,273	5,446	4,439	3,429	8,437
Portage	28,300	22,594	20,782	18,738	10,233	7,510	4,840	3,024	1,167
Waupesa	39,800	37,925	37,017	31,182	19,237	11,734	7,064	5,606	1,696
Waushara	17,000	17,314	17,256	17,489	13,518	10,158	6,415	3,137	2,405
Wood	30,200	31,621	27,798	18,465	8,548	4,615	1,842	584	118
Central District	169,349	163,764	156,447	135,262	94,597	58,290	38,758	23,547	16,801
Brown	39,900	34,107	32,683	26,020	17,882	12,035	8,184	4,267	740
Columbia	28,800	26,675	26,229	19,766	13,910	10,400	7,338	4,136	2,335
Door	19,200	19,773	18,546	14,118	8,358	6,796	3,689	303	141
Fond du Lac	67,000	53,758	50,156	43,688	32,713	29,695	18,931	14,272	10,388
Kewaunee	34,700	22,317	20,499	17,286	12,618	10,509	5,728	2,407	1,184
Manitowish	43,700	42,380	39,528	35,724	25,175	25,815	14,505	9,351	1,193
Outagamie	43,700	42,415	38,584	30,693	22,232	16,220	8,987	4,819	2,322
Shoshone	43,600	39,820	38,080	39,507	30,913	31,581	19,123	10,487	7,339
Winnebago	29,400	30,586	28,055	26,250	20,798	16,080	11,160	7,911	5,403
East District	331,000	318,889	292,907	252,335	184,465	162,883	94,683	59,546	32,229
Crawford	22,100	20,046	19,623	17,629	10,869	8,928	5,425	3,779	635
Grant	47,300	35,693	31,720	39,042	31,024	27,286	16,665	13,212	8,430
Iowa	37,000	34,300	30,349	34,589	28,342	21,006	13,494	10,064	6,967
Lafayette	35,000	29,996	29,242	32,409	25,010	18,721	12,938	10,481	6,480
Richland	36,000	34,673	32,036	28,521	16,893	12,785	7,479	4,683	2,332
Sauk	44,200	42,570	41,140	36,157	24,861	18,406	11,647	7,260	3,159
Vernon	47,100	41,734	30,761	31,618	16,521	14,754	8,962	5,080	2,475
Southwest District	268,798	239,919	224,364	219,944	153,636	122,872	77,916	55,694	31,445
Columbia	32,500	32,570	28,313	25,880	19,311	18,888	13,430	9,659	8,374
Dane	78,700	77,397	75,468	65,505	51,782	40,247	35,639	17,991	14,319
Dodge	63,200	68,901	65,426	55,780	46,107	34,478	23,250	16,311	12,485
Green	47,500	45,625	42,455	44,172	38,598	29,995	18,931	11,474	8,384
Jefferson	43,900	44,723	43,925	40,480	30,844	30,088	18,415	11,701	8,016
Rock	41,700	38,584	38,588	35,739	28,965	22,339	17,685	12,652	11,397
South District	344,608	307,965	294,479	267,019	216,547	174,811	116,668	79,688	64,545
Kenosha	15,100	16,551	16,163	16,400	13,923	11,341	7,594	7,169	6,212
Milwaukee	6,600	10,706	11,650	11,131	11,547	12,059	7,420	5,757	5,565
Ozaukee	17,600	17,612	17,437	16,084	11,740	11,627	7,678	5,641	4,542
Racine	20,100	22,163	22,559	20,327	14,628	13,578	6,597	7,257	5,966
Walworth	39,600	40,314	41,364	39,147	32,051	25,727	14,872	9,743	8,688
Washington	32,200	30,095	28,420	24,258	19,010	16,113	10,564	8,459	7,875
Waukesha	41,900	41,560	39,026	31,938	23,048	19,330	13,581	10,510	9,289
Southeast District	175,908	179,066	176,769	159,253	126,655	111,485	78,856	55,541	45,636
State	2,843,808	2,951,527	1,795,123	1,473,585	998,397	792,626	476,374	308,277	204,001

*United States census of 1850 shows a total of 54,893 milch cows for Wisconsin. Because of major changes in county boundaries, county data are not comparable with later figures and have not been included. Much of county data for northern counties in 1860, 1870, and 1880 is similarly affected. Some change has resulted from census period to census period in definition of term Dairy Cows. For information see footnote to Table 64.

^aJanuary 1, 1880 estimate by Crop Reporting Service of Wisconsin and United States Department of Agriculture. (Cows and heifers two years old and over kept for milk.)

^bFrom United States Census of Agriculture, 1925.

^cFrom United States Census reports 1920, 1910, 1900, 1890, 1880, 1870, and 1860.

^dState total includes 245 cows on Indian Reservations.

^eUnited States Census of 1860 publishes a state total of 203,001.

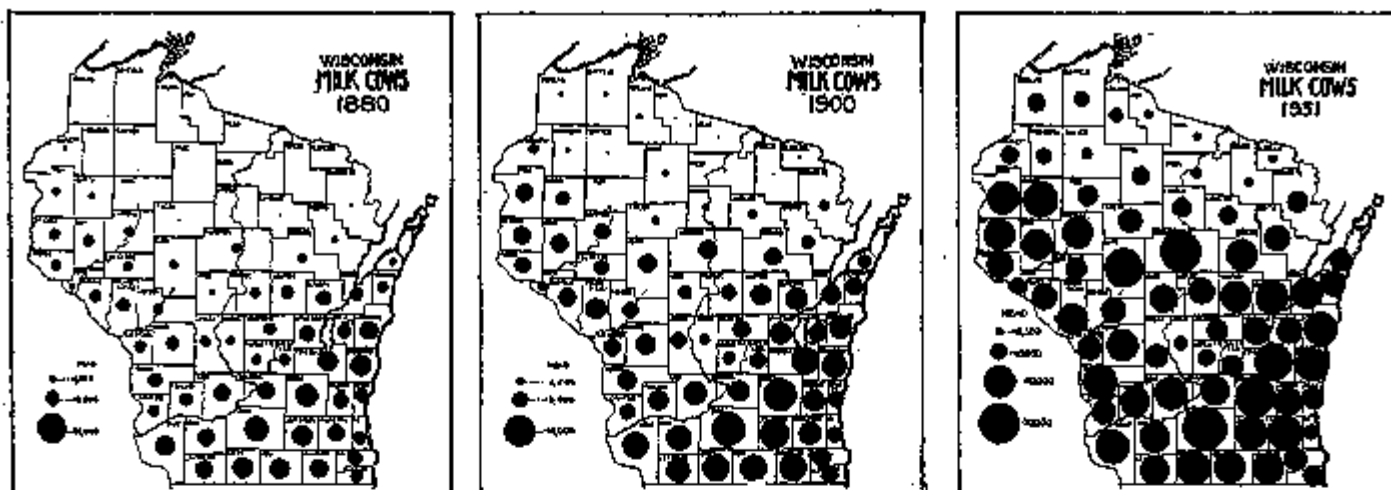


Fig. 16. In addition to the large increase which has occurred in Wisconsin dairy cattle in the past fifty years, a notable geographic change has occurred in the distribution. Dairying has expanded very rapidly in a belt across the northern part of the state.

strong champions among the dairy-men of the state and many fine herds have been established for each of them. This has been an important factor in greatly increasing the milk production per cow, particularly in those herds devoted primarily to dairying. The use of pure bred sires which has become general has gone a long way to improve the cattle in the average farm herds. In fact, so many of the cattle the traveler sees on a summer trip through Wisconsin have the breed characteristics of the leading dairy breeds that it is quite impossible for him to tell the pure bred herds from some of the grades.

Dairy Frontier Moves Northward

In Figure 18 on this page is shown graphically the trend of dairy cow numbers as estimated by years from 1887 to 1931. Dairying is an industry of remarkable stability and changes in it are gradual. It takes two years to raise a cow to the age of production and accordingly the plans of the dairy farmer have to be made rather far in advance. The number of dairy cows in the state has increased gradually with very few years showing decreases. Following the depression of 1907 there was

a period when expansion virtually stopped. Beginning with 1914, however, another rapid increase was recorded which continued until 1927 when a short down swing in numbers began. The trend is at present sharply upward.

The geographic change in Wisconsin's cow population is shown in Figure 16 on this page. As the state developed agriculturally the dairy industry pushed northward. In fact the greatest expansion in cow numbers and dairy production in recent decades has been in North Central and Northwestern Wisconsin. The density of dairying in this new region is now approaching that of many of the older counties in the state.

Figure 19 shows in detail the distribution of dairy cows as estimated for January, 1931. Soil types can be distinguished to some extent by a study of this map. There is a notable concentration on the more productive soils in the well developed parts of the state including the Colby silt loam of Central Wisconsin which represents a relatively new region of

dairy expansion. The sandy soils of Central Wisconsin show a very light distribution of dairy cows. This is due primarily to the difficulty of producing suitable forage crops on this soil type. Much of the extreme northern part of the state is undeveloped agriculturally and some of the soils in that region are less fertile than in the counties to the south. A notable dairy development is taking place in the clay soil region along Lake Superior, particularly northern Douglas, Bayfield, and Ashland Counties. The marked increase in the cow numbers shown for these counties on the map in Figure 16 is largely found in a narrow belt close to the lake shore is shown in Figure 19.

Border lines between sharply different soil types commonly stand out with remarkable distinctness on the dairy cow map. This is particularly true of the Colby silt loam region which has a well defined boundary to the south and west.

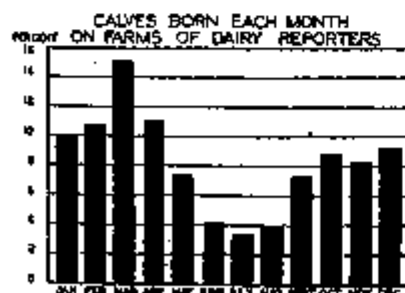


Fig. 17. Fifty-nine per cent of the calves on the farms of Wisconsin dairy reporters in 1930 were born during the first six months of the year. This indicates a reasonably large proportion of fall freshenings among these herds. The peak of freshening comes in March, about 15 per cent of the calves being born during this month.

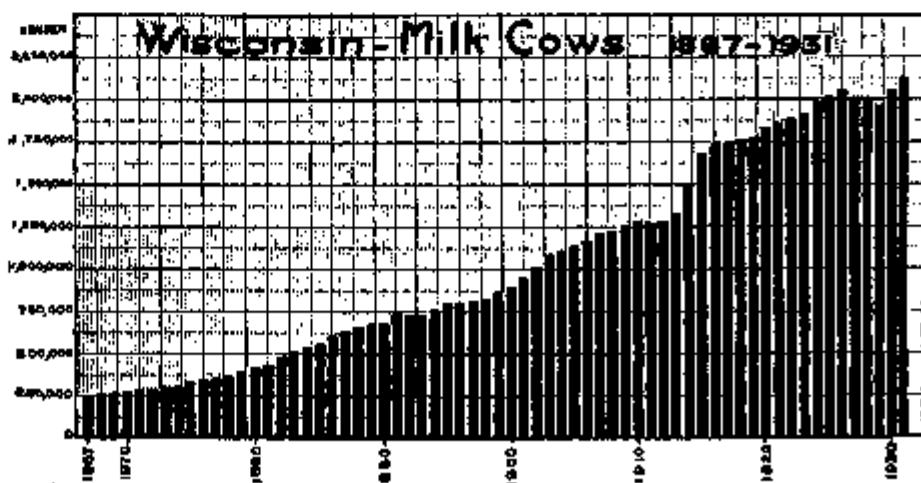


Fig. 18. The trend in Wisconsin milk cow numbers has been generally upward. The largest increases were registered during 1914 and 1915. War and post-war expansion in cow numbers reached a peak in 1927 with 2,055,000 head. The decline of 1927, 1928, and 1929 was the first important decrease in dairy cow numbers in the history of the state. The 2,125,000 dairy cows in the state on January 1, 1931 is the largest number on record.

TABLE NO. 8. NUMBER AND VALUE ALL CATTLE AND DAIRY COWS IN WISCONSIN, BY COUNTIES 1929-1931

County	ALL CATTLE						COWS AND HEIFERS TWO YEARS OLD AND OVER FOR MILK								
	Number on farms January 1			Farm value January 1			Number on farms January 1			Farm value January 1			Farm price per head January 1		
	1931	1930	1929	1931	1930	1929	1931	1930	1929	1931	1930	1929	1931	1930	1929
Barnes	27,500	28,800	27,700	\$3,017,000	\$5,791,200	\$5,720,400	53,300	51,400	48,900	\$4,317,000	\$4,883,000	\$4,721,200	\$62	\$65	\$68
Bayfield	14,900	14,400	13,300	688,800	974,100	982,800	9,700	9,800	9,900	514,100	780,300	831,600	53	55	54
Bernett	18,200	17,900	17,300	777,700	1,143,400	1,182,200	12,100	11,700	11,600	641,800	936,900	926,000	53	50	50
Chippewa	62,100	60,300	58,300	2,680,700	4,096,000	4,078,900	43,200	40,500	38,900	2,632,000	3,402,800	3,204,300	60	54	55
Douglas	14,300	13,800	12,300	824,900	942,500	942,100	10,300	9,800	9,400	549,500	652,800	617,500	58	57	57
Franklin	65,100	60,100	52,800	3,874,900	5,000,200	5,087,800	48,300	43,400	42,200	2,802,400	4,164,400	4,283,000	62	56	56
Grant	20,100	20,400	24,800	1,112,200	1,064,800	1,634,500	17,100	16,800	18,600	904,300	1,133,000	1,026,000	60	58	55
Green	7,400	7,200	8,900	226,800	403,900	485,300	4,800	4,700	4,800	285,800	378,000	416,600	58	50	55
Waushara	14,700	14,300	15,700	644,400	642,900	919,700	9,800	9,100	8,900	532,000	704,900	731,000	54	54	55
Northwest District	303,300	284,800	254,200	14,365,300	21,078,600	21,444,900	264,300	194,400	181,000	12,854,500	17,523,800	17,333,200	58.40	58.20	57.00
Ashland	11,500	11,900	10,800	492,500	723,400	723,100	7,400	7,400	7,500	402,900	599,400	600,000	53	51	50
Clark	95,200	92,800	89,300	4,829,400	7,229,500	6,949,900	96,200	88,800	80,500	4,104,400	6,158,200	5,866,600	63	57	57
Iron	5,700	5,800	5,400	383,700	244,900	248,500	7,800	7,500	7,800	127,300	207,500	212,000	51	53	55
Lincoln	21,800	21,800	20,400	945,000	1,408,100	1,479,100	18,100	14,800	14,200	800,800	1,247,700	1,240,800	63	56	56
Marathon	107,200	104,300	100,400	5,373,800	7,764,900	7,539,200	72,300	66,900	68,200	4,515,800	6,429,800	6,447,200	62	52	56
Oneida	5,800	5,400	5,400	254,100	300,100	370,500	4,300	4,100	4,900	225,800	282,100	324,000	64	51	51
Pierce	19,400	18,800	18,200	842,500	1,623,800	1,297,300	13,400	12,900	12,800	710,300	1,019,400	1,076,000	63	56	56
Taylor	24,900	28,900	32,700	1,645,200	2,410,800	2,437,800	24,000	29,100	32,300	1,300,000	2,082,800	1,862,400	62	58	58
Vilas	2,900	2,800	2,400	120,000	189,900	184,400	2,100	2,000	1,900	109,300	182,000	145,200	52	51	50
North District	582,400	593,700	583,200	14,537,100	21,786,200	21,444,900	547,900	506,900	493,500	12,514,800	18,226,200	17,881,400	59.50	59.30	57.9
Flora	4,100	3,900	2,900	125,400	309,200	308,900	2,400	2,300	2,100	120,000	184,000	174,800	50	50	50
Forest	4,400	4,200	4,100	185,100	291,800	281,100	2,900	2,900	2,800	163,700	244,000	229,000	52	54	55
Langlade	20,100	19,500	18,700	850,500	1,401,000	1,078,000	18,700	17,900	17,900	724,100	1,161,800	1,132,000	53	58	50
Manitowish	20,800	23,100	22,800	1,038,000	1,689,000	1,829,400	17,600	16,900	17,000	932,800	1,458,400	1,426,000	53	54	54
Portage	28,800	28,400	27,100	1,668,200	2,714,100	2,638,300	27,700	26,700	26,900	1,440,400	2,208,500	2,061,500	52	53	55
Shawano	68,000	64,400	54,400	2,818,900	4,284,800	4,064,800	41,700	40,100	38,800	2,460,800	3,649,100	3,499,900	59	51	50
Northwest District	148,800	144,600	139,500	6,749,100	10,586,300	10,213,700	148,800	142,400	140,400	5,833,200	8,958,400	8,635,900	53.80	52.30	57.40
Buffalo	45,500	44,300	42,800	1,990,200	3,046,200	2,891,200	28,800	27,700	26,800	1,613,800	2,682,200	2,361,200	55	55	54
Dane	81,800	80,900	78,000	3,834,900	4,961,000	4,971,200	49,100	46,100	45,000	3,325,800	4,834,000	4,187,200	65	54	53
Ray	29,500	31,900	30,600	1,458,900	2,206,200	2,272,100	38,400	38,800	38,800	1,654,000	2,711,200	1,778,500	60	52	55
Jackson	38,800	37,700	36,400	1,828,400	2,789,000	2,683,100	28,100	26,100	24,300	1,588,000	2,306,200	2,187,000	60	52	50
La Crosse	88,000	84,900	83,500	1,787,900	2,732,700	2,684,000	24,700	23,700	23,000	1,582,000	2,351,500	2,028,000	60	56	50
Monroe	88,200	84,900	82,000	2,441,000	4,504,400	4,318,000	45,000	41,500	38,800	2,408,000	3,584,400	3,298,000	56	57	55
Peppin	15,400	14,000	13,600	599,400	954,400	916,800	9,800	9,800	9,800	505,300	779,000	713,800	51	52	50
Plover	51,000	49,500	47,800	3,141,700	3,479,900	3,250,600	39,800	38,800	38,800	2,664,500	3,000,700	2,834,400	55	50	50
St. Croix	88,200	84,900	81,400	3,017,000	4,835,700	4,690,200	48,800	46,800	45,800	2,423,200	3,800,700	3,629,000	57	53	55
Trempealeau	68,800	61,700	59,800	2,800,800	4,840,000	4,841,900	49,800	46,000	44,000	2,278,800	3,482,000	3,300,000	56	58	50
West District	486,000	466,300	447,500	21,435,700	32,877,800	31,339,700	546,100	523,800	522,300	17,404,800	26,151,200	25,085,100	57.45	56.90	54.50
Adams	11,400	11,000	10,700	498,000	727,300	697,300	7,500	7,100	7,000	405,000	675,100	583,000	54	51	50
Green Lake	26,300	26,000	25,100	1,412,800	2,082,000	1,946,800	17,000	17,200	16,200	1,151,400	1,688,400	1,585,700	58	57	56
Juniata	33,400	31,800	30,400	1,473,400	2,168,400	2,139,700	21,400	20,600	20,300	1,192,400	1,736,400	1,745,800	58	54	56
Marquette	13,100	12,800	12,000	807,000	1,230,800	1,144,000	11,000	10,400	10,200	688,000	976,500	890,400	55	56	54
Portage	29,600	28,400	27,100	1,992,100	2,784,200	2,640,300	27,200	25,300	24,300	1,677,600	2,444,700	2,104,000	51	50	50
Waupaca	48,300	46,800	44,600	3,068,400	4,699,800	4,284,900	41,800	39,800	37,300	2,607,200	3,864,000	3,571,200	63	57	56
Waushara	26,300	25,500	24,100	1,329,000	1,921,000	1,626,400	17,000	16,100	16,100	1,097,400	1,564,000	1,332,000	62	52	54
Wood	45,700	44,300	42,800	2,333,900	3,358,800	3,201,700	41,400	39,200	38,500	1,946,800	2,806,900	2,773,000	62	58	54
Central District	288,500	258,900	241,500	12,984,800	18,689,400	17,976,300	178,300	148,300	149,500	10,746,400	15,824,900	14,725,800	61.00	61.70	61.20
Brown	55,200	53,700	51,800	2,793,800	4,384,900	4,184,400	49,600	46,800	47,200	2,470,500	3,773,900	3,577,200	61	57	56
Calumet	28,900	27,600	26,300	1,234,500	3,177,600	2,704,800	27,500	26,800	27,000	1,313,500	2,700,900	2,790,000	65	101	100
Deer	37,300	36,800	35,800	1,284,800	1,901,400	1,676,800	19,600	19,300	18,100	1,114,400	1,632,800	1,683,300	58	54	53
Pond du Lac	61,700	59,300	57,800	4,900,700	7,464,000	7,302,300	59,300	57,000	54,700	4,303,200	6,844,000	6,335,800	71	112	114
Racine	35,600	34,800	33,400	1,780,800	2,717,900	2,435,600	28,700	24,700	24,200	1,642,000	2,372,400	2,111,200	60	52	51
Manitowish	62,300	61,400	59,300	2,707,800	5,508,400	5,437,200	47,000	45,700	44,200	3,236,800	4,808,000	4,608,000	68	107	108
Oregon	65,100	63,000	61,000	3,057,000	5,112,100	5,214,000	47,000	45,700	44,200	3,329,000	4,707,100	4,508,400	70	103	102
Shoshone	63,500	60,000	58,500	3,648,800	5,434,400	5,283,800	48,400	46,000	42,900	3,223,400	4,796,400	4,588,800	71	110	110
Winnebago	44,200	42,900	41,600	2,608,000	3,800,400	3,549,200	30,500	28,400	27,800	2					

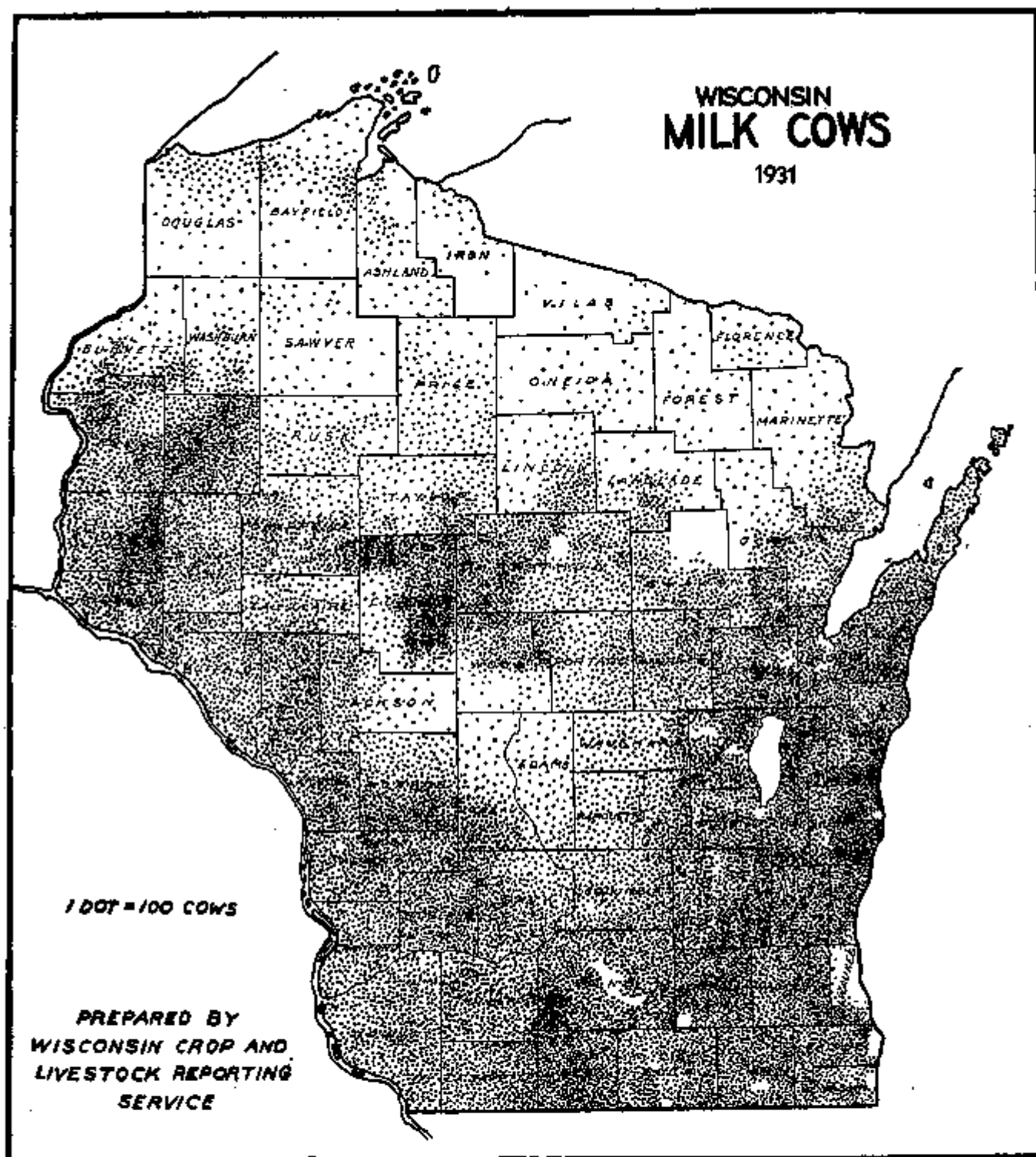


Fig. 18. Milk cows are the most important class of livestock in all counties of Wisconsin. The density of their distribution is quite uniform over the areas of better soil. The lightly dotted region in the central counties is one of sandy soil and much of the northern third of the state is less well developed. The map shows the distribution as estimated for January 1931.

Butterfat Test of Milk and Cream

Fat content of milk varies so considerably from a number of causes that average tests must be considered as rather general in meaning. Specific application of milk tests are best made when the tests themselves are quite specific, dealing with individual herd, dairy plant, or possibly local conditions. For use, however, in ap-

proximating disposition of milk to its various uses and for more or less rough comparisons between regions or areas, butterfat tests of milk even though being rather general, serve a useful purpose as a basis for study and comparisons.

In Table 20 milk tests have been given in the form of averages of tests as reported by dairy plants

for the last three months of 1929 and the first nine months of 1930. Returns indicate that cheese factory tests have been more numerous than would be warranted by the proportion of commercial milk which is diverted to cheese making. In 1929 approximately 89 per cent of the milk used for manufacture of dairy products in Wisconsin dairy plants was diverted

TABLE NO. 9. SHIPMENTS OF DAIRY CATTLE FROM WISCONSIN TO OTHER STATES AND COUNTRIES, 1922-1930*

Shipped to	Number of Head									
	1930	1929	1928	1927	1926	1925	1924	1923	1922	
Alabama	10	22	141	171	84	60	45	47	23	
Arizona	330	116	189	31	55	35	4	7	112	
Arkansas	26	51	216	206	22	84	9	5	8	
California	569	521	572	749	651	316	408	1,028	1,722	
Colorado	89	239	570	205	243	13	70	143	128	
Connecticut	1,014	898	2,472	1,749	311	353	183	663	1,219	
Delaware	112	137	44	7			31	10		
District of Columbia							1	1		
Florida	95	88	110	193	43	52	27	4	75	
Georgia	73	10	105	112	38	41	8	127	205	
Idaho	64	46	94	23	80	40	316	326	182	
Illinois	20,942	30,312	26,113	30,547	41,319	25,430	19,355	14,015	9,311	
Indiana	775	3,036	3,522	3,526	2,007	2,128	1,514	771	479	
Iowa	1,111	2,512	4,868	5,225	5,900	7,600	10,545	14,022	6,842	
Kansas	425	1,465	814	811	245	413	414	639	727	
Kentucky	58	394	352	210	66	112	246	137	87	
Louisiana	151	162	184	424	407	325	185	168	599	
Maine	104		15	1		4		3		
Maryland	1,960	2,367	2,838	2,031	1,945	1,065	532	540	856	
Massachusetts	1,196	1,158	653	499	901	535	21	158	81	
Michigan	838	1,368	1,312	1,721	941	738	861	510	283	
Minnesota	597	2,061	2,176	3,206	2,468	3,231	5,445	8,708	3,978	
Mississippi	12	30	133	108	20	66	70	10	47	
Missouri	360	313	1,377	590	260	323	732	270	658	
Montana	265	99	42	39	92	422	670	298	321	
Nebraska	2,033	2,645	3,237	2,914	1,188	1,423	2,917	2,984	2,063	
Nevada	1	1	4			1		64	238	
New Hampshire	576	150	60	75	120		1			
New Jersey	10,210	8,820	11,903	7,732	2,414	1,948	842	597	201	
New Mexico	12	24	3	8	93	1	11	2	25	
New York	4,896	4,906	5,981	7,035	4,463	3,688	1,077	2,146	2,062	
North Carolina	72	22	135	85	138	30	35	41	102	
North Dakota	132	197	623	299	135	1,369	2,131	945	644	
Ohio	611	1,910	1,871	2,037	1,143	574	365	376	383	
Oklahoma	23	694	373	184	130	78	113	105	34	
Oregon	1	2	19	7		15	13		6	
Pennsylvania	5,478	5,953	5,156	2,995	2,157	1,316	206	306	322	
Rhode Island	354	204	319	848	66		15		5	
South Carolina	3	7	1	53		9		18	2	
South Dakota	394	591	1,349	1,653	734	1,170	2,040	3,113	1,996	
Tennessee	22	149	353	223	34	37	23	14	53	
Texas	326	623	370	373	111	30	44	162	122	
Utah	150	70	67	83	802	68	165	752	167	
Vermont	235	105	75	2		1		2		
Virginia	313	884	569	302	212	554	510	707	799	
Washington		81	4	25	31	3	79	79	74	
West Virginia	10	206	111	154	170	45	73	31	60	
Wyoming	38	42	126	66	41	5	107	127	143	
Foreign Countries										
Africa	8	2	1							
Albania				1						
Australia								23	1	
Bahama Islands		26								
Bermuda Islands				4						
British Isles			1							
Canada	15	45	60	141	372	101	95	60	29	
Central America		16	11		1	2	1	29		
China		1		40						
Cuba										
Denmark							2			
France					1					
Germany					1					
Hawaii					59	307				
Honduras								2		
India							2		4	
Japan		5	13		28	1	14	39		
Mexico	221	173	938	2,037	1,644	2,062	505	2,610	3,613	
Porto Rico	1	2	2	1		30	3	10	44	
Portugal										
South America	68	38	28	21	98	63	30	18		
Spain			8		5		1			
West Indies		5								
Total	56,466	78,344	82,099	83,027	72,899	58,444	52,767	55,908	42,669	

*Data from records of interstate cattle shipments, State and Federal Veterinarians and Department of Agriculture and Markets, Madison. The compilation was prepared by the Wisconsin Crop Reporting Service.

to the manufacture of cheese. Such milk is generally of lower test than that sold for making of butter and probably a lower test than that of much of the milk going into condenser products and ice cream which when taken with butter account for 61 per cent, or the greater proportion of milk for manufacture. Butterfat test of milk then, in the accompanying table may be biased downward somewhat by a preponderance of tests reported by cheese factories. It is problematical, of course, in this rather preliminary study, as to what extent such influence has worked toward lowering tests.

A noticeable tendency toward lower tests is apparent in the south-central and southeast sections of the state where a larger proportion of the milk is used in cheese manufacture and as city market milk. Test of milk tends to decline in the spring months as freshenings increase and remains at relatively low levels during the period of greater proportion of freshenings and during the better part of the pasture season. Tests tend to increase as milk production declines in the late summer and fall and remain at a relatively high level during the period in winter when a higher percentage of lactation periods are near-

ing the end and when concentrate feeding is at a high level.

County and district test figures in the table represent straight averages of reports, except the weighted annual average figures which are from the monthly averages weighted according to monthly average milk production per cow. State monthly averages represent weighted averages from district averages weighted by number of dairy cattle two years old and over on farms and the state annual average is a weighted average from the state monthly averages weighted according to monthly average milk production per cow.

Cream tests as reported by Wisconsin plants average for the state by months and the year as follows:

	Per cent fat
January	27.2
February	27.3
March	27.4
April	27.9
May	28.1
June	28.1
July	28.2
August	28.2
September	28.2
October	27.4
November	27.0
December	27.1

Weighted yearly average 27.77 per cent

These tests reported for October to December of 1929 and January to September of 1930 show a low point in cream test of 27.0 for the month of November with a gradual and practically continuous rise from then until July to a test of 28.2. August and September tests were level with that of July and the decline from

28.2 to 27.0 occurred in October and November. During the fall and winter months tests remained low but with an upward trend from November. Since about 69 per cent of the cream received is used for making butter, the yearly average test of 27.77 per cent obtained by giving each monthly average importance according to the quantity of butter manufactured should be quite satisfactory for use as a general average fat test of cream delivered at Wisconsin plants.

TABLE NO. 10.
WISCONSIN DAIRY CATTLE
SHIPMENTS 1921—1930.

Year	Number
1921.....	25,544
1922.....	42,469
1923.....	55,908
1924.....	62,767
1925.....	58,445
1926.....	73,880
1927.....	83,027
1928.....	82,089
1929.....	78,344
1930.....	56,466

Exports of Dairy Cattle

The high quality of Wisconsin cattle combined with the fact that much of the state has been tested for tuberculosis gave Wisconsin farmers an opportunity to market for dairy and breeding purposes large numbers of cattle at favorable prices. This movement has been particularly pronounced since the war. In 1921, 25,544 head were shipped out in this way. Gradually these exports grew until the high point of 83,027 head was reached in 1927. Since then there has been a decline in these shipments. A table showing the destination of our dairy cattle to other states and countries each year since 1922 is shown on page 20.

Breeding of Wisconsin Cattle

Much interest has prevailed as to the extent to which the various breeds are found in Wisconsin cattle population. In order to get more specific information on that subject a study was made through the Wisconsin schools in which reports from 3,398 schools were received. These

WHERE 56,466 WISCONSIN DAIRY CATTLE WERE SHIPPED IN 1930

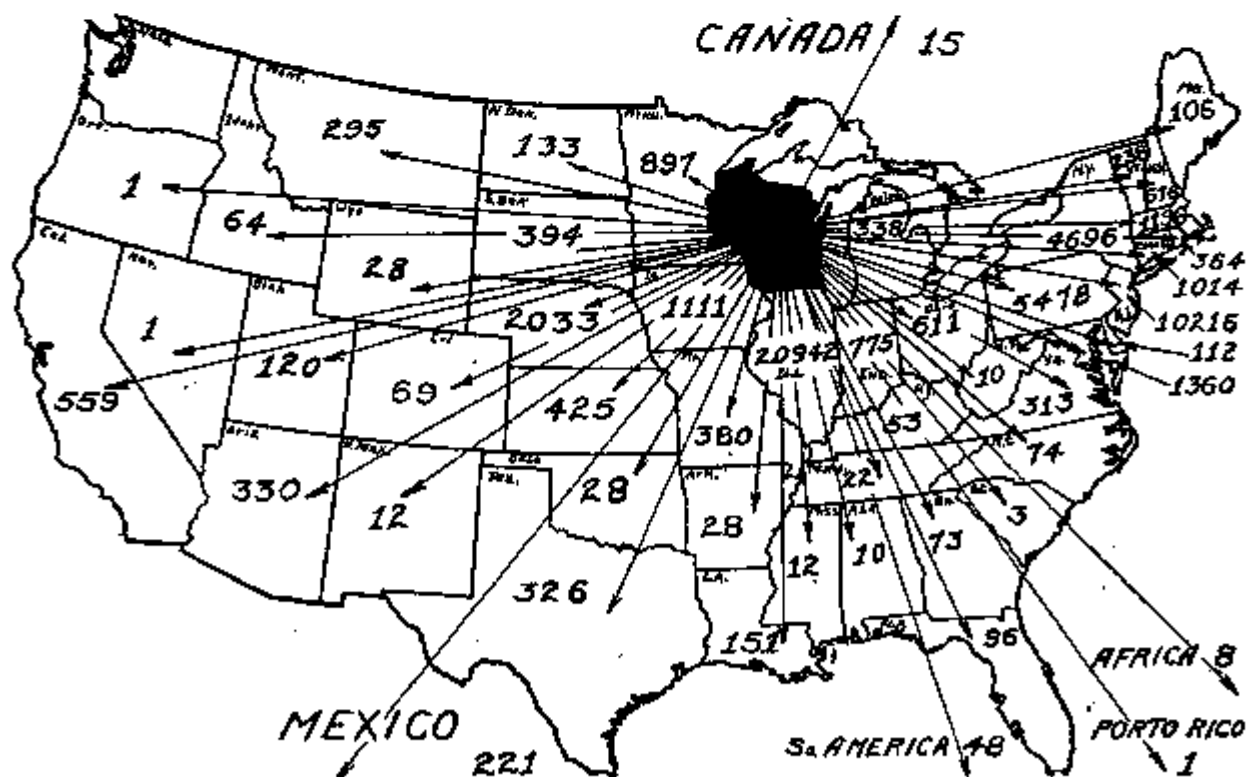


Fig. 20. For a decade or more Wisconsin farmers have had a valuable export market for dairy cattle to other states and countries. Near-by states and those near large eastern centers of population have been the state's best customers for dairy animals. While many of the cattle so exported have been sold for breeding purposes a large portion has gone for replacement animals particularly in the areas where large cities have required milk from tubercular tested cows. Illinois, Pennsylvania, and New York have been the leading buyers.

ESTIMATED PRODUCTION AND DISPOSITION OF CATTLE IN WISCONSIN, 1930¹

(\$00 Omitted)

Inventory

	On Hand January 1, 1930			On Hand January 1, 1931		
	Number	Average weight	Total weight	Number	Average weight	Total weight
Milk cows two years old and over	2,048	850	1,736,650	2,125	850	1,806,250
Other cows two years old and over	17	925	15,725	15	925	13,875
Heifers one to two years old	306	600	227,000	414	600	248,400
Steers one year old and over	88	800	26,400	34	800	27,200
Bulls one year old and over	94	1,100	103,400	89	1,100	108,900
Calfes under one year	448	800	324,400	433	800	329,900
	3080	744	2,353,475	3,120	748	2,324,525

Difference in Inventory

(\$00 omitted)

On hand, January 1, 1930	3080 head	2,353,475 lbs.
On hand, January 1, 1931	3120 head	2,324,525 lbs.
Increase	40 head	81,050 lbs.

Production and Disposition of Cattle, 1930

(\$00 omitted)

PRODUCTION 1930	Head	DISPOSITION 1930	Cattle	Calves	Total
On hand, January 1, 1930	3,030	Shipped to stockyards and packers	810	850	1,660
Calves born		Dairy cattle shipped out of state	51	5	56
2,048 milk cows @ 86%	1,799	Local slaughter	18	220	238
17 other cows @ 76%	13	Farm slaughter	12	103	115
Shipped into state	44	Draught	31	148	179
		On hand, Jan. 1, 1931	419	1,846	2,265
			2,587	433	3,120
	4,585		3,108	1,779	4,885

Estimated Value Wisconsin Cattle Production 1930

(\$00 Omitted)

Cattle Used for Slaughter and Feeding

Shipped to					
Stockyards and packers	219 head @	1,000 lbs.	330,000 lbs.		
Local slaughter	15 head @	900 lbs.	13,500 lbs.		
Farm slaughter	12 head @	800 lbs.	10,800 lbs.		
Total	357 head		354,300 lbs.		
Less shipped into state	44 head @	780 lbs.	32,120 lbs.		
Total			302,180 lbs.		
Value of cattle used for slaughter and feeding at 6.4 cents per pound					\$19,340

Dairy Cows and Calves

Value of					
Dairy cows shipped out of state	51 head @	\$83.00 per head		\$4,338	
Dairy calves shipped out of state	5 head @	\$15.00 per head		75	
Value of dairy cows and calves shipped from state					\$4,308

Calves

Shipped to					
Stockyards and packers	850 head @	115 lbs.	97,750 lbs.		
Local slaughter	230 head @	115 lbs.	26,450 lbs.		
Farm slaughter	103 head @	135 lbs.	13,875 lbs.		
Total	1,183 head		137,075 lbs.		
Value of calves production at 9.9 cents per pound					\$13,670

Change in Inventory

Increase in inventory from January 1, 1930 to January 1, 1931		81,050 lbs.			
Value of increase in inventory at 6.4 cents per pound					\$5,187
Estimated total value Wisconsin cattle production, 1930					\$42,405

¹Subject to revision as further information becomes available.²Includes cattle shipped into State for dairy purposes, number uncertain, but less than 8,000 head.

WISCONSIN CALF SHIPMENTS TO PACKERS AND STOCK YARDS 1930

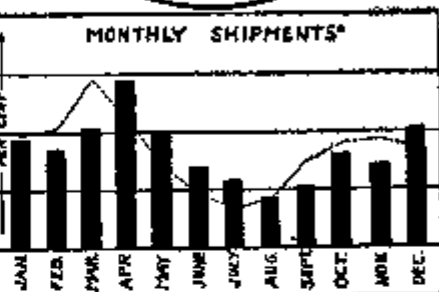
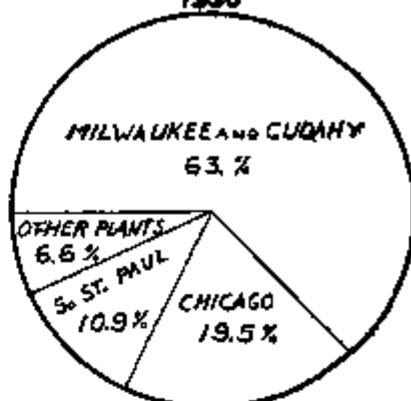


Fig. 21. Milwaukee and Cudahy Wisconsin are by far the most important markets for Wisconsin veal calves, taking almost two-thirds of Wisconsin shipments for 1930. During the year, 94 per cent of the veal calves marketed at Milwaukee were Wisconsin calves. Monthly shipments were highest during April when 14 per cent of the annual total came to market. The dotted line in the chart indicates the per cent of cows freshening each month on farms of Wisconsin dairy reporters. This curve lags behind shipments of veal calves by about a month.

WISCONSIN CATTLE SHIPMENTS TO PACKERS AND STOCK YARDS 1930

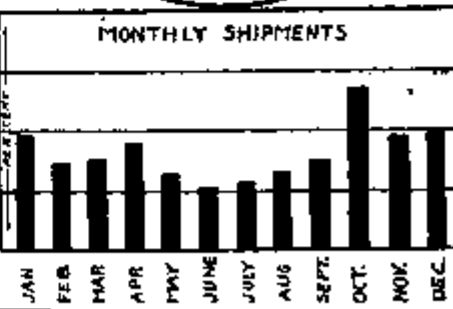
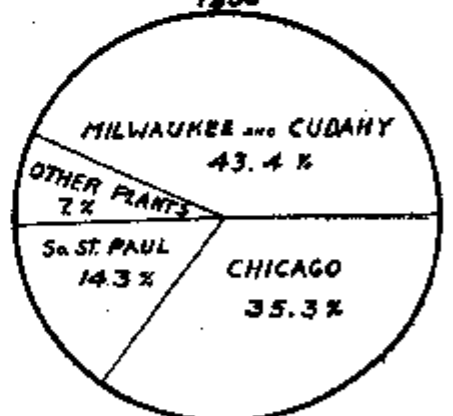


Fig. 22. More than 45 per cent of Wisconsin's slaughter cattle are sold to stockyards and packers within the state. Milwaukee, Cudahy, and Chicago are the leading markets for Wisconsin cattle, other outlets taking but a small portion of the totals. Monthly cattle marketings are more uniform than those of other classes of livestock, the high point being reached in October and the low in June.

BREEDING OF WISCONSIN CATTLE

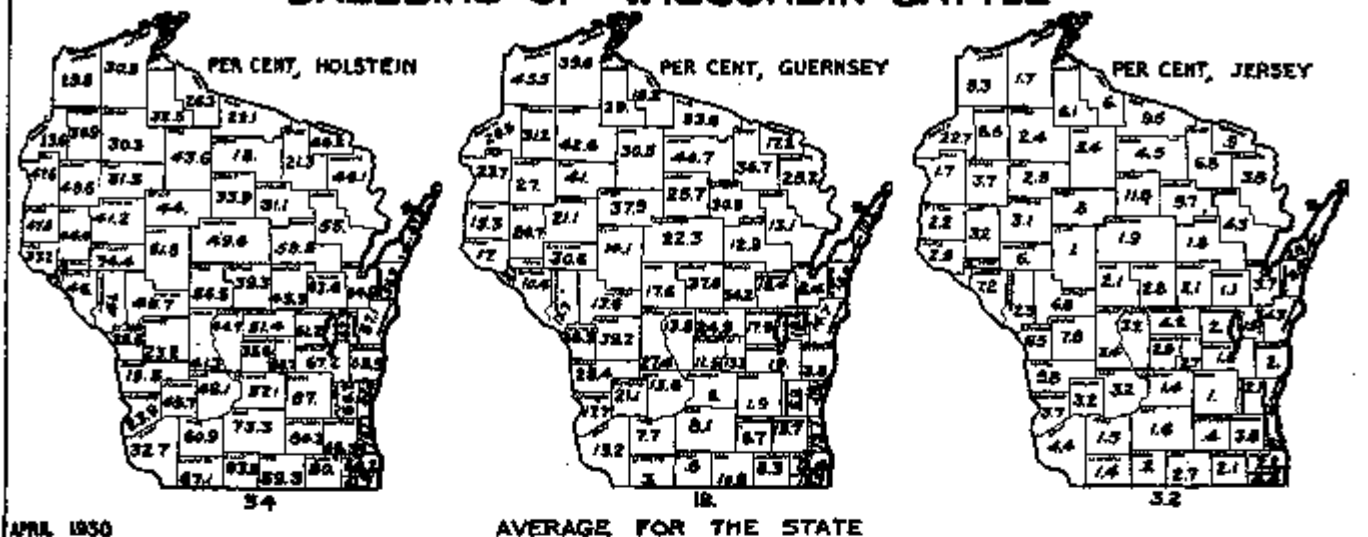


Fig. 23. Holstein cattle predominate in Wisconsin, over half of the cattle in the state having the characteristics of this breed and the Guernsey breed ranks second with about 18 per cent, and all others are of minor importance. These data were obtained by a survey made through the public schools of Wisconsin.

studies showed that 54 per cent of Wisconsin cattle are of Holstein breeding, 18 per cent Guernsey, 3.2 per cent Jersey, 3.5 beef and dual purpose breeds, and 19 per cent mixed. The details of this survey by counties are shown in Figures 23 and 24 on this page.

The Holstein breed while predominating over much of the state is particularly strong in Southeastern Wisconsin including the market milk areas and the cheese and condensary regions. Green, Sheboygan, and Dodge all prominent cheese counties report respectively 93.5, 89.5, and 87

per cent of their cattle as of Holstein breeding.

Guernsey cattle, the second ranking breed, are most important in Northern and Western Wisconsin. The distribution of herds of this breeding seems to follow somewhat the regions of butter production. The percentage of Guernseys reported is particularly low in the cheese areas.

Jersey cattle are relatively unimportant in the state. Their reported distribution follows largely the regions of butter production though scattered herds are found in all counties. Other dairy breeds account for

but a small part of the state's cow population and their distribution, while not as definite as some of the others, tends to be greatest in the regions of butter production. Beef and dual purpose cattle are quite largely in Southwestern and Western Wisconsin where more of the Corn Belt type of agriculture prevails.

Herds classified as of mixed breeding are still quite common. The term is not very specific but the tabulation of material obtained from 3,398 school districts reporting shows about 19 per cent of the state's herds of mixed breeding. This percentage is doubtless declining rapidly.

BREEDING OF WISCONSIN CATTLE

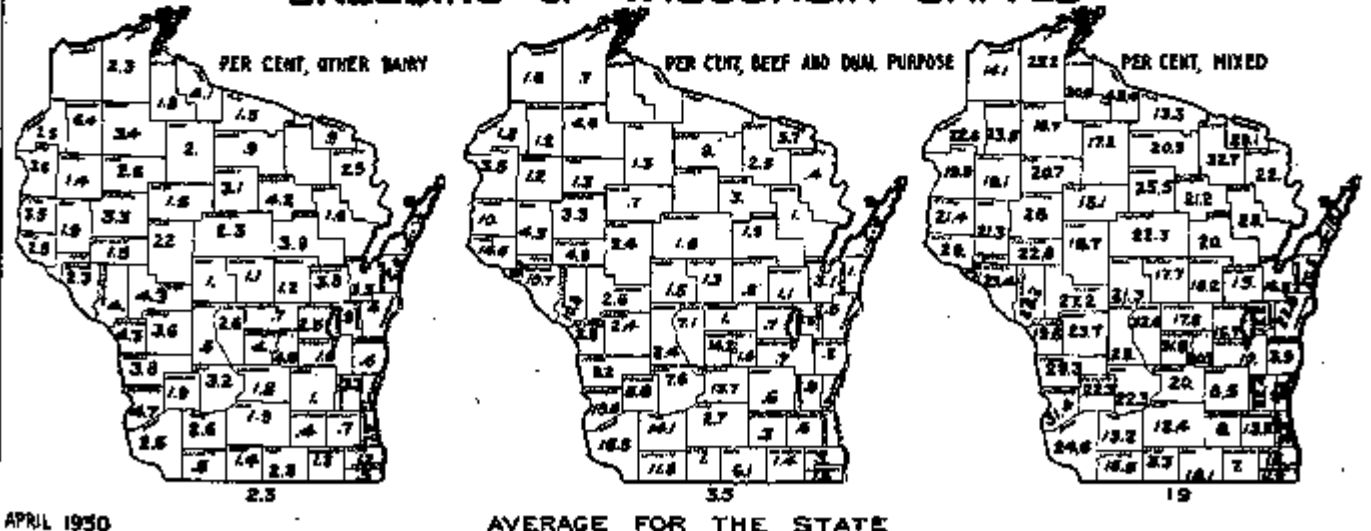


Fig. 24. Miscellaneous dairy breeds such as Brown Swiss, Ayrshire, and others account for only a small portion of the cattle in Wisconsin. Likewise cattle of the beef and dual purpose breed aggregate only about 3.5 per cent of the total. Cattle classed as of mixed breeding with the shorthorn predominating still account for nearly one-fifth of the state total.

TABLE NO. 11. BOVINE TUBERCULOSIS ERADICATION IN WISCONSIN¹

County	Original Area Test 1926-1936				1st General Retest		2nd General Retest		3rd General Retest		Total number of reactors all tests
	Number herds tested	Number cattle tested	Number reactors	Per cent of infection	Number reactors	Per cent of infection	Number reactors	Per cent of infection	Number reactors	Per cent of infection	
Bacon	3,870	67,000	400	.6	648	1.0	109	.2	93	.1	1,250
Bayfield	1,479	14,217	106	.7	59	.2	3	.1			127
Burnett	1,783	19,911	266	1.3	23	.1					291
Chippewa	4,412	68,042	1,105	1.6	446	.7	198	.3			1,749
Douglas	2,211	14,268	83	.7	73	.5	27	.2			193
Polk	4,810	64,781	1,233	1.9	130	.2	118	.2			1,481
Rusk	2,381	21,892	269	1.2	154	.6	73	.3			496
Sawyer	1,006	5,976	41	.7	87	.4	4	.1			83
Washburn	1,566	14,890	488	3.4	86	.6	10	.1			584
Northwest District	22,756	299,245	4,863	1.4	1,625		542		93		6,263
Ashland	1,801	11,922	314	1.8	83	.3	9	.1			266
Clark	5,273	89,265	1,604	1.8	278	.3	115	.1			1,992
Iron	938	4,954	88	.8	3	.1	3	.1			44
Lincoln	1,920	20,475	188	.9	183	.6	108	.5	17	.1	496
Marathon	6,571	105,098	555	.5	203	.2					758
Oconto	938	8,045	135	3.1	10	.2	2	.1			127
Price	2,551	18,084	106	.6	70	.4	10	.1			186
Taylor	2,879	30,010	337	1.1	61	.2	11	.1			409
Vilas	612	2,920	9	.3	0	.0	0	.0			9
North District	22,479	288,741	3,236	1.1	834		353		17		4,247
Florence	464	8,586	33	.9	10	.8					43
Forest	801	4,882	14	.3	8	.1					17
Langlade	1,782	20,877	54	.3							54
Marquette	2,298	24,451	143	.6							143
Oconto	2,880	40,859	397	1.0							397
Shawano	4,088	60,361	1,400	2.3	125	.2					1,535
Northeast District	12,328	154,582	2,046	1.3	148						2,194
Buffalo	2,258	50,057	387	.8	91	.2					478
Dunn	3,412	84,922	466	.6	126	.2					592
Eau Claire	2,860	32,830	503	1.5	174	.5	65	.2			742
Jackson	2,823	39,719	672	1.7	103	.3	80	.2			855
La Crosse	1,774	28,774	980	2.5	118	.9	84	.1			1,127
Monroe	3,718	62,850	844	1.4	117	.2	88	.1			1,099
Portage	1,051	13,884	184	1.0	26	.3					160
Waupaca	3,350	62,434	494	.8							494
St. Croix	3,394	71,745	1,479	2.0	387	.6	358	.5			2,222
Traverse	3,493	68,190	910	1.4	81	.1					971
West District	27,628	442,238	6,848	1.4	1,297		533				8,636
Adams	1,473	13,182	181	1.2	20	.2					181
Green Lake	1,679	28,190	614	2.2	168	.6					782
Juniata	2,493	34,998	589	1.6	114	.4	58	.3			762
Marquette	1,438	18,589	103	.8	7	.1					110
Portage	3,102	38,638	177	.5	27	.1					204
Waupaca	3,812	59,370	519	.9	180	.2					699
Waushara	2,127	28,490	200	.6	48	.2					248
Wood	3,415	51,864	678	1.3	113	.2	42	.1			833
Central District	17,441	271,582	3,929	1.1	636		199				3,765
Brown	3,587	56,300	1,091	1.9	197	.3					1,278
Calumet	2,089	39,637	532	1.3							532
Door	2,241	29,086	513	1.8	64	.2					580
Fond du Lac	4,157	81,543	5,185	6.3	504	.7					5,759
Kewaunee	2,084	24,399	781	3.2	66	.2					839
Manitowish	3,881	65,048	1,032	1.6							1,032
Outagamie	3,681	64,696	2,028	3.1	161	.2					2,189
Sheboygan	3,456	60,339	1,606	2.6	890	.6					1,906
Winnebago	2,688	44,678	1,065	2.4	232	.5					1,300
East District	27,745	476,192	13,789	2.9	1,764						15,495
Crawford	1,990	40,806	238	.3							238
Grant	4,806	90,076	1,356	1.5							1,356
Iowa	2,585	67,273	1,544	2.3							1,544
Lafayette	2,480	63,676	2,598	4.1							2,598
Richland	2,700	54,799	849	1.6	49	.1					898
Sauk	3,091	69,446	1,222	1.8	235	.4					1,507
Vernon	4,389	77,596	373	.5							373
Southwest District	22,184	443,273	8,279	1.8	334						8,613
Columbia	3,104	53,485	1,645	3.1	343	.6					1,988
Dane	5,077	120,015	5,098	4.2	1,082	.9					6,180
Dodge	4,737	98,860	3,789	3.2							3,789
Green	2,426	68,435	5,745	8.4							5,745
Jefferson	3,129	63,262	4,321	6.8	485	.6					4,806
Rock	3,485	61,470	8,689	14.1	854	.6					9,543
South District	22,858	467,196	28,617	6.1	2,214						30,831
Kenosha	1,121	19,016	7,567	39.8	147	.7					7,714
Milwaukee	1,487	11,788	180	1.5	76	.7					256
Ozaukee	1,851	25,379	754	3.0	80	.3					834
Racine	1,918	28,901	2,186	7.6							2,186
Walworth	2,582	54,454	4,086	7.4	538	.9					4,624
Washington	2,758	42,881	581	1.3	120	.2					691
Waukesha	3,809	56,049	3,271	5.8	468	.7					3,739
Southeast District	14,788	236,477	18,537	7.8	1,364						19,901
State	192,244	3,142,764	88,364	2.8	16,979	.4	1,483	.2	110	.1	190,847

¹ From records of Division of Livestock Sanitation, Wisconsin Department of Agriculture and Markets, April 1981

TABLE NO. 12.
MOVEMENT OF WISCONSIN
LIVESTOCK TO PACKERS AND
STOCK YARDS, 1920-1930

Year	Cattle	Calves
1920	381,601	788,667
1921	380,822	744,999
1922	371,954	807,941
1923	366,815	824,112
1924	321,120	880,712
1925	338,080	887,602
1926	408,856	848,826
1927	393,288	833,158
1928	418,734	838,826
1929	332,782	817,839
1930	340,007	856,684

Tuberculosis Eradication

No dairy summary would be satisfactory without brief mention of the work of eradicating Bovine Tuberculosis. This movement has been of great importance to the dairy industry in the United States, and especially to Wisconsin. Since 1917 cooperative work between the United States Department of Agriculture and the states has been vigorously pushed with the result that over 75 million head of cattle have been tested to date, with a total of about two million reactors having been discovered. According to the Bureau of Animal Industry about 24 per cent of the counties in the United States are now classed as modified accredited areas, that is, areas having less than one-half of one per cent of the cattle infected with tuberculosis. The work is being continued rapidly and testing is being done in over 400 counties. It appears that as the work progresses the percentage of reactors being tested is decreasing, and it is now much lower than it was ten years ago.

Three states—Maine, North Carolina, and Michigan—have all of their counties listed as modified accredited areas. Several other states such as Indiana, Wisconsin, and Ohio are approaching this point. Fifty-eight out of Wisconsin's seventy-one counties were modified accredited at the beginning of 1931.

TABLE NO. 13. ANNUAL RESULTS OF
TUBERCULIN TESTING OF CATTLE
IN THE UNITED STATES UNDER
THE COOPERATIVE TUBERCULOSIS-
ERADICATION PLAN, 1917-1930

Fiscal year	Cattle tested	Reactors	
		Number	Per cent
1917	20,101	645	3.2
1918	134,143	6,644	4.9
1919	229,878	19,538	4.1
1920	700,670	26,709	4.1
1921	1,366,868	52,768	3.9
1922	2,394,236	82,689	3.5
1923	2,430,849	112,844	3.3
1924	2,212,354	171,658	3.2
1925	7,000,028	214,491	3.1
1926	8,650,780	325,082	3.7
1927	9,700,176	285,981	2.9
1928	11,281,490	262,112	2.3
1929	11,688,720	206,764	1.8
1930	12,845,871	216,923	1.7
Total, 14 years	74,870,694	1,979,911	2.6

CHANGE IN MARKET OUTLETS FOR WISCONSIN CALVES
1920-1930

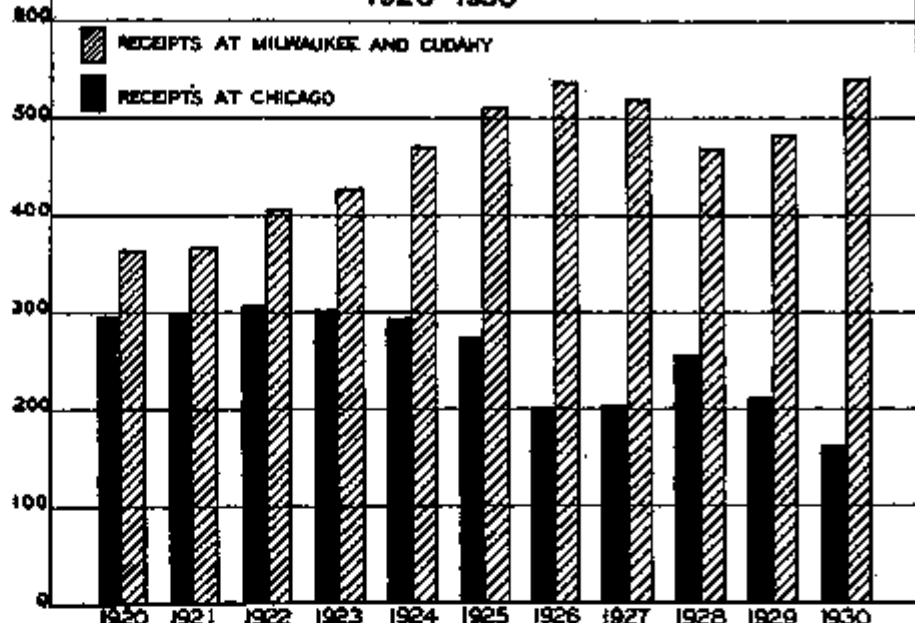


Fig. 25. Milwaukee and Cudahy have become increasingly important as market centers for Wisconsin veal calves, while the position of Chicago has declined in recent years. About 540,000 Wisconsin veal calves were shipped to the two Wisconsin cities during 1930. This number was 63 per cent of the calves marketed from the state. About 80 per cent of the calves sold at the Milwaukee Stockyards are Wisconsin calves.

The accompanying table shows the increasing volume of work done in the United States from 1917 to 1930, and the decreasing percentage of reactors found as the work was expanded.

While Bovine Tuberculosis was widespread in the United States and relatively high percentages of infection were found in some of the older dairy sections, the amount of infection in this country is nevertheless

DISPOSITION OF CALVES ON FARMS OF
WISCONSIN DAIRY REPORTERS-1930

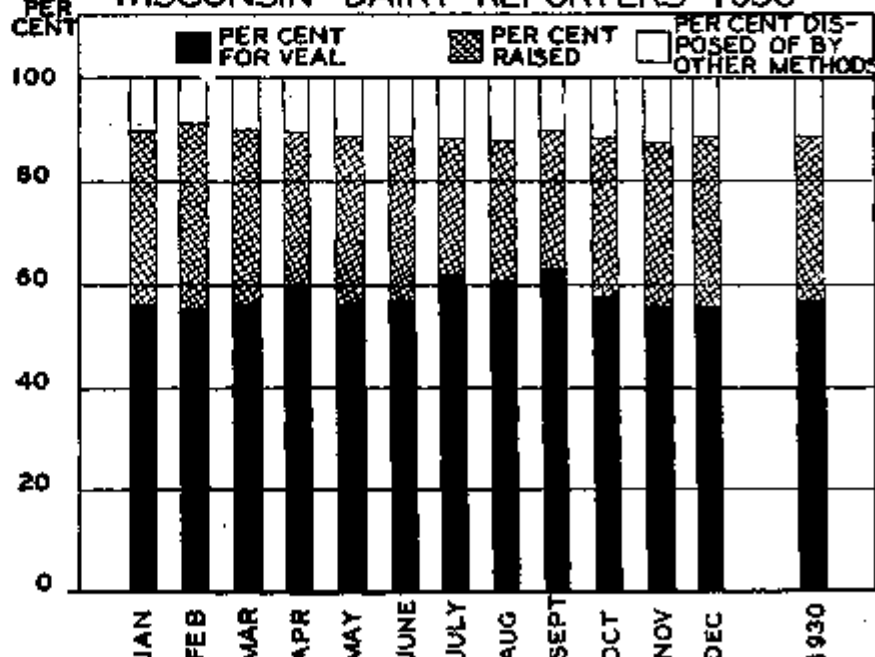


Fig. 26. During 1930, fifty-seven per cent of the calves on the farms of Wisconsin dairy reporters were reported as being vealed, 32 per cent raised, while 11 per cent were disposed of in other ways. The largest proportion of vealing occurred during April and the three late summer months, July, August, and September.

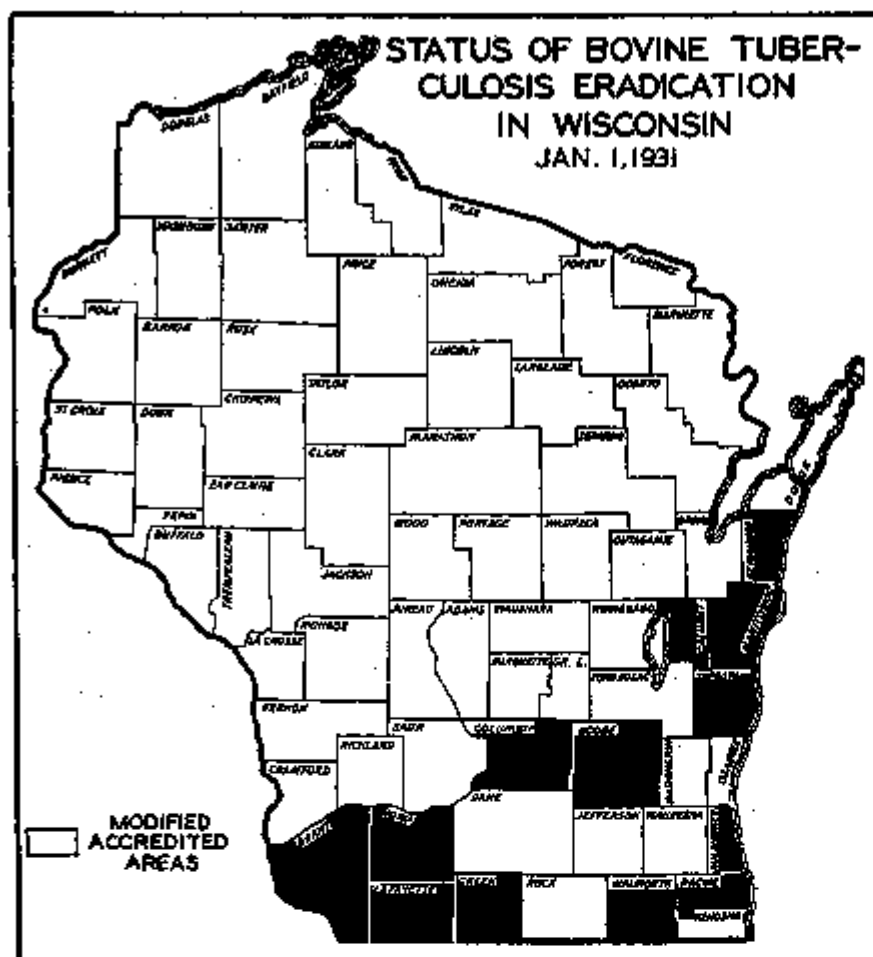


Fig. 27. Fifty-nine of Wisconsin's 71 counties were modified accredited areas on January 1, 1931. These areas have less than one-half of one per cent of cattle infected with tuberculosis. In a relatively short time it is expected that further area work will bring the remaining counties into the white.

low as compared with some of the European countries. Even though the task of eliminating the disease in the United States is a large one, it will probably be completed. In Europe the elimination of the disease would in some areas mean the destruction of a large portion of the cattle which is economically almost impossible, at least for sometime.

The table on page 27 gives the status of the work as of October, 1930 in the different states as it is being conducted under the area test plan.

Tuberculosis Eradication in Wisconsin

The work of eradicating tuberculosis from the dairy herds in Wisconsin has long been in progress. Some of the early work in the United States was done in this state when H. L. Russell interested himself in the problem after having studied it in Europe. A long period of educational work was necessary before the accredited herd plan and the area testing methods were developed. Progress was slow in the beginning, but in recent years the work has gained rapid

headway and Wisconsin will soon join the rank of those states in which each county is modified accredited, that is, having less than one-half of one per cent of infection in its herds.

Large appropriations have been made both by the State Legislature and by Congress for the purpose of carrying on this campaign of tuberculosis eradication. Wisconsin with a relatively large cattle population is approaching the point when nearly the entire state is in modified accredited area. None of the states now so far advanced has as large a cattle population as Wisconsin, and it will be a great achievement when the work in the state is completed. Already the dairy industry is benefiting by the reputation established for the cattle in the state by an extensive export trade which has formed a profitable outlet for surplus dairy animals in the state.

By June 30, 1926, eight counties in Wisconsin were modified accredited areas. By June 30, 1927, four more were added, and by the same date in 1928—16 more, 1929—16 more, 1930—9 more, and during the early months of 1931—8 more, bringing the total for the state to sixty-one counties.

TABLE NO 14. RESULTS OF ORIGINAL AREA TEST IN WISCONSIN COUNTIES* 1920-1930

Year	No. Herds Tested	No. Cattle Tested	Number of Reactions	Percent of Infection
1920----	3,470	57,000	400	.6
1921----	3,475	54,335	577	1.0
1922----	7,867	57,330	676	1.2
1923----	14,845	173,308	2,339	1.34
1924----	15,882	265,569	4,750	1.77
1925----	23,481	379,139	5,734	1.5
1926----	23,191	368,074	6,212	1.66
1927----	35,101	625,736	38,511	6.15
1928----	28,502	445,940	12,340	2.77
1929----	19,210	354,471	7,613	2.14
1930----	19,269	374,142	10,062	2.7
Total.	192,344	3,142,775	88,584	2.8

*Data from Dr. W. Wianicky, Director of Livestock Sanitation for Wisconsin.

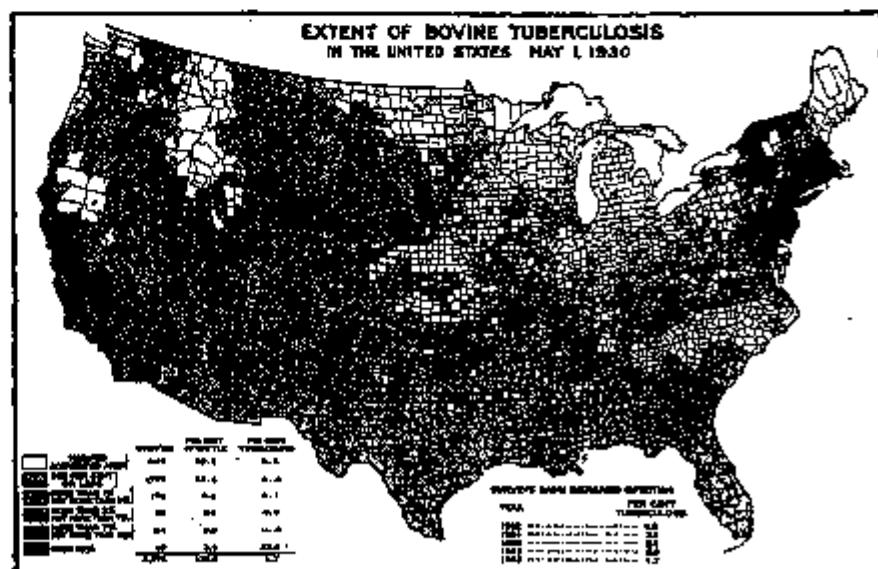


Fig. 28. In the United States the work of eradicating bovine tuberculosis is being pushed in many areas. Three states, Maine, Michigan, and North Carolina are now classed entirely as modified accredited areas. Some of the North Central States particularly Wisconsin and Indiana will soon reach this goal. Existing infection is greatest in a group of Northeastern States and California as shown on the map in dense shading. (Bureau of Animal Industry)

TABLE NO. 15. BOVINE TUBERCULOSIS ERADICATION IN THE UNITED STATES¹

Total tuberculin testing (including retests) of cattle by states, under the Cooperative Tuberculosis-Eradication Plan 1917 to 1930				Status of Tuberculosis-Eradication work in the United States					
State or Territory	Cattle tested	Reactors		Total once-tested-free		Total accredited		Total under supervision	
		Number	Per cent	Herds	Cattle	Herds	Cattle	Herds	Cattle
Maine.....	741,620	7,648	1.0	42,784	221,324	940	18,903	43,755	235,761
New Hampshire.....	639,957	20,802	3.0	2,343	29,603	4,635	61,541	6,147	93,789
Vermont.....	1,340,957	51,845	3.9	2,694	41,585	8,134	157,100	12,827	244,391
Massachusetts.....	484,354	48,255	11.1	4,081	27,704	2,360	29,858	7,245	75,327
Rhode Island.....	53,947	6,772	12.6	249	3,953	134	2,751	718	7,559
Connecticut.....	623,268	45,804	7.3	3,399	14,786	3,470	58,268	7,245	90,950
New York.....	5,725,750	450,189	7.9	27,418	239,900	83,641	828,605	121,268	1,178,099
New Jersey.....	441,000	27,459	6.2	4,366	15,307	4,020	20,432	13,078	45,100
Pennsylvania.....	3,647,482	159,850	4.3	119,092	650,588	6,159	106,212	187,408	1,093,349
North Atlantic.....	12,548,244	823,226	6.1	207,874	1,253,950	113,708	1,281,816	351,702	3,046,455
Ohio.....	2,009,328	84,218	2.8	237,655	1,482,495	823	19,677	241,440	1,890,398
Indiana.....	2,610,474	28,605	1.1	189,592	1,092,895	8,554	96,456	180,897	1,211,814
Illinois.....	5,719,269	215,287	3.8	44,285	324,242	5,582	156,682	184,975	1,604,878
Michigan.....	4,199,108	84,045	1.5	184,119	1,399,003	82	4,167	185,070	1,604,940
Wisconsin.....	8,425,515	166,717	2.0	174,100	2,820,112	11,979	290,158	187,684	2,172,883
Minnesota.....	6,038,794	110,510	2.0	109,501	1,717,051	8,897	175,912	119,803	1,932,199
Iowa.....	7,043,381	182,884	2.6	100,000	2,000,000	2,599	99,333	200,000	2,000,000
Missouri.....	1,087,460	7,809	.7	84,895	741,312	281	9,851	88,545	600,614
North Dakota.....	2,126,721	28,602	1.1	57,736	918,555	5,372	110,168	89,508	1,177,079
South Dakota.....	887,154	14,911	1.7	9,752	179,638	1,250	31,840	11,120	1,132,825
Nebraska.....	2,372,855	20,504	1.1	79,240	1,083,051	113	5,300	79,391	1,048,667
Kansas.....	1,546,823	12,984	.8	102,820	1,068,900	564	19,333	103,205	1,068,942
North Central.....	45,130,139	934,793	2.1	1,353,382	14,878,164	46,254	1,007,172	1,662,013	18,515,126
Delaware.....	204,603	15,008	7.3	4,648	20,317	1,452	21,290	8,769	50,820
Maryland.....	1,032,458	66,319	6.4	17,029	81,855	9,643	121,971	34,551	235,794
Virginia.....	578,298	12,468	1.5	69,274	269,011	985	31,448	64,068	285,482
West Virginia.....	545,323	5,337	1.0	67,699	285,378	840	14,070	69,473	320,378
North Carolina.....	839,864	9,997	.5	256,563	666,112	361	12,312	265,624	681,425
South Carolina.....	339,177	1,589	.5	73,737	217,620	115	4,200	73,904	284,518
Georgia.....	432,806	2,210	.5	87,076	165,638	30	2,244	87,108	187,985
Florida.....	364,413	4,021	1.1	9,267	95,747	106	7,182	2,003	144,053
South Atlantic.....	4,629,948	102,917	2.2	547,371	1,531,479	13,335	215,764	572,068	2,158,125
Kentucky.....	743,515	6,224	.8	80,569	633,864	38	1,529	82,416	587,056
Tennessee.....	511,811	2,752	.4	76,220	509,942	104	6,908	78,446	401,647
Alabama.....	482,974	2,251	.5	19,268	126,959	317	16,746	21,865	148,795
Mississippi.....	327,246	1,453	.4	12,646	161,647	1	1,616	12,581	155,918
Arkansas.....	111,640	1,487	.4	13,901	69,712	15	758	13,919	60,500
Louisiana.....	306,483	7,623	2.0	3,557	62,266	13	925	3,553	55,354
Oklahoma.....	273,936	4,114	1.5	4,274	69,478	251	10,719	4,541	71,560
Texas.....	405,418	4,262	1.1	9,268	84,793	435	19,134	9,983	120,329
South Central.....	3,344,083	29,549	.9	221,462	1,475,543	1,196	55,422	227,298	1,593,859
Montana.....	915,389	7,087	.8	33,541	344,309	65	4,373	87,154	505,208
Idaho.....	769,730	4,318	.6	39,756	437,043	58	2,280	42,096	487,972
Wyoming.....	156,675	1,169	.7	11,735	130,182	4	371	13,113	149,472
Colorado.....	106,482	2,465	2.3	1,361	16,449	180	6,063	2,096	83,864
New Mexico.....	85,037	583	.7	3,309	27,553	24	1,987	3,416	20,046
Arizona.....	311,494	6,961	2.2	8,744	105,531	46	3,691	8,846	108,698
Utah.....	618,954	5,578	.9	11,184	86,258	99	2,906	11,638	90,996
Nevada.....	180,615	2,193	1.2	2,683	55,802	9	606	2,992	73,956
Washington.....	1,357,465	32,100	2.4	46,827	412,501	91	3,614	82,724	825,915
Oregon.....	1,255,223	12,584	1.0	32,290	245,416	548	13,049	69,661	289,525
California.....	699,908	6,948	1.0	8,047	269,010	155	8,822	8,602	380,261
Western.....	6,429,186	82,454	1.3	199,479	2,131,639	1,384	46,157	214,443	2,762,778
Other.....	1,798,194	11,418	0.3						
United States.....	74,679,644	1,979,911	2.6	3,529,596	21,578,395	175,777	2,666,385	3,829,464	28,898,553

¹Includes District of Columbia.²From Bureau of Animal Industry, United States Department of Agriculture.**Dairy Herd Improvement Work**

To remove unprofitable cows from the dairy herd so as to increase the general efficiency of the dairy farm is a matter of importance. In addition to the finding of the poor individuals with the idea of removing them, information is also needed as to the care and satisfactory feeding of those animals which are left in the herd. In the raising of calves it is also important that the production of the parent stock is known, for it costs no more to raise a calf from good producers than from others. To guide dairymen in meeting these problems has been the chief work of dairy herd improvement associations.

These associations have been an important factor in dairy progress. The

movement began about twenty-five years ago, and has spread widely throughout the dairy regions of the United States. On January 1, 1930 there were 1,143 dairy herd improvement associations reported to the Bureau of Dairy Industry from forty-seven states. Because of depressed economic conditions there probably have been some declines in the numbers of associations in various states since that time, but the work continues with promise of even greater expansion.

Most of the associations are located in the Northern and Northeastern Dairy Region of the United States with the greatest concentration in the Upper Mississippi Valley. Wisconsin ranks first with 142 associations, Min-

nesota second with 120, and Iowa third with 101. The bulk of the remaining organizations are found between these states and the Atlantic Seaboard with Michigan, Pennsylvania, and Indiana having large numbers. The number of associations by states is given below:

Table No. 16.

No. of Dairy Herd Improvement Associations by States, Jan. 1930

Alabama.....	7
Arizona.....	4
Arkansas.....	1
California.....	33
Colorado.....	15
Connecticut.....	4
Delaware.....	1
Florida.....	2

Georgia	1
Idaho	18
Illinois	59
Indiana	51
Iowa	101
Kansas	22
Kentucky	12
Louisiana	2
Maine	5
Maryland	9
Massachusetts	11
Michigan	90
Minnesota	120
Mississippi	2
Missouri	36
Montana	9
Nebraska	28
Nevada	0
New Hampshire	7
New Jersey	16
New Mexico	1
New York	51
North Carolina	7
North Dakota	9
Ohio	38
Oklahoma	25
Oregon	14
Pennsylvania	88
Rhode Island	1
South Carolina	3
South Dakota	12
Tennessee	10
Texas	7
Utah	8
Vermont	23
Virginia	20
Washington	15
West Virginia	7
Wisconsin	142
Wyoming	1
TOTAL	1,143

*Data incomplete

In Wisconsin the cow testing movement has been an important one. The 142 associations in the state are largely located in the counties where butter, condensery products, and market milk require most of the farm milk supply. A comparison of the map shown herewith which gives the location of the dairy herd improvement associations in Wisconsin with the maps showing farms producing milk for cheese on page 53 shows that relatively few of these associations are in the important cheese areas. Their location seems to be mostly in the areas producing milk for butter, condensery products, and city market milk.

At the beginning of 1930 slightly over three per cent of the cows in Wisconsin were in dairy herd improvement associations. Since that time there has been some increase in the movement of cows in the state, as well as a slight decrease in the number of associations, due to the pressure of economic conditions; so that the percentage of the state's cows in

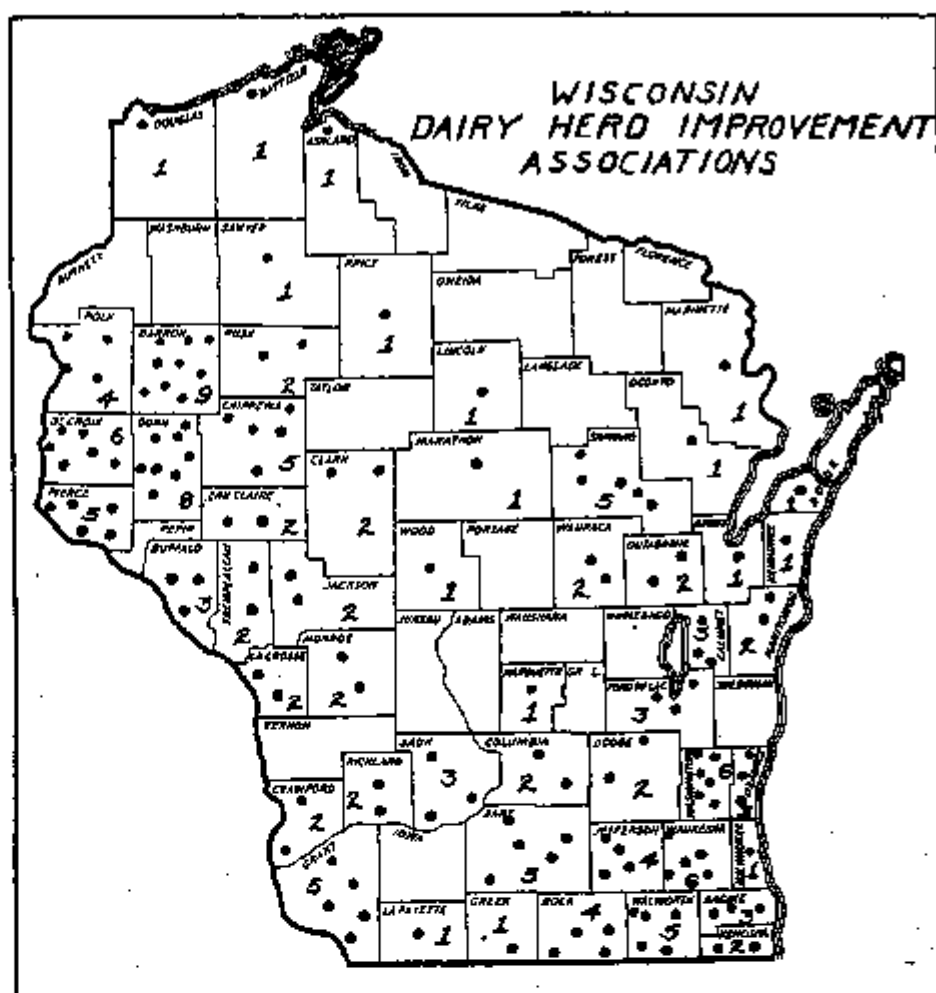


Fig. 29. Dairy Herd Improvement Associations in Wisconsin are quite unevenly distributed. They are largely located in the regions of creameries, condenseries, and market milk. In the cheese areas there are relatively fewer of them. In 1930 Barron County led with nine associations.

these herds probably has not increased during the past year. These organizations, however, have been an important force in spreading better

dairy methods and in general herd improvement. The number of associations in Wisconsin counties is shown in Figure 29.

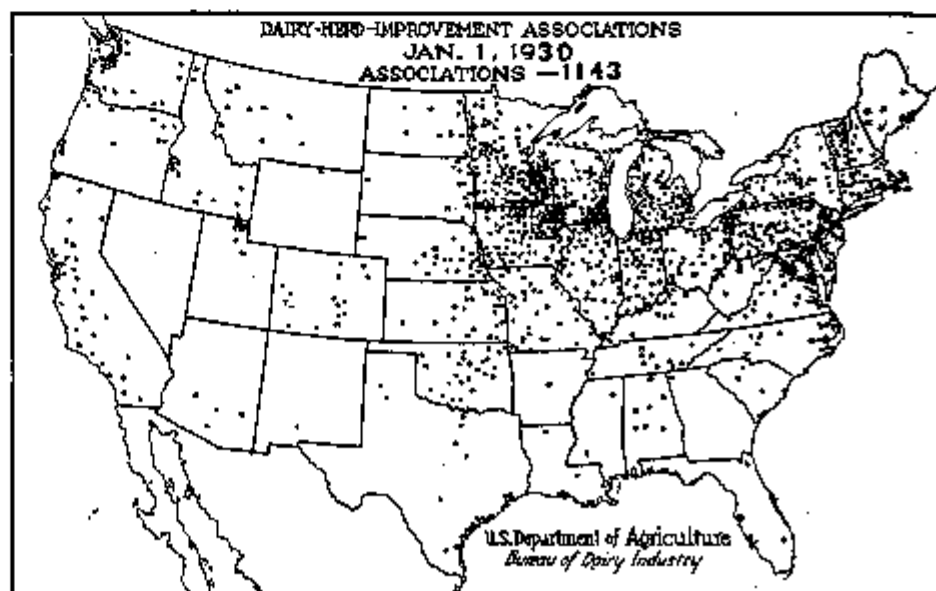


Fig. 30. Dairy Herd Improvement Associations in the United States are largely located in the Northeastern dairy region which includes the Upper Mississippi Valley and the states eastward to the Atlantic Ocean. Wisconsin led with 142 of these associations in 1930.

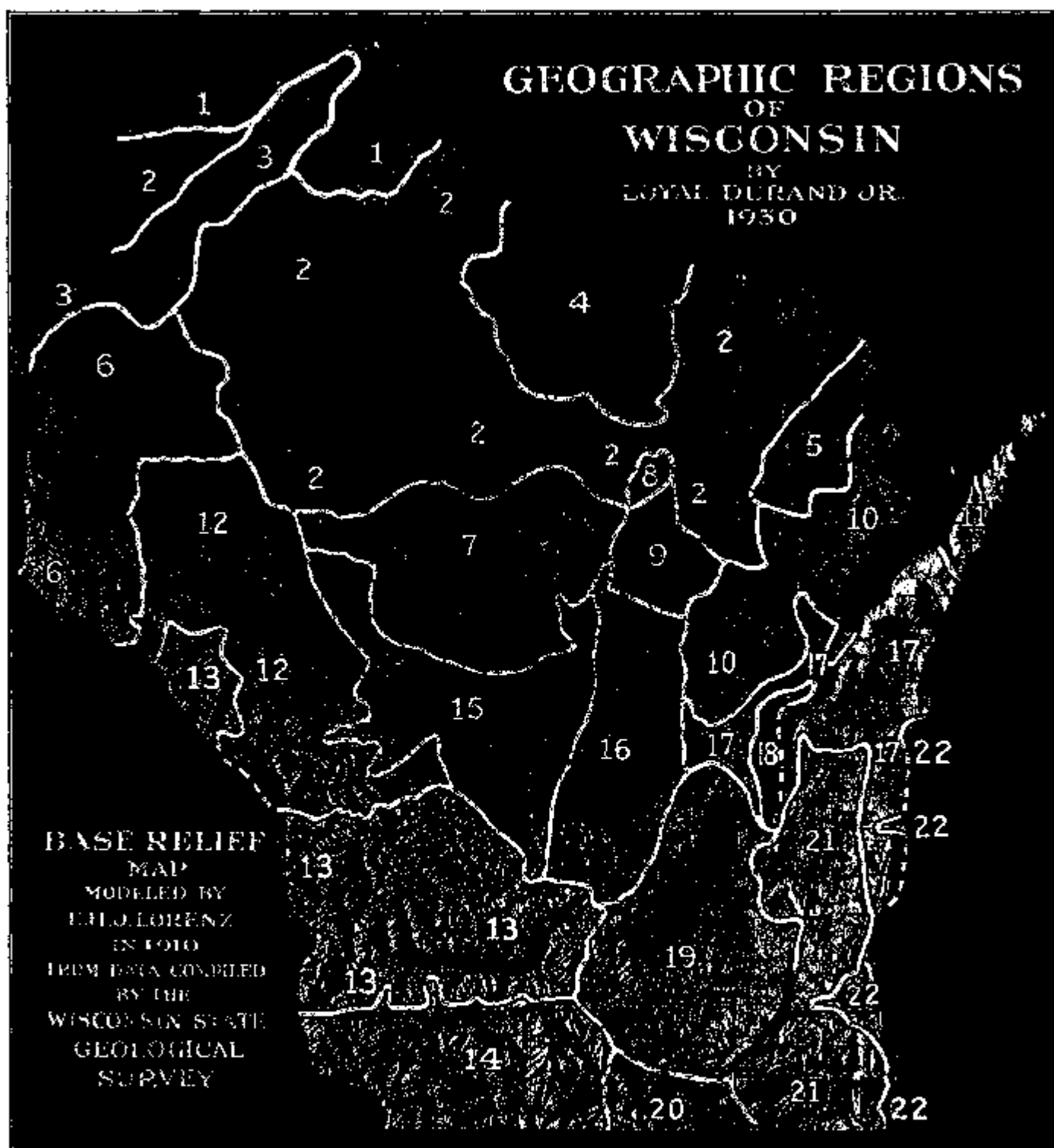


Fig. 31. The new map above shows geographic regions of Wisconsin and is used by courtesy of Dr. Loyal Durand, Jr. Types of agriculture follow to a considerable extent these geographic areas, and some of the regional variations in the dairy industry can be partly explained by geographic factors.

GEOGRAPHIC REGIONS OF WISCONSIN

1. Lake Superior Lowland

The Lake Superior Lowland has unity of soils, location, topography, and climate. The level lowland is mantled with heavy red clay soils of the Superior series, and the plain is rather markedly affected by its location next to the cool waters of Lake Superior. On the south the region terminates at an escarpment which rises rather abruptly from the level of the clay plain, and stands from four hundred to five hundred feet above it. The region is a growing dairy section, and fields and pastures are being reclaimed from the woodlands and cutovers that cover the greatest share of the lowland. The soils are excellent for grass, and the long but relatively cool summer,

with one hundred thirty to one hundred fifty days in the growing season, is distinctly favorable for milk production. Two dairy centers of promise have arisen, one near the western end of the region, sending fluid milk to the Duluth-Superior city market, and the other south of Ashland, where butter and cheese are manufactured. In this region the major portion of the milk used in manufacture is made into butter.

2. The Northern Forest, Hay, and Dairy Region

The Northern Forest, Hay and Dairy Region covers approximately the northern one-fifth of Wisconsin, although it is not the only province in that part of the

state. The region is characterized by a landscape that is composed of woodland, cut-over land, grass and pasture land, and hay land. The scattered agricultural patches within the region are predominantly devoted to hay; at least 50 per cent of the small total acreage of cultivated land is in hay, and usually 80 per cent or more of the cropped area is in grass. Non-agricultural districts are characterized by areas of standing timber, second growth timber, cut-over fire-blasted waste, swamps, and marshes. The Keweenaw loams and the other soils have largely been derived from glaciation of the underlying crystalline bedrock and local areas are often bowldery. The cool summer and relatively short growing season of 100 to 120 days do not retard the dairy industry, but handicap the maturing of corn, although it generally may be matured to a silage state. The sale of milk accounts for about 60 per cent of the gross farm income throughout the region, and several important dairy districts are in process of development. Cheese factories and creameries are expanding into the region from more southerly dairy sections, and are aiding in more rapid development locally by supplying an outlet other than that of cream shipping, which is still a common outlet for the milk produced by the settlers. While most of the milk is used for butter manufacture, the American cheese industry has been the most rapidly developing branch of dairying in recent years, particularly in the southern part of the region.

3. Northwestern Sand Region

The Northwestern Sand Region is a long narrow strip of country stretching from the high central interior of the Bayfield Peninsula southwestward to the St. Croix River in Burnett County. Sand is the keynote of the region, and the outer boundaries are at the edge of the sandy soils, classified in the Plainfield and Vilas series. The sands are of glacial origin. The generally level, but locally rough, country has a vegetative cover that is a mixture of open grassland, grassland with a few scattered jack pine and scrub oak, or a heavy growth of jack pine. At present, agricultural utilization accounts for but 8 per cent to 5 per cent of the region, and dairying is negligible.

4. Northern Lakes Country

Recreational utilization of land characterizes the Northern Lake Country, a sandy, lake-studded area that covers practically all of Vilas and Oneida Counties, and portions of adjoining political units. The flat sand and sandy-loam plains are largely in woodland and cut-overs, but a locally intensive specialized potato farming is found. Dairying is relatively unimportant, furnishing but 38 per cent of the income in Oneida County as against 37 per cent furnished by the sale of potatoes. The summer tourist provides a local seasonal milk market for the very few farms of the region.

5. Northeastern Sand Region

Like its counterpart in Northwestern Wisconsin, the Northeastern Sand Region is a unit as a result of its soils. Jack pine and scrub oak cover large areas, while other districts are open and treeless. Extensive glacial outwash flats and low rolling sandy moraines are crossed by numerous swift-flowing clear streams. There are few agricultural areas, and dairying within the region is unimportant.

6. Northwestern Dairy Region

The Northwestern Dairy Region is located in the northwestern portion of Wisconsin, adjacent to the Mississippi and St. Croix Rivers and the state of Minnesota. The northern part of the province is covered by the young Wisconsin glacial drift, whereas the southern portion is covered by the deposits of a pre-Wisconsin ice sheet. The province is one wherein the dairy industry, in conjunction with general farming, is outstanding; half of the gross farm income of the province as a whole is derived from the sale of milk, and in one county (Barron) 58 per cent of the revenue is obtained from this source. The region is well settled and large modern dairy barns, silos, and milk houses are characteristic landscape features. The southern portion of the province, lying on the back slope of the Lower Magnesian Gneiss is a highly developed dairy and grain country, whereas the dairy industry alone is more outstanding in the Polk and Barron County portion, north of the limestone. The Northwest-

ern Dairy Region entered dairying at a later date than some other portions of the state, a fact reflected in large and modern dairy structures. The province is part of the great butter district of Western Wisconsin, and is further characterized by large co-operative creameries. American cheese production is an important and growing outlet for milk in the western portion of the region, while condenseries are found in the Barron County section.

7. Central Dairy Region

The Central Dairy Region is one of the most highly specialized dairy districts of Wisconsin. It lies south of the terminal moraine of the Wisconsin glacier, but on the crystalline bedrock of the Northern Highland portion of the state in a section with 120 to 130 days in the growing season. The Colby silt loam soils of the western portion of the region have long been noted as among the best grass soils of the state, and have been important aids to the preeminence of dairying within the province. The region is characterized by long, gently erosional slopes that lead down to deeply cut, but not sharply incised, valleys. Gently rounded hills separate the valleys from one another. Where the land flattens out on occasional divides, the heavy soils are apt to be poorly drained, but are not marshy. The most prominent cultural features of the region are tremendous red dairy barns that leave no question as to the agricultural emphasis of the farmers. Over 60 per cent of the gross farm income is derived from the sale of milk. The crossroads cheese factory is as typical of the Central Dairy Region as are the barns and the large herds of cattle. While the area has increased rapidly in milk production, the output of cheese and butter has remained about constant, because new milk supplies have tended to go into condensery products.

8. Antigo Flats

The Antigo Flats, a region largely in Langlade County, is a vast level outwash plain, spreading fan-wise from the interlobate angle between two portions of the Wisconsin glacier. The level landscape is broken by closely spaced farmsteads and numerous woodlots. The farmers of the Flats specialize in the raising of potatoes and in the dairy industry. Per unit of area the district is the most intensive potato region of the state, for from 15 per cent to 25 per cent of the cultivated land is devoted to the crop, and 25 per cent of the farm income is derived from the sale of potatoes. Dairying is also important, supplying 47 per cent of the farm income, relatively less than in surrounding regions, but high nevertheless. The milk reaches crossroads cheese factories or else is marketed in Antigo. This region and the Central Dairy Region are the two most densely settled geographic regions of the Northern Highland of Wisconsin.

9. West Shawano Upland

The West Shawano Upland is a region of rocky wooded drumlins and rolling wooded moraines, rising from generally level cleared outwash plains. Physiographically it is within the Northern Highland of Wisconsin, and stands higher above sea level than regions to the south and southeast. Thirty per cent of the area has been reclaimed from the hardwood forest. The region has been settled long enough so that it has passed through the frontier stage, and large dairy barns, numerous cheese factories, and dairy herds characterize the landscape. The province "bridges the gap" between the lake shore American cheese district and the American cheese district of the Central Dairy Region, and the Upland itself is noted for its cheese. In 1928, 72 per cent of the farms sent milk to cheese factories.

10. Northeastern Dairy Region

The Northeastern Dairy Region lies on the sandy loam soils and sedimentary rocks of Northeastern Wisconsin, west of the Fox-Winnebagos Valley and of Green Bay. It is characterized by a well-developed and intensive agriculture, hinging on the dairy industry; there is a gradation in development from southwest to northeast, the former part of the province having been farmed longer, but all districts are well developed. The Lower Magnesian and Galena-Black River Limestone Gneisses are insignificant topographic features throughout the region, for the whole area is covered with glacial drift. The ice sheet,

which advanced from the northeast in this vicinity, carried sandy loam soils on to the limestone bedrock, so that the region is a soils unit. The soils support good hay and pasture lands, and over half of the gross farm income is derived from the sale of milk. The region is part of the lake shore American cheese district of the state. Condenseries have recently entered active competition for milk in the region, with the result of a decline in cheese making.

11. Door Peninsula Fruit and Resort Region

The Door Peninsula Fruit and Resort Region is found upon the cuestas of brilliantly white Niagara Limestone between Green Bay and Lake Michigan. The escarpment slope rises abruptly from the waters of Green Bay to a height of from forty to two hundred feet. From this high point there is a long gradual decline to the level of Lake Michigan. The region is made up of three parallel landscapes, which occasionally merge for a short distance, again to separate. These are: (1) the Green Bay shore and its environs back for a mile or two, dominantly a landscape made up of fruit orchards, wooded lands on the steep face of the cuestas, and summer cottages and resorts along the shore; (2) the Lake Michigan shore and its environs for a mile or two inland, a region characterized by active low sand dunes, cedar covered sand flats and old sand dunes, peat marshes and an occasional resort or orchard; and (3) the central region of the peninsula, wherein the landscape is made up of fields, cattle, barns, and woodlands, all centering around the dairy industry. Within this area cheese is manufactured, especially toward the northern tip of the peninsula, while milk destined for condenseries leaves the southern part. The length of the growing season in this peninsular environment, 180 days, is somewhat offset by its coolness. No month within the region averages as high as 70 degrees.

12. The West-Central Maturely Dissected Region of Valley Culture

The West-Central Maturely Dissected Region of Valley Culture includes the northern portion of the Driftless Area together with districts to the north that are thinly covered with a pre-Wisconsin glacial drift, and has a natural landscape not unlike that of the unglaciated portion of the province. The region is floored by the Cambrian series of sandstones and has silt loam, sandy loam, and loessial soils. Broad, undulating, cultivated valley floors and steep-sided narrow wooded ridges characterize the province. Nearly every farmstead and practically all of the cultivated land is in the valleys except locally where the ridges have been eroded to rolling knobs. The region as a whole has reached an advanced stage of maturity so that the ridges have been reduced to a minimum of width, and most of them have a narrow inverted "V" summit, offering little available land for cultivation. A little less than half of the total land area is crop land. Pastures occupy side hill sites and follow stream courses. The region is a very important part of the great butter area of Western Wisconsin, and the counties within the province are among the most important butter-producing counties of the state. Butter-making has continued to expand in the region, and has suffered little encroachment from other branches of dairying.

13. Western Maturely Dissected Region of Ridge and Valley Culture

The Western Maturely Dissected Region of Ridge and Valley Culture contains the roughest and most dissected land in the state. All of the region, except the eastern part of the Baraboo Range, lies in the Driftless Area, and the entire province has been reduced to slope; stream valleys are incised from two to five hundred feet below adjacent uplands, and have been cut into the Cambrian series of sandstones that underlie the Lower Magnesian Limestone. Limestone caps the steep-sided ridges, the crests of which are undulating to gently rolling. The two topographic sites best suited for cultivation are the ridge crests and the valley bottoms; the settlement pattern of the province follows these two land forms, and there are well-developed ridge communities and important valley communities. Cultivated land, town sites, and farmstead sites are on ridgetop or in valley bottom; the steep rocky intervening land is utilized as pasture or woodlot, with

patches of waste land. The region is not geographically continuous, for an "outlier", having similar natural and cultural landscapes, lies northwest of the main part of the province. The hay crop is important in the rolling fields, and corn is not of major rank, despite the 130 to 150 day growing season. Usually just enough corn for silage is raised. Dairying is important within the region; there is much hill pasture as well as excellent pasturage in the portions of the valley bottoms that are subject to flooding. Butter is the product in much of the area, while cheese factories are common in Richland County, and condenseries are found in some of the towns. Dairying is expanding in the region; condenseries and creameries are being built in the northern portions, while the cheese industry is increasing in the southern sections.

14. The Southwestern Maturely Dissected Region of Ridge Culture, and Associated Valley Culture

Military Ridge, the crest of the cuestas developed upon the Galena-Black River Limestone, is at the northern border of the Southwestern Maturely Dissected Region of Ridge Culture, and Associated Valley Culture. South-flowing streams that rise on Military Ridge, have dissected the back slope of the limestone country. Broad, undulating uplands, spreading out between narrow V-shaped valleys, furnish most of the land suitable for cultivation. Toward the eastern portion of the region, especially in Green County, the ridges have been considerably reduced in area by river erosion and much valley bottom land has been developed. These valleys, if broad enough, are cultivated, just as are the adjacent ridges. If the valleys are very narrow, their pasture grasses support dairy herds. The dairy industry is not equally developed within the province; it is vastly more important and more intensive toward the east, in Green and Southwestern Dane Counties, than it is toward the Mississippi River. However, it is expanding westward, and new dairy manufacturing plants are being established in the Grant County district. The eastern intensive dairy district, centering on Green County, is noted for the production of Swiss and Limburger cheese, and has a dairy cattle population per unit area that is about as large as in any other region of Wisconsin. Tremendous dairy barns are prominent features of the cultural landscape. The Western portion of the region has a mixed dairy and cornbelt (beef cattle, hogs, corn for grain) type of agriculture, with a growing emphasis on dairying. The people of the western portion of the province came from the Eastern United States or from England, and have never been as intensive dairymen as the Swiss. However, they are gradually taking up the industry. The type of product in the Grant County area is butter and American cheese, in contrast to the foreign cheese of the eastern portion of the region. The relatively less intensive dairying near the Mississippi is shown by the fact that in 1928 the Grant County farmer received 37 per cent of his gross farm income from milk and 32 per cent from the sale of hogs. In contrast the Green County farmer in the same year received 56 per cent from milk and 20 per cent from hogs.

15. Central Sand Plains

The Central Sand Plains lie west of the terminal moraine of the Wisconsin glacier; the extreme northwestern portion of the plains are thinly mantled with a pre-Wisconsin glacial drift. Sand flats and extensive marshes compose the area. Jack pine and scrub oak are characteristic trees. The skyline is almost as featureless as that of the sea, except for isolated sandstone crags, buttes and mesas, left by the retreat of the Cambrian escarpments. This is the only level portion of the Driftless Area. Population is sparse and dairying is unimportant, although the milk check makes up a relatively large share of the income of the few farmers. The region is noted for certain specialized crops, particularly cranberries.

16. Central Glaciated Sand Country.

The Central Glaciated Sand Country is entirely within the area of young, or Wisconsin, glaciation. It has rolling topography and sand or sandy loam soils. Certain crops such as rye and potatoes reflect the soils environment. Three sub-units may be distinguished, (1) a northern sub-region of potato specialization, and dairy farming, (2) a central sub-region of rye specialization, and (3) a southern sub-region of general farming. Dairying in the region

is not absolutely important as compared to other geographic regions of the state; it is merely relatively important. Yet the sale of milk produced 40 per cent to 45 per cent of the gross farm income, and nowhere within the region does the proportion of gross farm income contributed by the specialized crops make half as much as the amount of gross income contributed by the sale of milk. Creameries are the principal outlet. The northern part of the region is one of the chief potato-raising sections of the state.

17. Eastern Lake Shore Red Clay Dairy Region

The Eastern Lake Shore Red Clay Dairy Region lies in East Central Wisconsin. The most distinctive natural feature about the province is its heavy red clay soil, uniform in texture and color over practically the entire area. Only local patches of sandy loams or silt loams interrupt the clays. The heavy clays have a subdued relief, and the country is nearly level or very gently rolling. Steep slopes, except along some stream and lake banks, are so rare as to be conspicuous and outstanding when they occur. The most distinctive cultural feature of the province is the dairy industry. If the vista is extensive enough, the type view will always include a cheese factory, for the region is the heart of the American cheese district of lake shore Wisconsin. Large herds and barns, many silos, in fact an average of almost one silo per farm, and other visible landscape elements attest the importance of dairying. The growing season ranges from 140 to 170 days in length. Toward Lake Michigan the summer is somewhat cooler than in the interior of the region. In the northeastern portion of the region, as in Kewaunee County, the adjacency of Lake Michigan and the heavy clays that are retentive of moisture in the spring, somewhat handicap the raising of corn, and less than 10 per cent of the cultivated land of this portion of the region is in corn. Conversely, the same conditions are excellent for hay, and from 50 per cent to 60 per cent of the cultivated land is in hay. By far the largest portion of the milk produced in the province reaches crossroads cheese factories, but condenseries have begun to enter the area.

18. Fox-Winnebagi Urban Belt

The Fox-Winnebagi Urban Belt is a geographic region characterized by urban use of the land. Within the province there is a concentration of population and industries within a restricted area. The region stretches from Fond du Lac at the south to Green Bay at the north, and is broken only at one point, where the Fox is a placid stream and does not supply waterpower. The cities of the province are located on Lake Winnebago or along the course of lower Fox, between the lake and Green Bay. Fond du Lac, Oshkosh, Neenah, Menasha, Appleton, and Green Bay are the largest centers.

19. Upper Rock River Valley Dairy Region

The Upper Rock River Valley Dairy Region is one of the outstanding regions of Wisconsin wherein there is intensive specialization in dairying. The region is a gently rolling glaciated country, beset with large red dairy barns, substantial farm houses, and rectangular fields. In general, 50 per cent to 60 per cent of the area is under cultivation, a high average for the state. The 140 to 170 day growing season is warm, with two months averaging above 70 degrees. Hay, corn, and oats make up the bulk of the crops, except in the specialized tobacco and pea districts, where these two cash crops enter the landscape picture. The drumlin is the land form responsible for the greatest physical divergence within the province, for the region contains one of the largest drumlin districts of the United States. These long oval and elliptical hills are often in woods or pasture, only the gentler slopes being cultivated. Pasture is also furnished by marshy swales and by fields in rotation. Dodge County is famous for brick cheese, and is one of the leading foreign-type cheese sections of the state. Creameries, condenseries, and fluid milk plants shipping milk to Milwaukee and Chicago also furnish outlets for milk. The latter type of plant is be-

ginning to encroach upon the region, which at present lies on the outer margin of the city milk sheds.

20. Rock County Dairy-Corn Belt

The Rock County Dairy-Corn Belt is transitional between the intensive dairy regions north of it in Wisconsin and intensive corn regions southward in Illinois. The province is an extensive level or undulating plain, much of which was originally treeless except along the streams. The eastern portion of the province contains one of the largest original prairies of the state and is characterized by black prairie soils. The prairie is a large outwash plain. West of the Rock River is an undulating section covered by old drift, wherein dairying is relatively more important than on the prairies, and Corn Belt farming relatively less important than it is on the prairie. The long growing season of the province, 170 days, and the warm summer months, permit maturing of corn, and make possible the Corn Belt type of mixed farming. However, dairying is encouraged by adjacency to the Chicago fluid milk market, and nearly every town of the region has a large receiving station and tank cars or tank trucks are common within the province. In 1928, 37 per cent of the farms of Rock County were producing city market milk, largely for Chicago.

21. Southeastern Dairy Region

The Southeastern Dairy Region is one of the old dairy sections of Wisconsin, and dairying has reached an advanced stage of specialization. All of the counties included with the region obtain at least half of their gross farm income from the sale of milk, and in Waukesha County the figure is 62 per cent. The cattle population of the province is as dense as in any geographic region of Wisconsin, and the production of milk likewise concentrated. The province has a gently undulating glacial surface, but the smooth slopes give way to abrupt sage, pits, knobs, hills, and depressions in the Kettle Moraine country. The Kettle Moraine extends from Manitowoc County southwestward through Sheboygan, Fond du Lac, Washington, and Waukesha Counties. Holy Hill and Lapham Peak are well known high points within the bulky wooded gravel ridge. The rolling surface of the entire geographic region is dominated by large red dairy barns that rise from concrete or bowlder foundations. Silos are attached to practically every barn, and are so common a feature of the cultural landscape that they are expected, and a farm is more conspicuous by the absence of a silo than by its presence. A little more than half of the total area is cultivated, the non-cropped land being in pasture and woodland. The milk from the large and well-kept herds is disposed of in the fluid form except in the extreme northern portion of the region, where American cheese factories predominate. The chief markets are Milwaukee and Chicago, the latter city tapping the southern portion of the province. However, all of the immediately adjacent cities on the shore of Lake Michigan provide a market for fluid milk. In turn, the nearness of markets stimulates milk production. The production of condensed and evaporated milk is important along the western side of the region. The condensery and fluid milk areas merge and overlap in part.

22. Lake Shore Urban and Manufactural Belt

The Lake Shore Urban and Manufactural Belt occupies a narrow strip along Lake Michigan in Southeastern Wisconsin. The region is characterized by an urban type of landscape and urban use of the land. The province stretches from the Illinois state line to Two Rivers; it is continuous from the southern border of the state through Milwaukee to Port Washington. Thence there are two northern "outliers", the Sheboygan-Kohler-Sheboygan Falls urban center and the Manitowoc-Two Rivers center. The large city populations furnish a considerable market for Wisconsin dairy products, both in fluid and in manufactured form. Kenosha, Racine, Milwaukee, Sheboygan, and Manitowoc are the largest centers, but the urban landscapes extend beyond the purely arbitrary city boundaries.

TABLE NO. 17. MILK PRODUCTION AND PRODUCING COWS IN WISCONSIN—REVISED ESTIMATES BY COUNTIES 1924-1928

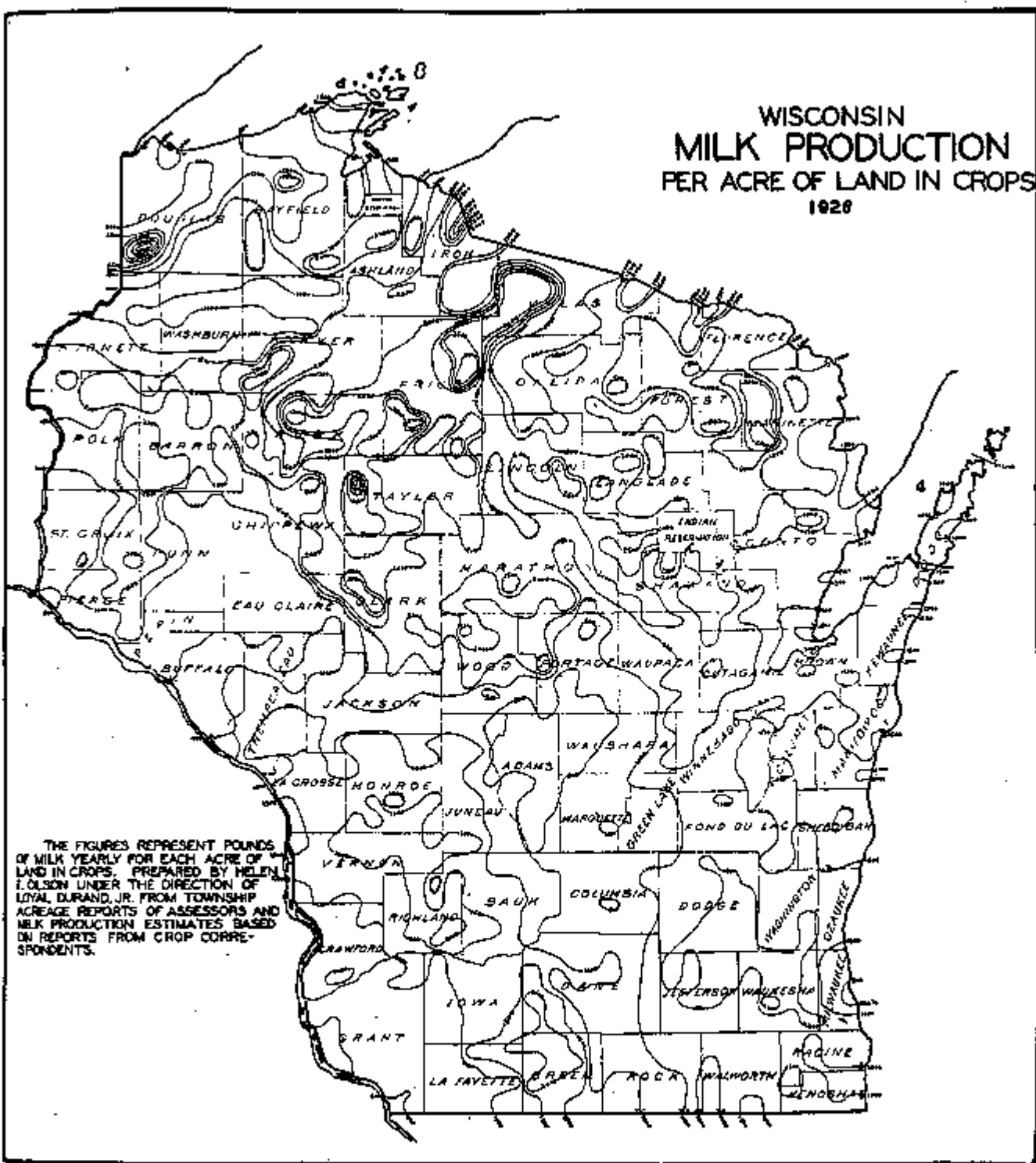
County	1924			1925			1926			1927			1928		
	Produc- ing cows	Produc- tion per cow	Milk produc- tion	Produc- ing cows	Produc- tion per cow	Milk produc- tion	Produc- ing cows	Produc- tion per cow	Milk produc- tion	Produc- ing cows	Produc- tion per cow	Milk produc- tion	Produc- ing cows	Produc- tion per cow	Milk produc- tion
	Num- ber	Cwt.	Million lbs.	Num- ber	Cwt.	Million lbs.	Num- ber	Cwt.	Million lbs.	Num- ber	Cwt.	Million lbs.	Num- ber	Cwt.	Million lbs.
Barron.....	43,500	56	244	43,500	56	244	43,400	59	256	43,700	59	258	43,100	61	275
Bayfield.....	9,300	49	43	9,500	49	47	9,300	52	48	9,300	53	48	9,300	54	50
Burnett.....	11,600	45	52	12,000	45	54	12,000	47	56	11,800	51	60	11,300	51	58
Chippewa.....	36,200	52	204	36,900	51	203	39,000	53	211	40,100	52	208	38,500	54	208
Douglas.....	3,500	49	43	3,600	47	43	3,700	50	43	3,500	52	44	3,700	54	47
Folk.....	38,100	48	183	38,300	48	180	37,400	52	194	38,900	53	196	38,700	54	209
Franklin.....	18,900	47	65	14,800	48	71	16,000	52	78	14,300	56	76	14,500	54	78
Grant.....	4,600	48	23	4,700	46	23	4,700	51	24	4,600	51	23	4,600	53	24
Green.....	9,500	49	42	9,500	49	43	9,500	53	46	9,500	52	44	8,200	55	45
Northwest Dist.	177,244	56.7	904	186,944	56.7	917	179,280	53.5	936	177,740	53.9	958	178,944	56.6	994
Ashland.....	6,500	46	29	6,500	42	27	6,300	46	26	6,400	49	31	6,700	50	34
Clark.....	61,600	50	308	62,300	50	311	61,000	52	323	66,800	52	341	68,100	53	350
Iron.....	2,500	45	11	2,400	44	11	2,400	48	12	2,400	48	13	2,400	47	11
Lincoln.....	12,700	49	62	13,000	49	64	13,300	52	66	12,300	52	63	12,400	53	71
Marathon.....	60,100	51	307	62,700	51	320	66,300	53	346	65,800	54	361	64,700	56	362
Menasha.....	2,900	48	14	3,000	50	15	3,200	51	16	3,000	52	16	3,400	53	18
Oneida.....	11,000	47	52	11,200	48	53	11,100	50	56	10,800	51	55	11,300	52	58
Pierce.....	18,400	49	90	19,200	50	96	19,800	52	103	20,900	53	109	20,800	53	109
Taylor.....	4,600	48	23	4,700	46	23	4,700	51	24	4,600	51	23	4,600	53	24
Washburn.....	9,500	49	42	9,500	49	43	9,500	53	46	9,500	52	44	8,200	55	45
Northwest Dist.	177,244	56.7	904	186,944	56.7	917	179,280	53.5	936	177,740	53.9	958	178,944	56.6	994
Florence.....	1,800	48	9	1,900	48	9	1,800	49	7	1,800	49	7	1,700	51	9
Forest.....	2,100	48	10	2,300	48	12	2,700	49	13	2,500	48	12	2,500	49	13
Lengdale.....	12,700	50	64	13,700	52	66	12,500	54	68	12,300	53	66	12,300	53	65
Marquette.....	16,800	48	80	16,100	48	77	14,800	51	76	14,500	52	75	15,100	52	79
Oconto.....	25,700	49	126	25,100	48	123	24,000	52	125	23,900	52	124	24,000	54	130
Shawano.....	38,100	50	196	38,300	52	204	40,200	53	226	40,300	54	226	38,300	56	214
Northeast Dist.	98,040	49.2	485	97,540	54.4	491	95,704	53.2	513	95,104	53.7	510	93,944	54.2	509
Buffalo.....	37,300	47	126	37,500	46	126	37,400	50	137	37,000	51	138	38,300	53	139
Dunn.....	39,900	50	200	39,800	51	200	39,000	53	207	39,300	51	200	37,900	53	201
Eau Claire.....	21,100	49	103	21,000	49	103	20,400	51	104	20,300	51	104	18,900	53	100
Jackson.....	33,400	48	108	33,300	46	107	32,700	49	109	32,200	49	109	32,400	50	112
La Crosse.....	22,100	47	104	22,500	45	106	23,300	50	116	23,000	50	115	21,800	51	112
Monroe.....	37,100	50	186	38,000	51	194	37,800	53	200	37,800	52	197	37,000	52	196
Pepin.....	9,400	47	39	9,800	45	42	8,900	51	45	8,700	51	44	8,800	52	48
Pierce.....	26,000	49	127	27,400	51	142	28,700	53	153	27,600	53	148	27,600	54	151
St. Croix.....	38,400	48	184	39,500	49	194	38,900	50	194	37,600	51	192	36,600	53	194
Traverse.....	34,400	47	163	34,800	49	171	34,400	52	179	34,100	53	181	34,300	54	185
West Dist.	278,184	48.2	1,341	281,604	49.1	1,387	281,504	51.3	1,443	277,904	51.3	1,428	271,344	52.8	1,433
Adams.....	5,400	40	34	5,000	41	38	7,500	44	33	7,300	41	30	6,800	43	31
Green Lake.....	14,700	45	66	15,100	45	70	15,400	49	75	15,200	51	78	15,100	52	79
Juneau.....	19,000	47	90	19,600	47	92	19,800	49	96	19,600	52	97	19,800	53	95
Marquette.....	11,000	44	48	10,800	44	48	10,500	46	48	10,300	47	50	10,000	48	46
Portage.....	21,300	45	94	21,700	45	98	21,100	49	103	20,900	51	107	21,300	53	111
Waupaca.....	36,900	54	199	36,200	54	206	36,300	54	212	36,400	53	204	36,200	57	206
Waushara.....	17,500	47	82	17,200	47	81	16,700	49	82	16,000	49	78	15,800	50	77
Wood.....	30,600	51	158	31,200	51	159	31,100	52	162	30,800	53	161	28,800	53	158
Central Dist.	159,480	48.4	779	161,580	48.9	792	161,640	50.4	813	157,040	51.2	805	151,940	52.5	796
Brown.....	32,400	54	175	32,000	54	178	32,700	52	170	32,500	56	182	33,600	57	182
Calumet.....	25,100	56	141	25,800	57	148	26,800	57	162	26,700	58	155	26,000	58	151
Dock.....	19,800	47	92	19,100	48	93	18,400	51	94	18,100	50	90	17,400	52	92
Fond du Lac.....	32,400	58	304	32,100	58	307	31,100	60	301	30,700	60	304	31,000	61	311
Kewaunee.....	22,000	53	117	22,500	53	126	23,000	58	133	22,800	57	130	22,300	58	129
Manitowish.....	41,300	59	239	41,800	59	247	43,200	60	255	42,700	59	252	43,200	60	253
Outagamie.....	41,300	55	227	41,200	56	231	40,800	58	235	40,000	56	224	40,600	58	235
Sheboygan.....	39,300	58	228	39,300	59	232	39,300	60	238	39,400	61	240	39,400	62	244
Winnebago.....	29,600	60	178	29,800	59	176	29,300	58	170	28,800	59	167	27,000	61	165
East Dist.	302,804	56.1	1,701	305,544	56.3	1,737	304,740	57.4	1,749	301,240	57.9	1,744	299,344	59.2	1,773
Crawford.....	19,400	44	86	20,300	44	92	21,800	44	96	20,800	43	89	20,200	43	87
Grant.....	37,500	43	161	41,900	44	184	48,600	45	218	46,900	44	206	44,100	45	198
Iowa.....	36,800	43	173	37,800	43	181	41,700	50	208	39,700	51	202	39,500	49	174
Lafayette.....	29,100	47	137	31,200	47	147	32,200	45	145	31,200	49	153	32,000	50	160
Richland.....	34,200	50	171	34,600	50	175	35,500	53	189	34,800	53	184	33,800	54	183
Sauk.....	42,400	48	204	43,400	49	213	43,900	53	233	42,400	55	238	39,300	54	213
Vernon.....	40,300	49	197	45,000	49	211	45,000	51	220	43,700	51	223	42,400	53	220
Southwest Dist.	238,944	47.2	1,138	252,744	47.6	1,201	268,604	49.1	1,318	259,840	49.3	1,296	247,344	50.0	1,234
Columbia.....	21,300	45	140	21,700	45	143	20,400	49	145	20,600	47	139	20,400	47	143
Dane.....	75,800	50	378	78,900	50	393	75,800								

TABLE NO. 18. THE INTENSITY OF DAIRYING IN WISCONSIN COUNTIES

County	Milk Production per Acre Land			Milk Cows per 100 Acres Land			*All Cattle per 100 Acres Land		
	In 20 prin- cipal crops 1927	In farms (1925 Census)	In land area (1925 Census)	In 20 prin- cipal crops 1927	In farms (1925 Census)	In land area (1925 Census)	In 20 prin- cipal crops 1927	In farms (1925 Census)	In land area (1925 Census)
	Pounds	Pounds	Pounds	Number	Number	Number	Number	Number	Number
Barron	1,526	629	463	27.2	11.2	8.6	37.1	16.2	11.7
Bayfield	1,405	308	63	23.0	5.0	1.0	32.8	9.5	1.7
Burnett	1,241	289	113	22.3	8.3	2.1	35.7	8.2	3.2
Chippewa	1,279	628	367	20.9	8.6	5.3	39.2	13.7	9.3
Douglas	1,228	298	58	25.2	6.1	1.1	36.5	7.4	1.6
Polk	1,602	495	362	25.9	9.9	7.2	37.1	14.1	10.3
Rusk	1,708	359	123	26.6	7.7	2.6	50.5	10.6	3.8
Sawyer	1,427	288	85	23.1	4.7	1.6	35.4	7.1	2.9
Waushara	1,061	350	89	19.3	4.6	1.6	29.2	5.9	2.4
Northwest District	1,344	435	171	24.8	7.9	3.1	35.3	11.1	4.5
Ashland	1,170	300	51	24.9	6.4	1.1	26.5	9.1	1.5
Clark	1,706	659	414	22.0	12.3	7.8	45.5	17.6	11.0
Iron	1,044	259	22	22.7	5.9	1.5	31.2	7.3	1.7
Lanolin	1,505	369	116	21.9	7.8	2.5	44.4	10.8	3.4
Marathon	1,570	349	389	28.2	10.2	6.9	40.4	14.1	9.6
Oneida	680	219	21	17.0	5.5	1.5	17.0	5.3	1.8
Price	2,057	326	77	40.6	6.5	1.5	59.4	9.4	2.2
Taylor	1,873	441	186	39.6	9.3	3.5	52.2	12.2	4.6
Vilas	1,033	310	13	23.7	4.7	1.3	30.3	6.0	1.4
North District	1,589	487	157	30.9	9.5	3.9	42.9	12.1	4.2
Florence	1,024	231	32	21.3	4.3	1.7	39.5	6.6	1.9
Forest	991	210	22	19.9	4.2	1.4	29.0	6.1	1.6
Langlade	1,264	400	121	24.0	7.6	2.3	36.3	11.5	3.5
Marquette	1,122	305	99	21.2	6.8	1.9	29.6	8.1	2.6
Oconto	1,111	419	182	22.1	8.3	2.6	31.8	11.9	5.1
Shawano	1,457	528	298	25.6	9.3	5.2	36.4	13.2	7.4
Northeast District	1,249	469	137	23.3	7.4	2.4	33.3	10.9	3.7
Buffalo	894	340	814	17.8	5.6	6.1	27.9	10.6	9.8
Dunn	938	400	347	18.7	7.9	6.9	29.0	12.4	10.7
Bay Claire	732	262	259	18.0	6.2	4.6	32.2	10.7	7.3
Jackson	929	201	176	18.1	6.6	3.8	28.6	9.6	5.6
La Crosse	1,027	414	348	21.6	6.7	7.3	31.2	12.6	10.6
Monroe	1,170	485	338	22.3	8.3	6.5	33.6	12.6	9.8
Popple	744	213	290	14.1	6.0	6.5	22.7	9.6	8.9
Pierce	936	474	450	17.1	8.7	3.2	27.6	14.0	13.3
St. Croix	830	488	435	15.5	9.1	3.1	25.4	14.9	13.3
Traverse	910	401	382	18.3	8.0	7.7	28.9	12.7	12.1
West District	910	399	339	17.7	7.7	6.4	27.8	12.2	10.1
Adams	353	117	72	8.5	2.4	1.6	14.3	4.4	2.7
Green Lake	738	381	345	16.0	7.8	7.0	22.0	11.9	10.8
Juneau	899	309	181	10.6	6.7	4.0	27.4	9.4	5.5
Marquette	658	207	185	18.1	4.1	3.6	21.7	6.8	6.0
Portage	668	286	220	14.1	5.8	4.5	20.6	8.5	6.8
Waupaca	1,244	568	454	22.5	9.3	7.7	32.3	18.9	11.4
Waushara	536	288	181	12.1	4.9	2.9	18.4	7.5	6.0
Wood	1,499	521	818	26.8	9.3	6.7	40.6	14.2	8.7
Central District	899	337	246	16.9	6.5	4.7	25.4	9.7	7.1
Bergen	1,244	684	596	22.9	12.6	11.0	28.0	15.9	13.9
Calumet	1,363	785	720	24.7	14.2	13.0	32.4	18.8	17.1
Dodge	1,003	420	334	18.1	7.6	6.0	25.7	10.8	8.6
Fond du Lac	1,193	711	650	21.6	12.9	11.8	29.8	17.7	16.2
Kewaunee	1,114	688	661	21.4	11.4	10.8	27.8	14.8	14.0
Manitowish	1,500	801	733	29.6	13.6	11.5	32.6	17.9	16.4
Ottawa	1,264	667	558	24.2	12.8	10.7	30.6	16.2	13.5
Shelburne	1,424	823	744	24.6	14.1	12.8	32.6	18.7	16.9
Winnebago	1,298	739	629	19.2	11.1	9.5	30.6	17.4	14.8
East District	1,283	699	617	22.5	12.3	10.8	30.5	16.6	14.7
Crawford	711	243	221	18.9	6.4	5.9	29.7	10.1	9.3
Grant	707	231	208	14.3	6.7	6.0	20.6	14.3	12.9
Iowa	939	292	331	20.3	8.8	7.0	27.0	15.1	12.8
Lafayette	773	297	354	18.4	9.5	8.7	28.4	14.6	13.4
Richland	1,294	473	435	28.0	10.3	9.5	37.7	13.9	12.8
Sauk	1,030	462	405	19.0	8.2	7.5	30.0	13.2	11.8
Vernon	1,114	433	297	24.1	9.4	8.6	35.5	18.8	13.7
Southwest District	918	388	349	19.5	8.5	7.5	32.3	13.7	12.3
Columbia	845	322	295	14.5	7.2	6.8	22.8	11.3	10.3
Dane	986	536	511	17.4	9.3	9.0	28.3	16.0	14.7
Dodge	1,340	768	670	22.4	12.6	11.2	33.0	19.8	18.5
Orsen	1,297	737	682	25.3	13.3	12.3	34.3	18.2	16.8
Jefferson	1,309	680	627	24.6	12.8	11.8	28.4	18.9	17.6
Rock	876	536	305	14.7	9.3	8.5	22.9	14.5	13.2
South District	1,048	593	540	19.2	10.7	9.7	29.1	16.1	14.7
Kenosha	1,046	600	484	17.3	9.9	8.0	28.3	15.0	12.1
Milwaukee	782	486	288	16.9	10.0	6.2	13.9	11.2	6.9
Ozaukee	1,180	733	673	19.1	12.1	11.1	27.5	17.4	16.0
Racine	1,121	655	609	18.8	9.7	9.0	28.8	15.6	14.8
Walworth	1,197	666	623	16.9	11.0	9.8	28.5	17.1	15.8
Washington	1,219	668	627	21.4	11.5	11.0	28.5	15.4	14.6
Waukesha	1,274	716	653	22.5	12.7	11.6	31.0	17.5	15.9
Southeast District	1,162	646	589	19.5	11.2	9.9	28.1	16.1	14.2
State	1,189	487	399	20.7	9.0	5.4	30.8	13.4	8.3

*Cattle numbers as estimated for Jan. 1, 1928 unserved used in this computation. Data from Bulletin No. 90 and Supplement No. 1 to Bulletin No. 90.

WISCONSIN MILK PRODUCTION PER ACRE OF LAND IN CROPS 1928



WISCONSIN MILK PRODUCTION PER ACRE OF LAND IN CROPS

Fig. 32. In order to obtain some information of the relative production of milk as compared with the acres in crops in different parts of the state a special study has been made. The above map shows the results of this work and indicates the density of milk production as compared with the acreage of land in crops. The lines are drawn to show pounds of milk per acre of land in crops in the different areas.

Township figures were used as the basis for the map. Acreage figures for 1927 prepared by Fred J. Kessler in 1928 for his thesis were used because total acreage in crops does not change materially from year to year. The number of cows per township was revised, on the basis of the assessors' returns for 1928, to correspond to the total county figures as determined in the latest tuberculosis count, so that the number of cows might be somewhat comparable to acreage figures used. The average production of milk per cow was a county figure for 1928 taken from Table No. 17, Supplement No. 1 to Bulletin No. 90. A few adjustments were made for counties in the central and region where conditions within a county vary a great deal. The total milk production of a township, obtained by multiplying the revised figure for cow population by the county average production per cow, was divided by the number of acres of crops in the township. The result, the number of pounds of milk per acre of land in crops, was placed upon a base map of Wisconsin in proper township position. Lines join areas of equal production per acre and give in general the picture of conditions existing in Wisconsin in regard to the relationship

between milk production and cropped land. It must be borne in mind that estimates for cow numbers were used and that statistical enumerations of any sort are only relatively accurate.

The map shows that there is a relationship between areas of intensive dairy industry and areas where production is high per acre of cropped land. It also shows areas where the dairy industry is less intensive due to sandy soils or competition of other agricultural products. The Green County foreign cheese area, the Dodge County cheese section, the cheese center of Sheboygan County all stand out as areas where milk production is high per acre of land in crops. The Colby Silk Loam Dairy region also stands out as a region of high production. The sandy area of Central Wisconsin has a low production of milk per acre of land in crops, due to the utilization of the cropped land for rye and potatoes. The tobacco producing section of eastern Dane County has a relatively low production of milk per acre of cropped land. Another low area in Southwestern Wisconsin is a section where beef cattle are fed. Similarly, many other sections of the state may be related to some factor of the natural or cultural environment, or to competition by crops not destined for feed for dairy cows. Northern Wisconsin has intermingled regions of very high and very low production which show the sparse settlement of this little developed section of the state. Dairying is not intensive anywhere in this section, but a few cows grazing in the woods may bring the production per acre of land in crops very high, because of the small acreage of crops.

TABLE NO. 19.

ESTIMATES OF WISCONSIN PRODUCING COWS, MILK PRODUCTION, PRICES AND FARM VALUE OF MILK, 1929-1930*

County	1929					1930				
	Producing cows	Production per cow	Total milk production	Farm price of milk per cwt.	Farm value	Producing cows	Production per cow	Total milk production	Farm price of milk per cwt.	Farm value
	Head	Cwt.	Cwt.	Dollars	Dollars	Head	Cwt.	Cwt.	Dollars	Dollars
Barron	80,000	62	8,100,000	2.20	6,520,000	51,900	61	8,165,000	1.73	5,477,007
Bayfield	9,800	56	528,000	1.95	1,059,600	9,400	54	507,600	1.53	776,828
Burnett	11,800	50	590,000	2.08	1,206,400	11,800	48	566,400	1.64	926,896
Chippewa	39,800	54	2,138,000	2.15	4,595,950	41,000	54	2,214,000	1.73	3,839,226
Douglas	9,800	55	538,000	2.13	1,124,640	9,800	51	504,800	1.71	863,379
Folk	43,100	51	2,198,100	2.03	4,462,143	43,800	55	2,414,800	1.55	3,742,375
Frank	15,900	55	874,500	2.12	1,853,940	15,900	55	873,000	1.72	1,570,390
Sawyer	4,800	54	259,200	1.99	515,908	4,800	53	254,400	1.50	381,630
Waushara	8,800	54	475,200	2.10	997,920	9,200	54	496,800	1.50	794,820
Northwest District	192,900	55.3	10,676,600	2.12	22,596,401	198,500	55.4	11,037,500	1.66	18,365,445
Ashland	7,400	53	392,200	2.10	823,620	7,400	53	392,200	1.55	607,810
Clark	61,700	59	8,540,300	1.97	7,171,391	64,800	56	3,600,300	1.32	5,475,214
Iron	2,500	50	125,000	1.98	247,500	2,500	51	127,500	1.65	210,375
Lincoln	14,300	55	786,500	2.11	1,659,515	14,700	58	779,700	1.62	1,262,162
Marathon	68,700	57	3,915,900	1.95	7,686,005	70,700	57	4,029,100	1.51	6,085,149
Oneida	4,000	55	220,000	2.15	473,000	4,200	55	231,000	1.57	362,679
Pierce	12,800	53	687,800	1.95	1,302,210	13,100	52	681,200	1.63	1,110,355
Taylor	22,600	52	1,167,800	1.94	2,323,732	23,400	54	1,253,600	1.54	1,938,380
Village	1,900	50	95,000	2.20	209,000	2,000	52	104,000	1.50	156,400
North District	196,700	54.4	11,048,600	1.98	21,545,973	202,200	55.4	11,209,300	1.54	17,236,978
Fluorose	2,200	51	112,200	2.12	237,664	2,400	52	124,800	1.51	200,328
Forest	2,800	50	140,000	1.87	261,600	2,800	50	140,000	1.53	214,200
Langlade	12,900	55	709,500	2.02	1,423,190	13,800	55	751,800	1.46	1,141,140
Manitowish	18,900	55	929,500	1.92	1,794,640	17,000	54	918,000	1.55	1,422,900
Oneida	14,800	56	1,487,200	1.79	2,626,388	26,900	56	1,478,600	1.46	2,160,070
Shawano	39,200	58	2,273,600	1.88	4,374,368	40,800	57	2,308,800	1.50	3,462,720
Northwest District	189,200	56.2	5,632,400	1.99	10,618,150	182,900	55.4	5,782,300	1.51	8,441,988
Buffalo	27,100	55	1,490,500	2.10	3,120,050	27,800	49	1,387,100	1.58	2,160,038
Dunn	38,200	51	1,948,200	2.19	4,286,648	38,900	49	1,908,100	1.68	9,203,368
Bau Claire	18,800	52	982,000	2.04	1,962,480	18,800	52	977,600	1.59	1,564,384
Jackson	24,800	49	1,205,400	1.65	2,250,590	25,400	50	1,270,000	1.46	1,854,200
La Crosse	23,000	50	1,150,000	2.26	2,599,000	24,000	49	1,174,000	1.33	2,169,090
Monroe	29,800	53	2,068,800	2.06	4,304,768	31,700	50	2,085,000	1.66	3,461,100
Pepin	8,800	53	463,800	2.05	948,740	9,500	52	489,200	1.61	800,712
Pierce	29,800	56	1,652,000	2.18	3,598,320	29,900	54	1,614,600	1.81	2,922,436
St. Croix	39,400	56	2,205,400	2.19	4,832,016	41,400	53	2,194,200	1.77	3,888,734
Traverse	37,800	56	2,105,800	1.98	4,189,088	39,400	48	1,891,200	1.59	3,007,008
West District	286,600	53.2	15,252,500	2.11	32,131,550	297,000	54.4	14,981,000	1.67	25,040,910
Adams	7,000	42	294,000	2.00	588,000	7,200	44	316,800	1.57	497,376
Green Lake	10,000	54	540,000	2.02	1,101,728	10,000	55	540,000	1.51	1,445,070
Juneau	20,800	53	1,078,400	2.05	2,205,595	20,800	54	1,122,200	1.65	1,853,380
Marquette	10,800	48	518,400	2.00	1,036,800	11,300	48	541,800	1.65	897,670
Portage	24,700	49	1,210,300	1.90	2,339,570	26,600	50	1,330,000	1.55	2,081,500
Waupaca	38,800	56	2,221,400	2.10	4,844,940	40,500	58	2,331,000	1.63	3,800,605
Waubesa	18,500	51	941,500	2.05	1,925,075	17,200	50	860,000	1.87	1,590,200
Wood	29,700	54	1,608,800	1.84	2,950,992	30,500	52	1,586,000	1.49	2,363,190
Central District	163,900	52.8	8,661,700	2.04	17,281,780	171,200	52.7	9,024,400	1.56	14,128,744
Brown	37,800	57	2,154,600	2.00	4,309,200	39,800	53	2,082,900	1.57	3,270,159
Calumet	29,800	59	1,748,200	2.11	3,736,332	27,100	59	1,671,900	1.62	2,583,054
Dodge	18,600	55	1,023,000	1.92	1,918,080	19,400	55	1,067,000	1.49	1,580,830
Font du Lac	43,800	51	2,239,800	1.88	4,348,736	37,500	50	1,930,000	1.53	2,975,500
Kewaunee	23,000	59	1,359,000	1.93	2,591,950	26,000	58	1,480,000	1.52	2,204,000
Manitowish	44,800	52	2,338,400	1.94	4,640,372	46,100	51	2,352,100	1.52	3,474,352
Outagamie	44,800	59	2,643,200	2.01	5,312,332	46,100	61	2,812,100	1.55	4,443,119
Shoshone	42,800	54	2,311,200	1.90	4,316,160	44,100	62	2,739,000	1.50	4,107,450
Winnebago	28,800	61	1,756,800	2.03	3,566,144	29,700	63	1,871,100	1.56	2,913,918
East District	323,700	60.1	19,447,600	1.97	38,366,597	334,300	59.5	19,395,300	1.54	30,788,393
Crawford	21,800	46	1,009,800	1.88	1,892,282	22,400	45	1,008,000	1.49	1,501,920
Grant	49,000	48	2,352,000	1.87	4,128,960	47,900	48	2,294,400	1.45	3,326,350
Iron	25,800	49	1,265,400	1.89	2,397,596	27,400	49	1,352,600	1.45	2,440,350
Lafayette	35,200	50	1,760,000	1.87	3,291,200	34,600	47	1,628,200	1.45	2,357,990
Richland	35,800	54	1,933,800	1.88	3,693,984	38,400	51	1,958,400	1.50	2,934,600
Seneca	42,000	53	2,226,000	2.06	4,588,900	44,700	58	2,389,100	1.60	3,799,560
Vernon	43,000	54	2,322,000	2.08	5,042,560	47,900	51	2,427,600	1.67	4,051,322
Southwest District	262,700	50.9	13,373,600	1.94	25,683,122	278,900	49.8	13,264,700	1.61	20,813,633
Columbia	32,700	52	1,700,400	2.05	3,485,820	32,800	50	1,645,000	1.50	2,467,000
Dane	73,700	54	3,925,800	2.12	8,322,596	77,400	54	4,179,800	1.65	6,985,340
Dodge	64,800	50	3,240,000	1.95	7,044,000	66,800	51	4,019,800	1.60	6,029,800
Green	46,800	57	2,678,800	1.98	5,293,184	48,900	56	2,688,000	1.64	4,139,820
Jefferson	43,800	52	2,281,200	2.06	4,693,960	44,900	52	2,345,800	1.61	3,822,096
Rock	39,800	58	2,307,800	2.34	5,607,316	41,500	62	2,579,200	1.94	5,003,563
South District	299,200	57.9	17,318,100	2.08	36,669,862	319,100	57.6	17,858,300	1.62	28,958,394
Kenosha	14,700	60	882,000	2.76	2,434,320	15,800	60	948,000	2.52	2,318,360
Milwaukee	9,800	59	528,200	2.72	1,428,224	8,800	61	518,800	2.42	1,254,770
Ozaukee	19,900	62	1,234,800	2.20	2,744,840	17,900	60	1,089,000	1.84	1,965,120
Walworth	19,900	58	1,118,800	2.86	3,241,794	20,800	60	1,218,000	2.03	2,472,460
Washington	37,800	62	2,349,600	3.52	8,280,960	40,000	61	2,440,000	2.91	7,094,400
Winnebago	31,100	63	1,958,800	2.11	4,124,123	32,800	61	1,982,800	1.73	3,429,723
Winchester	41,000	61	2,501,000	2.46	6,132,460	42,400	60	2,544,000	2.05	5,215,200
Southeast District	169,100	61.3	10,357,900	2.36	24,484,147	178,800	60.5	10,489,800	2.62	21,558,115
State	1,994,000	54.0	111,759,900	2.05	229,310,802	2,064,000	56.1	113,661,000	1.62	184,669,947

*Preliminary

TABLE NO. 20.

MONTHLY AND ANNUAL BUTTERFAT TEST OF MILK RECEIVED AT WISCONSIN DAIRY PLANTS, BY COUNTIES, 1930*

County	January	February	March	April	May	June	July	August	September	October	November	December	Weighted annual average
Barron	3.8	3.7	3.6	3.6	3.6	3.6	3.7	3.7	3.9	4.0	4.0	4.0	3.75
Bayfield	4.0	4.0	3.6	3.6	3.6	3.6	3.7	3.7	3.9	4.0	4.0	4.0	3.93
Bernett	3.7	3.7	3.6	3.6	3.6	3.6	3.7	3.7	3.9	4.0	4.0	4.0	3.71
Chippewa	3.8	3.7	3.6	3.6	3.6	3.6	3.7	3.7	3.9	4.0	4.0	4.0	3.72
Douglas	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	3.84
Polk	3.6	3.6	3.5	3.4	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.7	3.59
Rusk	4.0	3.9	3.7	3.7	3.6	3.6	3.6	3.6	3.7	3.8	3.8	3.7	3.92
Sawyer	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.60
Waushara	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.79
Northwest District	3.8	3.7	3.6	3.6	3.6	3.6	3.7	3.7	3.8	4.0	3.9	3.9	3.73
Ashland	3.8	3.8	3.6	3.6	3.6	3.6	3.7	3.8	3.9	4.0	4.0	4.0	3.73
Clark	3.6	3.6	3.5	3.5	3.5	3.6	3.6	3.6	3.9	4.0	4.0	4.0	3.64
Iron	3.8	3.7	3.6	3.6	3.7	3.7	3.7	3.8	3.9	4.1	4.0	3.9	3.79
Lincoln	3.9	3.8	3.8	3.6	3.6	3.7	3.7	3.8	4.0	4.2	4.2	4.1	3.82
Marathon	3.7	3.6	3.6	3.6	3.5	3.6	3.6	3.7	3.8	3.9	3.9	3.8	3.66
Oneida	4.0	3.8	3.6	3.7	3.7	3.6	3.6	4.0	4.2	4.3	4.3	4.1	3.95
Pierce	3.9	3.9	3.9	3.6	3.6	3.6	3.6	4.0	4.1	4.1	4.2	4.0	3.90
Taylor	3.8	3.8	3.8	3.6	3.6	3.6	3.6	3.7	3.8	3.8	3.9	3.9	3.72
Vilas	4.0	3.8	3.8	3.7	3.6	3.6	3.6	4.0	4.2	4.3	4.3	4.1	3.95
North District	3.7	3.6	3.6	3.5	3.5	3.6	3.6	3.7	3.9	3.9	3.9	3.8	3.68
Florence	3.8	3.7	3.6	3.6	3.6	3.6	3.6	3.7	3.9	3.9	4.0	3.9	3.71
Forest	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.8	3.8	3.9	3.8	3.68
Langlade	3.9	3.8	3.7	3.6	3.6	3.7	3.7	3.8	4.0	4.0	4.2	4.0	3.81
Marquette	3.6	3.5	3.5	3.4	3.5	3.5	3.5	3.6	3.8	3.9	3.9	3.8	3.60
Oconto	3.6	3.6	3.5	3.4	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.7	3.61
Shawano	3.6	3.6	3.5	3.5	3.5	3.5	3.6	3.6	3.8	3.9	3.9	3.8	3.63
Northeast District	3.7	3.6	3.5	3.5	3.5	3.5	3.6	3.6	3.8	3.9	3.9	3.8	3.64
Buffalo	3.8	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.8	4.0	4.0	3.9	3.68
Dunn	3.8	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.8	4.0	4.0	3.9	3.78
Rau Claire	3.8	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.8	4.0	4.0	3.9	3.61
Jackson	3.5	3.5	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.8	3.8	3.7	3.53
La Crosse	3.6	3.5	3.4	3.4	3.5	3.5	3.5	3.6	3.8	3.9	3.9	3.8	3.58
Monroe	3.6	3.5	3.4	3.4	3.5	3.5	3.5	3.6	3.8	4.0	4.1	4.0	3.61
Portage	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.8	4.0	4.0	3.9	3.66
Waupaca	3.8	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.8	4.0	4.0	3.9	3.73
Waushara	3.6	3.6	3.6	3.4	3.4	3.4	3.4	3.6	3.7	3.8	3.8	3.7	3.65
Wood	3.6	3.6	3.4	3.4	3.4	3.4	3.4	3.6	3.7	3.8	3.8	3.7	3.65
Central District	3.6	3.6	3.5	3.5	3.5	3.5	3.6	3.6	3.8	3.9	3.8	3.8	3.63
Brown	3.6	3.5	3.5	3.4	3.4	3.4	3.5	3.5	3.6	3.8	3.8	3.8	3.55
Calumet	3.6	3.5	3.4	3.4	3.4	3.4	3.5	3.5	3.7	3.8	3.8	3.8	3.55
Door	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.7	3.7	3.7	3.57
Fond du Lac	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.7	3.63
Kewaunee	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.7	3.65
Manitowish	3.6	3.5	3.5	3.4	3.4	3.4	3.5	3.5	3.6	3.7	3.7	3.6	3.57
Ontonagon	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.7	3.60
Shelburne	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.5	3.5	3.4	3.38
Winnebago	3.8	3.5	3.5	3.4	3.4	3.4	3.4	3.5	3.6	3.8	3.8	3.7	3.53
East District	3.6	3.5	3.9	3.4	3.4	3.6	3.5	3.5	3.6	3.8	3.8	3.7	3.60
Crawford	3.8	3.6	3.4	3.4	3.5	3.4	3.5	3.6	3.7	3.7	4.0	3.9	3.60
Grant	3.7	3.6	3.5	3.4	3.4	3.4	3.4	3.5	3.6	3.8	3.8	3.8	3.58
Iowa	3.8	3.6	3.5	3.3	3.3	3.3	3.3	3.4	3.5	3.8	3.8	3.8	3.54
Lafayette	3.9	3.7	3.5	3.4	3.3	3.3	3.3	3.4	3.5	3.8	4.0	4.1	3.58
Richland	4.0	3.7	3.6	3.5	3.5	3.5	3.5	3.6	3.8	4.0	4.0	4.1	3.70
Sauk	3.7	3.6	3.4	3.4	3.4	3.4	3.4	3.5	3.7	3.8	3.8	3.7	3.63
Vernon	4.3	4.1	3.9	3.6	3.6	3.6	3.6	3.6	4.0	4.1	4.2	4.2	3.85
Southwest District	3.8	3.6	3.5	3.1	3.4	3.4	3.4	3.5	3.6	3.9	4.0	3.9	3.66
Columbia	3.4	3.4	3.4	3.3	3.4	3.4	3.5	3.5	3.5	3.6	3.8	3.4	3.44
Dane	3.5	3.4	3.4	3.3	3.3	3.3	3.4	3.5	3.5	3.6	3.8	3.6	3.43
Dodge	3.4	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.6	3.8	3.4	3.37
Green	3.6	3.4	3.3	3.1	3.3	3.3	3.3	3.4	3.5	3.6	3.8	3.6	3.33
Jefferson	3.6	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.8	3.8	3.6	3.68
Rock	3.8	3.7	3.6	3.6	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.6	3.68
South District	3.5	3.4	3.4	3.3	3.4	3.4	3.4	3.4	3.8	3.6	3.6	3.5	3.46
Kaposhia	3.8	3.8	3.8	3.6	3.7	3.7	3.7	3.7	3.7	3.8	3.8	3.6	3.73
Milwaukee	3.9	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.8	3.8	3.8	3.67
Ozaukee	3.4	3.4	3.3	3.3	3.4	3.3	3.3	3.4	3.4	3.6	3.8	3.6	3.44
Racine	3.5	3.3	3.5	3.5	3.4	3.4	3.4	3.5	3.6	3.8	3.8	3.8	3.49
Walworth	3.6	3.6	3.5	3.9	4.0	3.9	3.9	3.9	3.9	3.7	3.7	3.6	3.75
Washington	3.4	3.4	3.3	3.6	3.4	3.4	3.4	3.4	3.5	3.6	3.6	3.5	3.42
Waukesha	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.6	3.7	3.6	3.5	3.43
Southeast District	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.6	3.6	3.6	3.47
State	3.7	3.6	3.6	3.4	3.5	3.5	3.5	3.6	3.7	3.8	3.8	3.8	3.61

*As reported by Wisconsin dairy plants for months of October to December, 1929 and January to September of 1930. Gaps in data filled by estimates.

TABLE NO. 21. DAILY MILK PRODUCTION PER COW ON THE FIRST DAY OF EACH MONTH ON THE FARMS OF WISCONSIN CROP REPORTERS, 1924-1930¹

	1924 Average number of pounds per cow on the first of												1925 Average number of pounds per cow on the first of											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
District 1	12.0	14.1	13.7	16.4	15.7	18.8	21.8	17.5	34.4	13.8	12.9	11.4	13.6	13.7	14.0	16.4	17.9	19.8	21.7	19.7	14.8	14.4	12.9	12.8
District 2	12.5	12.0	13.6	14.2	15.9	17.5	23.8	19.0	38.8	15.2	13.4	10.2	11.7	13.1	12.8	15.3	15.8	19.3	22.8	18.9	15.8	14.1	11.6	10.6
District 3	10.5	12.6	12.2	13.4	12.9	19.7	22.9	18.6	17.9	15.7	14.1	11.9	12.4	10.8	13.3	14.3	17.0	19.7	22.7	21.9	15.8	17.3	15.0	15.7
District 4	12.0	13.7	14.3	15.7	17.1	19.7	17.6	15.4	13.0	12.8	12.9	12.8	12.5	14.8	14.9	14.8	16.7	19.2	16.2	16.8	12.7	12.4	10.8	11.7
District 5	12.5	15.7	15.8	16.6	16.8	19.8	18.7	15.3	12.3	13.0	12.4	11.8	12.7	13.7	12.0	15.4	17.0	19.7	19.3	15.4	12.4	11.8	11.3	11.3
District 6	14.1	16.8	16.0	20.0	20.4	21.1	24.8	29.6	17.2	17.3	15.0	13.9	14.5	16.1	18.6	19.9	21.2	24.2	24.0	20.7	17.4	16.6	18.3	15.6
District 7	8.6	10.3	12.1	12.7	14.2	18.5	18.3	18.2	13.6	14.8	13.2	10.0	9.4	10.6	10.3	12.1	14.3	19.2	18.8	13.1	17.0	15.3	9.9	10.1
District 8	12.7	15.8	16.1	18.4	17.9	20.3	19.0	17.2	15.0	14.7	12.1	11.6	12.7	13.7	16.1	14.8	17.7	21.3	22.4	19.6	15.9	14.0	13.1	15.0
District 9	18.0	18.6	17.7	19.3	20.4	31.3	10.0	16.4	16.8	15.8	14.5	16.8	15.6	17.4	16.6	19.3	19.1	20.8	19.5	16.7	15.3	15.5	13.6	16.0
State Str.	12.4	14.5	13.5	16.5	17.2	19.8	24.4	17.5	15.3	14.9	13.7	12.3	12.7	14.1	15.0	16.9	17.7	20.6	20.9	18.5	15.5	14.7	12.5	13.4
Wtd.	12.5	14.3	15.4	16.4	17.3	19.9	26.5	17.4	15.1	14.8	13.6	12.4	13.8	14.6	14.8	15.9	17.5	24.6	21.0	18.4	15.8	14.7	12.3	13.1
1926																								
District 1	15.1	17.1	16.6	18.4	18.2	22.1	22.8	18.3	18.0	14.3	12.9	11.1	15.4	15.6	16.2	18.8	19.3	23.6	22.3	20.5	17.2	14.9	14.0	11.1
District 2	11.8	18.7	14.6	16.0	16.4	21.8	21.8	18.7	14.5	18.1	11.1	11.8	12.0	12.3	15.3	15.4	17.8	22.3	22.6	19.0	16.4	16.6	10.8	10.9
District 3	18.0	14.7	15.8	18.2	20.3	20.6	22.0	20.0	17.5	13.8	13.7	11.4	16.2	16.4	17.4	19.8	20.0	23.1	23.5	22.0	18.3	15.3	13.1	11.7
District 4	14.1	16.2	17.8	18.3	14.8	21.6	18.1	15.1	13.1	12.1	11.2	11.6	13.8	13.9	18.1	18.0	20.9	20.7	17.6	13.7	12.3	13.6	12.2	12.2
District 5	12.4	13.7	17.1	13.6	16.5	20.8	19.4	14.0	13.4	10.0	11.1	12.6	15.6	16.4	18.1	17.8	19.2	21.9	19.6	15.8	12.6	11.6	11.0	13.3
District 6	15.2	16.8	18.0	20.6	20.6	23.3	24.3	19.9	15.9	15.4	13.0	13.2	16.2	18.2	19.1	22.2	22.7	26.6	25.1	21.8	17.3	14.3	14.0	14.0
District 7	9.5	12.0	11.3	11.4	15.4	21.5	21.6	15.4	13.9	12.0	10.6	10.4	10.9	10.0	11.8	15.6	16.3	20.8	20.0	17.1	14.8	12.3	12.2	10.8
District 8	13.5	16.8	15.4	17.9	20.1	23.8	22.7	17.2	16.3	13.9	14.0	13.2	15.7	16.1	15.6	17.2	18.3	22.3	21.5	16.6	13.8	13.3	12.3	14.2
District 9	18.8	20.4	19.4	19.5	18.7	26.2	21.6	16.3	14.6	15.7	14.5	16.0	17.5	19.0	18.1	20.5	20.0	22.8	19.6	15.1	15.4	13.3	14.5	16.5
State Str.	13.8	15.7	16.2	16.9	17.9	21.4	21.6	17.1	15.1	13.9	12.7	12.6	14.6	15.2	16.8	18.1	19.4	22.8	21.7	18.0	15.3	12.5	13.2	13.3
Wtd.	13.7	15.8	16.2	16.9	18.6	21.9	21.7	17.1	15.1	13.6	12.9	12.4	14.3	15.2	16.7	17.9	19.3	22.9	21.8	18.0	15.2	13.5	13.2	13.9
1927																								
District 1	13.2	15.1	16.3	17.5	18.6	25.1	22.8	20.8	17.5	14.8	14.3	15.1	16.0	16.7	17.7	17.2	19.9	22.5	23.8	21.8	15.1	14.5	13.0	12.6
District 2	12.2	13.5	13.3	16.0	17.7	23.5	22.2	19.7	16.0	12.1	11.5	11.9	11.9	12.1	14.0	18.0	13.9	22.3	24.9	20.3	17.2	14.2	11.0	12.3
District 3	14.7	14.3	17.8	17.4	18.2	24.3	23.7	20.6	19.1	16.0	13.7	15.6	16.4	16.6	18.4	17.0	18.5	24.2	22.0	20.9	18.2	16.0	11.3	9.1
District 4	12.4	14.5	15.4	15.7	18.1	20.6	20.2	18.6	14.9	13.7	10.6	12.9	12.6	14.6	15.7	16.4	18.6	23.4	23.4	18.2	14.8	12.2	11.5	13.2
District 5	14.3	16.6	17.7	15.1	18.3	21.4	18.1	15.1	14.0	11.6	12.9	13.7	15.1	15.4	17.7	17.4	19.6	21.3	21.9	15.9	14.8	11.0	12.4	13.1
District 6	14.9	17.2	19.1	20.4	23.3	24.6	24.6	20.4	17.1	13.6	12.9	14.2	14.8	17.5	19.7	20.0	22.5	25.3	26.5	21.4	17.4	15.1	14.7	14.1
District 7	10.4	9.3	9.5	12.4	15.6	20.2	19.6	18.9	15.4	14.2	12.3	10.2	10.7	10.4	11.2	12.8	17.0	22.3	22.6	19.5	13.9	12.8	8.6	10.5
District 8	13.1	15.0	15.8	16.7	18.7	23.4	23.8	17.1	14.2	14.9	14.5	12.6	15.4	15.9	16.2	17.7	18.3	22.7	22.5	18.2	15.0	11.5	14.5	14.8
District 9	18.0	18.0	18.8	19.9	21.3	21.8	21.6	19.2	16.8	12.2	17.3	18.3	17.8	18.6	19.0	20.5	20.5	21.1	19.8	16.7	14.8	17.3	15.8	15.8
State Str.	13.7	14.9	16.0	17.9	18.9	22.4	21.1	18.5	15.9	14.9	13.8	13.5	14.4	15.5	16.8	17.8	19.7	22.8	23.4	19.2	15.9	13.7	13.2	13.2
Wtd.	13.6	15.0	16.0	17.7	18.8	22.6	21.1	18.5	15.9	14.6	13.2	13.5	14.3	15.2	16.5	17.5	19.5	22.9	23.4	19.3	15.7	13.7	12.8	13.1
1928																								
District 1	15.9	16.5	16.5	18.6	18.3	22.4	21.1	19.5	14.2	11.4	11.5	12.7	15.8	18.4	15.3	16.4	18.8	24.3	24.0	20.2	18.2	13.9	13.0	11.4
District 2	15.8	18.4	15.3	16.4	18.8	24.3	23.0	20.2	18.2	13.9	13.0	11.4	14.6	16.0	15.9	16.8	18.8	24.3	24.0	20.2	18.2	13.9	13.0	11.4
District 3	12.4	13.8	15.0	15.9	17.8	20.1	19.0	15.6	12.4	11.4	10.5	11.1	12.4	13.8	15.0	15.9	17.8	20.1	19.0	15.6	12.4	11.4	10.5	11.1
District 4	15.8	16.8	18.3	19.2	18.1	20.5	20.0	18.9	12.8	11.4	11.7	13.2	15.8	16.8	18.3	19.2	18.1	20.5	20.0	18.9	12.8	11.4	11.7	13.2
District 5	15.8	16.8	18.3	19.2	18.1	20.5	20.0	18.9	12.8	11.4	11.7	13.2	15.8	16.8	18.3	19.2	18.1	20.5	20.0	18.9	12.8	11.4	11.7	13.2
District 6	11.4	10.6	12.1	13.6	15.7	21.8	19.9	15.7	13.2	13.4	12.4	11.0	14.8	17.5	16.8	19.9	20.4	22.6	22.6	19.5	13.9	12.8	8.6	10.5
District 7	14.8	17.5	16.8	16.9	19.4	23.4	21.8	17.8	12.5	13.0	14.6	14.8	15.9	16.8	18.3	19.9	20.4	22.6	22.6	19.5	13.9	12.8	8.6	10.5
District 8	15.9	18.0	18.7	20.3	21.4	23.0	20.8	14.5	15.0	15.1	17.3	16.8	15.9	16.8	18.3	19.9	20.4	22.6	22.6	19.5	13.9	12.8	8.6	10.5
State Str.	14.8	15.9	17.0	18.1	19.4	23.1	21.6	17.4	14.1	12.9	13.1	13.5	14.8	16.6	16.4	17.8	19.4	22.8	23.4	19.3	15.7	13.7	12.8	13.1
Wtd.	14.8	15.6	16.4	17.8	19.0	22.9	21.6	17.7	14.0	12.9	13.1	13.2	14.8	16.6	16.4	17.8	19.4	22.8	23.4	19.3	15.7	13.7	12.8	13.1

Str. represents simple arithmetic or straight averages of district data and Wtd. represents the average obtained when district data are weighted by a set of weights based on cow numbers as reported by the U. S. census of 1925.
¹ Data from the monthly reports of the Wisconsin F. A. Hat of Crop Reporters.

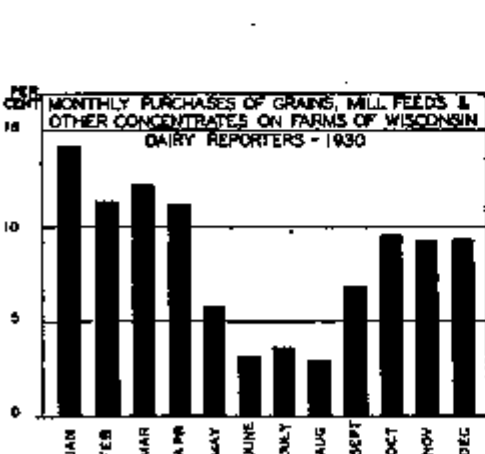


Fig. 32. Wisconsin dairy reporters made 14 per cent of their purchases of grain, mill feeds, and other concentrates during January. Purchases go to low levels during the months of summer pasture, but rise during September to a fall and early winter level of nearly ten per cent of the annual total per month. From October to December the quantities bought do not change much but a sharp rise takes place in January. During February, March, and April the reported purchases remained fairly constant.

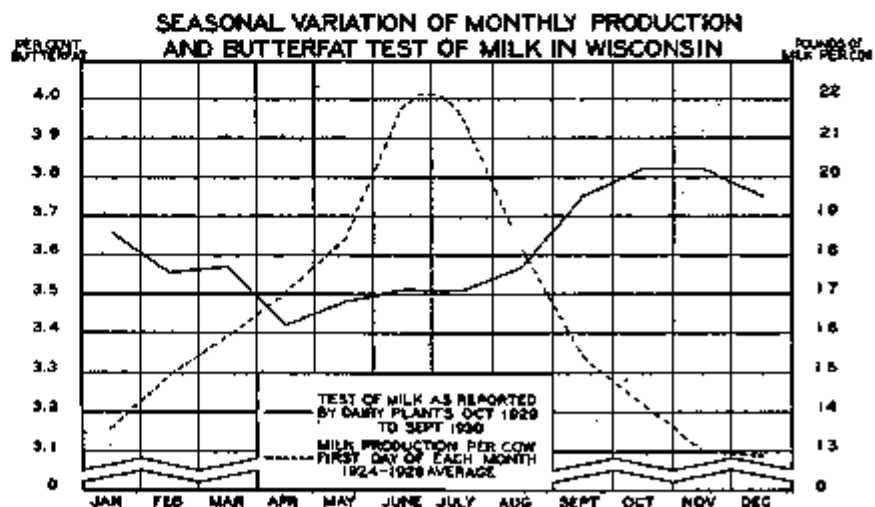


TABLE NO. 22. DISTRIBUTION OF WHOLE MILK RECEIVED AT WISCONSIN PLANTS, QUANTITIES AS REPORTED 1929*

County	Milk received Pounds	Purpose for Which Used						
		Cheese Pounds	Butter Pounds	Condensary products Pounds	Ice cream and ice cream mix Pounds	Separated for cream Pounds	Shipped to points within the state Pounds	Shipped out of state Pounds
Barron	246,780,578	39,941,030	61,383,336	12,808,794	266,765	151,715,607	115,427	1,530
Bayfield	8,444,817	8,444,817						547,500
Burnett	1,514,360	1,514,360						
Chippewa	202,091,114	37,271,946	22,600,058	80,385,641	147,949	65,336,706	124,468	12,667,625
Douglas	25,438,050	2,408,620	714,779	881,000	1,194,182	14,628,338	3,121,380	3,643,670
Polk	60,148,910	42,621,787	2,502,248		4,308	5,831,587	84,000	2,829,903
Rock	33,173,236	21,929,743	7,822,128			3,175,107	448,367	
Sawyer	6,773,469	2,316,896	3,913,713					
Waushara	9,189,750		6,729,950			2,128,137	260,663	
Northwest District	593,566,223	156,966,539	110,471,212	72,886,735	1,612,893	226,768,466	4,174,145	12,649,158
Ashland	11,823,988	11,310,885	208,303		185,628			273,870
Clark	237,829,887	178,512,726	2,462,217	71,073,404	813,366	76,170,184	14,097,274	80,000
Iron	2,411,217	1,902,843			60,000			442,674
Lincoln	38,133,896	20,901,042		22,827,741	30,180		214,368	189,800
Marathon	296,947,210	188,372,078	348,372	38,406,119	737,441	59,128,047	1,906,494	2,628,804
Oneida	1,950,188		0,000		200,860			1,730,711
Pierce	26,748,999	31,716,153	4,880,186		178,000			7,680
Taylor	26,928,398	31,830,307			19,328	5,078,783		
Vilas								
North District	782,993,758	468,444,660	7,872,625	128,316,263	1,695,681	140,385,964	16,217,121	14,712,945
Florence								
Forest	2,716,563	2,716,563						
Langlade	84,121,953	57,431,476	1,162,282	23,657,931	22,050	10,318,037	231,743	1,150,400
Marquette	54,270,439	29,380,012	9,970,901	10,776,741	484,529			658,557
Oconto	118,140,060	109,187,522	1,039,699			2,289,721	17,131	3,237,797
Shawano	206,707,993	167,618,374	4,545,685	16,237,909		25,003,924	622,335	555,194
Northeast District	442,937,144	336,281,879	9,751,629	50,432,631	586,583	37,579,682	971,199	4,869,388
Buffalo	6,002,173	2,424,737	2,577,446					
Dunn	38,042,783	15,210,239	8,229,049	27,647,283	28,000	28,822,094	7,178	
Bay View	43,860,641	8,183,837	7,867,124		31,484	28,106,822	6,541,272	810,000
Jackson	27,867,067	23,519,521	825,791		4,550	3,300,000	17,205	
La Crosse	15,894,348	3,811,855	1,805,926	6,641,966		3,000,000		134,600
Monroe	54,480,751	8,823,605	9,773,139	23,583,112	16,000	4,318,288	6,014,278	1,402,827
Papin								
Pierce	13,761,831	4,039,910	9,508,921		63,000			
St. Croix	47,910,131	35,760,564	5,480,335		39,308	5,458,380		780,513
Trempealeau	26,177,081	881,003	8,390,260	9,907,626	7,720	7,030,000		471,071
West District	322,766,747	97,705,963	53,277,973	67,764,997	177,662	84,336,553	11,579,934	1,194,757
Adams	1,823,144	1,823,144						
Green Lake	62,530,900	6,243,904	1,053,421	38,148,267			17,085,308	
Juneau	14,187,906	1,806,487	6,089,349		2,100	5,400,000		
Marquette	644,432	630,224	16,198					
Portage	54,385,588	9,391,816	14,686,609	14,033,231	725,414	13,582,378		617,138
Waupaca	206,498,250	58,500,000	8,108,062	69,745,645	4,769	40,385,332	24,337,979	1,048,863
Waushara	12,836,752	12,856,752						
Wood	158,691,177	68,880,095	948,585	20,270,887	731,883	50,888,756	2,347,096	16,623,584
Central District	514,598,157	158,632,444	26,964,284	143,898,018	1,464,296	118,306,464	43,678,123	29,801,391
Brown	217,102,210	112,083,391	16,388,768	37,034,730	1,327,122	80,809,227	7,652,614	825,444
Columbia	143,838,725	30,098,754	538,951	41,319,079		10,283,091	9,904,085	618,758
Door	123,798,018	41,773,632	508,583	80,165,420	75,000	318,161	105,800	860,700
Fond du Lac	232,646,786	67,340,183	5,401,260	14,388,264	11,927,070	69,460,925	33,188,705	19,850,263
Kewaunee	132,090,447	106,654,280	27,700			25,828,354	12,798	888,816
Manitowish	242,371,474	157,481,446	4,018,710	69,773,649	1,069,789	7,047,621	61,327	2,912,631
Outagamie	191,391,985	67,122,039	9,974,340			75,165,220	10,391,320	2,788,430
Sheboygan	232,181,198	156,328,571	918,849	10,866,069	2,863,291	46,181,119	6,088,379	10,943,887
Winnebago	157,708,780	46,262,804	12,782,762	34,906,734	6,583,870	2,000,000	23,332,089	2,533,717
East District	1,654,549,649	684,653,122	44,537,734	288,475,364	23,315,939	236,273,264	128,343,783	23,550,519
Crawford	82,505,212	32,417,274	25,670					62,368
Grant	61,161,772	77,139,673	3,911,442					110,657
Iowa	132,968,782	132,968,782						
Lafayette	121,923,021	110,218,548	8,917,722			2,788,751		
Richland	135,534,789	91,232,234	14,035,516	29,692,607	340,012			204,400
Sauk	93,519,679	32,367,687	16,721,972	25,660,079	1,162,500	3,960,318	11,988,021	1,449,000
Vernon	62,608,429	28,840,421	5,741,629	18,398,390				
Southwest District	450,221,564	304,962,429	49,353,950	73,669,866	1,499,512	6,739,649	11,938,821	243,802
Columbia	113,351,680	33,026,084	5,951,654	29,323,051		44,915,321	121,800	14,600
Dane	296,416,520	86,049,489	17,472,177	78,011,786	6,485,431	81,827,901	15,587,583	16,099,270
Dodge	423,922,177	244,485,821	813,171	106,975,064	12,645	4,346,136	62,805,512	2,846,892
Green	275,080,427	153,896,813	1,146,240	24,115,844		14,825,172	11,471,294	10,733,598
Jefferson	219,789,906	17,891,302	28,851,046	87,437,669		23,552,696	19,231,139	6,281,938
Rock	174,721,704	8,374,241	13,046,141	29,454,066	5,669,834	27,854,718	8,784,580	9,900,395
South District	1,504,781,047	543,522,430	67,280,429	415,968,309	12,297,710	147,160,943	117,982,048	166,574,987
Kenosha	67,698,190	27,000	2,948,921			73,000		13,891,042
Milwaukee	289,013,756	217,909	39,862,670	4,300,000		25,434,397	3,776,076	193,062,448
Ozaukee	37,587,638	34,587,638	3,066,666				19,282,093	438,632
Racine	101,025,220	1,088,854	8,078,795	48,846,041	823,140	4,578,000	10,142,892	23,849,886
Walworth	194,506,247	515,000	86,391,859	13,836,543		24,992,792	23,891,053	60,263,269
Washington	167,107,481	81,829,214	2,987,824	87,048,476		10,614,383	14,045,190	24,172,207
Waukesha	179,400,687	8,579,723	300,000	78,856,747		83,779,923	27,670,481	33,866,183
Southeast District	1,826,183,989	72,255,332	56,754,476	264,949,118	16,430,348	190,456,298	168,687,682	173,477,552
State	7,492,532,198	2,122,994,987	439,284,332	1,504,751,497	58,980,928	1,485,806,794	435,563,916	438,293,479

*As reported by plants

TABLE NO. 23. RECEIPTS AND DISTRIBUTION OF CREAM AT WISCONSIN DAIRY PLANTS, QUANTITIES AS REPORTED IN 1929 *

County	Cream Receipts			Purpose for Which Used						
	Cream received Pounds	Cream from separation of milk received Pounds	Total cream Pounds	Cheese Pounds	Butter Pounds	Condensed products Pounds	Ice cream and ice cream mix Pounds	Shipped to points within state Pounds	Shipped out of state Pounds	Other uses Pounds
Barron	7,246,559	13,008,274	20,254,833		6,295,283		28,532	6,975,441	6,914,657	24,900
Bayfield	2,737,568		2,737,568		2,131,025			123,509	472,530	158
Chippewa	2,898,131	6,820,947	10,518,728		9,201,320		150,598	1,857,930	5,165,809	113,171
Douglas	3,661,472	1,904,949	5,566,411		2,861,725		87,828	492,585	1,467,081	537,535
Polk	19,860,066	1,022,863	20,882,917		18,945,822		59,365	392,579	1,065,326	128
Rock	4,804,614	338,802	5,143,416		4,455,145			1,291,801	385,462	
Sawyer	1,784,869		1,784,869		1,368,098			323,562	73,181	
Washburn	6,895,666	536,830	7,432,496		2,685,429			555,045	291,441	
Northwest District	53,759,162	23,226,494	76,985,676		47,680,638		356,753	13,056,146	16,315,452	676,695
Ashland	2,597,032		2,597,032		1,735,725		130,890	182,919	536,498	
Cook	2,139,674	7,212,258	9,351,932		814,605	91,515	13,088	4,817,580	3,600,369	
Iron	1,039,363		1,039,363		704,245		64,069	121,209	59,037	40,520
Lac Seul	2,128,963		2,128,963		2,076,549		39,163	14,221		
Marathon	3,804,003	6,338,950	10,142,953		2,068,951		217,752	2,893,560	4,854,037	4,655
Oconto	307,038		307,038		122,512		76,240	23,018		72,905
Pierce	1,945,867		1,945,867		1,451,244			336,609	167,734	
Price	6,597,335	446,623	7,043,958		6,787,476		51,120	408,799	115,907	1,531
Taylor	295,351		295,351		295,351					1,858
Vilas										
North District	29,534,184	13,991,731	43,525,915		16,151,319	91,315	549,332	8,793,856	8,798,582	131,512
Flora	391,218		391,218		339,760			1,453		
Forest	561,971		561,971		432,519			149,045		
Langlade	2,044,778	992,861	3,037,639		1,850,459		89,564	552,048	465,054	
Marquette	2,526,646		2,526,646		2,243,730		780	371,114	99,042	100,000
Ontonagon	1,055,807	208,956	1,264,763		1,054,438			308,354	103,990	
Shawano	1,737,906	2,446,066	4,183,972		1,472,318			1,075,895	1,839,024	
Northeast District	9,128,261	3,644,412	12,772,673		7,723,812		98,324	2,555,336	2,304,629	109,800
Buffalo	13,206,023		13,206,023		12,870,219			834,784		1,023
Dunn	16,301,692	8,447,513	24,749,205		15,232,387	12,872	44,440	1,317,809	2,139,704	1,070
Eau Claire	6,537,744	2,632,173	9,169,917		6,642,356		80,119	3,274,547	1,421,145	51,609
Jackson	1,080,411	292,060	1,372,471		9,070,577			787,504	130,030	
La Crosse	11,581,806	382,387	11,964,193		11,474,836		289,197	372,516		86,706
Manitowish	28,432,424	455,096	28,887,520		23,171,767	15,893	102,880	189,453	830,540	47,200
Monroe	10,466,554		10,466,554		10,466,554					
Pepin	16,108,405		16,108,405		16,287,379		23,394	12,651	809,482	
Portage	17,504,223	24,825	17,529,048		17,402,165		44,000	544,936	16,254	42,700
St. Croix	22,596,392	708,835	23,305,227		22,563,270		17,890	719,928	69,577	2,932
Traverse										
West District	149,168,121	8,368,682	157,536,803		143,934,991	31,866	626,956	7,653,337	4,896,269	154,172
Adams	521,552		521,552		451,816			67,006	2,720	
Green Lake	4,647,165		4,647,165		4,630,067	17,098				
Juneau	9,946,504	331,276	10,277,780		9,090,784		34,657	1,202,356		
Marquette	4,510,490		4,510,490		4,363,086			145,442		
Portage	9,897,032	1,860,240	11,757,272		7,494,489		19,900	2,379,594	249,454	114,838
Waupaca	7,665,900	3,137,737	10,803,637		7,079,616	76,269	1,181,439	1,209,060	1,282,792	14,600
Waushara	6,284,936		6,284,936		6,049,535			235,391		
Wood	8,973,826	4,534,797	13,508,623		8,108,709		141,789	3,101,688	4,049,786	405,206
Central District	81,265,884	9,454,142	90,719,986		45,210,634	93,367	1,376,716	8,146,561	5,564,672	534,638
Brown	13,430,870	2,909,806	16,339,676	4 9,837	11,204,697		187,917	2,193,093	1,517,146	122,672
Calumet	438,973	254,043	693,016		89,770	29,016		537,632	711,924	24,675
Door	415,900	87,480	503,380		330,810		98,080	37,400		80
Fond du Lac	13,721,846	4,732,150	18,453,996		7,710,305		287,440	3,268,681	7,135,940	6,260
Kewaunee	204,909		204,909		204,909					
Manitowish	1,064,358	830,997	1,895,355		1,732,525	62,629	5,674	972,987		
Outagamie	1,107,215	7,245,943	8,353,158		160,800		187,897	4,034,124	8,990,687	
Shawano	6,239,149	4,074,648	10,313,797		5,237,703	65,622	220,282	1,334,713	3,480,198	84,307
Winnebago	9,647,481	168,800	9,816,281		9,631,704	138,598	514,804	479,890	31,300	
East District	46,071,914	20,873,328	66,945,242	9,337	36,264,233	276,859	1,482,074	12,658,379	14,267,145	187,984
Crawford	6,665,436		6,665,436		4,714,298			884,683	87,617	11,843
Grant	17,554,871		17,554,871		15,923,039			1,230,780	342,950	68,093
Iowa	6,890,203		6,890,203		2,908,471			1,610,769	575,938	
Lafayette	4,063,161	227,793	4,290,954		1,081,644			1,718,890	1,530,420	
Richland	4,761,583		4,761,583		2,683,201	44,957		1,718,145		
Sauk	22,295,224	365,246	22,660,470		13,627,980	74,101	245,916	1,921,118	6,492,361	
Vernon	17,426,882		17,426,882		16,919,529	2,836		248,324	160,000	8,700
Southwest District	77,281,116	593,839	77,874,955		58,443,156	121,913	245,916	9,723,224	9,179,291	80,636
Columbia	9,576,653	4,351,813	13,928,466		8,748,098	65,901	188,528	1,497,945	3,486,512	4,000
Dane	17,872,109	2,274,209	20,146,318		13,345,463	460,342	1,322,074	4,392,862	708,449	38,121
Dodge	7,958,826	360,645	8,319,471	2,665,748	1,007,634		177,310	242,704	3,882,874	
Green	8,028,260	1,378,887	9,407,147		831,000	553,930	106,513	1,249,579	1,696,860	
Jefferson	8,860,943	2,239,548	11,100,491		2,941,318	48,536		4,874,031	706,319	20,343
Rock	4,392,334	2,642,018	7,034,352	364,502	3,398,588	128,111	221,361	884,928	2,149,782	
South District	69,286,867	13,264,427	82,551,294	3,321,251	28,254,894	1,246,829	1,983,798	12,943,899	12,667,776	54,444
Kenosha	228,175	7,309	235,484		209,041					37,894
Milwaukee	18,909,628	2,046,053	20,955,681	65,668	11,581,029		2,301,381	1,241,166	804,888	10,000
Ozaukee	2,521,042		2,521,042		271,900		2,327,813	7,170		4,160
Racine	995,793	412,786	1,408,579		550,559	20,307	17,492	158,143	47,837	614,190
Walworth	1,678,012	3,181,567	4,859,579		614,042			1,423,078	2,734,508	6,340
Washington	808,229	844,366	1,652,595		387,585			387,388	207,447	
Waukesha	2,128,583	3,053,792	5,182,375		1,270,595	618,967		801,907	2,454,652	5,904
Southeast District	22,244,451	9,545,823	31,790,274	45,663	15,940,861	439,264	4,856,635	4,616,812	6,121,914	975,935
State	679,608,802	103,154,068	782,762,870	3,396,381	399,791,581	2,499,813	11,289,489	79,433,730	82,615,142	2,518,056

TABLE NO. 24. PERCENTAGE DISTRIBUTION OF WHOLE MILK RECEIVED AT WISCONSIN PLANTS, 1929*

County	PURPOSE FOR WHICH USED							
	Cheese	Butter	Condensary products	Ice cream and ice cream mix	Separated for cream	Shipped to points within state	Shipped out of state	Other uses
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Barron	16.2	24.9	5.2	1	53.4			.3
Bayfield	100							
Burnett	100							
Chippewa	18.5	11.1	30	1	32.3	1	6.1	1.9
Douglas	9.4	2.8	2.7	4.7	57	12.3		11.1
Polk	70.9	14.3			14.7	1		
Rusk	98.1	23			9.6	1.3		
Sawyer	41.8	53.2						
Waushara		52.8			34.6	8.1		
Northwest Dist.	26.5	18.6	12.4	.3	38.2	.7	2.1	1.2
Ashland	84.9	1.7		1.1				2.8
Clark	21.0	.7	21	2.7	32.6	4.2	.4	
Iron	78.9			2.7				18.4
Lincoln	55.0		42.4	1		.4	1.7	.4
Marathon	53.0	1	11.3	4.2	19.8	.6	4.2	.9
Oneida		.4		10.8				89.8
Pierce	54.3	13.2		.6				
Taylor	54.2				13.8			
Vilas								
North Dist.	59.6	1.0	16.4	.2	17.9	2.1	1.9	.7
Florence								
Forest	100							
Langlade	42.9	1.0	38.5		16.1	.5		1.9
Manitowish	72.6	5.5	19.5	.8				1.2
Oconto	84.1	.9			1.9		8.1	
Shawano	75.6	2.2	7.9		12.1	.3	.6	.3
Northeast Dist.	74.6	2.2	11.4	.1	8.5	.2	1.1	.5
Buffalo	48.5	51.3						
Dunn	17.1	10.3	31.1		41.6			
Eau Claire	7.3	17.8			60.2	12.8		1.9
Jackson	84.9	3.1			11.9	.1		
La Crosse	24.8	11.7	43.1		19.6			.3
Monroe	16.2	17.9	43.4		8.3	11	.6	2.6
Papin								
Pierre	29.7	70.0		.4				
St. Croix	74.6	11.3		.1	11.4		1.6	1
Traverse	3.4	21.9	37.5		26.9			
West Dist.	30.3	17.1	21.0	.1	26.7	3.6	.3	.9
Adams	100							
Green Lake	10	1.7	51		37.3			
Juneau	12.7	49.2			38.1			
Marquette	97.3	2.2						
Portage	17.6	27.4	27.5	1.8	25.1			1.1
Waupesa	27.9	1.5	53.3		19.3	11.6	5.9	.5
Waushara	100							
Wood	42.1	.6	12.5	.5	32.1	1.4	10.5	
Central Dist.	34.3	5.2	27.8	.3	21.4	6.5	5.6	.4
Brown	51.7	7.5	17.1	.8	14.2	3.5	4.9	.2
Calumet	56.3	.4	28.8		7.2	5.9		.4
Dor	32.7	.4	64.7		1.3			.7
Fond du Lac	37.3	2.3	6.2	5.1	25.5	15.1	9.5	
Kewaunee	80					19.4		.6
Menomonie	65	1.7	28.5	.4	2.9			1.2
Ontonagon	80.7	3.1			59.4	5.4	1.4	
Outagamie	67.1	.4	4.8	1.2	19.4	2.8		4.7
Ribougan	33.6	9.3	25.3	4.0	1.5	24.2	.3	1.3
Winnebago								
East Dist.	53.5	2.8	17.4	1.4	13.9	7.8	2.0	1.2
Crawford	99.7	.1						.2
Grant	95.1	4.8						.1
Iowa	100							
Lafayette	90.4	7.2			2.3			
Richland	87.3	10.3	31.9	.3				.2
Sauk	34.6	17.9	27.4	1.2	4.2	12.8	.3	1.6
Vernon	54.3	10.6	34.3					
Southwest Dist.	77.7	7.4	11.3	.3	1.0	1.8		.3
Columbia	29.0	5.2	56.3		39.4	.7		
Dane	29.0	5.2	26.4	2.2	10.7	5.2	15	5.6
Dodge	87.6	.2	55.3		1.0	14.9	1.0	.1
Green	85.7	.4	30.8		5.4	4.1	8.9	
Jafferson	8.0	13.1	39.8		10.7	3.3	17.2	.2
Rock	4.8	7.3	16.9	3.3	15.3	.5	41.1	6.6
South Dist.	36.2	4.5	27.6	.8	9.8	7.8	11.2	2.1
Kenosha		4.3			.1		75.8	19.8
Milwaukee	.1	14.4	1.6	.7	9.8	1.4		72
Ozaukee	60.3	5.3			33.8			.8
Racine	2.0	9.0	45.4	.6	4.5	10	4.9	23.6
Walworth		.3	35.1	7.2	12.8	13.3	30.5	.6
Washington	30.4	1.9	42.7		6.7	5.9	15.8	4.1
Waukesha	2.0	.1	43.7		18.8	15.4	18.9	1.1
Southeast Dist.	7.4	5.5	25.7	1.6	9.7	9.7	16.9	23.5
State	43.1	5.7	28.0	.3	14.5	5.8	5.9	4.2

TABLE NO. 25. PERCENTAGE DISTRIBUTION OF CREAM RECEIVED OR SEPARATED AT THE PLANT IN 1929*

Cheese	Butter	Condensary products	Ice cream and ice cream mix	Shipped to points within state	Shipped out of state	Other uses
Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
	31.1		.3	34.4	34.3	.1
	83.8			3.8	12.6	
	91.8			.8	7.6	
	30.4		1.3	17.7	49.	1.1
	58.6		1.6	8.7	26.4	9.7
	98.		.2	1.9	4.9	
	87.4			25.1	7.6	
	77		18.9	4.1		
	77.3			14.8	7.3	
	61.9		.5	15.6	21.1	.9
	66.8		4.7	7.1	21.4	
	8.7	1.0	.2	51.6	88.6	
	74.8		6.2	11.8	3.3	3.9
	97.5		1.8	.7		
	22.		3.3	30.8	45.3	.1
	43.2		25.5	7.5		23.8
	74.5			17.3	8.1	
	82.5		.4	5.5	1.6	
	89.4					.6
	46.8	.3	1.4	25.5	25.5	.3
	98.6			.4		
	74.3			25.7		
	60.3		3.2	21.6	15.3	
	79.9			18.1	3.6	3.6
	78.6			17.5	5.9	
	35.2			23.7	39.1	
	64.5		.7	26.6	18.6	.8
	95.3			4.8		
	81.2		.8	7.0	11.4	
	57.9	.1	.7	28.8	12.4	.4
	90.9			7.9	1.2	
	94.2		2.4	3.1		.3
	97.1	.1	.4	.8	1.4	.2
	99.9				.1	
	94.7		.2	.1	5.	
	96.4		.2	3.	.2	.8
	95.5		.1	3.1	.3	
	91.4		.4	5.6	3.1	.1
	86.6			12.9	.5	
	89.8	.4				
	88.0		.3	11.7		
	95.6			3.2		
	74.5		.2	21.7	2.5	1.1
	65.4	.7	10.9	11.2	11.7	.1
	95.2			3.8		
	44.3		1.	22.5	29.8	2.9
	74.2	.2	2.3	13.3	9.1	.9
.1	73.5		1.2	14.4	10.0	.8
	6.4	2.1		38.8	51.1	1.3
	70.3		21.5	8.2		
	41.8		1.6	17.7	38.6	
	100.					
	63.1	1.9	.3	34.8		
	1.9		2.0	49.3	47.8	
	50.7	.6	2.2	12.9	83.8	.3
	58.1	1.3	5.3	5.	.3	
	82.7	.4	2.2	19.2	25.2	.3
	89.3			15.6	1.5	.2
	90.6			7.	.4	
	53.9			35.4	10.7	
	24.6			39.9	35.5	
	62.9	1.0		38.1		
	61.5	.3	1.1	9.5	23.6	
	97.1			2.	.9	
	76.1	.2	.3	12.5	11.8	.1
	82.8	.5	1.1	10.3	24.8	
	48.9	2.2	6.6	21.7	3.5	.2
35.8	12.		2.1	2.9	47.7	
	13.2	12.7	2.4	23.4	37.7	
	34.3	.6		66.7	8.2	.2
	6.3	48.3	1.8	8.2	9.8	21.
5.3	48.4	2.0	3.2	20.7	20.3	.1
	83.1					11.9
	73.2		14.4	7.8	5.	.1
	10.8		88.7	.3		.2
	38.2	1.4	1.2	11.2	8.4	43.6
	12.7			20.6	57.5	.3
	35.9			51.8		12.4
	24.6	11.9		18.8	47.9	.1
.2	47.3	2.0	14.3	14.2	19.2	2.8
.7	69.4	.4	1.9	13.7	14.2	.5

*In case quantity used for any purpose was less than 0.1 per cent it was not considered in the percentage distribution.

*Milk shipped to points within the state has, for the most part, reappeared in butter, condensary products, ice cream, city market milk or cream or elsewhere and for that reason is largely duplication which could not be removed from the figures with the data available.

*In case quantity used for any purpose was less than 0.1 per cent it was not considered in the percentage distribution.

*Cream shipped to points within the state has, for the most part, reappeared in butter, condensary products, ice cream, city market cream or elsewhere and for that reason is largely duplication which could not be removed from the figures with the data available.

The Utilization of Milk in Wisconsin

In addition to the utilization of milk on the farm, the distribution in commerce is an item of interest, particularly in a state such as Wisconsin where the volume is large and where numerous outlets compete for the milk supply. An examination of the map in Figure 89 shows that the use of milk in manufactured products differs greatly with different parts of the state. The use of milk to be sold as fluid milk or cream for city market purposes is not shown in this map. The three outlets indicated are butter, cheese, and other uses in manufacture, such as condensery products, ice cream, malted milk, etc. It will be noted that the butter areas shown in black are located chiefly in Western and Northwestern Wisconsin. A few counties report no manufacture of dairy products other than butter. These are Pepin, Washburn, Vilas, and Florence. All of the counties in Western Wisconsin are important producers of butter, and in this region butter making forms the leading

market outlet for milk. Some counties in Central and Eastern Wisconsin also show important quantities of

UTILIZATION OF MILK ON WISCONSIN FARMS

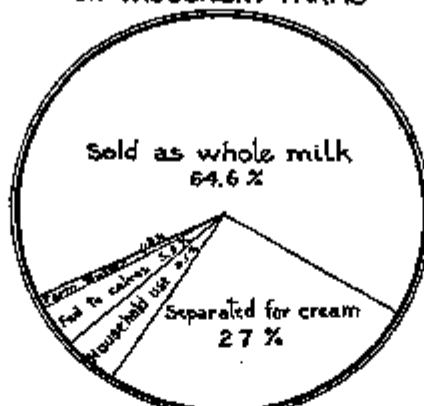


Fig. 87. Uses of milk on farms of the state as a whole reflect the demand or the market outlet for whole milk used in the cheese, condensery, and city market milk industries particularly and that separated for the sale of cream largely reflects the demand made for creamery butter. Regional differences in percentage of total farm milk diverted to the various uses are shown in Fig. 88. The portion of milk being sold whole is steadily growing as other types of commercial production develop in place of butter-making.

TABLE NO. 28. UTILIZATION OF MILK ON WISCONSIN FARMS BY DISTRICTS

District	Sold as whole milk Per cent	Separated for sale of cream Per cent	Used as milk or cream in business hold of the farm Per cent	Fed to calves Per cent
Northwest	53.15	37.02	5.53	3.40
North	68.06	21.30	6.73	3.93
Northcentral	74.59	15.74	6.15	3.75
West	27.78	64.00	5.48	2.74
Central	46.03	43.76	6.48	3.75
East	56.35	5.92	3.83	3.90
Southwest	54.32	36.84	4.77	4.07
South	76.65	16.00	4.07	3.28
Southcentral	91.18	2.64	3.27	2.93
State	54.64	26.96	4.91	3.49

milk utilized for the manufacture of butter. In some of these regions the manufacture of butter has been continued in spite of the competition and encroachment of other types of production such as cheese, condensery products, and city market milk. In large population centers such as Milwaukee, the quantity of surplus market milk manufactured into butter

TABLE NO. 29.

PER CENT OF FARMS IN WISCONSIN COUNTIES SELLING MILK AND CREAM TO VARIOUS TYPES OF PLANTS, 1928*

County	Percent of farms patronizing					
	Cheese factory	Creamery	Condensery	City market	Cream shipping	Other uses or not reporting milk sold
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Barron	23	94	4	5	1	2
Bayfield	9	52	3	1	9	26
Bernett	2	77	1	1	7	13
Chippewa	23	40	24	5	2	8
Douglas	2	18	2	20	56	27
Folk	20	71	1	1	2	5
Grant	28	45	1	1	13	13
Green	8	45	1	6	17	24
Washburn	2	97	1	2	10	17
Northwest District	17	55	6	4	7	11
Ashland	15	46	1	5	9	25
Clark	64	7	12	3	10	4
Iron	14	9	2	8	39	34
Lincoln	37	20	30	2	2	19
Manitowish	68	14	9	5	3	10
Marathon	2	16	1	10	23	40
Oconto	25	41	2	1	4	17
Pierce	33	48	2	1	5	11
Taylor	33	29	2	3	7	58
Vilas						
North District	45	21	3	3	3	15
Florence	18	20	2	6	37	40
Forest	18	24	1	8	13	45
Lacado	68	9	1	2	2	18
Marquette	50	34	1	2	9	15
Oconto	73	6	1	9	3	9
Shawano	72	8	1	4	1	7
Northwest District	62	12	3	4	5	14
Buffalo	2	78	5	1	11	4
Dunn	9	70	11	1	3	6
San Claire	4	65	9	10	4	7
Jackson	20	63	2	1	4	10
La Crosse	6	72	6	10	7	7
Monroe	4	79	8	2	2	7
Portage	4	94	1	1	1	5
Pierce	5	35	1	1	3	5
St. Croix	10	60	3	1	1	5
Traverse	4	89	7	1	1	5
West District	6	75	4	2	3	5
Adams	5	72	1	1	3	10
Green Lake	11	61	18	2	3	6
Juneau	4	78	2	1	3	9
Central District	40	31	11	3	5	9
Boonville	40	28	0	3	4	7
Calumet	64	13	26	2	1	2
Door	37	2	51	1	2	7
Fond du Lac	24	29	24	2	2	4
Kenosha	84	2	9	2	1	2
Manitowish	74	2	14	5	1	3
Outagamie	44	21	16	7	7	3
Schoonmaker	85	3	5	16	1	6
Winnebago	84	27	10	16	1	6
East District	49	15	12	7	2	6
Grand	33	65	1	1	4	6
Grant	27	61	1	1	2	9
Juneau	48	17	1	1	5	8
Lafayette	67	16	1	1	5	10
Richmond	60	10	15	1	2	6
Rock	12	69	11	2	1	6
Vernon	13	84	9	1	2	7
Southwest District	37	47	5	1	3	7
Columbia	19	44	13	2	4	17
Dane	17	35	22	16	4	5
Dodge	32	7	27	3	1	4
Green	58	4	24	4	3	8
Jellison	7	77	45	13	3	4
Rock	3	17	22	37	5	18
South District	25	33	28	13	3	9
Kenosha	1	4	2	62	6	28
Manitowish	1	1	5	98	2	89
Outagamie	34	17	4	35	1	13
Rock	4	4	17	51	4	24
Winnebago	3	3	32	33	4	10
Winnebago	20	2	23	54	2	4
Winnebago	4	2	23	63	3	23
Southwest District	3	6	22	44	3	16
State	38	26	12	3	4	10

*Data collected by Wisconsin Department of Agriculture.

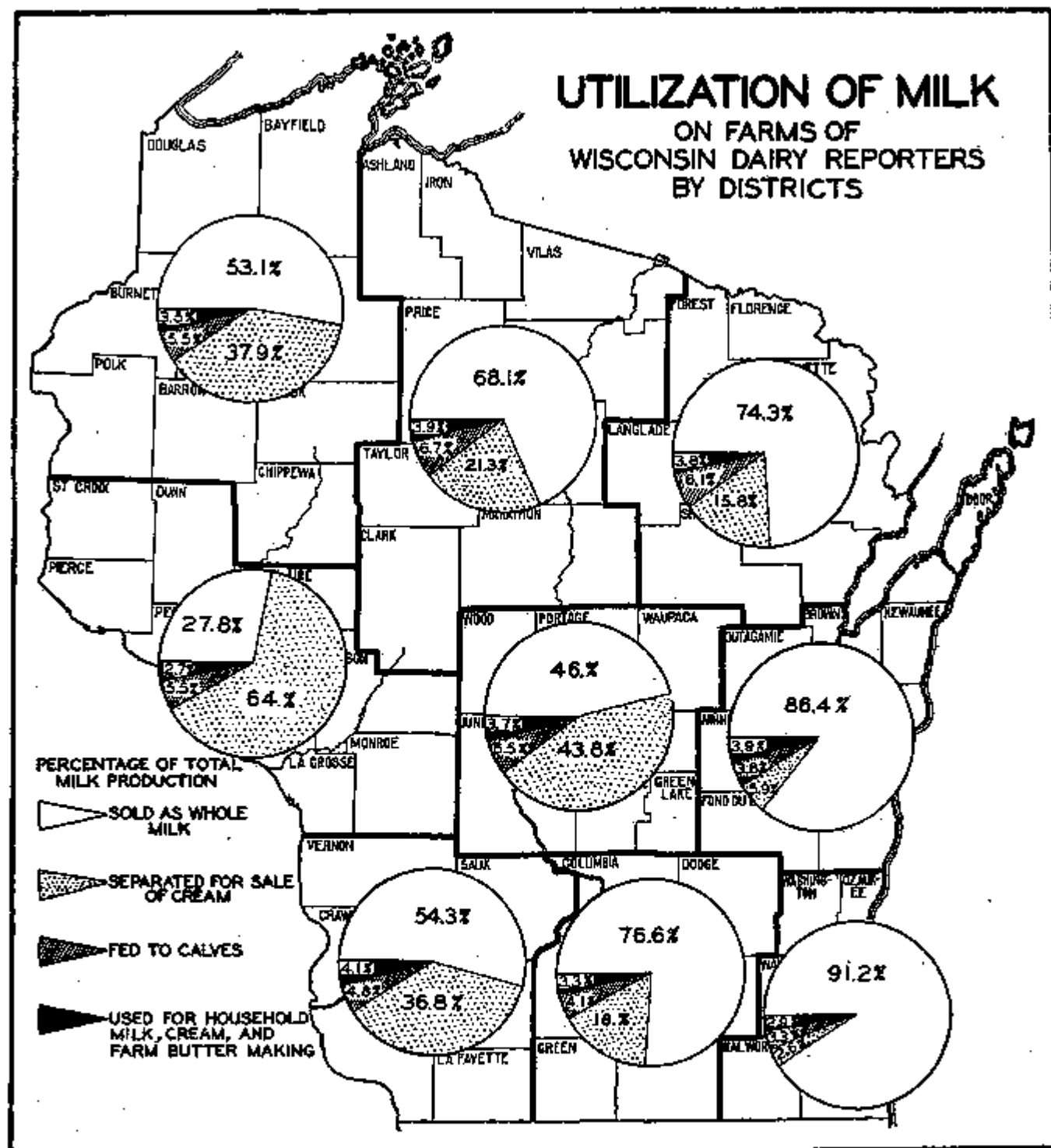


Fig. 35. Uses of milk on farms show considerable regional variation which is directly influenced by the type of market outlet available. In areas of close proximity to Milwaukee, Chicago, and other lake shore cities a great proportion of the milk is sold from farms as whole milk as shown by 51.2 and 38.4 per cent of the milk going in this manner from the southeast and east central regions. The relative proportion of milk sold as whole milk and separated and sold as cream depend largely on the predominance of the city market outlet, cheese factories and condensaries receiving whole milk as compared to the existence of creameries receiving cream and to some extent, for cream factories with a partial demand for cream.

and other products at certain times of the year is large. A large portion of surplus market milk and cream is commonly made into butter.

While cheese and butter production now take very nearly equal portions of the state's milk supply, Wisconsin has long been noted mainly for cheese production. Cheese production, par-

ticularly a number of foreign types, has been singularly concentrated in the state. In 1929 Wisconsin made about 63 per cent of the factory cheese in the United States. Of the Swiss cheese the state produced 85 per cent, brick 95 per cent, American 65 per cent, Limburger 60 per cent, and Italian varieties 28 per cent. The

total production has declined since about 1925 when the high point was reached.

The shaded area on the map, page 48, indicates the portion of the milk used for manufacture that is employed in the making of cheese. The Eastern Wisconsin lake shore American cheese region north of the

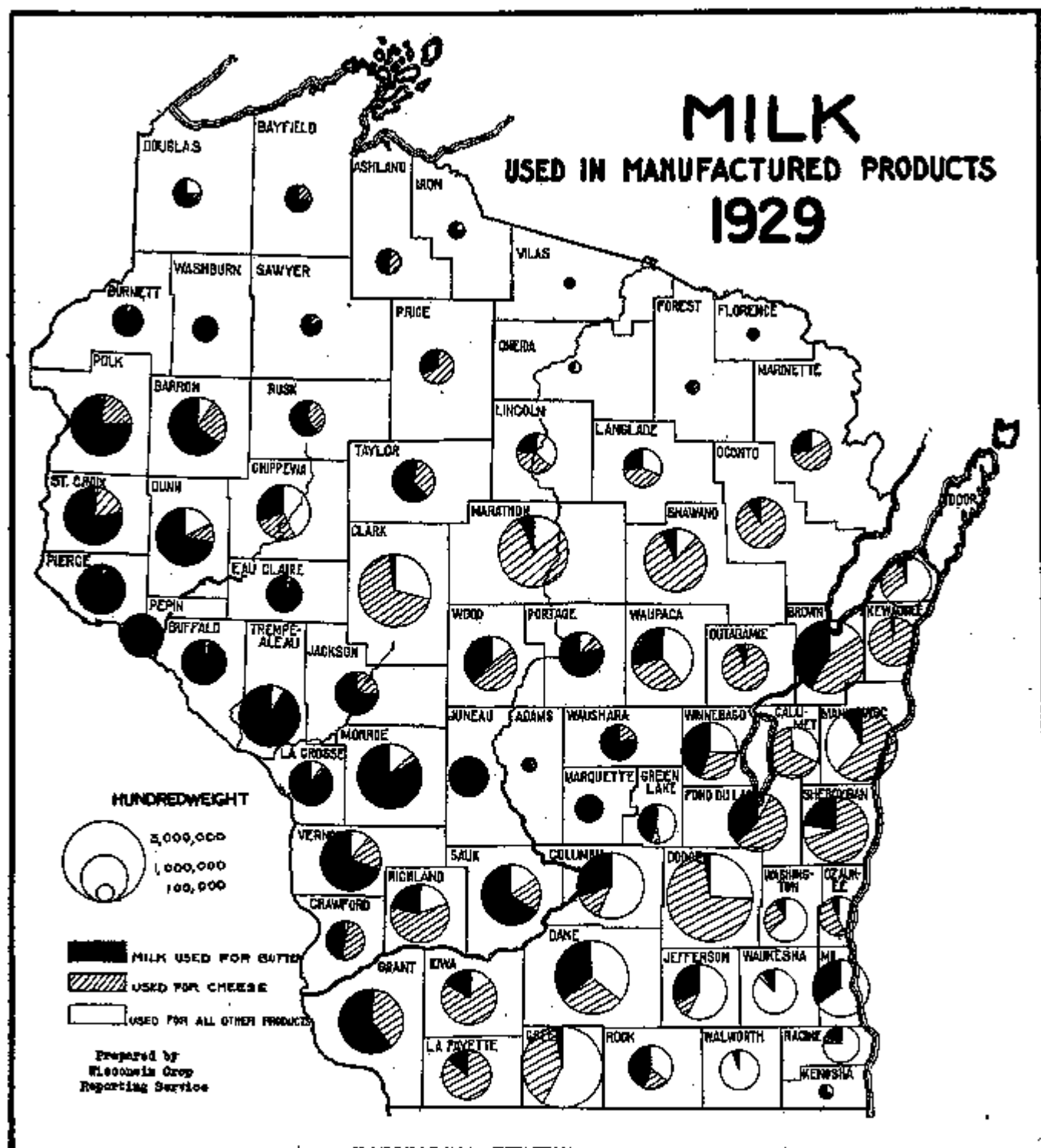


Fig. 29. Estimated distribution of uses of milk by counties based on manufactures as reported by plants in 1929, shows considerable variation by counties and different sections of the state depending upon the predominance of the particular types of manufacture. In the state as a whole, estimated utilization of milk for manufacture has been as follows, according to 1929 factory reports: 39.5 per cent for butter, cheese 38.8 per cent, condensed and evaporated milk 18.3, and ice cream and other products 4.8 per cent. Total diversion to products other than butter and cheese amounts to 21.7 per cent.

market milk area, the Dodge County brick cheese region, the Green County Swiss cheese area, and the North Central Wisconsin American cheese area are the most important cheese sections in Wisconsin, and in them large portions of the milk used for commercial purposes are devoted to cheese production. Kewaunee

County in the lake shore American cheese district has the largest portion of its milk production used for the manufacture of cheese, with Outagamie County in the same general area running second.

Particularly outstanding also are such areas as the brick cheese region in Dodge County and the North Cen-

tral Wisconsin American cheese region of Shawano, Marathon, and Clark Counties. Green County, while the center of Swiss cheese production, has transferred some of its milk into other channels, notably condenser products. In recent years there has been an increase in the output of Limburger, and a decline in Swiss,

TABLE NO. 30. WISCONSIN FARM CHEESE PRODUCTION, 1849-1919*

County	1919 Pounds	1909 Pounds	1905 Pounds	1899 Pounds	1889 Pounds	1879 Pounds	1849 Pounds	1839 Pounds	1849 Pounds
Barron	1,638	185	1,830	52,242	5,222	595			
Bayfield	834	470							
Burnett	2	225	932	80	3,882	4,534		(?)	
Chippewa	100	100	450	6,309	1,908	100		300	800
Douglas	1,285	80							
Folk	2,579	125,772	594	908	13,198	4,058		260	
Frank			70						
Grant	190	410		53					
Iron		250		462	350				
Northwest District	6,643	130,442	3,576	59,935	31,554	11,090	100	559	800
Ashland	944	520	604		75				
Clark	2,920	1,505	3,339	18,775	2,035	10,124		25	
Iron	13,309	300		106					
Lincoln	150	508	900	84					
Marathon	14,445	800	3,180	15,120	2,022	664			
Menomonie	1,300	75		315					
Price	231	6,175	1,785	245	2,861	26			
Taylor	4,000	627	2,587		1,300				
Vilas	956								
North District	27,854	19,348	18,465	37,645	8,193	10,814		35	
Florence	170	796							
Forest	105			120					
Linguist	50		1,800	615	240				
Marquette	5,989	1,094		412	330	6			
Oconto	325	200	19,280	2,632	470	658		20	
Shawano		100	9,653	273	2,117	622	100		
Northeast District	7,543	2,190	29,413	4,055	3,157	1,286	100	20	
Buffalo	11,450	1,017	80,458	28,107	24,679	82,382	19,320	1,710	
Dunn	25		1,800	31,386	20,604	5,300	1,330	1,830	
San Claire	575		610	6,338	5,773	6,803	400	1,195	
Jackson	870	250	18,230	624	6,355	2,325	470	2,650	
La Crosse	40		1,980	4,218	23,794	45,870	22,165	17,575	
Manitowish	15,000	2,000		444	4,247	18,887	9,150	6,194	
Peppin	25	1,880		1,048	17,082	18,745	1,400	610	
Portage	285	20	7,035	3,674	34,375	7,555	790	2,635	
St. Croix		150	8,005	5,950	3,412	4,808	1,625	2,437	
Traverse	115	100	620	5,141	7,688	19,445	7,363	4,120	
West District	27,926	4,887	58,845	99,991	159,049	167,721	64,613	41,596	
Adams		800	11,924		4,345	12,058	8,321	8,662	4,560
Green Lake			360		17,438	5,845	40,578	32,198	
Juneau	109	120		22,807	17,635	1,795	2,420	8,672	
Marquette					1,000	2,154	1,440	10,365	9,545
Portage	700	55,875	1,200	5,610	4,215	10,305	7,433	760	
Waupaca	300		105,035	10,322	89,067	12,871	5,265	5,140	
Waushara	520	300	420	51,425	2,090	18,765	9,514	8,191	
Wood	1,017	25,004	3,708	56,669	1,045	1,085			
Central District	2,640	81,899	122,645	146,825	130,777	62,992	76,257	70,616	14,105
Brown	279	180	420,362	25,855	13,457	4,719	80	920	100
Calumet	100	10	300	5,475	2,931	9,475	3,895	6,673	9,377
Deer	55	1,500	580	1,224	2,075	491			
Fond du Lac	369	3,000	205,551	283,567	21,817	47,385	61,835	144,467	10,307
Kewaunee	50	155		1,153	458	106	822		
Manitowish	5,919	29,833	8,540	7,690	28,164	63,974	4,412	740	
Outagamie	3,038	25,703	155,655	6,334	27,147	47,940	17,710	4,645	
Sheboygan	584	1,548	455	838	1,190	584,458	120,006	25,367	2,425
Winnebago	7,315		7,417	70,871	49,916	192,056	99,397	27,733	14,350
East District	17,747	61,706	799,390	513,185	156,054	998,634	307,014	212,363	30,589
Crawford	100	4,453		21	1,725	6,900		3,083	
Grant	30		112,068	15,280	23,439	57,610	19,577	42,307	18,639
Iowa	9,100		5,303	404	955	4,891	3,722	13,130	840
Lafayette	2,391	688	1,108	18,180	1,228	11,011	22,763	20,462	10,585
Richland	3,962		74,302	432,928	19,859	8,425	25,644	2,966	200
Rock	8,310	3,840	17,289	70,379	14,667	6,084	20,447	(?)	
Vernon	101,280	339,553	2,853	12,080	12,555	10,365	1,965	6,192	
Southwest District	125,673	387,708	199,758	496,173	134,454	108,669	78,972	139,714	27,815
Columbia	945	135	790	5,959	29,803	42,268	33,065	44,086	12,245
Dane	21,471		87,375	18,983	9,830	17,479	43,414	79,610	26,724
Dodge	10	80,729	71,843	82,106	2,120	34,066	12,939	42,311	42,893
Green	33,100		486,582	62,448	73,004	402,165	358,889	78,227	8,417
Jefferson	3,000		170		6,085	114,225	34,201	49,371	93,800
Rock	915	45,431	100,550		4,785	9,128	36,110	91,667	38,334
South District	69,581	126,285	796,997	176,774	126,527	628,379	418,589	364,111	165,513
Kenosha	3,200	60		10,200		158,443	306,870	45,287	57,271
Milwaukee	7,302	28,941	27,108	480,983	60,945	31,013	17,706	11,812	4,185
Ozaukee	971	25	2,260	2,957	7,325	19,465	1,100	15,170	
Walworth	218	931	930	1,205	32,378	12,368	1,705	21,280	27,540
Washington	25		3,041	1,509	22	17,163	79,527	38,496	53,493
Winnebago	468	27,883	1,960	5,002	24,098	57,618	4,547	16,173	370
Waukegan	1,733	29,137	1,112	2,621	36,288	51,750	33,585	54,155	25,745
Southeast District	12,911	85,637	35,418	107,643	160,399	347,834	446,583	265,384	161,461
State	308,117	841,262	1,974,839	1,635,618	996,266	2,261,411	1,591,798	1,184,306	490,283

*Taken from regular census reports of the United States for the years given except 1905 which is from "Wisconsin Census Report, Parts I-II," for 1905, and 1924 which is from the United States Census of Agriculture of 1925.

†No return.

‡Included in figure for Adams.

§Vernon County figure in 1839 was reported as for Bad Ax County but due to similarity of area included, the figure is given for Vernon County.

¶Includes 15,382 pounds of curd cheese.

TABLE NO. 31. WISCONSIN FACTORY CHEESE PRODUCTION, 1885-1929*

County	1929 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds	1919 Pounds	1917 Pounds	1915 Pounds	1913 Pounds	1911 Pounds	1909 Pounds	1907 Pounds	1905 Pounds	1903 Pounds	1901 Pounds
Barron	4,299,573	5,010,029	6,837,189	5,951,239	5,131,923	5,221,323	3,102,972	1,075,621	538,212	343,661	18,270				
Bayfield	826,633	826,633	241,002			42,900									
Burnett	149,375	149,375	139,266	154,555	67,978	213,222	127,001	30,993		4,030	1,847				
Chippewa	3,689,949	4,507,959	5,062,223	3,746,956	2,023,947	3,254,788	2,384,518	1,374,325	800,858	467,881	37,832				
Douglas	222,378	188,282	190,909	107,973	18,336	729	2,000								
Polk	4,122,639	4,736,864	4,547,614	3,811,457	3,883,351	3,324,760	2,894,342	1,679,809	1,139,233	503,593	27,552				
Rusk	2,247,548	2,265,177	2,583,889	1,371,755	674,972	1,106,574	431,023	79,404	17,429						
Sawyer	253,795	178,404	153,098		86,249	161,139	25,225	16,373							
Waushara			138,287				2,500								
Northwest District	15,621,899	18,386,324	19,845,222	15,143,964	11,820,754	14,030,726	8,941,581	4,241,953	2,555,953	1,332,732	88,514	46,439			
Ashland	1,130,256	621,819	12,158	77,721		100,242	46,975	79,285	84,587	42,725					
Clark	16,719,195	18,389,533	25,734,497	21,631,254	17,100,638	15,568,842	13,008,294	10,708,218	8,643,967	1,629,000	28,504	45,355			
Iron	191,596	65,093													
Lincoln	3,114,553	2,975,024	3,150,339	2,551,434	1,955,435	2,178,808	1,152,899	971,682	814,020	187,284	50				
Marathon	18,656,233	21,224,659	26,157,447	23,424,563	18,889,840	17,810,819	13,109,742	10,679,553	2,472,174	1,128,706	51,114	4,317			
Oneida			45,000			8,612	46,921	8,339							
Pierce	3,180,447	1,365,784	1,009,073	788,391	351,477	325,002	269,455	122,478	105,849						
Taylor	3,108,351	2,626,314	2,054,409	2,146,997	1,209,309	2,538,295	1,401,993	373,933	120,198	168,738	800				
Vilas						3,379									
North District	46,098,451	48,528,126	58,792,971	51,872,296	39,537,749	39,514,998	29,024,239	22,844,976	6,712,736	3,446,453	81,768	69,476			
Florence				110,374	62,189	90,630									
Forest	261,546	218,184	194,542			102,701	65,777								
Langlade	2,787,330	5,029,774	4,097,104	3,052,205	2,046,728	2,527,351	1,747,748	699,431	282,739	858,710	5,591				
Manitowish	3,331,687	3,192,447	3,891,184	3,455,545	2,038,826	3,154,714	1,948,655	827,136	333,248	299,423					
Oconto	10,518,077	10,478,021	8,245,416	6,514,295	7,172,018	6,960,441	5,325,778	3,809,894	899,218	429,307	5,000	10,788			
Shawano	15,255,088	15,859,044	17,179,124	16,050,737	13,522,884	11,308,606	9,853,827	7,532,579	3,461,362	2,241,450	279,871	680			
Northwest District	32,619,153	37,367,529	34,448,323	32,183,656	25,406,909	24,147,465	19,009,823	12,849,840	4,937,277	2,260,890	299,562	11,436			
Buffalo	381,063	409,865	431,442	358,805	397,622	1,359,620	1,969,028	383,881	803,266	955,041	221,845	118,374			
Dunn	1,588,913	1,527,887	1,586,794	1,450,459	1,092,686	1,609,626	576,655	142,571	58,512	172,082	44,655	28,019			
Eau Claire	905,764	847,579	511,123	671,322	321,077	499,570	149,351	25,934	28,470	90,126	21,859	45,800			
Jackson	2,113,136	1,944,266	1,946,629	1,797,448	1,608,593	2,332,613	1,729,426	738,027	37,985	12,608	19,815	45,800			
La Crosse	375,507	482,619	299,447	280,009	329,859	455,353	308,369	348,567	301,887	545,576	80,689	135,323			
Monroe	781,190	679,007	422,080	177,445	123,182	272,620	186,212		36,310	191,864	79,790	11,295			
Portage															
Precinct	356,795	1,044,162	754,887	515,409	399,712	658,816	230,134	83,131	91,002	182,815	101,895	74,375			
Pierce	8,417,515	8,268,272	3,041,873	2,826,959	2,040,031	2,433,273	1,792,728	1,699,596	528,370	677,064	10,280	150,662			
St. Croix	83,728	416,801	388,547	40,358	6,900	168,941	310,549	62,467	70,867	51,600	1,880	21,380			
Trempealeau															
West District	9,342,927	10,131,641	9,443,814	8,416,499	6,316,831	7,883,197	7,267,373	3,972,354	2,161,448	2,913,922	534,999	69,582			
Adams	161,212	116,171	221,733	83,110	71,693	135,065	53,934	100,500	73,000	322,453	30,420	1,400			
Green Lake	567,504	647,528	328,234	646,714	791,797	979,240	790,722	156,792	80,150	44,655	28,019	44,729			
Juneau	156,517	320,838	312,680	134,656	63,939	396,296	153,078	120,523	135,412	343,155	414,138	15,770			
Marquette	65,412	142,871	142,890	138,609	169,485	279,728	197,744				100	850			
Portage	929,299	1,328,500	8,126,981	2,322,153	1,361,221	1,713,410	1,340,916	448,192	144,272	50,000	48,860	800			
Waupaca	5,728,565	6,404,106	7,738,456	7,983,689	7,665,089	8,250,562	7,894,091	5,882,008	3,830,225	2,361,223	992,441	134,475			
Waushara	1,249,564	1,142,636	999,443	398,520	618,476	536,934	1,513,590	291,490	155,513	384,276	1,190,281	194,282			
Wood	5,410,860	8,725,583	12,165,481	10,511,004	9,968,324	9,406,956	8,909,096	4,634,958	733,685	795,075	77,095	800			
Central District	15,349,254	19,634,730	25,624,888	22,213,484	20,765,975	22,043,261	15,413,101	11,522,463	4,632,172	4,287,740	2,442,392	344,311			
Brown	10,525,804	9,783,507	10,819,876	8,397,066	7,809,109	8,643,350	7,516,691	7,417,467	4,265,040	3,442,022	969,314	833,131			
Calumet	7,777,914	7,430,934	7,958,884	7,821,674	5,937,649	5,257,457	7,248,742	7,784,501	5,750,577	3,092,577	1,765,766	1,166,596			
Deer	3,835,284	4,308,636	4,482,580	4,342,610	4,212,934	3,430,068	4,310,142	4,153,992	1,300,170	880,220	483,355	1,800			
Fond du Lac	8,779,914	9,150,808	11,227,187	13,120,431	12,445,078	11,525,430	12,890,667	9,671,636	5,801,411	4,015,799	2,883,877	2,497,983			
Kewaunee	10,177,011	10,387,647	10,983,817	9,967,425	8,682,792	7,871,907	7,177,584	9,334,598	3,991,833	3,030,129	1,407,031	129,179			
Manitowish	14,712,764	19,406,227	19,487,947	20,913,445	15,503,622	14,538,582	14,933,582	10,587,573	9,837,378	7,725,477	3,315,930	2,431,770			
Outagamie	8,999,990	7,678,367	8,976,090	10,020,122	11,080,845	10,347,572	9,635,889	9,190,975	5,941,797	5,036,583	3,121,839	785,079			
Shabogaun	14,019,894	17,048,931	20,085,181	20,121,266	21,898,149	17,979,960	19,214,217	21,883,445	15,987,445	11,622,153	8,049,370	7,383,513			
Winnebago	4,406,325	8,439,318	7,687,356	6,989,196	5,567,058	6,368,145	6,038,480	4,591,221	3,062,403	2,379,680	1,590,580	379,494			
East District	83,194,668	92,178,992	101,164,344	101,593,277	93,627,115	86,788,684	86,366,133	87,094,354	54,667,797	41,278,177	22,417,664	16,102,535			
Crawford	8,173,416	8,286,622	8,221,954	2,327,841	1,126,943	1,789,747	1,148,034	849,464	247,028	169,686	900	190			
Grant	7,509,737	6,912,112	6,030,347	4,773,715	3,813,191	4,393,067	4,665,444	2,192,469	1,814,326	1,009,949	600,262	127,106			
Iowa	12,061,418	11,977,811	12,722,970	10,703,567	10,534,804	11,045,225	9,385,900	9,124,354	7,412,296	5,732,843	2,139,847	154,040			
Lafayette	3,901,998	6,515,204	9,978,999	7,647,368	8,112,317	9,383,268	3,379,840	9,634,617	7,678,098	4,780,782	1,201,368	190,368			
Richland	9,119,218	10,793,867	10,149,614	7,832,561	7,204,496	7,708,675	3,873,008	6,227,665	6,044,718	3,288,328	1,977,825	2,364,890			
Sauk	8,023,462	2,981,618	3,646,043	3,948,257	3,038,558	2,300,750	2,758,801	3,055,631	2,145,785	1,631,794	683,591	262,676			
Vernon	2,979,040	2,988,148	2,503,815	1,945,405	1,312,758	2,060,946	2,111,588	1,180,143	745,075	494,334	6,426	56,126			
Southwest District	46,804,289	46,804,398	48,852,344	38,156,132	35,732,665	40,446,467	38,312,173	32,674,393	25,967,314	17,968,695	6,439,756	1,594,944			
Columbia	2,247,417	8,809,589	4,282,069	5,068,212	5,214,318	5,512,410	4,834,859	2,792,212	633,378	604,257	192,796	155,927			
Dane	7,615,804	7,905,269	8,384,170	7,342,694	7,093,770	8,597,022	6,508,898	5,985,878	4,841,937	4,587,082	1,449,026	875,930			
Dodge	27,721,829	24,782,080	23,822,784	24,894,108	25,690,324	24,230,269	25,561,197	23,081,558	14,647,758	12,266,560	5,890,125	1,701,693			
Green	13,835,284	13,639,513	15,912,820	12,247,364	12,706,246	12,690,219	11,833,3								

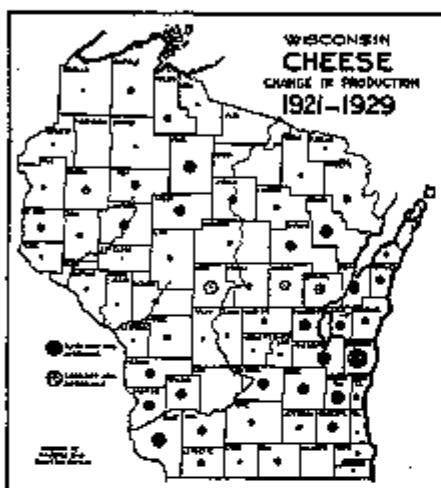
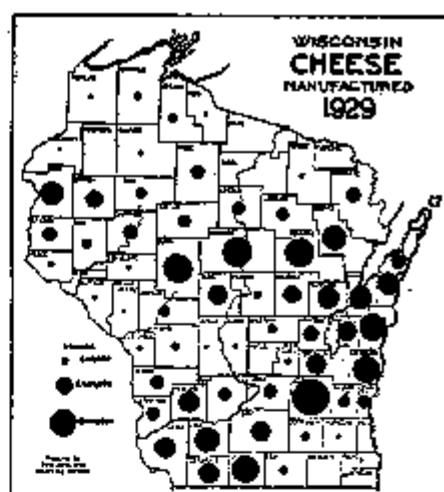
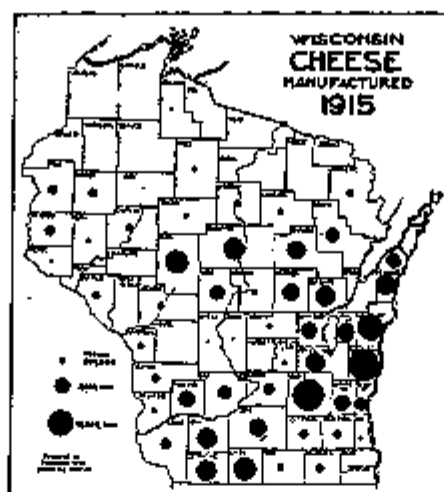
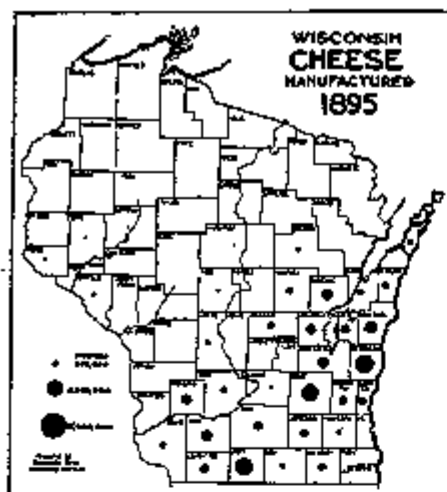


Fig. 40. Cheese manufacture grew from a modest dispersion through a fair number of southeastern and southern counties of the state in 1895 to an industry of importance in many counties in recent years. Decreases in cheese manufacturing occurring from 1921 to 1929 have come in the areas where demands for condenser products and for city market milk and cream have been increasing rapidly, while increases have come rather around the edges of heavy cheese production as a result of increasing numbers of milk cows and milk production in these sections.

titles of milk available daily are desirable for condenser locations. This type of manufacture was greatly stimulated by wartime exports, and it has expanded since that time. In so doing it has tended to draw rather heavily on other types of production, particularly cheese, which, in turn, has encroached somewhat upon the butter areas for its milk supply.

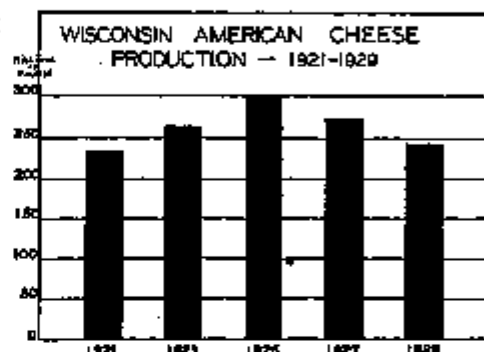


Fig. 41. American cheese, the most important type of cheese manufactured in Wisconsin, increased steadily in production from 1921 to the peak of 1925 when almost 300 million pounds represented the state's output. Since 1925 American cheese manufacture as in the case of other varieties has declined appreciably as a result of the inroads made upon milk supply by demands for other products. Wisconsin is still manufacturing practically two-thirds of the United States output of American cheese.

particularly of the block type. To the west of Green County is a newer and growing Swiss cheese area, and to the northwest an important and growing American cheese area.

The areas shown in white in the circles on the map represent the portion of the milk devoted to manufacture which is made into products other than butter and cheese. In the main, these are condensed and powdered products, ice cream, and others. The condenser area tends to form a secondary belt lying in general between that of market milk production in Southeastern Wisconsin and the cheese area to the west and north. It has expanded steadily and in so doing it has encroached primarily upon the regions of cheese production. The condenser industry is not a pioneer industry such as the butter or cheese industries have commonly been. It has followed these industries after large volumes of milk had become available and it has tended to compete with these former uses when the volume has become large enough. Good transportation and large quan-

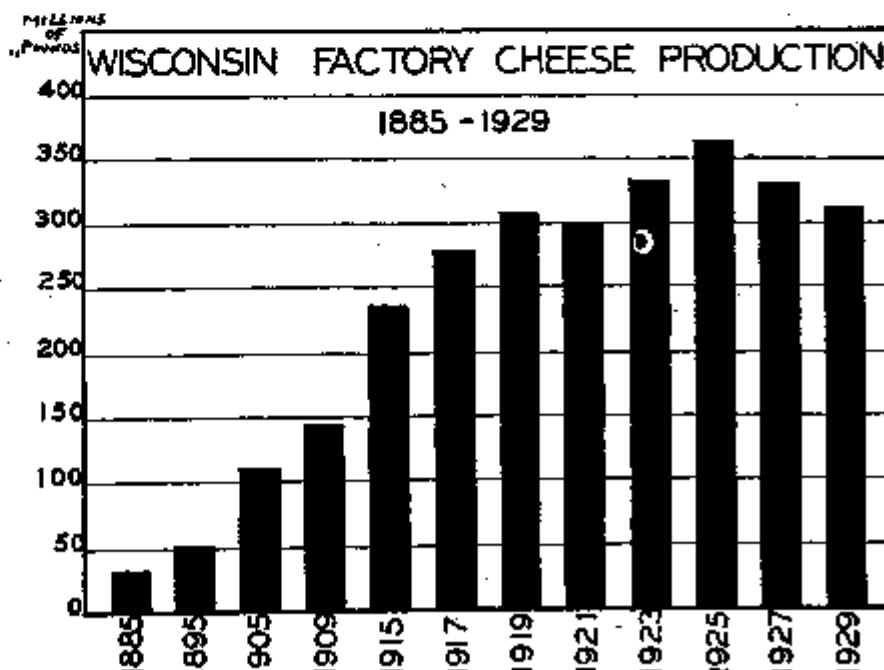


Fig. 42. From 1885 to 1925 increase in cheese production was virtually continuous. Despite reductions since 1925 Wisconsin is still producing a little more than 63 per cent of the total cheese output of the United States. Demands made by other dairy products upon the milk supply have brought about the lowered cheese production of recent years.

TABLE NO. 32. WISCONSIN AMERICAN AND BRICK CHEESE PRODUCTION, 1921-1929*

County	AMERICAN CHEESE					BRICK CHEESE				
	1929 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds	1929 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds
Barron	1,532,801	3,312,180	4,208,258	2,587,960	2,948,883	2,320,473	1,841,927	2,366,738	3,096,157	2,108,436
Bayfield	824,682	328,803	241,002	154,555	67,076	68,485				
Burnett	76,890	148,217	123,266	3,748,856	2,039,047					
Chippewa	3,688,949	4,507,886	5,082,323	3,748,856	2,039,047					
Douglas			578		9,374					
Folk	8,791,566	4,274,747	3,738,223	3,161,535	2,996,465	231,840	461,107	810,382	743,780	835,984
Frank	2,187,075	2,170,861	2,087,467	1,027,127	407,674	90,473	111,288	608,223	143,288	153,863
Sawyer	268,798	173,404	136,063		88,249					
Washington			138,267							
Northwest District	12,841,821	15,514,778	15,908,384	10,728,531	8,554,598	3,881,281	3,414,322	3,702,342	3,991,205	3,121,352
Ashland	1,088,878	321,454	12,159	77,721	18,694,250	43,883	240,368	47,524	455,112	403,688
Clark	16,344,466	19,386,823	25,841,438	31,196,143		105,485				
Iron	121,586	85,093	3,087,922	2,797,536	1,956,435	283,596	167,806	112,456	154,093	42,811
Lincoln	2,881,997	2,888,721	28,197,447	23,424,693	18,847,029					
Marathon	16,053,933	21,224,959	45,000							
Oneida			1,009,073	786,261	351,477	1,785				
Priest	3,378,062	1,868,784	2,600,794	2,147,039	1,356,209					
Taylor	3,063,825	2,671,561								
Vilas										
North District	45,408,382	48,117,495	58,533,848	50,431,222	39,108,450	474,749	347,645	159,989	639,218	446,841
Florence				110,874						
Forest	201,640	213,134	2,881,108	2,688,425	2,046,729					
Langlade	2,767,830	3,014,186	3,340,693	3,158,586	2,302,637					
Marquette	3,401,107	6,137,667	9,345,419	9,514,585	7,172,013					
Ontonagon	10,618,077	10,476,021	16,842,865	15,509,871	13,227,686	607,985	681,617	626,269	540,686	264,390
Shawano	14,647,043	16,007,727								
Northeast District	51,586,608	54,948,735	52,705,618	51,262,734	24,649,244	687,985	351,317	336,269	548,866	294,399
Buffalo	210,983	409,868	431,442	334,843	333,689	30,200				63,822
Dunn	1,291,434	1,359,631	1,813,375	1,161,114	918,227	247,484	188,216	272,219	279,076	161,802
Bay Claire	808,764	847,679	611,123	362,424	313,457					6,424
Jackson	2,212,136	1,944,386	1,948,622	1,797,445	1,606,595					
La Crosse	376,997	448,878	193,213	110,190	84,632	44,041		98,228	166,816	265,197
Monroe	781,195	867,062	422,060	177,445	128,182	11,975				
Pepin										
Plymouth	368,686	1,027,780	764,897	610,406	569,712	18,425	18,425			
St. Croix	3,406,087	2,958,947	2,638,387	2,446,147	1,888,588	8,451	313,925	403,636	360,522	161,423
Traverse	88,728	416,801	866,547	40,623	6,830					
West District	9,052,362	9,537,692	8,671,829	7,148,546	5,489,373	290,568	574,589	771,968	859,680	638,686
Adams	123,788	98,671	147,108	18,721	1,642	57,473	17,600	74,630	72,838	57,070
Green Lake	82,852	128,007	111,242	64,738	191,191	514,752	228,018	532,082	589,976	600,608
Juniata	185,617	328,863	812,886	194,666	86,639					
Marquette	1,621	78,611	54,768	88,719	23,628	68,791	64,260	59,122	99,588	148,540
Portage	928,239	1,622,500	3,158,991	2,329,182	1,944,645					18,648
Waupaca	5,728,646	6,404,108	7,788,456	7,983,696	7,426,281					338,908
Wausau	1,379,564	1,143,666	999,543	386,520	616,476					
Wood	6,410,880	8,726,563	12,165,481	10,511,004	9,966,224					
Central District	14,713,288	18,439,691	24,438,254	21,457,226	19,633,222	636,616	304,775	635,634	754,254	1,059,672
Brown	10,525,804	8,785,507	10,233,567	8,387,068	7,306,103			85,776		
Calumet	7,777,914	7,430,934	7,782,697	7,821,674	6,937,649			178,167		
Dodge	3,836,234	4,308,636	4,456,360	4,342,610	4,212,924					
Fond du Lac	7,946,692	8,728,390	10,770,864	11,519,928	11,363,883	232,391	206,356	330,165	674,028	985,107
Kewaunee	10,177,611	10,587,647	10,983,817	9,967,425	8,580,212					102,577
Manitowish	14,712,764	19,406,237	19,457,947	19,354,445	18,898,822					
Ottawa	8,928,789	7,632,123	8,740,341	8,993,873	10,992,948	31,141	22,263	237,749	26,220	4,167
Sheboygan	18,871,096	15,593,736	13,809,319	19,442,686	21,566,146	148,809	12,831			
Winnebago	4,267,643	6,351,349	7,504,303	6,777,263	6,121,612	129,124	121,567	115,156	124,619	152,533
East District	81,932,998	90,439,751	98,799,944	97,417,873	91,926,860	561,444	367,564	1,005,946	834,847	1,214,324
Crawford	3,176,416	3,286,628	3,221,084	2,827,841	1,126,942					
Grant	7,509,727	5,912,112	6,920,347	4,766,139	3,717,640					
Iowa	9,785,484	9,126,510	9,277,168	6,984,298	7,259,210	580,030	557,843	1,220,626	893,368	877,065
Lafayette	3,684,440	3,326,841	6,012,070	1,993,445	1,796,887	237,131	793,363	937,618	422,608	1,123,561
Richland	9,119,218	10,092,857	10,149,614	7,852,861	7,279,489					17,008
Seneca	3,023,482	2,981,618	3,646,043	2,960,373	3,939,119					67,538
Vernon	2,979,040	2,898,999	3,803,315	1,945,406	1,612,788					
Southwest District	39,249,797	37,825,490	38,741,511	38,749,762	25,422,055	767,161	1,369,968	2,118,156	880,794	2,138,771
Columbia	755,682	1,026,208	1,237,624	1,216,432	1,235,903	2,471,669	2,477,260	2,056,271	3,842,037	3,979,413
Dane	1,311,376	919,908	1,221,776	878,402	1,494,844	2,446,958	2,823,985	3,068,171	2,056,718	2,808,902
Dodge	5,112,892	6,691,307	7,804,263	7,083,657	4,962,490	13,109,396	12,652,918	14,309,535	16,208,438	19,837,945
Green	426,926	226,048	1,093,353	3,663,468	1,770,779	1,660,469	2,469,747	3,257,018	1,726,181	2,670,213
Jackson	674,056	851,686	1,953,049	800,190	428,881	989,631	998,313	982,060	892,060	896,619
Rock		71,268	196,779	128,051		56,767	151,839	408,219	154,874	167,036
South District	8,189,993	9,686,565	13,146,949	16,457,225	8,277,748	20,528,398	21,409,922	24,109,214	24,879,295	29,886,047
Kenosha				88,146	9,948					
Milwaukee					45,402					
Ozaukee	3,244,667	4,019,239	4,268,491	3,868,881	3,756,679					
Racine										
Walworth										
Washington	1,661,608	1,632,946	2,874,330	2,725,180	3,821,687	1,388,991	1,287,641	1,894,414	1,622,462	2,769,168
Waukesha	1,671,414	1,378,744	772,685	325,708	1,106,367	194,278	242,958	465,055	532,532	798,302
Southeast District	5,853,674	7,939,928	7,429,506	6,946,866	8,733,083	1,580,269	1,690,599	1,899,469	2,164,985	2,352,848
State	247,505,979	271,459,677	298,276,633	244,697,185	221,758,082	28,382,875	29,720,738	34,748,295	35,537,126	42,352,663

*From reports published by the State Dairy and Food Commission, except 1929.

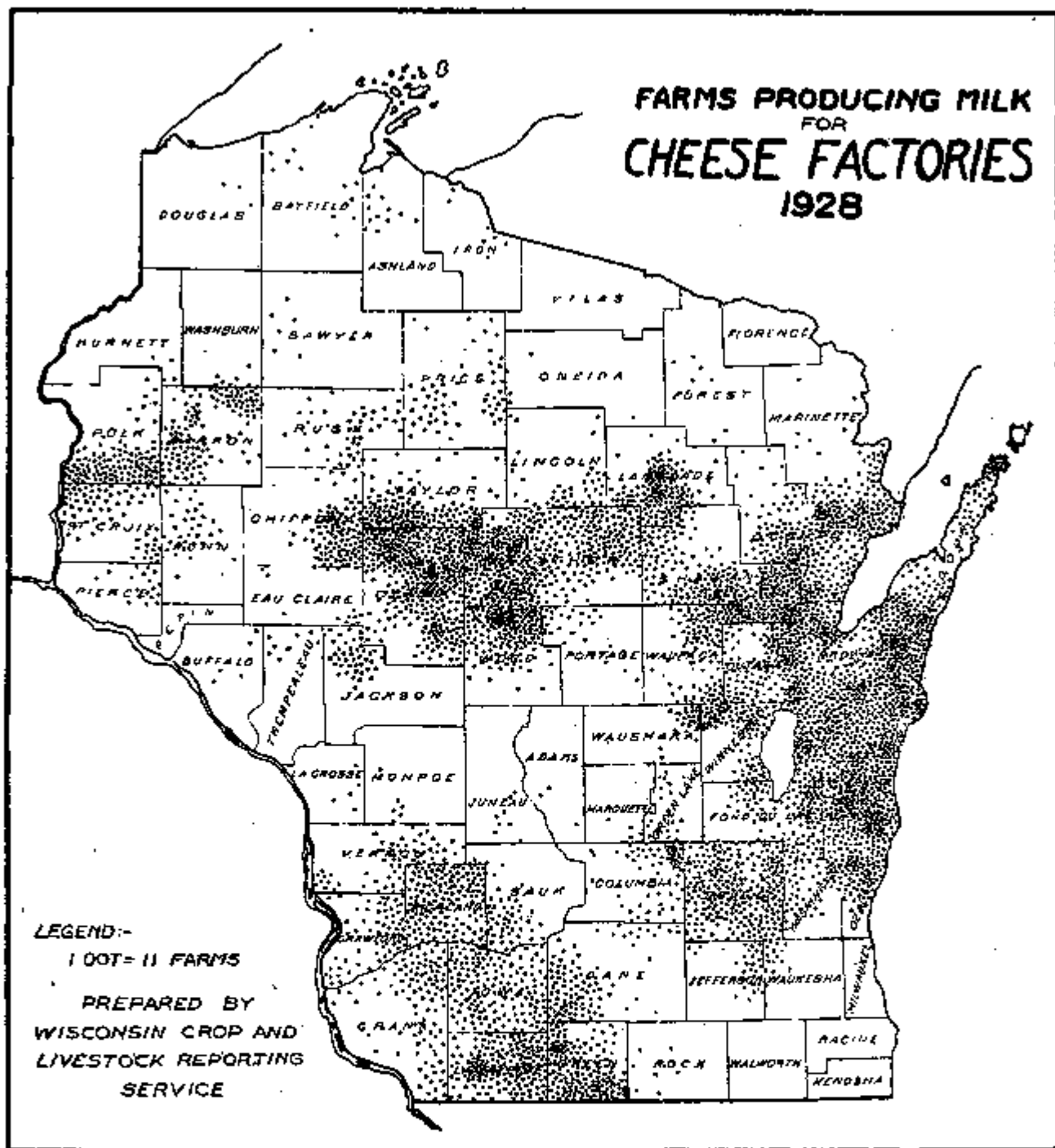


Fig. 43. Thirty per cent of the farms producing milk in the state patronize cheese factories. Increased demands for city market milk and cream, for condenser products, and for less cream to some extent, have made inroads into areas formerly diverting larger proportions of their total milk to cheese manufacture.

The Wisconsin Cheese Areas

Cheese has for a long time been one of the important market outlets for commercial milk in Wisconsin, and a number of varieties and types are being made. The most important of these is the American cheese, the manufacture of which while widespread in Wisconsin, is found in three major areas. These are the lake shore American cheese area, the North Central Wisconsin American cheese region, and the Southwestern Wisconsin American cheese region

centering in Richland and Iowa Counties. The first two of these are not completely divided, but since they are in two quite different geographic areas, they are usually looked upon as two distinct cheese regions. Brick cheese making, while found to some degree in a number of counties, is centered in Dodge County with portions of adjoining counties also producing some of the product. Brick cheese production has declined 83 per cent in the state since 1921, though a few counties in Northern Wisconsin have increased their out-

put of this type. Swiss cheese is mostly produced in a small region in Southwestern Wisconsin with Green County as the center. This type has also declined in volume, though the production is expanding on the western edge of the region. In addition to the leading type of cheese above mentioned, Wisconsin is also the largest producer of Limburger cheese, the production of which centers in Green County and is increasing somewhat. Other minor varieties, while widely spread in the state, are usually only of local importance.

WISCONSIN AMERICAN CHEESE FACTORIES 1931

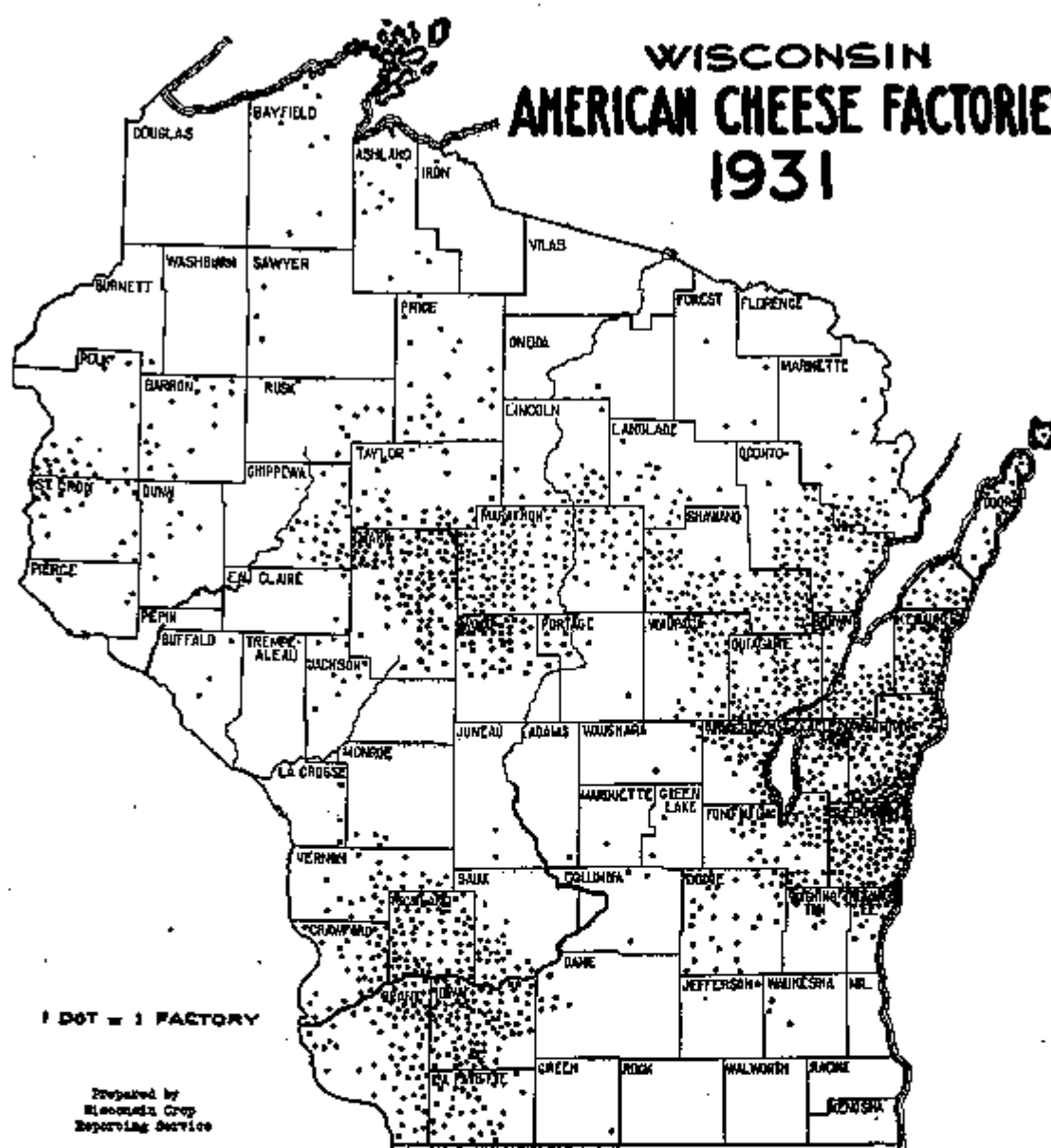


Fig. 44. American cheese factories are located largely in three important areas as indicated in the distribution here; the southwest, the east central, and north central areas, although a scattering of factories occurs here and there in other sections. Of the total number of 2,246 cheese plants licensed in 1930, 1,738 were manufacturing American cheese as all or part of their output. The East Central Wisconsin and the North Central areas are most important and they are not completely separated geographically. There is a connecting area in Western Shawano County. This type of cheese production has been expanding in Northern Wisconsin and in Southwestern Wisconsin where new factories are being built. (Compare this map with those in Figures 45 below.)

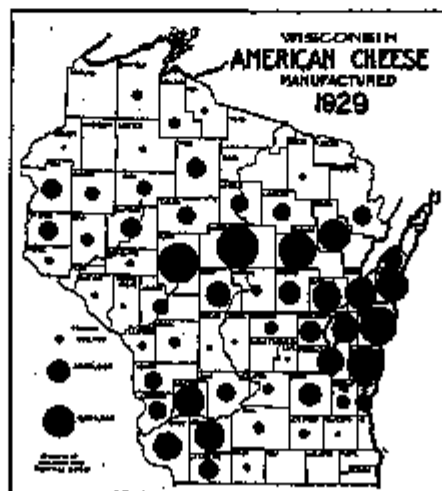
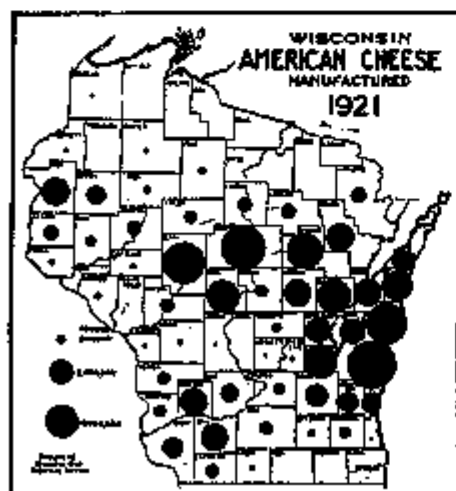


Fig. 45. Development of the American cheese industry during the eight years following 1921 shows the familiar picture of increased production in the central and eastern counties where demands on the milk supply have been made by condenseries and city market trade. Also the spread of American cheese production to more northern counties and development in the southwestern counties to care for increasing milk production is evident.

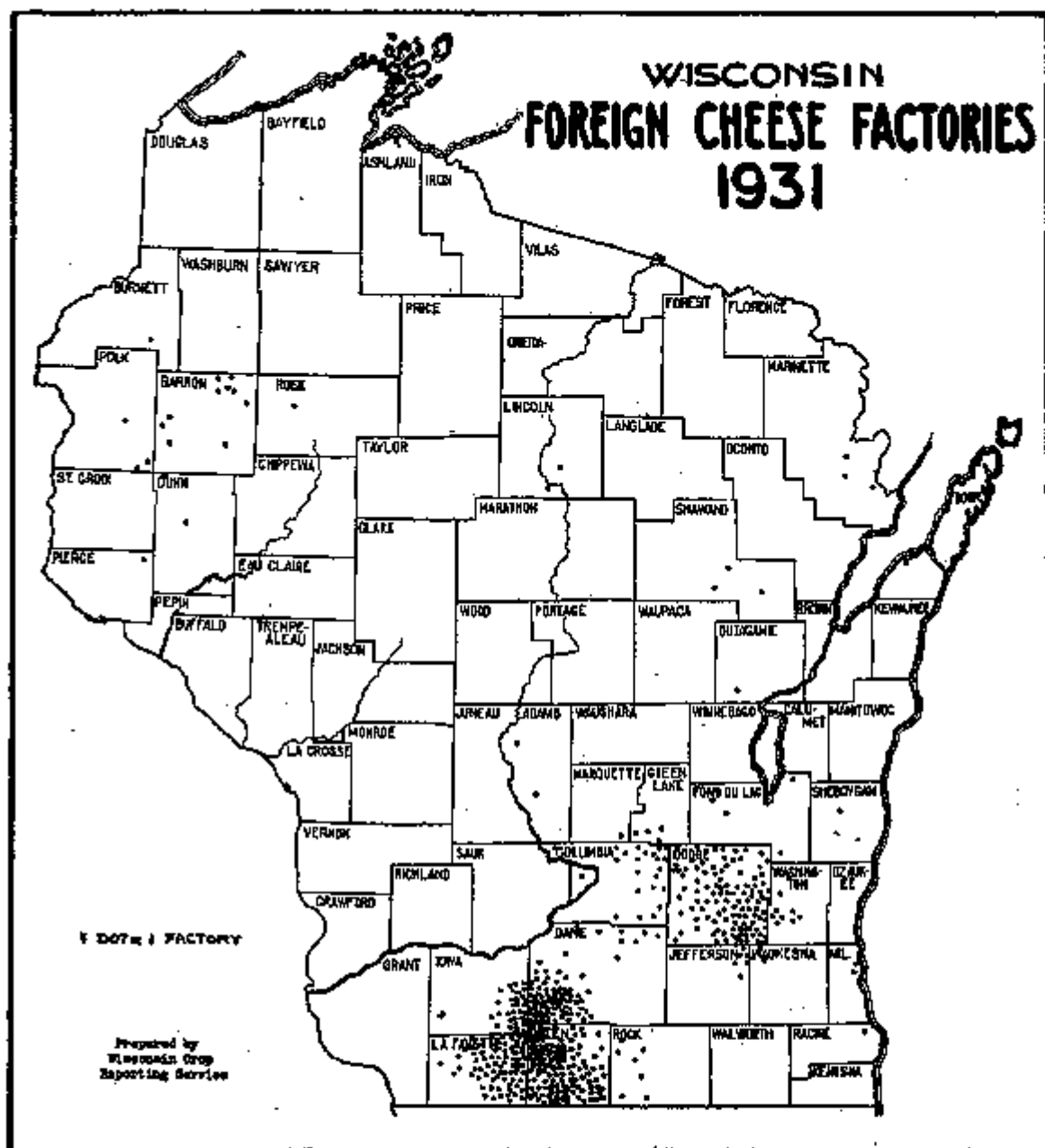


Fig. 48. Cheese factories manufacturing foreign types of cheese are distributed in two major areas. In the Green, Lafayette, Dane, Iowa, and Rock County area the largest number of plants are manufacturing Swiss or brick cheese. In the Dodge County area including some plants in neighboring counties brick cheese is the predominating type of foreign cheese with munster being of importance also, and some Limburger, Swiss, and Italian being reported. With the exception of Limburger the foreign types of cheese have been declining in recent years.

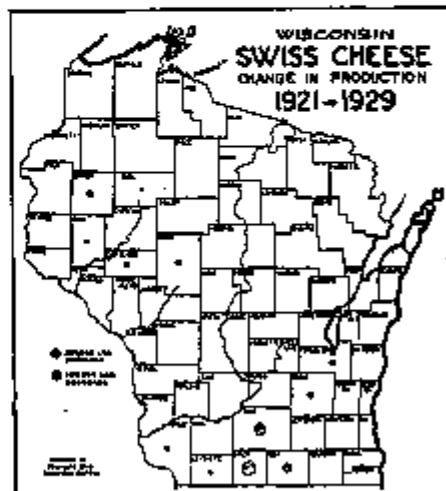
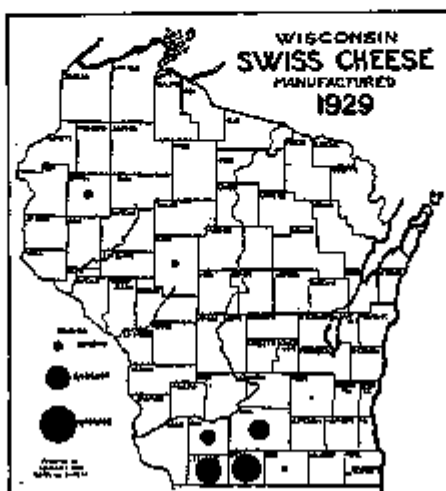
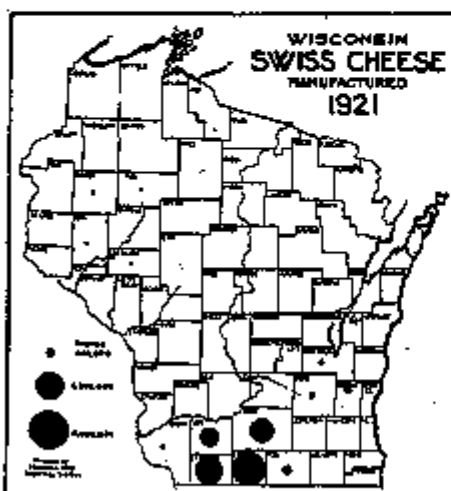


Fig. 47. Swiss cheese, produced largely in Green, Lafayette, Dane, and Iowa Counties has declined about 15 per cent in output for the state since 1921. While the decline has been largely in the brick type of Swiss, there appears to be no area of major expansion to indicate that the decrease in output of this type will not continue further.

TABLE No. 33. WISCONSIN SWISS AND LIMBURGER CHEESE PRODUCTION, 1921-1929*

County	SWISS CHEESE					LIMBURGER CHEESE				
	1929 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds	1929 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds
Barron	274,322	165,281	120,543	208,301	71,345					2,360
Bayfield										
Burnett										
Chippewa										
Douglas										
Polk				6,782		120				922
Rusk				25,626	10,000		13,038		55,444	101,246
Sawyer										
Washburn										
Northwest District	274,322	165,281	120,543	251,989	81,374	120	13,038		55,444	104,525
Ashland										
Clark	178,214				3,450			45,537		
Iron										
Lac Seul										
Marathon										
Oneida										
Precinct										
Taylor										
Vilas										
North District	178,214				2,450			45,537		
Florence										
Forest										
Langlade		2,012,688	1,213,311	62,780						
Marquette										
Oconto										
Shawano										
Northeast District		2,012,688	1,213,311	62,780						
Buffalo										
Dunn				10,273	22,547					
Bay Claire					88,216					
Jackson										
La Crosse										
Monroe										
Portage										
St. Croix										
Trempealeau										
West District				10,273	118,763					
Adams										12,931
Green Lake										
Juneau										
Marquette										
Portage										
Winnebago										
Winnebago										
Wood										
Central District										12,931
Brown										
Calumet										
Dodge										
Fond du Lac			66,158		107,129					18,968
Kewaunee										
Manitowish										
Outagamie										
Shoshong						12,240	18,402	17,849	19,897	10,013
Winnebago										
East District			66,158		107,129	12,240	18,402	17,849	19,897	28,972
Crawford										
Grant					71,931					
Iowa	1,669,797	1,914,965	2,174,964	3,834,903	2,392,432			40,000		5,590
Lafayette	4,899,878	4,696,683	5,406,846	4,971,119	4,794,672	99,107	253,546	280,824	359,654	407,187
Richland										
Seneca										
Vernon										
Southwest District	6,559,873	6,511,541	7,671,818	8,246,822	7,259,062	99,107	253,546	320,864	359,654	412,777
Columbia				7,843						
Dane	3,139,178	3,149,210	3,710,442	3,788,480	3,768,881	727,809	698,733	613,781	820,094	820,742
Dodge	42,836	114,792	45,830	817,804	190,987	47,579	133,449		11,484	131,035
Green	6,330,124	5,688,614	7,329,278	7,278,167	7,418,491	4,498,824	4,203,058	4,251,635	2,980,257	2,617,420
Jefferson										
Rusk	66,286	26,208	177,833	813,481	393,454	208,652	398,404	510,369	380,549	328,675
South District	9,468,242	8,977,824	11,263,082	12,603,825	11,771,913	5,488,664	5,438,639	5,376,839	4,992,384	3,105,378
Kenosha										
Milwaukee										
Ozaukee										
Racine										
Walworth										
Washington										
Waukegan			332,833	397,001						
Southeast District			332,833	397,001						
State	16,438,111	17,667,214	20,667,237	21,631,594	19,240,631	5,691,531	5,716,625	5,766,289	4,327,379	3,645,134

*From reports published by The State Dairy and Food Commission, except 1929.

†Revised from 3,652,155.

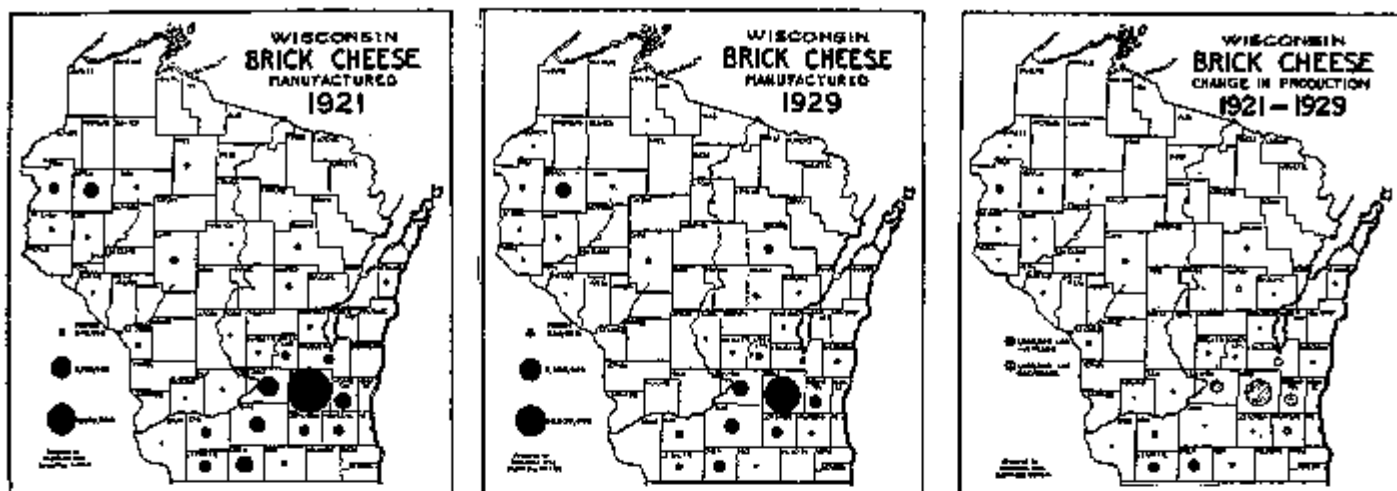


Fig. 48. Production of brick cheese has been quite localized with Dodge County being the brick cheese manufacturing center of the United States, producing more than 41 per cent of the nation's total output in 1929. Since 1921, brick cheese output has been on the decline in both the United States and Wisconsin. There are at present no areas in the state where there is much increase in this type of production, most counties showing declines.

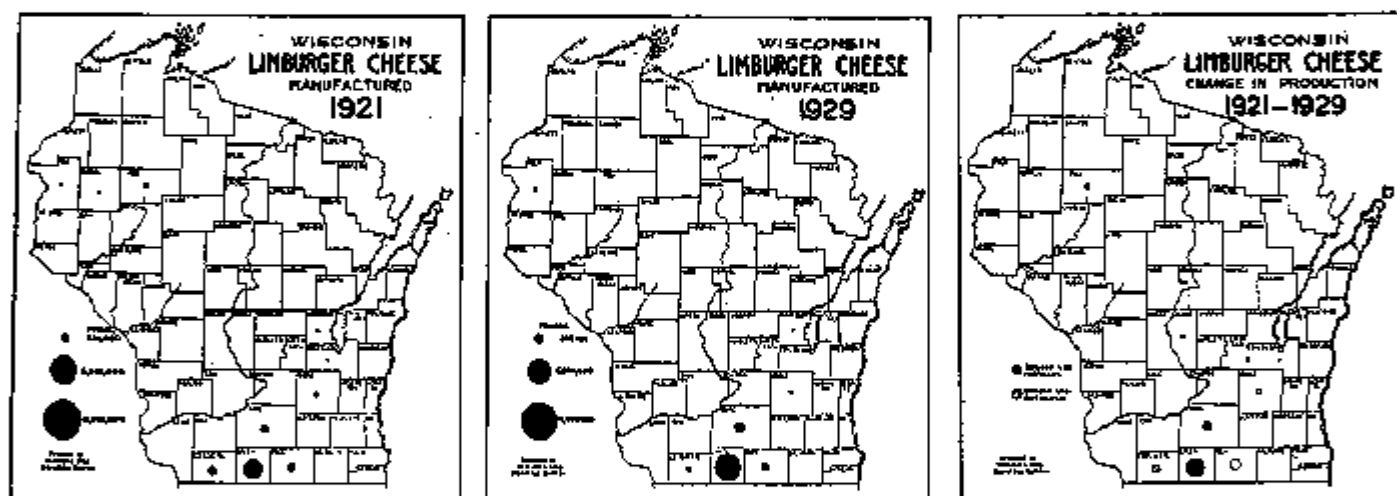


Fig. 49. Limburger cheese, as with most of the other foreign types of cheese, has been produced largely in quite restricted areas in the state. Green County is the outstanding producer of Limburger cheese, manufacturing over 50 per cent of Wisconsin's total output in 1929 and 52 per cent of that made in the United States. Slight declines in Limburger cheese production have occurred in recent years, but it has dropped less, proportionally than have some other varieties.

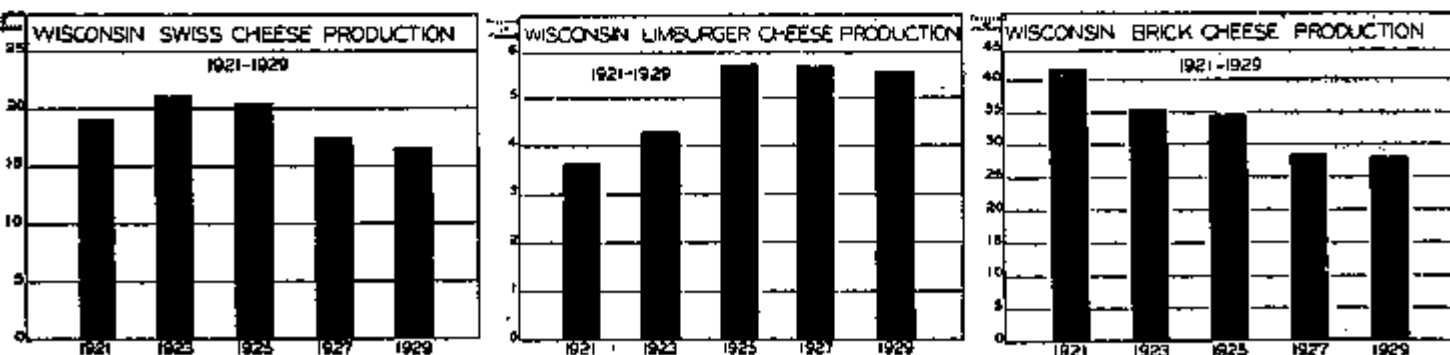


Fig. 50. Swiss cheese has had to compete for its milk as have other varieties of cheese with the demands for city market milk and cream and condensery products primarily. Also the competition of imported cheese coupled with a limited demand have all contributed to decreased production of Swiss cheese since the peak of 1923 when the production was close to 22 million pounds.

Fig. 51. Limburger cheese output of Wisconsin increased over 57 per cent from 1921 to 1925 and has stood at about the five and one-half to five and three-quarter million mark since then although slight decreases occurred in production as reported by plants in both 1927 and 1929.

Fig. 52. Wisconsin brick cheese production has declined from over 42 million pounds in 1921 to slightly over 28 million pounds in 1929. Factors affecting reduction in all cheese output have also influenced brick cheese production downward.

TABLE NO. 34. WISCONSIN FARM BUTTER PRODUCTION, 1849-1924*

County	1849 Pounds	1859 Pounds	1869 Pounds	1879 Pounds	1889 Pounds	1899 Pounds	1909 Pounds	1919 Pounds	1924 Pounds
Barron	80,076	107,132	431,340	745,078	827,265	411,787	142,352	4,974	
Bayfield (†)	208,332	280,420	286,143	149,945	58,144	1,400	670	50	
Burnett	112,344	485,760	185,431	333,706	173,407	156,231	30,895	5,886	100
Chippewa	138,841	199,145	433,871	840,088	886,686	613,233	238,403	51,486	775
Douglas	288,984	233,735	135,011	23,540	31,890	8,807	5,038	50	6,880
Polk	97,347	122,188	503,702	378,413	603,633	808,807	301,890	58,208	11,147
Rusk	132,738	120,079	252,771	199,592					
Sawyer	112,808	97,816	74,861	32,451	33,082	3,200			
Waushara	118,535	139,085	187,310	241,095	90,080	9,893			
Northwest District	1,268,756	1,455,900	2,561,640	2,564,498	2,682,999	1,713,353	625,866	120,560	12,072
Ashland	118,637	121,728	142,535	136,795	101,021	33,984	280	1,487	
Clark	50,497	47,129	723,068	672,186	1,335,110	611,807	242,006	74,578	19,888
Iron	85,249	77,307	23,373	58,456	12,338				
Lincoln	145,690	141,589	283,436	293,726	192,748	61,823	7,195		
Marathon	147,825	174,614	968,709	1,218,637	1,305,304	558,153	202,180		8,180
Oconto	90,817	116,163	140,308	73,287	48,418	500			
Pierce	180,732	171,060	260,258	297,536	179,300	48,337	1,472		
Taylor	84,842	98,763	215,128	199,060	394,250	113,212	19,428		
Vilas	59,615	58,803	86,579	1,450	3,400				
North District	979,123	1,041,951	1,809,878	2,948,043	3,274,097	1,422,664	472,237	75,136	29,615
Florence	41,334	87,774	62,738	52,445	27,196	18,038			
Forest	42,363	79,565	47,955	22,475	7,100	1,323			
Langlade	118,660	151,185	230,834	418,738	263,196	126,831	6,036		
Marquette	202,006	257,482	502,196	454,962	384,873	92,048	28,791		
Ontonagon	59,256	107,887	486,312	822,053	611,243	329,800	133,505	46,300	9,505
Shawano	85,794	188,581	500,001	738,938	843,320	460,316	134,572	20,970	2,340
Northeast District	619,421	792,224	1,851,039	2,362,643	2,137,633	1,433,981	392,879	67,279	12,845
Buffalo	119,865	165,214	387,538	571,414	720,685	432,699	321,000	264,885	88,457
Dunn	261,220	218,370	412,934	754,649	738,594	711,443	349,511	209,530	24,850
EAU Claire	80,588	133,928	374,745	421,683	514,476	598,964	277,990	124,365	32,711
Jackson	138,052	232,328	470,581	605,031	604,505	410,619	328,184	140,154	54,680
La Crosse	132,269	197,870	322,484	437,635	568,108	598,665	338,181	245,438	108,401
Monroe	117,825	102,582	547,673	878,304	1,277,428	907,872	532,738	381,478	141,620
Portage	68,651	102,084	190,166	182,928	211,444	212,688	155,895	125,019	20,474
Popple	196,724	312,793	612,933	798,020	1,011,343	783,638	384,907	121,038	56,599
St. Croix	106,145	171,374	602,910	837,907	538,704	782,905	390,306	239,815	54,795
Traverse	840,892	454,138	583,783	618,963	1,128,513	751,204	497,660	341,043	71,000
West District	1,446,631	2,109,743	4,275,744	5,825,452	8,558,794	6,224,563	3,546,651	2,195,854	453,487
Adams	110,941	154,912	330,657	334,866	471,751	868,512	289,208	277,530	142,648
Green Lake	25,872	35,791	330,143	304,334	719,097	845,268	896,015	862,594	331,490
Juniata	102,412	160,328	589,121	619,612	630,840	530,813	862,059	231,003	112,640
Marquette	37,388	94,136	101,860	160,924	478,094	431,182	275,219	240,408	223,474
Portage	51,417	101,968	273,605	427,943	724,902	537,887	815,821	156,899	38,730
Washburn	58,035	80,434	308,406	654,714	774,735	833,553	494,554	253,593	183,875
Winnebago	43,006	78,721	103,943	368,928	644,607	807,214	492,353	321,706	290,102
Wood	55,930	99,082	239,613	427,744	690,064	251,873	124,924	46,343	32
Central District	523,881	781,369	1,351,572	3,207,037	4,933,420	4,485,681	2,798,258	1,952,148	1,348,684
Brown	287,588	87,307	426,879	646,532	1,393,467	820,496	513,532	809,838	48,738
Calumet	11,108	15,443	229,438	390,551	385,117	530,070	459,091	805,886	159,638
Door	70,793	137,692	449,043	654,247	539,631	363,966	153,874	58,861	4,051
Fond du Lac	41,823	41,600	968,409	695,431	1,207,903	1,608,324	1,348,571	1,065,482	684,774
Kewaunee	48,844	61,861	174,610	372,637	822,102	472,397	264,147	124,091	61,716
Manitowish	224,082	99,135	417,306	613,316	706,907	819,316	772,647	573,319	186,457
Outagamie	51,470	97,656	875,822	1,026,880	869,243	329,899	786,028	282,242	189,574
Sheboygan	34,152	36,024	257,768	377,919	640,225	636,955	801,863	710,010	508,870
Winnebago	49,307	40,289	726,072	900,685	855,228	1,064,184	859,773	731,268	464,840
East District	786,612	615,917	4,234,644	5,738,518	7,489,623	7,348,197	5,999,772	4,180,694	2,201,553
Oshkosh	130,089	148,880	529,479	543,744	881,213	809,155	375,681	228,277	40,170
Grant	153,310	115,646	480,885	956,702	1,840,085	1,968,002	1,138,052	861,028	452,827
Iowa	58,160	77,134	187,720	337,907	485,858	1,142,480	815,684	547,398	295,578
Lafayette	82,815	90,467	314,683	306,561	555,821	1,148,436	1,082,602	689,265	314,434
Richland	25,282	21,013	440,406	454,200	621,412	890,946	561,567	316,734	233,301
Sauk	66,090	94,816	392,780	613,014	1,025,536	1,487,895	826,078	513,080	369,238
Vernon (‡)	169,698	246,819	1,085,207	1,177,923	1,398,709	1,156,014	821,110	464,741	144,917
Southwest District	675,354	794,065	3,440,610	4,619,651	7,085,245	8,382,412	5,483,625	3,636,603	1,852,313
Columbia	115,848	232,128	738,376	888,838	1,344,876	1,848,240	988,838	706,516	580,145
Dane	109,519	144,616	668,681	968,658	1,468,518	2,155,508	1,960,801	1,242,858	890,289
Dodge	31,021	65,074	463,904	473,086	678,127	1,765,938	1,847,286	1,153,272	856,221
Green	43,226	40,351	819,725	417,245	272,740	725,091	993,770	909,485	573,665
Jefferson	37,330	27,730	235,824	1,084,281	228,332	672,861	1,001,887	906,119	512,506
Rock	65,141	67,201	830,330	897,936	823,568	1,778,751	1,436,728	1,043,169	804,164
South District	382,483	537,388	3,266,946	4,538,445	4,614,161	8,476,387	8,889,211	5,963,514	4,317,548
Kenosha	28,707	51,329	72,400	142,972	209,330	565,969	806,300	480,599	376,079
Menominee	94,213	166,084	484,185	500,798	745,999	1,262,280	780,329	847,590	427,906
Oscoda	30,700	30,630	224,667	586,160	590,180	767,774	848,307	895,008	287,704
Radnor	78,123	75,081	243,990	371,303	499,827	797,417	738,574	610,323	436,523
Walworth	35,683	28,443	49,550	242,948	219,037	883,105	1,133,596	639,516	594,063
Washington	34,307	72,485	848,980	488,655	781,396	989,281	834,507	633,214	404,931
Waukesha	59,376	103,368	1,046,822	847,241	1,265,897	1,950,552	1,079,470	584,215	687,934
Southeast District	381,249	537,629	2,449,422	3,175,691	4,386,216	7,217,378	6,071,383	4,269,265	3,185,819
State (‡)	7,171,288	8,666,637	27,208,509	34,620,368	44,739,147	46,296,623	32,353,645	22,473,036	13,611,228

* Taken from the regular census reports of the United States for the years given except 1905 which is from "Wisconsin Census Report, Parts I and II," for 1908, and 1924 which is from the United States Census of Agriculture of 1925.

† Bayfield County figures for 1889 and 1890 were reported as La Pointe County which included much more than Bayfield County in those years, the figures being put under Bayfield County here for convenience.

‡ No return.

§ Included in figure for Adams County.

¶ Vernon County figure in 1880 was reported as for Red Ax County but due to similarity of area included, the figure is given for Vernon County.

‡ State totals include figures for Indian reservations reported separately as follows in 1899: La Pointe 70 pounds, Menominee and Stockbridge 1,030, and Oconto 18,512 pounds.

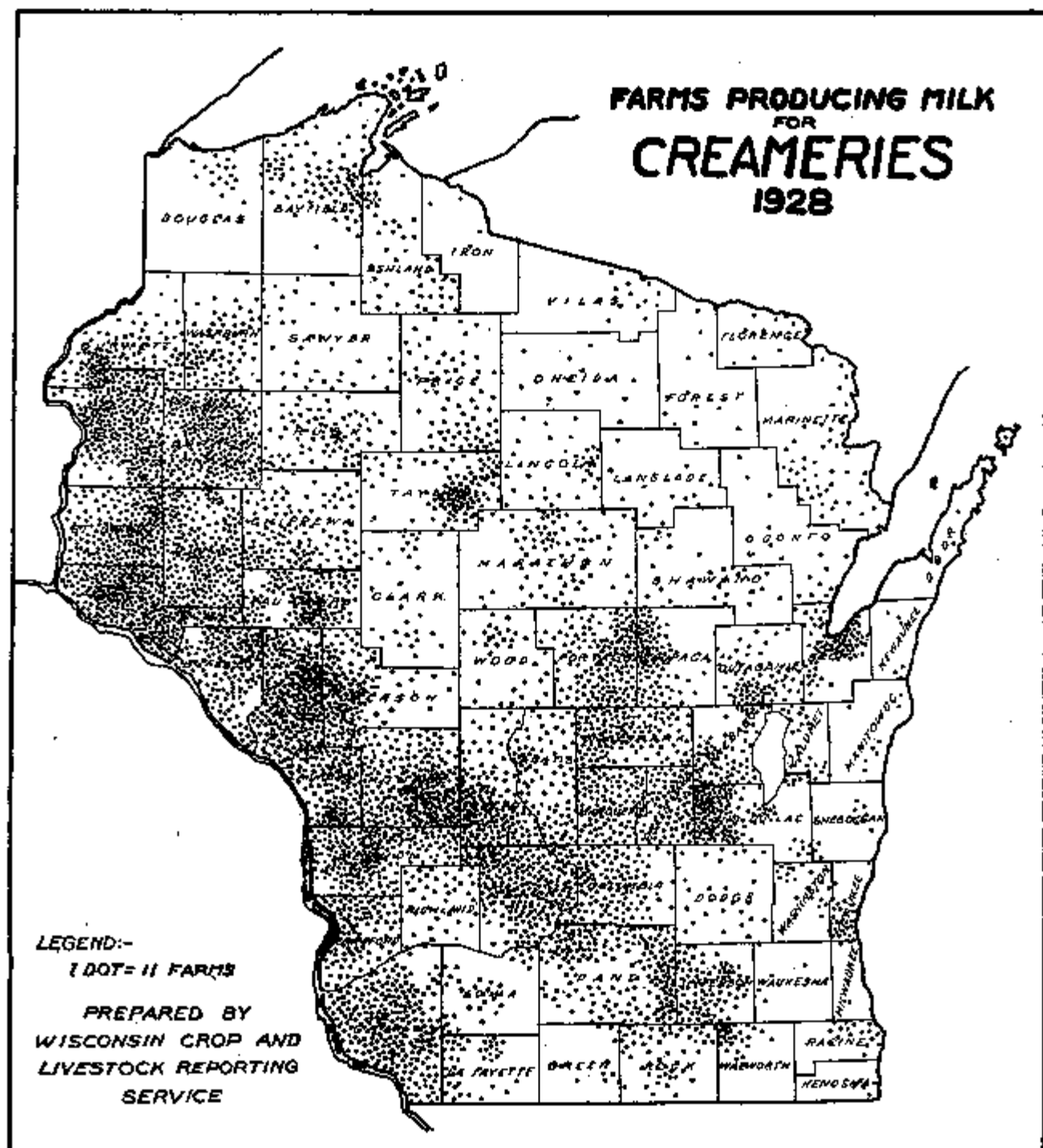


Fig. 51. Counties with greater numbers of farms producing milk for creameries are those having larger numbers of creameries in operation. The area adjacent to the butter territory of Minnesota and Iowa, bordering on the Mississippi River produces the bulk of the state's butter. Thirty-six per cent of the farms in Wisconsin reported their product as going to creameries in 1928. Every county in the state has at least one creamery, with most of them having more.

The Butter Areas

Creameries in Wisconsin are widespread and form an important outlet for milk. The manufacture of butter has often been the leading industry in the beginning of the dairying in many communities. Other outlets have come with the development of better transportation. Butter production has given way to other types of production, such as cheese making

and the condensery industry. Some creamery butter production is reported in all Wisconsin counties, the important areas being Western, Southwestern, and Central Wisconsin. Milwaukee County is a large producer, but this output is largely the result of surplus city market milk and cream which is converted into butter as a convenient market outlet. Large quantities are also produced in

the vicinity of Lake Winnebago and the Fox River Valley, as well as throughout the central sandy soil region of Wisconsin. In the Fox River Valley and other cheese areas the butter production is partly obtained from whey cream, hence it becomes to some extent a by-product of cheese making.

Butter production has tended to follow the agricultural frontier and

TABLE NO. 35 WISCONSIN FACTORY BUTTER PRODUCTION, 1885-1927*

County	1924 Pounds	1927 Pounds	1925 Pounds	1923 Pounds	1921 Pounds	1919 Pounds	1917 Pounds	1915 Pounds	1913 Pounds	1911 Pounds	1909 Pounds	1907 Pounds	1905 Pounds	1903 Pounds	1901 Pounds
Barron	4,980,878	5,398,761	6,376,881	6,340,958	5,131,922	5,481,612	5,512,884	4,798,006	2,830,615	1,413,414	828,126	226,886	58,148	35,148	22,886
Bayfield	1,146,448	1,431,143	1,361,380	1,214,698	885,942	869,747	869,747	136,753	17,801	1,413,414	828,126	226,886	58,148	35,148	22,886
Burnett	1,815,088	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808	1,902,808
Chippewa	2,069,718	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877	2,324,877
Douglas	1,121,118	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011	1,438,011
Folk	1,361,430	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066	1,445,066
Frank	1,695,489	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228	1,435,228
Grant	869,838	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354	843,354
Washburn	1,276,940	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070	1,318,070
Northwest District	21,111,089	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014	21,372,014
Ashland	616,600	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391	555,391
Clark	880,588	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888	536,888
Iron	809,902	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828	899,828
Lincoln	788,418	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302
Marathon	777,513	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302	844,302
Oneida	747,525	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341	104,341
Pierce	761,850	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719	899,719
Taylor	3,382,049	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191	2,877,191
Vilas	106,549	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310	93,310
North District	6,276,860	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953	7,221,953
Bloomsburg	128,921	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906	89,906
Forest	179,222	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129	161,129
Langlade	817,024	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026	944,026
Marquette	961,004	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890	966,890
Oneida	818,930	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070	487,070
Shawano	749,875	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098	497,098
Northwest District	3,340,096	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618	3,845,618
Buffalo	4,188,385	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812	4,643,812
Dunn	5,487,458	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401	6,040,401
EAU Claire	2,680,734	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895	2,714,895
Jackson	3,622,984	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306	3,890,306
La Crosse	3,908,990	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419	2,974,419
Monroe	7,753,977	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305	7,833,305
Pepin	2,980,444	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009	2,151,009
Pierce	3,324,310	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331	5,765,331
St. Croix	6,739,823	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956	5,909,956
Traverse	7,608,086	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880	7,249,880
West District	49,514,467	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613	49,863,613
Adams	154,175	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686	166,686
Green Lake	1,619,970	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789	1,668,789
Juneau	8,180,392	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852	8,236,852
Marquette	1,446,361	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574	1,456,574
Portage	2,686,919	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825	2,681,825
Waupaca	2,616,146	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707	2,623,707
Waushara	2,087,510	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823	1,455,823
Wood	2,417,431	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580	2,093,580
Central District	16,382,077	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285	15,776,285
Brown	5,063,778	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848	5,090,848
Calumet	79,922	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280	125,280
Dodge	181,601	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862	262,862
Pond du Lac	2,680,568	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964	3,264,964
Kewaunee	154,289	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702	154,702
Manitowish	994,462	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842	941,842
Outagamie	336,285	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178	269,178
Shawano	2,158,981	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566	2,393,566
Winnebago	3,341,394	3,044,663	3,044,663	3,044,663	3,044,663										

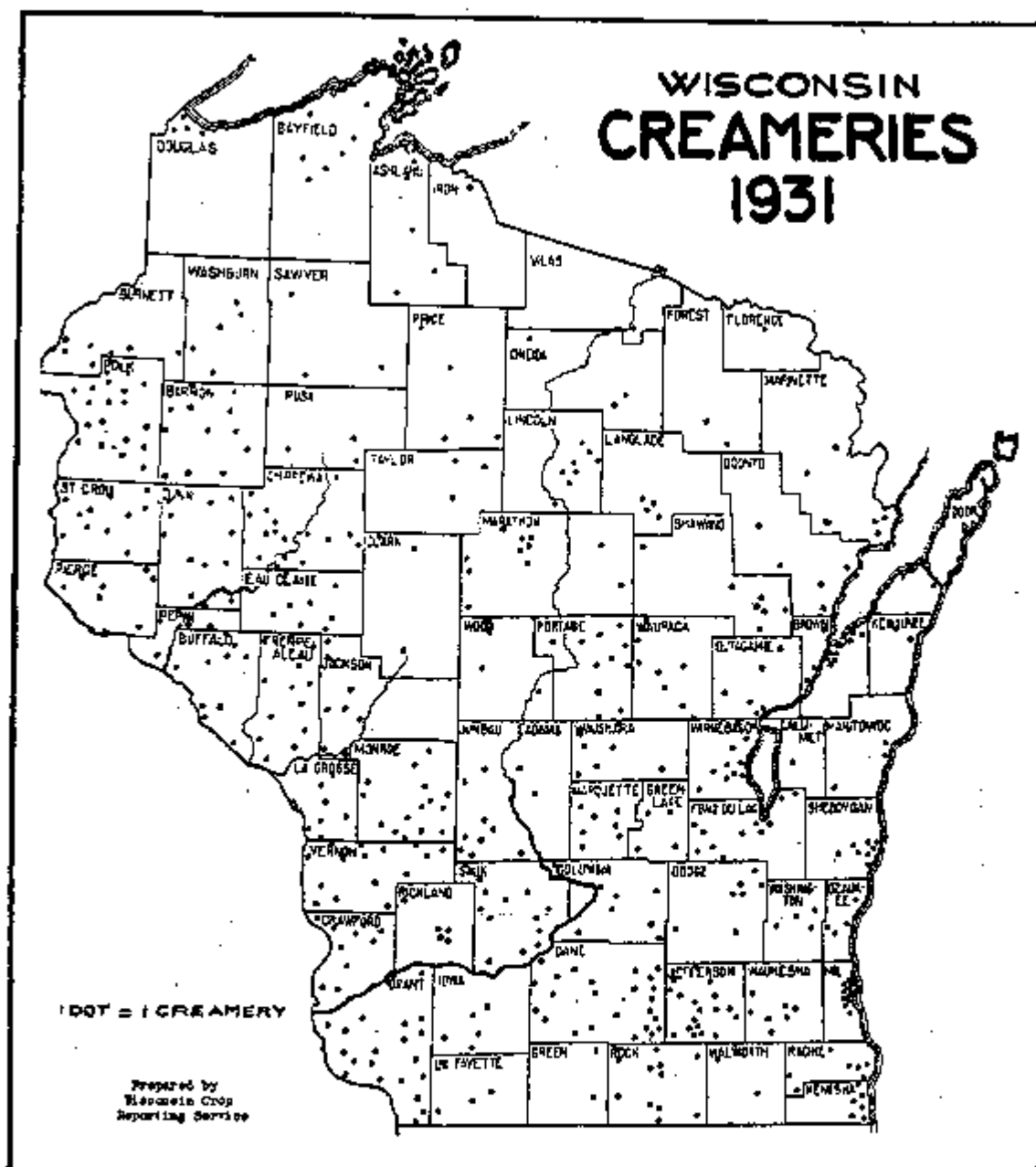


Fig. 54. With butter being manufactured quite generally over the state, distribution of creameries is similar in character. A considerable concentration of creameries is evident through the western counties where much of Wisconsin's butter is made. Licensed butter plants numbered 816 in the state for 1930 or an average of more than seven per county. Creameries usually cover much larger areas than cheese factories and fewer of them are needed to dispose of a large local output of milk.

also in a sense the frontier of dairying. While it still holds an important place in the large portion of the state where a number of different outlets are available for milk, it forms practically the only available outlet in many localities of Western Wisconsin, particularly hilly regions where transportation facilities are less developed than in some of the other parts of Wisconsin. This Western Wisconsin butter region forms a part

of the large butter area in the United States which is found in the Upper Mississippi Valley regions of Wisconsin, Minnesota, and Iowa. About 41 per cent of the United States creamery butter production comes from these three states. In 1928, 85 per cent of the farms in Wisconsin reported that their milk was being sold to creameries.

The farms in the state which produce milk for creameries were large-

ly concentrated in Central and Western Wisconsin as is shown in the map on page 59. Not all of the cream and milk sold to creameries is used for butter making. Shipments of cream to other plants both in and out of Wisconsin are common. Some of the cream is used in the making of ice cream or sold as market cream in the cities. In some years heavy shipments to Eastern markets have been made.

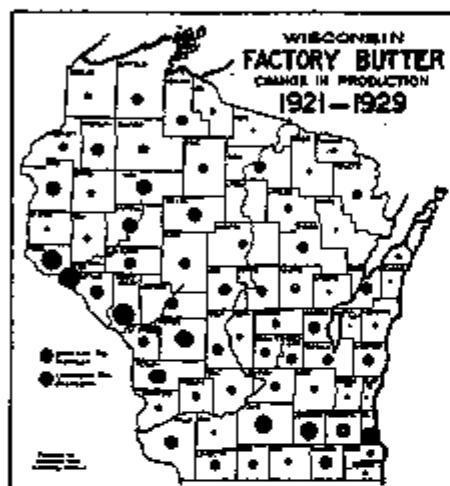
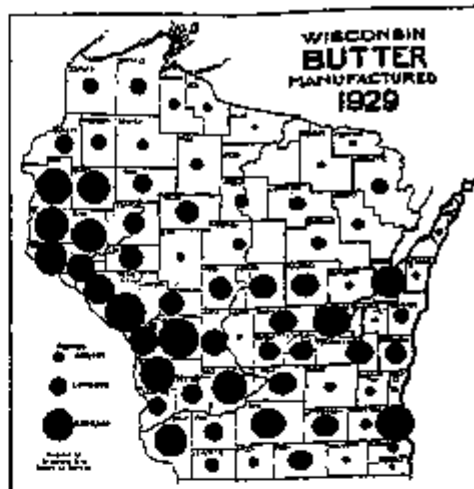
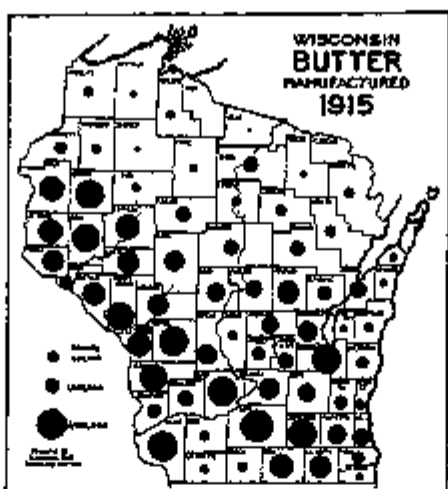


Fig. 55. Factory butter production in 1895 was greatest in the southeastern section of Wisconsin. As numbers of dairy cattle increased over the state manufacture of butter spread farther and became increasingly important in western counties. In 1915 a much heavier concentration is evident to the north and west of the former southeastern heavy producing area. About 15 years after this another distribution of factory butter production shows this major shift away from the southeastern counties as having continued up to 1929. Now the western counties account for a relatively high proportion of our factory butter. The shift in recent years is quite apparent in the change in production from 1921 to 1929. The inroads of city market milk and condenser products especially are readily seen in those areas showing decreased butter production.

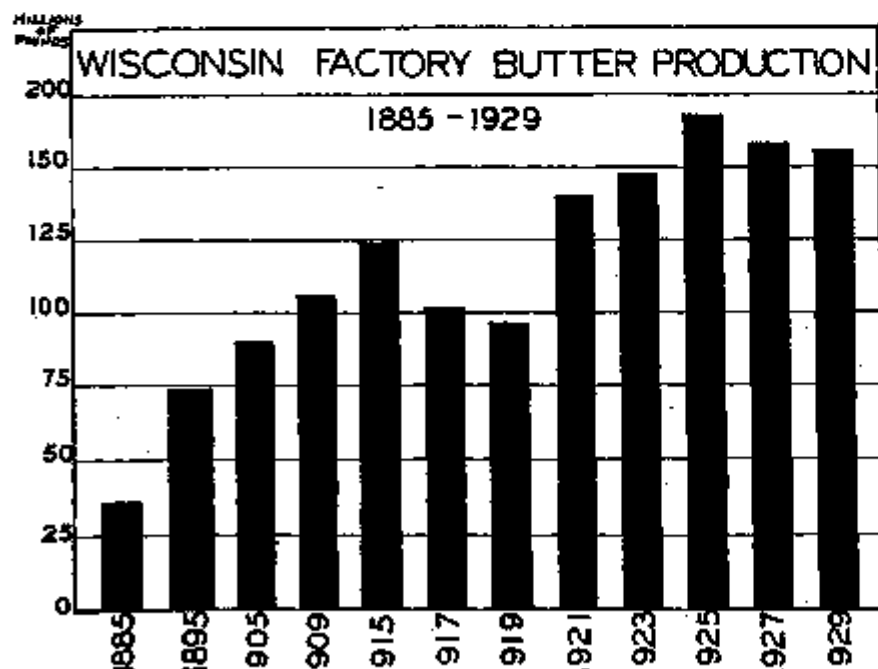


Fig. 57. Factory butter production developed steadily from 1885 to 1915. A drop occurred in 1917 and a further decline appeared in 1919. During this four year period of war time influence condenser products were being manufactured in large quantities and more land and effort was devoted to the production of grains and livestock for market with probably some effect on butter production through lowering milk supply in butter regions especially adapted to grain, pork, and beef production. In 1921 a resumption of the upward trend of butter manufacture occurred and up to 1925 increases were registered. After 1925 production declined as a result of greater diversion of milk to city market milk and cream channels, condenser products, and some minor outlets.

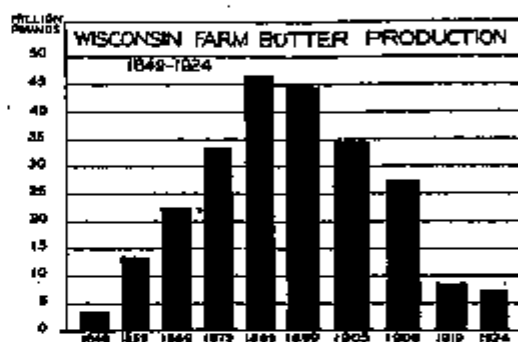


Fig. 56. Butter production on the farm in 1849 was in quite an early stage of the dairying phase of Wisconsin's agriculture. There was little demand for butter other than where produced as compared to the present time. Expansion of farm butter making came quite rapidly and by 1889, 40 years later, the state production had reached over 45 million pounds. With standardization of dairy products and the great volume of creamery butter now being manufactured, there is little reason to believe that the next census will show any marked change in farm butter production, although a further decrease may occur.

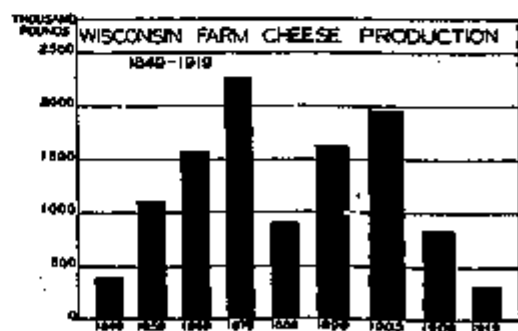


Fig. 58. Farm cheese production made rapid strides from 1849 to 1879 when from a study of county tables on factory and farm cheese production it appears that in counties important in farm cheese production, factories came in to supplant this home industry. Later on another cycle of this nature occurred and after 1903 factory cheese again usurped the place of farm cheese manufacture. As in the case of farm butter making, there is little reason to believe that farm cheese manufacture will increase materially now as the standardization of dairy products and the trend of markets is entirely away from that possibility.

TABLE NO. 36. MISCELLANEOUS WISCONSIN DAIRY FACTORY PRODUCTS, 1929*

County	Condensery Products ¹						Munster cheese	Cream and neutral cheddar cheese	Italian cheese ²	Cottage, skim milk and other cheese not listed separately ¹	Casein ³		Butter-milk sold	
	Evaporated milk	Sweetened condensed milk	Evaporated skim milk	Sweetened condensed skim milk	Powdered milk ⁴	Powdered butter-milk					Dry	Wet		
														Pounds
Barron	420,201	5,090,277		2,241,358	7,443,511	302,945				101,978	1,006,509	155,068	741,548	
Bayfield						50,788						1,818	589,880	
Burnett													826,125	
Chippewa	26,470,478	876,811	383,803	1,442,800	2,443,781	320,210					881,800		576,484	
Douglas					1,123,718	108,933				229,378	5,287		988,418	
Polk					732,880	42,190					160,985		3,251,401	
Rusk					480,658	142,782					143,541			
Sawyer					787,698	63,010					124,294		10,000	
Washburn														
Northwest Dist.	26,890,679	6,066,858	383,803	3,684,268	12,947,352	1,034,879			222,278	161,976	2,432,296	154,884	6,293,782	
Ashland													1,800	
Clark	33,607,025				472,820					28,920	1,840,142	69,486	152,192	
Iron														
Lincoln	12,935,792													
Marathon	16,707,695	101,846	189,080	677,309	3,756,563				2,300	56,086	139,063	1,696	770,322	
Oneida													1,188	
Priest					108,088						44,540	24,261	400	
Taylor						326,196			34,480	8,735	139,367			
Vilas									8,546				3,200	
North Dist.	62,152,402	101,846	199,980	677,309	4,335,171	829,186			34,460	10,846	91,751	2,163,132	95,451	919,582
Marathon													3,000	
Forest	19,224,801				482,255	26,050					8,188		81,500	620,297
Langlade	5,107,820									430,580	31,859		17,600	12,000
Marquette												29,367	44,885	6,000
Oneida	10,188,119		2,026,602								640,062	73,063	176,870	1,741
Shawano									430,560	395,893	102,420	328,365	644,958	
Northeast Dist.	25,515,840		2,026,602		482,255	25,590								
Buffalo					186,800	471,052								2,821,143
Dunn	13,427,652	126,358			914,403	847,682						867,896		2,563,814
Ray					1,407,731							2,947		1,083,306
Walworth						189,760								2,176,584
La Crosse	2,200,000		900,000		327,050	387,830						72,000		1,112,097
Monroe	11,832,391				604,360	378,885						2,000	46,621	1,487,813
Pepin						452,787								170,284
Pierce					371,300	611,471								887,880
St. Croix						596,026						18,780		817,047
Traverse	2,693,663	3,447,000			358,682	361,611						181,266		2,882,898
West Dist.	29,184,906	3,673,252	900,000		3,930,328	3,743,952					23,427	1,970,497		16,161,231
Adams														
Green Lake	17,889,108												7,713	1,946,090
Juneau			577,607		482,252	86,224						174,300		808,910
Marquette						101,828								187,459
Portage	6,848,966				351,845	88,668					55,651	238,972	230,201	382,643
Waupaca	22,843,484		416,278	18,329	2,137,335	169,150						32,089	209,532	134,491
Waushara														930,066
Wood	9,316,992				402,965	198,061					16,200	604,554	55,245	46,495
Central Dist.	66,686,456		993,888	18,329	3,324,328	650,477					69,851	1,048,186	602,691	4,647,005
Brown	17,885,441			294,288		532,902					308,780	470,148		26,596
Chetek	13,090,524										3,240	181,888	68,795	4,096
Door	30,640,232										13,000			35,030
Dodge	3,697,210	1,247,208	1,084,208	8,031,058	999,900				365,031	537,806	86,511	1,092,822		2,472,356
Kewaunee											9,155			4,000
Manitowish	24,422,285				1,323,693						124,383	22,500	2,985	181,000
Outagamie					3,322,471						10,500	66,671	81,850	
Shoshone	5,130,858			298,769							246,705	193,606		1,900,003
Winnebago	10,688,248				648,743	90,000			7,218		107,169		78,000	862,802
East Dist.	130,425,897	1,247,208	1,084,208	8,031,058	9,789,664	6,469,867	622,902		870,249	337,809	813,462	2,576,585	236,405	4,990,793
Crawford														6,113
Grant														1,214,044
Iowa								113,107			2,800	53,320		28,460
Lafayette					718,400									
Richland	13,814,984				709,200	149,900					48,254		107,124	162,000
Sauk	11,843,016		25,000		1,448,000	401,000					7,600			1,868,478
Vernon	9,014,712				306,200	488,128								1,070,958
Southwest Dist.	34,672,692		25,000		3,270,806	1,082,829	113,107	11,745			55,054	52,330	107,134	4,497,043
Columbia	9,139,848				3,837,487	109,837								60,400
Dane	34,678,535		287,085		750,313	230,832					28,783	6,309		404,438
Dodge	44,821,380				201,284		18,471	3,207,425	5,789,857		548,587		22,500	1,411,333
Green	29,206,326				2,392,181				22,804		430,924	111,468		26,440
Jefferson	40,018,798			3,487,400									20,600	7,300
Rock	9,578,106	3,180,000	610,760	474,671	1,277,061			1,202,853			789,416	208,847		12,820
South Dist.	169,508,996	3,180,000	747,545	3,941,971	8,294,276	129,408	3,632,059	7,015,104			2,285,267	326,118	152,630	2,370,891
Kenosha														60,400
Milwaukee	1,724,046	42,381	385,070	3,642,278					14,097		3,030,789		582,006	16,398,212
Ozaukee														9,600
Racine	1,483,769	12,367,406												1,208,096
Walworth	19,073,784	10,776,940		3,878,947	319,000				216,018	26,000	284,808			240,000
Washington	27,181,490										10,500			15,184
Waukesha	33,283,774			1,700,187	1,610,240						42,300	164,025	604,242	32,880
Southeast Dist.	78,646,802	23,776,679	295,670	5,221,412	1,829,248				229,950	25,006	2,409,502	154,621	1,426,251	17,960,275
State	623,614,964	37,345,873	6,717,193	25,152,233	45,063,515	7,568,483	3,745,166	7,661,867	1,026,593	6,248,582	10,835,678	2,988,011	58,495,497	

*Not listed elsewhere.

¹See Table 37 for total production of condensery products.

Additional products, not listed separately, are condensed buttermilk; Jackson County 132,982 pounds; Sauk 45,000, state 177,642 pounds; powdered whey in Marathon County 168,580 pounds; Shawano 214,830, state 381,360 pounds; and powdered cream in Green County 7,450 pounds which is also the state total of powdered cream. Also milked milk estimated from quantity of milk reported used in ice manufacture was 12,670,955 pounds for the state.

²Powdered milk is powdered skim milk except the following quantities of powdered whole milk, which are included: Douglas County 95,161 pounds; Waupaca 11,108; Columbia 1,252,711; Green 1,509,896; and the state 2,868,834 pounds.³Estimated and reported quantities of the various types of Italian cheese for the state are: asiago 489,014 pounds; reggiano 184,499; scamorza 107,188; ricotta 88,866; casuvalle 53,078; fontina 36,150; provolone 23,494; romanesco 6,092; and unlisted as to type, 20,948 pounds.⁴Cottage, skim milk, and other cheese not listed separately, includes the following kinds and quantities of cheese for the state: cottage cheese 6,182,173 pounds; skim milk cheese 402,763; cream cheese 228,152; cooked or boiled (reported as soups) 118,396 pounds; bond out 101,976; bond out and kumazin out (not reported separately) 55,219; lunch 22,596; plump 17,635; roll cheese 2,835; and undesignated, 12,900 pounds.⁵Both wet and dry casein were reported. Some of the wet casein may have appeared both as wet and as dry casein if dried at some plant other than that of manufacture. This duplication is probably not very high, however, since much of the wet casein is used as such. Wet casein may be converted to dry casein by multiplying the quantity of wet casein by .4 since one pound of wet casein will yield approximately two-fifths of a pound of dry casein.

TABLE NO. 37. ALL CONDENSERY PRODUCTS MANUFACTURED IN WISCONSIN DAIRY PLANTS, 1921, 1925 AND 1929*

TABLE NO. 38. WISCONSIN ICE CREAM MANUFACTURE, 1923-1929*

TABLE NO. 39. ESTIMATED WHOLE MILK USED IN MANUFACTURE OF DAIRY PRODUCTS IN WISCONSIN PLANTS, 1929*

County	1929 Pounds	1925 Pounds	1921 Pounds	1929 Gallons	1927 Gallons	1925 Gallons	1923 Gallons	Total whole milk used Cwt.	Milk Used for Manufacture of			
									Butter Cwt.	Cheese Cwt.	All other products Cwt.	
Barron	15,498,292	2,829,661	790,182	72,258	67,388	68,130	62,769	1,408,151	1,099,380	419,718	129,078	
Bayfield	50,739					1,489	3,142	829,799	243,001	86,798		
Burnett								404,798	390,246	14,551		
Chippewa	22,006,793	20,743,513	13,153,074	118,864	116,000	113,212	85,827	1,488,280	441,928	387,443	603,847	
Douglas	1,332,071			180,847	187,047	147,488	96,260	1,389,273	241,040	24,055	94,178	
Folk	779,066			16,406	1,800	23,580		1,799,179	1,868,520	428,001	2,856	
Hask	598,440			15,614	13,940			802,332	365,174	234,584	2,520	
Sawyer								171,725	144,026	27,699		
Waushara	860,708							274,898				
Northwest District	51,697,759	28,572,174	13,943,804	338,783	325,999	353,697	276,789	6,933,348	4,538,188	1,622,695	832,294	
Ashland			634,982	38,890	48,240	59,450	49,156	959,879	139,438	113,019	9,022	
Clark	93,990,445	12,821,813	10,174,464	34,036	28,628	31,737	27,455	2,847,907	73,492	1,769,262	719,233	
Iron				23,069	24,906	45,486	42,640	32,019	66,843	20,118	5,357	
Lincoln	12,666,792	189,339		23,879	22,756	32,218	22,640	773,032	169,080	235,642	279,411	
Marathon	20,488,590	900,228		187,956	109,212	109,331	77,636	2,450,323	158,517	1,989,906	369,450	
Oneida				73,219	64,506	68,944	38,865	32,100	10,289		11,821	
Pierce	106,088	149,188		17,381	14,301	16,327	9,114	496,652	162,516	336,920	2,816	
Taylor	322,188			16,830	12,350	1,700		870,818	541,312	226,680	2,726	
Vilas								22,909				
North District	67,442,191	13,969,565	18,809,456	611,131	532,492	544,699	361,445	7,567,999	1,338,746	4,836,427	1,392,836	
Flambeau								29,870	29,870			
Forest								65,967	38,535		27,452	
Langlade	10,733,706			24,257	26,385	34,018	10,760	886,932	175,982	239,572	221,718	
Marquette	5,107,820			30,004	21,736	26,921	20,903	723,607	266,635	402,312	118,680	
Oconto								1,214,389	110,495	1,108,573		
Shawano	12,424,761	189,480	1,331,188	62,255	41,573	45,750	59,649	1,974,527	154,918	1,592,629	228,086	
Northeast District	28,265,377	132,480	1,831,189	116,616	88,296	96,689	91,262	4,694,351	716,110	3,485,879	562,863	
Buffalo	657,838		240,017					913,712	889,788	22,359		
Dunn	12,736,288	36,653	9,494,283	19,816	81,178	42,612	59,131	1,602,023	1,172,869	157,574	270,795	
EAU Claire	1,497,721			50,081	129,491	110,155	50,213	618,688	577,848	32,106	9,033	
Jackson	319,742			390	240	870	1,030	899,193	426,985	282,274	54	
La Crosse	2,674,330		132,611	282,983	212,450	109,743	283,313	969,082	889,222	39,461	38,898	
Monroe	13,083,166	7,263,961		41,555	12,909	23,800	7,000	2,008,550	1,667,085	64,025	259,287	
Pepin	452,767					7,264	7,871	384,285	384,285			
Pierce	882,771			15,613	20,690	17,472	20,792	1,164,782	1,145,782	41,462	2,513	
St. Croix	390,025		77,624	21,642	88,686	39,584	10,321	1,008,171	1,289,315	358,695	5,366	
Traverse	6,780,836	7,310,882	4,562,442	2,977	10,649	2,820		1,775,152	1,686,088	8,791	131,378	
West District	41,464,518	14,643,526	14,346,527	438,794	483,184	492,371	392,116	12,368,678	10,699,411	976,449	767,313	
Adams								51,319	32,143	18,168		
Green Lake	17,998,108	16,535,064	52,361,124					778,139	243,272	65,027	374,840	
Juniata	1,151,214			26,328	56,415	2,700	22,687	701,020	977,334	19,584	4,403	
Marquette					8,009			316,993	327,083	5,411		
Portage	7,189,107			46,386	38,332	37,585	46,138	865,732	642,760	97,670	138,396	
Waupaca	35,960,579	40,368,332	22,370,603	69,016	13,000	16,666		1,851,080	629,740	601,659	719,706	
Waushara								630,619	448,518	181,304		
Wood	9,608,638			98,900	110,519	109,768	69,220	1,402,845	519,090	673,140	213,610	
Central District	71,343,469	37,691,896	54,731,729	235,225	226,816	161,018	174,506	6,678,694	3,510,253	1,402,132	1,465,709	
Brown	18,313,581	10,983,648	14,500,000	211,689	282,408	816,704	269,226	2,694,645	1,084,700	1,103,209	604,636	
Calumet	15,690,324	19,234,718	20,315,148					1,327,851	13,066	816,581	286,194	
Door	36,646,222	18,618,680	13,268,953	87,790	43,890	25,000		1,167,749	29,587	402,700	769,452	
Fond du Lac	14,680,244	11,083,070	4,731,872	256,673	261,356	244,649	226,244	1,704,487	640,801	919,506	144,128	
Kewaunee								1,085,015	16,429	1,068,586		
Manitowish	34,423,233	13,008,905	9,516,282	82,133	79,169	155,583	55,213	2,487,114	195,778	1,544,840	748,501	
Outagamie	1,322,663			66,584	131,799	124,426	29,286	1,026,534	70,850	640,323	13,881	
Shaboga	9,266,502	3,176,687	6,210,789	170,397	168,842	127,476		2,070,970	463,176	1,469,857	137,046	
Winnebago	16,366,992			427,960	261,826	227,690	213,263	1,581,068	718,140	680,640	402,318	
East District	148,708,946	76,888,498	67,583,643	1,292,516	1,319,979	1,221,828	982,183	14,974,822	3,232,902	8,728,344	3,413,976	
Crawford				93,052	87,343	104,684	89,637	671,900	323,807	323,419	15,074	
Grant				29,035	38,819	23,200	4,061	2,006,981	1,213,152	788,522	4,707	
Iowa				20,461	31,349	21,360	12,000	1,842,976	254,513	1,284,849	3,315	
Lafayette	718,406							1,171,738	198,897	1,003,336		
Richland	14,767,094	16,997,708	19,518,584	15,000	17,743	17,128	19,442	1,699,965	385,656	967,518	299,839	
Sauk	13,762,016	9,280,568	6,442,619	85,899	719,800	131,164	428,945	1,718,647	1,132,211	1,177,494	260,172	
Vernon	9,608,041	6,796,640	4,463,418			300		2,722,438	1,217,621	312,799	195,013	
Southwest District	59,045,521	23,622,896	32,454,548	243,467	289,658	299,831	256,270	10,470,533	4,694,639	3,997,986	277,976	
Columbia	12,807,242	10,282,556	6,947,089	73,761	65,636	57,492	30,875	2,166,348	854,101	303,704	1,308,543	
Dane	37,681,988	34,697,287	21,127,903	456,563	456,620	437,762	423,221	2,378,818	924,755	797,499	858,989	
Dodge	45,202,125	23,068,104	14,639,343	98,977	77,185	55,226	37,633	3,910,598	86,986	2,782,815	971,197	
Grant	31,606,080	37,186,839	47,491,324	49,202	54,120	41,891	15,563	3,999,968	83,836	1,948,165	1,808,177	
Jefferson	43,481,106	46,682,317	22,847,336	68,458	130,454	156,985	131,333	1,484,041	481,267	169,335	868,646	
Rock	15,020,498	11,813,634	559,607	349,320	297,500	315,414	295,968	906,612	406,633	175,783	827,185	
South District	165,841,946	163,523,437	133,642,601	1,692,761	1,684,533	964,279	934,583	14,246,480	2,613,962	5,548,178	6,079,344	
Kenosha				121,122	172,960	160,497	126,251	61,219	41,696		19,624	
Milwaukee	5,814,324	2,672,218	3,878,662	1,416,798	3,679,938	2,259,377	2,305,887	1,616,868	1,847,108	3,393	287,857	
Ozaukee		5,071,104	3,208,680	2,087,359				707,787	45,142	340,669	321,336	
Racine	20,690,930	14,298,730	16,404,476	285,779	222,872	216,331		699,434	121,627	28,264	489,643	
Walworth	30,048,651	46,220,991	35,920,580	720,303	88,226	90,777	31,266	780,379	41,770		688,006	
Washington	27,131,459	59,227,039	10,264,449	41,792	9,000	39,663	62,348	958,769	73,921	268,178	834,670	
Waukesha	41,366,005	49,614,041	40,894,606	112,037	79,312	72,100	12,000	968,700	96,719	24,013	334,963	
Southeast District	124,951,349	178,765,673	118,256,902	4,685,108	3,281,911	2,868,974	2,623,278	5,682,666	1,778,782	795,877	2,246,807	
State	758,681,886	566,498,645	447,199,801	8,891,835	7,814,840	46,644,473	6,631,994	23,581,393	33,849,185	32,432,489	18,998,799	

Table No. 37.*All condensed, evaporated and powdered products and estimates of malted milk are included.
*Compiled from records of the State Dairy and Food Commission.

Table No. 38.*From reports published by The State Dairy and Food Commission except 1929.
*Revised from 8,900.

Table No. 39.*Estimates based on conversion factors representing the whole milk required to manufacture the various products, multiplied by the quantities of the products manufactured in 1929. The following conversion factors, were furnished by R. L. Gillett, Agricultural Stationer for the United States Department of Agriculture and the State Department of Agriculture and Markets of New York: American cheese 10.6; Swiss 12; Limburger 9; brick and munster 9; cream and neutralized 12; powdered whole milk 8; and powdered cream 18.
Other conversion factors used were obtained as follows: butter 21.5 based on 3.7 per cent fat test of milk and 33.5 per cent over-run in manufacture but rounded downward; condensed and evaporated milk 1.13 based on average reports from condenseries; ice cream 16.2 based on 3.7 per cent butterfat test of milk and 12 per cent fat test of ice cream; Italian cheese 10.6 based largely on the fact that 10.8 pounds of milk were required for a pound of sausage and about 10.8 pounds for regional and ricotta cheese (these three varieties made up approximately 75 per cent of the total 1929 Wisconsin (Italian cheese), other cheese (not cottage, alpine milk, pot, and baker's) 10.6; and malted milk, quantities of milk as reported used for malted milk.

FARMS PRODUCING MILK FOR CONDENSERIES 1928

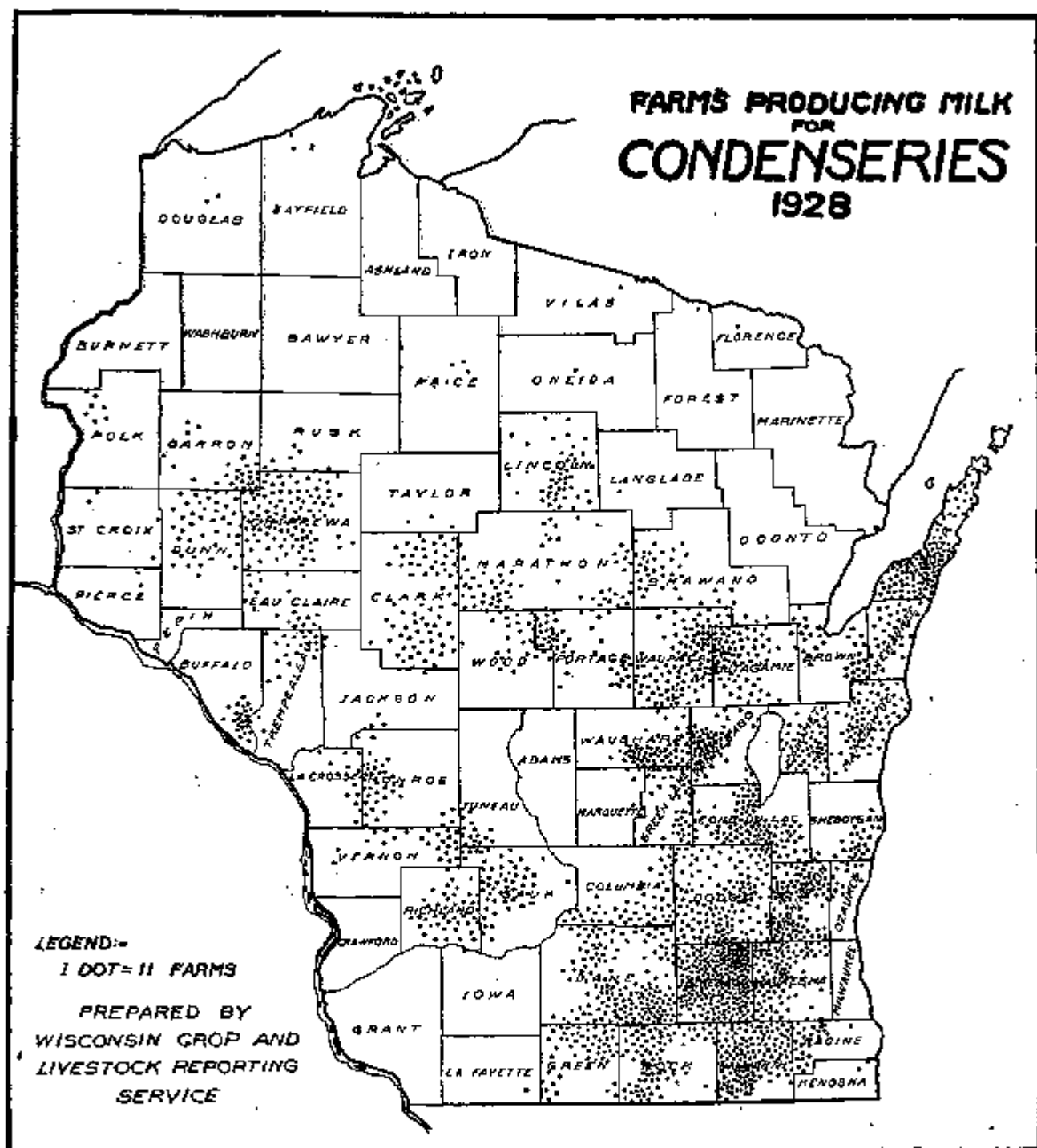


Fig. 59. Distribution of farms patronizing condenseries assumes much the same general appearance as distribution of the condenseries. Concentration at points reasonably close to condensary locations is quite apparent. Comparison of this map with those showing distribution of farms producing milk for cheese factories, creameries, and city market milk shows the heaviest concentration for condenseries as lighter areas in the other distributions.

Wisconsin's Condensary Areas

The condensary industry in Wisconsin has established itself in many counties due to its tendency to locate in areas where considerable quantities of milk are available. At present, the condensary regions are not very definite geographically. They overlap to a considerable extent in regions where other types of milk utilization are also important. Milk for conden-

sary purposes is frequently transported long distances by truck and in addition it can be partly or wholly concentrated and then shipped in bulk by tank cars or trucks to larger plants for canning. Concentration to a moisture content below that required in the final product is frequently practiced in order to eliminate transportation costs on bulk products. While there are regions in the state which

market the bulk of the milk production through condensaries the industry is not limited by the boundaries established by other milk uses for the condensary industry usually can compete readily with cheese and butter where the supply of milk is adequate for the maintenance of this type of plant. While with the expansion of the market milk area due to the growing demands of lake shore

Fig. 59. Distribution of condenseries has become more widespread in recent years with increasing numbers and quite a general distribution is evident in south central and south-east counties, a belt across the center of the state from east to west and an especially noticeable grouping in Barron, Dunn, and Chippewa Counties. Wisconsin has more condenseries than any other state and has for a number of years led all states in the manufacture of condensation products. At present the state is credited with about one-third of the nation's total output.

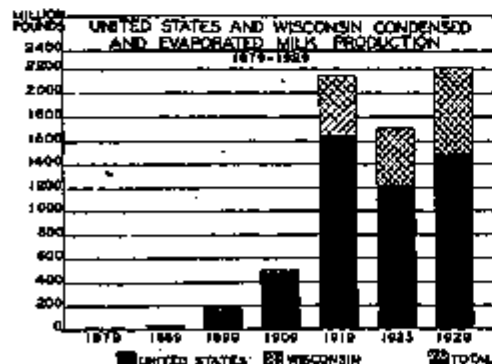
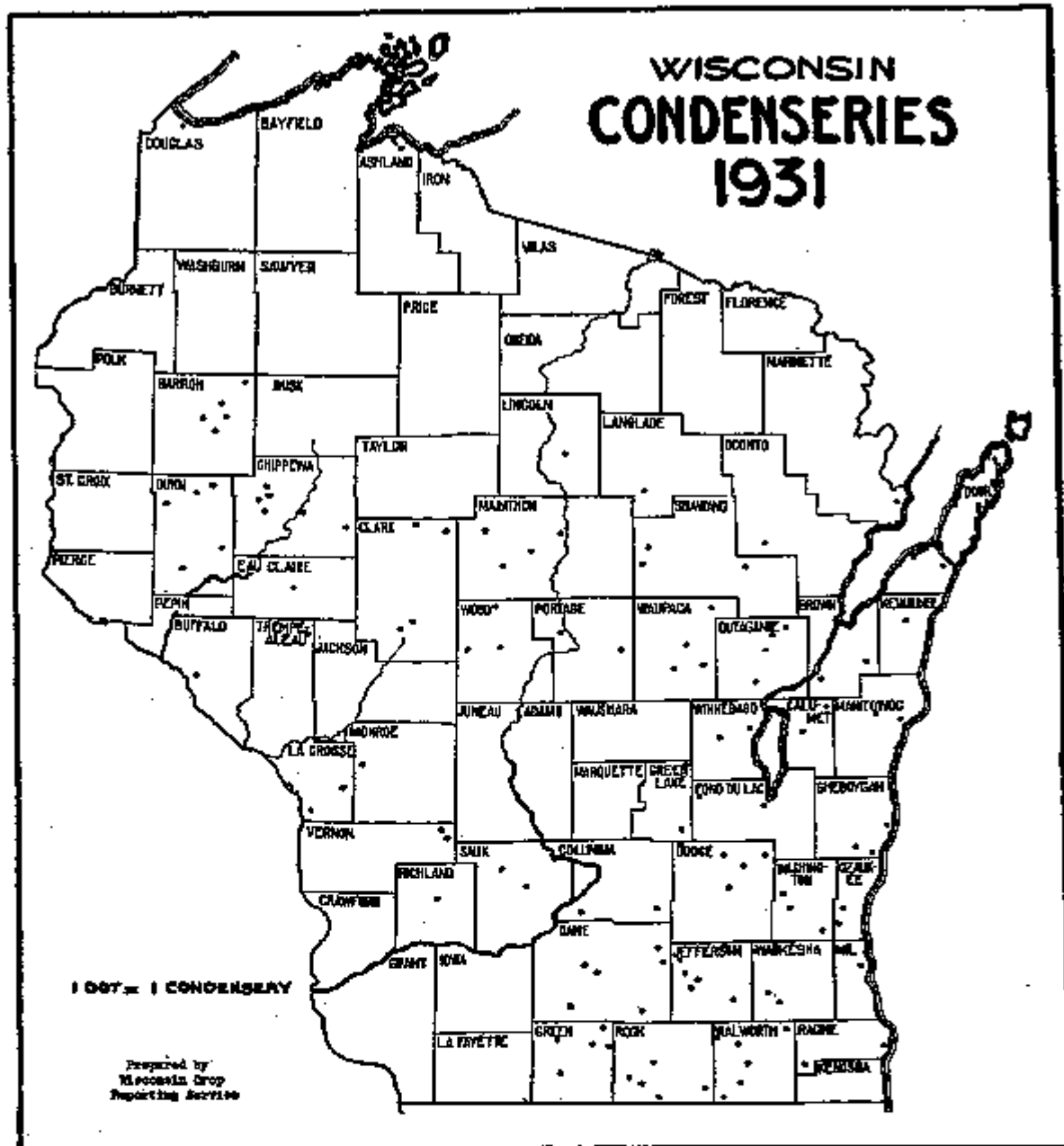


Fig. 61. Manufacture of condensed and evaporated milk became of real significance as early as 1888. Some production was recorded in the census years of 1875 and 1889 with increases during that period. Wisconsin produced about three and one-half million pounds of condensed and evaporated milk in 1889, increased this to 30 and one-half million in 1909, and by 1919 was manufacturing about 616 million pounds annually or 24 per cent of the nation's output. Following 1919 a slump in total output of the United States occurred in the post-war reaction although output in Wisconsin continued upward. By 1929 production of condensed and evaporated milk had reached over two billion pounds in the United States and about 712 million in Wisconsin or practically one-third of the total national manufacture.

Wisconsin cities and Chicago, the condenseries have drawn their milk supply from somewhat farther inland. With the present tendency for the market milk area to concentrate more closely to cities, the probability of the area encroaching upon that now occupied by condenseries in the immediate future is not great.

A chart showing the trend of output in condensed and evaporated milk for the United States and Wisconsin is shown in Figure 61. It will be noted that the major expansion has taken place since 1909. The World War stimulated greatly the foreign demand for condensation products and American production grew immensely. After the war a slump in exports caused a reduction in output for a time, but the demand is generally growing as new uses are found for condensation products. This has resulted in a growth of output to a new

high level in 1929 and the upward trend will probably continue. Wisconsin has gradually been making a larger share of the national production.

Wisconsin produces 14 per cent of the condensed milk made in the United States, 37 per cent of the evaporated milk and 33 per cent of the total of these two products. No other state produces as much of either of these products as does Wisconsin. Twenty per cent of the country's powdered milk is manufactured in the state which is exceeded only by New York and Washington. Wisconsin produces about 50 per cent of the malted milk output of the nation and the balance is manufactured in six other states. Other condensation products manufactured in the state include dried buttermilk, condensed or evaporated buttermilk, concentrated skim milk and some powdered cream. (See Table 80)

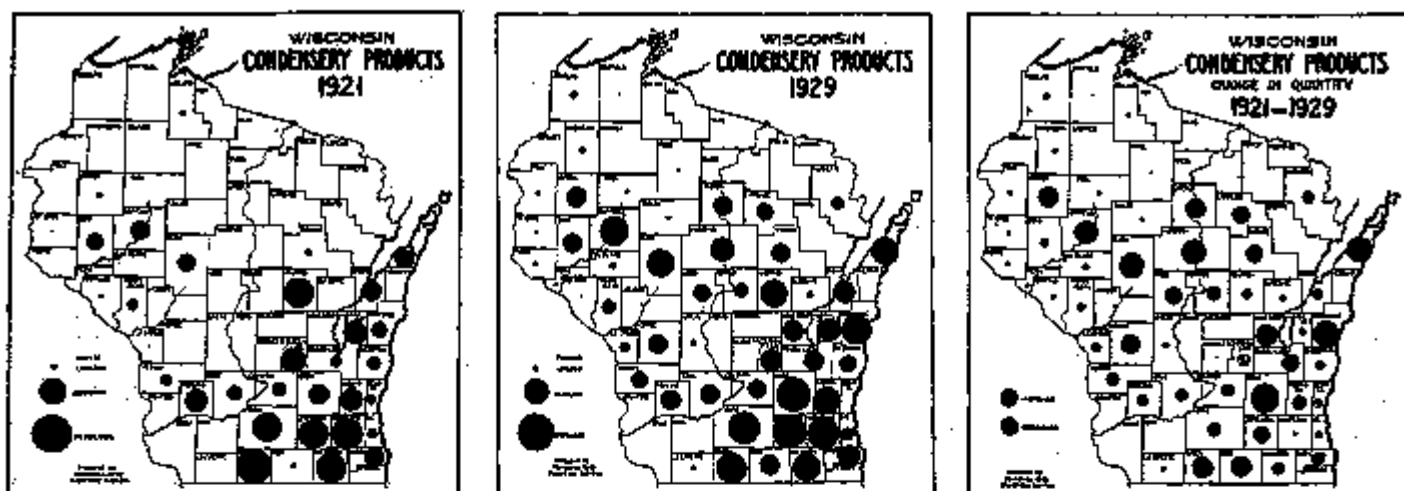


Fig. 62. Manufacture of condensery products in 1921 showed a rather definite zoning with the bulk of output being from the southeastern one-fourth of the state. In 1929 much development and spread had occurred as compared to the 1921 distribution. Some development had been going on in western counties prior to 1921 and this continued noticeably, growing in volume of output in each county and with considerable development taking place in counties not reporting condensery products in 1921. Now the manufacture of condensery products as compared to total state production shows up for the most part quite strongly in the southern two-thirds of the state in all but a few counties and the tendency to spread farther north seems to continue. The map on the right shows the counties with increases and decreases in output for the period from 1921 to 1929. The ability of some other products and uses for milk to compete with the condensery market is evident in several counties of the southeastern one-quarter of the state or the area which is still the heaviest producer of condensery products. The black dots spreading to the north indicate largely new plant development since 1921. Only seven counties in the entire state had decreases for the eight-year period while 47 showed increases in condensery product output, varying from 59,783 pounds in Bayfield County to over 30 million pounds in Dodge County.

TABLE NO. 40. MONTHLY DISTRIBUTION OF DAIRY PRODUCTS MANUFACTURED IN WISCONSIN, 1929*

Months	Butter ¹ Per cent	Cheese						Condensery Products			
		All cheese ² Per cent	American Per cent	Swiss Per cent	Brick and monster Per cent	Limbberger Per cent	Italian Per cent	All con- densery pro- ducts ³ Per cent	Condensed whole milk Per cent	Evaporated whole milk Per cent	Ice cream Per cent
January	8.4	5.8	5.8	.5	7.5	4.0	4.7	6.1	7.0	8.1	2.2
February	8.2	5.7	5.8	.5	7.2	3.7	5.3	7.1	9.0	7.3	3.7
March	7.8	6.9	7.0	.8	8.4	5.2	6.5	8.8	10.2	8.4	5.8
April	8.4	5.1	8.3	4.1	9.0	8.4	4.7	9.0	9.5	9.0	7.0
May	10.8	11.2	11.2	15.9	9.6	12.1	7.9	11.3	10.8	11.2	10.1
June	12.1	13.5	12.5	20.5	10.0	13.8	10.8	15.7	9.8	14.0	12.7
July	11.6	11.3	12.0	19.2	8.1	12.4	11.8	11.4	8.5	11.8	15.3
August	9.6	10.0	10.1	14.7	7.4	10.5	11.9	8.5	8.9	8.6	14.9
September	7.7	8.4	8.4	12.3	7.0	9.1	10.7	7.2	9.0	7.2	9.2
October	7.1	7.3	7.1	7.6	3.8	8.7	10.2	6.2	7.9	6.0	6.4
November	6.9	5.8	5.4	2.6	8.3	8.9	6.7	5.2	5.0	4.9	4.8
December	6.9	5.5	5.4	1.3	8.1	5.2	9.8	6.0	5.4	5.7	4.3

*Adapted from monthly production report by the Division of Dairy and Poultry Products, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.

¹Includes whey butter.

²"All cheese" includes all varieties except cottage, pot, baker's, and skim milk cheese.

³"All condensery products" includes all condensed and evaporated whole and skim milk, concentrated skim milk for animal feed, condensed or evaporated butter-milk, dried or powdered whole and skim milk, dried or powdered cream and buttermilk, and malted milk.

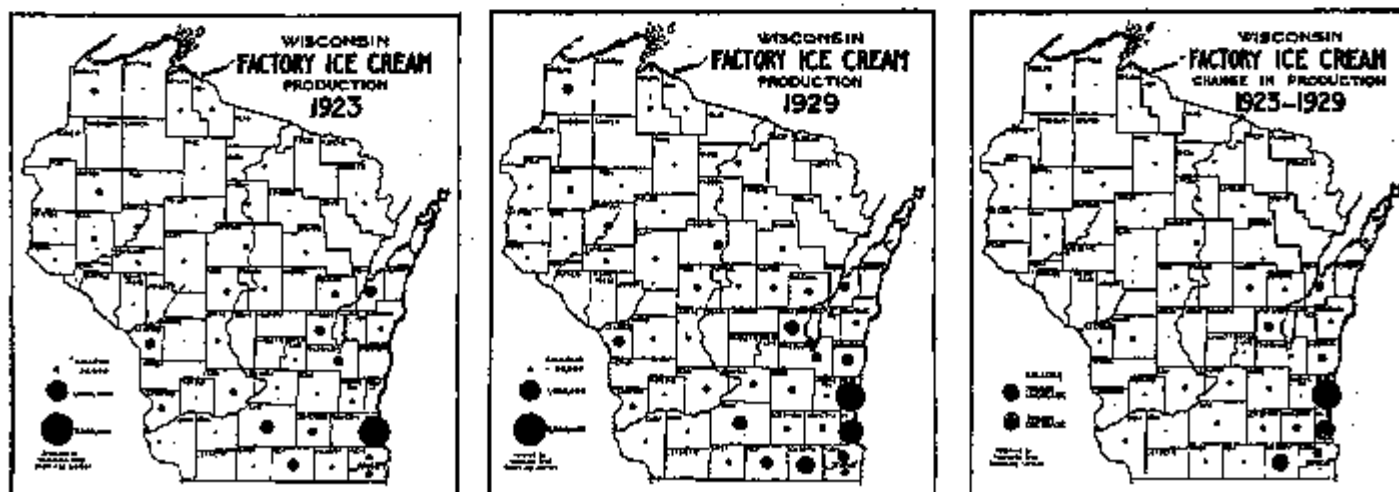


Fig. 63. Factory ice cream production increased over 48 per cent in Wisconsin from 1923 to 1929. This industry has offered one of the most important major outlets for Wisconsin milk. While about 38 per cent of the ice cream manufacture was in Milwaukee and Ozaukee Counties in 1923 the balance of the output was quite well distributed over the state. The seasonal increase of milk production during the summer months comes at the time ice cream production is at its height. With plenty of milk available at the time of greatest demand for ice cream and with increasing consumption of ice cream and its products the upward trend of ice cream production may be expected to continue.

TABLE NO. 41. QUANTITY AND VALUE OF MILK AND CREAM SHIPPED OUT OF WISCONSIN, 1927 AND 1929*

County	Cream shipped out of state		Milk shipped out of state		Value of milk and cream shipped out of state	
	1929 Pounds	1927 Pounds	1929 Pounds	1927 Pounds	1929 Dollars	1927 Dollars
Barren	6,014,667	4,301,372	1,530		1,532,648	899,018
Bayfield	472,880	322,669			82,566	41,421
Barrett	449,439	307,265			58,102	34,479
Chippewa	5,165,804	4,308,001	12,867,823	441,413	1,428,606	747,284
Douglas	1,467,031	148,212			308,363	28,408
Franklin	1,006,826	261,818		41,100	177,984	65,631
Rock	386,449	468,795			48,808	73,843
Sawyer	73,181	180,334			10,177	24,184
Washburn	291,441	400,869		2,174,340	86,924	97,486
Northwest District	16,215,452	10,795,650	12,669,188	2,656,961	3,565,110	1,731,633
Ashland	555,468	303,109			70,832	41,087
Clark	3,800,859	2,154	1,212,888		860,426	311
Iron	36,937	27,655			4,257	3,052
Lincoln		168,160	971,806	687,768	18,439	54,824
Marathon	4,826,037	2,170,007	12,328,268	17,176,431	1,261,604	896,039
Ontonagon						
Price	157,734	160,467			24,257	21,677
Taylor	113,607	46,716		802,000	17,908	30,469
Vilas						
North District	8,798,682	2,869,158	14,712,905	18,645,196	2,287,792	1,643,429
Florence						
Forest					39,320	
Laporte	466,084				12,932	2,585
Marquette	89,842	14,186			112,848	189,861
Oconto	102,880		3,637,767	7,519,187	387,817	701,731
Shawano	1,630,024		1,231,691	21,607,274		
Northeast District	2,344,626	14,186	4,869,388	29,176,405	420,815	673,677
Buffalo		2,294				287
Brant	3,129,704	64,696		32,056	467,544	15,321
Deer Creek	1,431,145	974,831			288,770	129,793
Jackson	120,030	197,389			20,718	18,902
Le Chateau						
Manitowish	390,540		244,244		79,492	
Manitowish	10,456				1,325	
Portage	809,462	468,841			127,883	65,693
St. Croix	15,854	17,018	760,819	1,314,931	30,044	32,688
Traverse	89,877	210,877			6,155	24,630
West District	4,896,288	1,632,020	1,184,757	1,346,887	981,089	277,472
Adams	2,730	7,343			809	681
Green Lake		32,852				6,867
Iron						
Marquette		3,223				421
Portage	349,454	111,890			47,885	12,545
Waupaca	1,382,702	1,667,970	12,377,507	28,644,080	579,287	967,638
Waushara						
Wood	4,049,796	1,439,725	16,628,884		1,299,900	845,436
Central District	8,564,671	3,292,901	29,801,391	23,644,839	1,921,311	1,333,799
Brown	1,817,146	4,700,500	10,600,994	1,323,832	330,234	562,696
Calumet	711,834				180,675	
Door						
Fond du Lac	7,183,940	3,879,912	19,830,268	2,819,499	2,168,171	2,594,660
Keweenaw			12,798		243	
Manitowish		66,000				16,810
Ontonagon	3,980,867	4,072,499	2,738,420	25,739,928	970,861	1,167,561
Shawano	2,430,163				814,025	
Winnebago	31,300	860,637	348,044	13,685,453	10,861	487,328
East District	16,967,145	16,584,448	32,539,519	48,848,712	4,444,570	4,849,143
Crawford	87,817	179,408			80,568	17,188
Grant	342,960	531,472			58,118	74,428
Iowa	678,943	229,913			124,814	44,962
Lafayette	1,580,420	690,455		2,734,500	263,064	230,998
Richland		112,138		274,008		38,745
Rock	6,453,341	49,146,066	248,008	3,757,264	747,500	6,171,381
Vernon	180,000	72,900			18,554	7,997
Southwest District	9,179,291	51,864,251	243,002	6,765,769	1,242,406	6,585,679
Columbia	3,458,512	359,190		1,635,243	885,380	107,899
Dane	702,449	161,113	44,363,703	12,149,213	1,304,805	349,883
Dodge	8,982,974		3,866,682		1,111,546	
Green	1,686,860	1,006,554	10,723,588	24,320,395	691,386	509,549
Jefferson	706,319	922,566	37,694,073	28,935,668	923,041	861,765
Rock	2,149,763	10,816	71,927,761	84,506,159	2,578,471	1,433,471
South District	12,467,776	2,337,347	168,574,807	122,546,875	7,195,059	3,552,373
Kenosha			51,263,227	80,201,050	1,429,851	1,324,441
Milwaukee	804,858	2,042,574			111,183	621,473
Ozaukee						
Racine	47,567	4,192	4,928,692	3,695,330	128,204	87,767
Walworth	2,784,509	3,170,182	80,368,268	68,343,270	1,982,877	1,769,354
Washington		513,019	24,172,207	25,067,078	632,915	978,062
Waukesha	2,484,853	157,786	88,865,168	20,101,167	1,594,317	686,943
Southeast District	6,121,916	5,687,652	173,477,552	167,968,413	5,877,347	5,411,262
Stevens	82,615,142	96,499,413	438,263,479	416,428,848	28,185,619	15,664,376

*As reported by plants in 1927 and 1929

TABLE NO. 42. VALUE OF WISCONSIN MANUFACTURED DAIRY PRODUCTS AS REPORTED BY DAIRY MANUFACTURING PLANTS IN 1929*

County	Total of reported items	Cheese (not including cottage, etc.) ¹	Butter	Condensary products ²	Ice cream	All other products ³
Barren	\$4,476,250	\$877,866	\$2,173,793	\$1,168,496	\$83,698	\$198,402
Bayfield	589,411	109,187	425,626	5,648		881
Bernett	535,318	26,558	799,126			531
Chippewa	4,648,849	745,574	812,860	2,472,915	181,759	296,841
Douglas	1,104,853	54,504	500,753	111,352	169,384	336,535
Folk	4,127,965	1,359,730	2,772,810	46,485	23,595	25,055
Frank	1,885,871	493,577	788,632	55,690	14,724	18,808
Sawyer	552,526	55,280	289,879			18,117
Waushara	597,786		552,718	44,668		64
Northwest District	17,969,219	3,499,243	9,226,761	1,878,714	392,158	749,334
Ashland	513,306	199,943	256,935		50,858	15,789
Clark	6,893,228	3,447,687	155,016	2,532,490	31,437	242,266
Iron	539,233	39,086	136,290		35,959	20,958
Lincoln	1,848,410	633,244	347,064	937,245	20,019	8,820
Marathon	6,066,836	4,169,640	356,617	1,260,348	150,795	171,832
Ontonagon	192,400		20,512		77,301	94,586
Pierce	976,549	519,830	326,882	5,345	18,744	7,585
Taylor	1,770,851	805,178	1,108,947	19,760	16,580	16,246
Vilas	50,810		50,080			730
North District	18,169,320	9,699,287	2,715,864	4,741,449	397,944	604,776
Florence	56,602		56,602			
Forest	126,255	58,645	75,785			75
Langlade	1,545,813	370,238	868,072	820,708	27,792	59,006
Marquette	1,893,493	804,643	414,181	935,888	28,607	51,325
Oconto	2,306,158	2,138,834	233,796			4,065
Sawado	4,235,902	8,117,963	337,107	579,971	62,355	43,177
Northeast District	10,396,582	6,684,261	1,475,776	1,861,262	116,452	186,641
Buffalo	1,920,122	45,073	1,842,490	28,480		7,080
Dunn	9,781,851	912,664	2,376,792	980,460	31,227	109,398
Hau Claire	1,530,826	62,879	1,198,139	121,631	54,664	92,010
Jackson	1,197,882	442,729	1,290,428	20,262	280	28,748
La Crosse	2,238,946	76,877	1,724,065	198,298	220,268	20,780
Monroe	4,736,734	169,767	4,319,234	1,028,156	41,865	96,703
Port	1,706,101		1,967,732	31,618		851
Price	2,487,022	60,030	2,310,847	63,365	16,158	25,687
St. Croix	3,328,954	680,890	2,514,504	13,010	35,306	43,184
Traverse	3,688,583	17,651	3,226,788	536,254	8,338	32,181
West District	27,481,171	1,988,288	21,631,279	2,994,471	392,659	474,373
Adams	102,643	37,244	65,299			
Green Lake	2,363,958	109,952	787,404	1,515,814		1,528
Juneau	1,544,104	90,578	1,389,630	60,299	34,752	23,498
Manitowish	638,733	19,556	619,558	4,282		240
Marquette	1,909,930	183,742	1,719,600	451,361	55,508	28,824
Waupesa	4,952,401	1,174,819	1,108,063	2,628,559	69,060	76,876
Waushara	1,177,947	257,928	618,204			915
Wood	8,168,124	1,399,978	1,012,810	608,225	39,480	100,050
Central District	15,852,696	3,117,490	6,970,886	5,178,340	334,238	352,236
Broken	6,667,897	2,181,088	1,931,673	1,568,416	116,447	119,278
Chetek	3,285,128	1,583,338	37,264	1,580,917		67,614
Dor	3,679,543	786,177	82,812	2,771,741	54,500	41,418
East du Lac	4,442,106	1,740,640	1,308,244	983,052	371,215	120,045
Kewaunee	3,175,890	2,073,886	68,181			34,879
Manitowish	6,321,979	8,062,655	477,935	2,696,200	61,694	283,606
Manitowish	3,289,902	1,545,288	1,165,333	81,227	80,842	70,889
Ontonagon	5,199,233	2,890,880	921,351	605,018	134,261	508,164
Shawano	3,938,374	918,141	1,476,161	964,518	442,656	87,598
Winnebago						
East District	26,945,204	17,082,572	6,435,684	10,639,899	1,177,565	1,339,944
Crawford	1,374,403	638,645	640,780		89,578	3,327
Grant	3,062,195	1,528,421	2,389,540		26,150	24,714
Iowa	2,661,779	2,439,856	501,164		20,573	177
Lafayette	2,406,582	2,050,847	328,788	25,795		
Richland	3,603,138	1,370,347	737,788	1,263,746	12,500	17,757
Bank	4,183,378	684,437	2,349,782	965,700	92,981	80,524
Vernon	4,142,935	592,839	3,457,358	1,088,498		3,145
Southwest District	22,891,871	9,746,645	9,443,421	3,366,677	242,764	131,544
Columbia	3,258,681	640,908	1,348,374	1,132,101	75,436	7,814
Dane	8,017,458	1,487,939	2,303,323	2,812,784	531,348	231,590
Dodge	3,845,678	5,816,478	183,078	2,708,698	99,534	38,390
Green	5,805,590	2,857,319	179,361	2,781,820	35,921	1,178
Jefferson	5,017,161	324,557	891,870	3,401,146	73,008	820,686
Rock	3,056,345	202,905	844,781	1,108,237	363,333	519,009
South District	33,993,792	11,528,889	5,749,486	12,942,985	1,205,305	1,767,727
Kenosha	968,122		96,043		137,362	624,717
McKeesha	13,965,873	17,019	3,306,814	330,297	1,152,158	9,280,085
Oconomowoc	2,324,883	677,788	108,152		1,429,529	22,396
Racine	4,677,645	18,982	260,961	3,725,264	316,387	1,845,321
Walworth	3,301,733		32,546	2,302,678	720,100	36,209
Washington	3,050,540	614,657	170,472	1,836,432	41,792	387,287
Waushara	3,861,253	59,328	205,654	3,339,539	124,187	131,994
Southeast District	31,559,529	1,397,472	4,236,942	10,434,539	5,920,465	11,849,41
State	\$315,329,569	\$64,645,649	\$47,847,429	\$57,238,536	\$8,081,548	\$17,497,17

*Values as reported by dairy plants.

Values of all types of cheese included except cottage, pot, baker's, skim milk, cooked and boiled types.

Value of condensary products includes value of "milk used in manufacture of malted milk" as reported and all values of condensed and evaporated products and powdered products, as reported by dairy plants.

Value of all other products includes value of cottage and skim milk cheese, buttermilk acid, wet and dry casein and value of miscellaneous items.

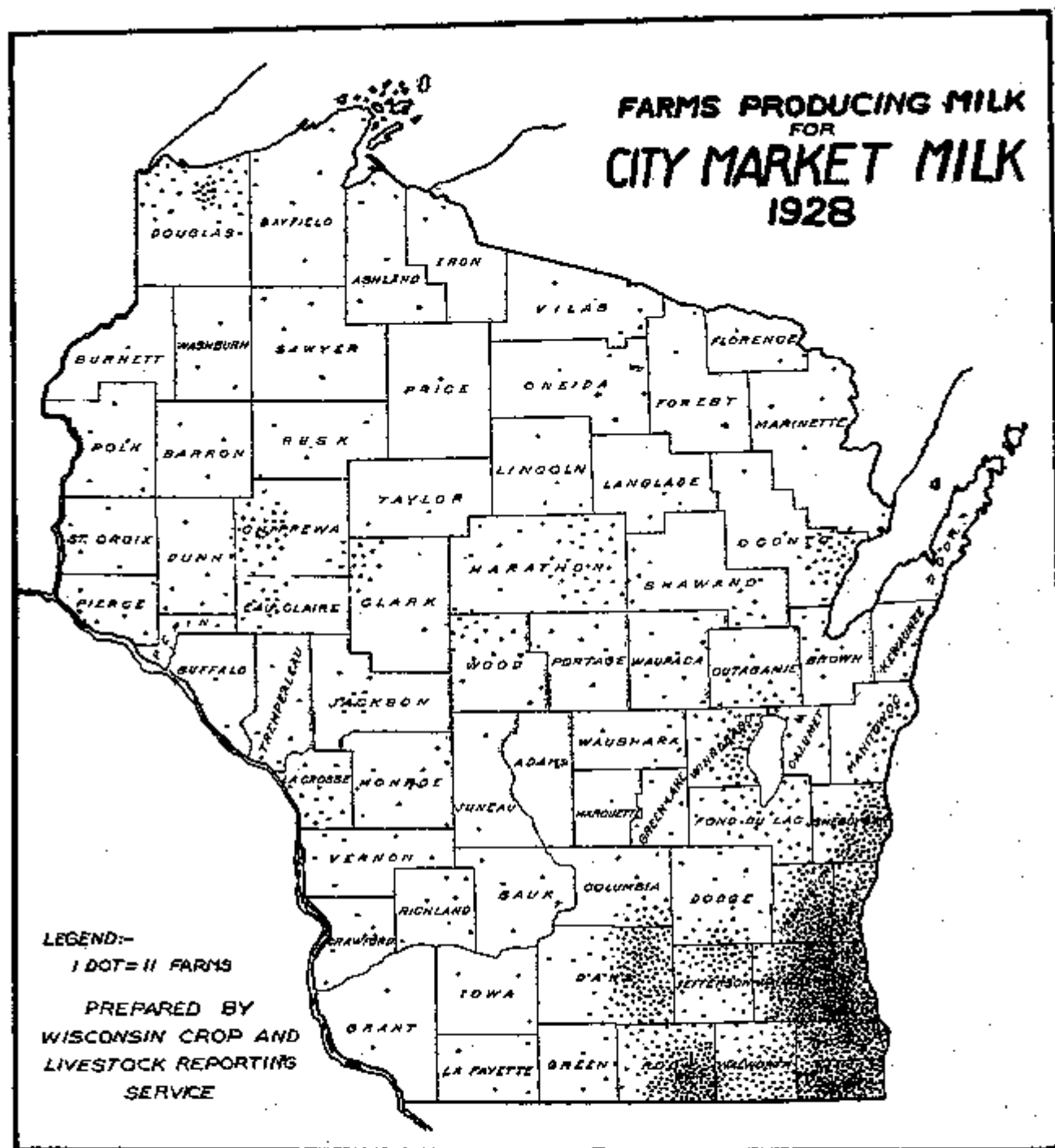


Fig. 64. A noticeable concentration of farms producing milk for fluid use occurs in the vicinity of the larger centers of population within the state. Of outstanding significance is the great number of these farms in the Milwaukee and Chicago milk shed areas. The cost of transporting whole milk is high as compared to the cost of shipping cream, butter, or other products. For this reason city market milk comes from farms closely adjacent to the cities. Also the requirements of city boards of health make it imperative that farms furnishing city market milk be easily reached for the purpose of inspection.

The Market Milk Area

Southeastern Wisconsin has had a varied history in dairying. After wheat growing declined cheese making was introduced largely by people from eastern states who had seen a similar change before. These cheese factories were small units and the latter gave way in many communities to creameries which were larger units and these in turn have given way largely to condenseries and market milk production.

While the production of market milk for retail trade is to be found wherever there are cities of sufficient size to furnish a satisfactory market this development in Wisconsin is largely found in a few of the southeastern counties, particularly the region around Milwaukee occupying about the southern half of Ozaukee County, the southeastern third of Washington County, all of Milwaukee County, the eastern two-thirds of Waukesha County, Racine, Kenosha,

and parts of Walworth and Rock Counties. The markets for this area are found in Milwaukee and other lake shore cities in Wisconsin, such as Racine and Kenosha, and Chicago. The Wisconsin area furnishing market milk to Chicago has expanded considerably during the last decade, particularly in connection with the attempt of that city to obtain milk from tuberculin tested cattle. For a time some milk for Chicago was supplied from distant points in Central and

Northern Wisconsin, but as the area best progressed in the counties close to Chicago, the market milk area has tended to again become less extensive and some of the more distant sources of fluid milk have been abandoned. It appears difficult to transport fluid milk long distances when a satisfactory supply can be obtained closer to the market. More concentrated products with a higher value per unit of weight can stand the cost of shipping over long distances more readily than whole milk.

While the production of cheese and butter were once important in the region now known as the fluid milk area of Southeastern Wisconsin, the production of these commodities has declined to a low level in the area. More and more the production has gone into city market milk, market cream and to some extent condenser products. While the condenseries obtain their milk supply largely from a secondary belt lying in general between the market milk region and the cheese and butter areas to the west and north; no exact boundary between them is maintained since the regions merge into one another and overlap considerably. Transportation facilities are especially important in the market milk region, and the direction of its development is in part influenced by them. Unlike creameries and cheese factories, condenseries are always located on railroads so that their output and supplies can be conveniently handled in carload lots. The increasing supply of city market milk and cream produced in this area has in part been obtained at the expense of the condenser industry which has receded as the market milk region has grown. Other outlets for milk do not compete successfully for the milk supply in the regions close to large cities because of the relatively high price paid for fresh market milk.

The shipping of cream from Wisconsin to other states reached a high point in 1927 when 96,000,000 pounds were sent to outside markets. A very large portion of the exports for that year were shipped from Sauk County and this movement has declined greatly since 1927. Shipments of cream from other parts of

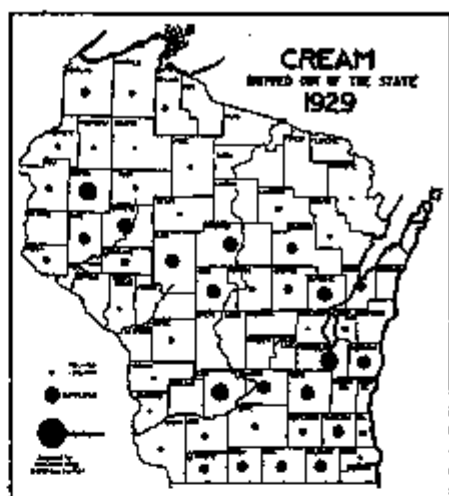
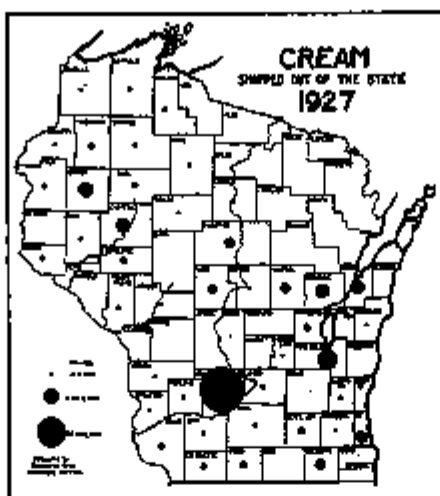


Fig. 65. Shipment of cream out of the state reached a high point in 1927 with over 96 million pounds being sent to outside markets, a high proportion of this being from Sauk County. By 1929 cream shipments were being made in greater quantity from a larger number of counties but the Sauk County cream was being largely diverted to other uses. A drop in cream shipments outside of the state of around 14 per cent occurred from 1927 to 1929.

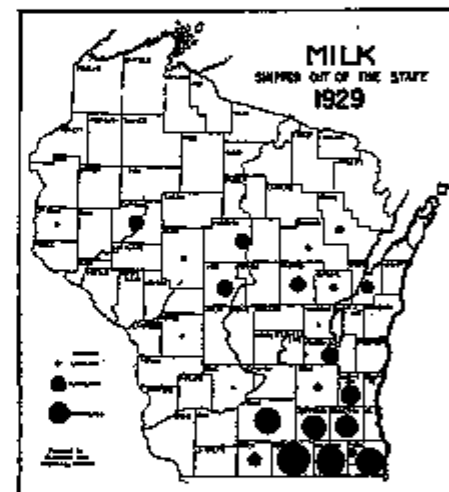
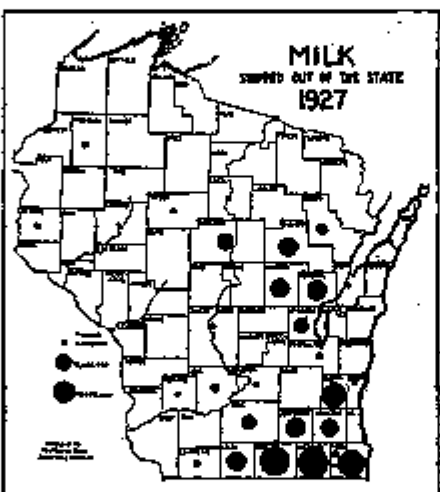


Fig. 66. By far the greater portion of Wisconsin's out of state milk shipments have been from the southeastern counties to the Chicago area. A five per cent increase in total annual movement of milk out of the state appeared in 1929 as compared to 1927.

the state have shown increases during the last few years.

Of the out of state markets Chicago is the most important, although in times of shortage considerable quantities go to Eastern cities. Cream, because of its high value per can, can stand the transportation charges of long distance shipping much better than milk. The Philadelphia market (see Fig. 121) draws heavily upon Wisconsin for cream. This market is dependent largely upon Western sources for its cream supply. The Boston market, to which small quantities are sent, (see Fig. 120.) draws very little of its cream from Western sources most of it com-

ing from the New England area. New York receives very little Western cream because of the Health Department regulations which makes it almost impossible for Western producers to ship to that market. The increased movement of cream to other states from Northern Wisconsin counties is partly the result of the decrease in market milk shipments from these areas. As suitable supplies of milk became available near Chicago it became more and more difficult to ship whole milk from distant points into this market. The shipping of cream has, to some extent, been substituted for the shipping of whole milk.

FARM PRICES

One of the most important items of study in dairy statistics is that of dairy prices. Accordingly considerable effort has been put into this work during the past year.

Any study of milk prices can be added to greatly by the comparison of the prices of milk with other farm products. As a part of the analysis of milk prices, therefore, the study of other farm prices was essential and this led to the development of the general index of Wisconsin farm prices published herewith.

Wisconsin Index of Farm Prices

The level of farm prices has an important bearing upon the income of the Wisconsin farmer. Because of rather favorable climatic conditions together with a reasonably well stabilized type of farming, the volume of agricultural production for the state is not likely to be subjected to wide or unusual variations over short periods. Changes in prices of farm products rather than changes in volume or kind of production are likely to have the greatest influence on farm incomes.

An index of Wisconsin farm prices has been constructed to portray the price changes which have been so influential in determining farm incomes. This index is based upon monthly and annual farm prices for thirty important farm products representing about 97 per cent of the cash

income of Wisconsin farmers. The commodities included in the index together with estimates of the average annual amounts sold from Wisconsin farms 1924-1928 are shown below.

Marketings of Wisconsin Farm Products

Commodity	Average annual quantity marketed 1924-1928	Unit
-----------	--	------

Grains		
Wheat	1,729,000	bu.
Corn	615,000	bu.
Oats	4,075,000	bu.
Barley	3,454,000	bu.
Rye	2,817,000	bu.
Buckwheat	235,000	bu.

Livestock		
Hogs	474,138,000	lb.
Beef cattle	383,957,000	lb.
Veal calves	123,445,000	lb.
Sheep	4,239,000	lb.
Lambs	15,454,000	lb.
Milk cows	69,842	head

Dairy products.		
Milk	91,696,000	cwt.

(Includes estimates of sales of cream and farm butter converted to milk equivalent)

Leading cash crops.

Potatoes	13,629,000	bu.
Tobacco	32,368,000	lb.
Clover seed	131,000	bu.
Canning peas	217,000,000	lb.

Poultry products.

Chickens.	37,801,000	lb.
Eggs	58,280,000	doz.

Fruits and vegetables.

Cabbage	129,000	ton
Onions	380,000	bu.
Apples	766,000	bu.
Cherries	8,645	ton
Cranberries	44,200	bbl

Unclassified.

Dry beans	65,000	bu.
Flaxseed	123,000	bu.
Hay	481,000	ton
Dry peas	647,000	bu.
Sugar beets	127,000	ton
Wool	2,490,000	lb.

Commodity prices, with the exception of those for milk, have been secured from the United States Department of Agriculture estimates of prices paid Wisconsin farmers. These estimates are based upon information secured from its staff of crop and price reporters. The monthly farm price of milk has been obtained by the Federal-State Crop Reporting Service for Wisconsin from special studies of historic and current prices of milk. The prices are published currently in Crops and Markets or The Wisconsin Crop and Livestock Reporter, publications of the United States Department of Agriculture and The Federal-State Crop Reporting Service for Wisconsin.

WISCONSIN AND UNITED STATES FARM PRICES

BASED ON 1910-14 AVERAGE PRICES

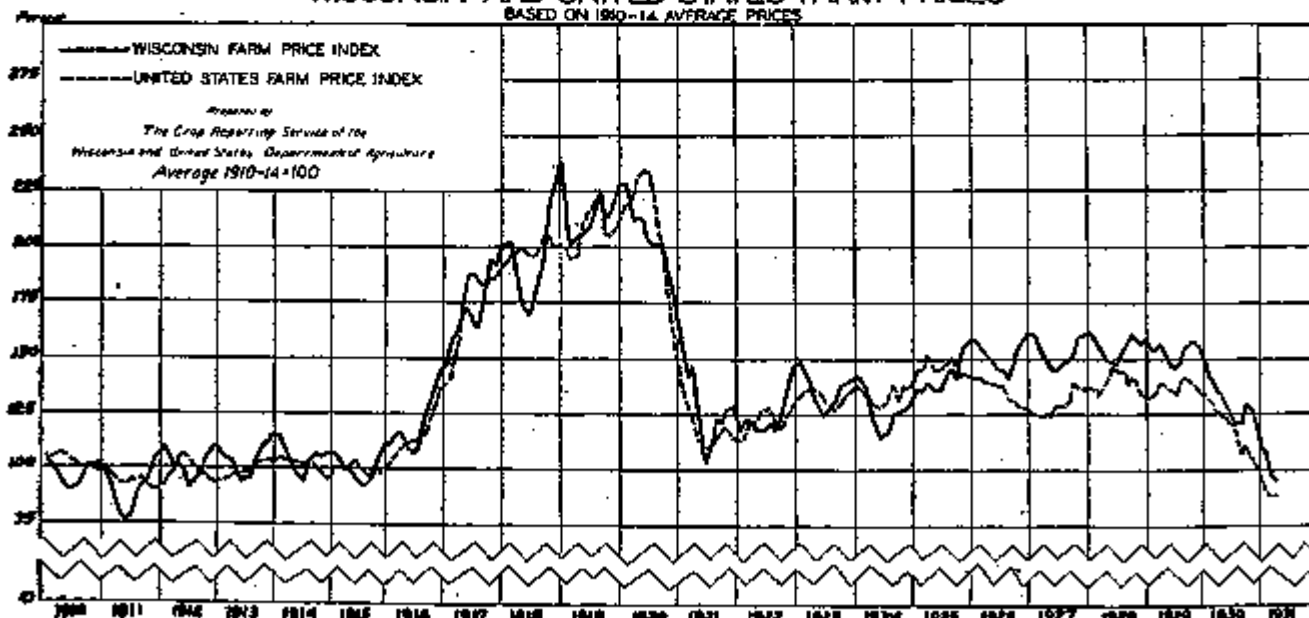


Fig. 67. This chart compares prices of United States and Wisconsin farm products with prices received in 1910-1914 which is taken as 100. Wisconsin farm prices have been well above United States levels during most of the period since the war. Wisconsin prices were particularly favorable during 1927. While both United States and Wisconsin farm prices have fallen to levels well below pre-war during 1930 and 1931, Wisconsin prices are still somewhat above average prices for the United States. The two price series behaved somewhat differently during the war inflation. Wisconsin prices, heavily influenced by milk, reached a peak in December 1918. United States prices continued upward to the middle of 1920 because of rising prices for grains and cotton. Both price series are now below 100 indicating that Wisconsin and United States farm prices are below pre-war levels.

The index has been constructed with the five-year period, January 1910 to December 1914 inclusive, as a base. The average price for Wisconsin farm products during this period is taken as 100. Prices during other periods are compared with this pre-war level. For example the Wisconsin index for January 1930 was 145. This indicates that prices were then 45 per cent higher than the average price from 1910 to 1914.

The commodity prices have been combined in such a manner that each commodity influences the index in proportion to its importance as a source of cash income to Wisconsin farmers. The index is best described as one of weighted aggregates. The weights are based upon the average annual amount marketed from Wis-

consin farms for the five year period 1924 to 1928.

Briefly stated, the index number for each month or year is calculated as follows. The average 1910—1914 price for each commodity is multiplied by average annual marketings for 1924 to 1928. The resulting values are added together. In a similar manner the 30 commodity prices for the month under calculation, as January 1930, are multiplied by the average annual marketings 1924—1928. The sum of the 30 values so obtained is divided by the 1910—1914 values obtained in the first operation. The result of this division is the index number for the month, as January 1930. In reality, the Wisconsin index measures the relationship between the value of given quan-

ties of agricultural products at any time, and the value of the same quantities at 1910—1914 prices.

The seven commodity groups, comprising the thirty Wisconsin farm products, influence the index in the following proportions:

Grain	2.9
Livestock	26.0
Dairy products	52.1
Four leading cash crops	7.9
Poultry products	6.8
Fruits and vegetables	1.2
Unclassified	8.1
	100.0

Returns from milk account for about one half of the total farm cash income of the state. Accordingly, milk prices have about as much influence upon the Wisconsin farm index

TABLE NO. 43. GENERAL TREND OF FARM PRICES AND PURCHASING POWER IN THE UNITED STATES¹

GENERAL TREND OF FARM PRICES AND PURCHASING POWER IN WISCONSIN

Index Numbers of United States Farm Prices (Average of prices August, 1909-July, 1914 = 100)								Purchasing Power		Index Numbers of Wisconsin Farm prices (Average of prices January, 1910-December, 1914 = 100)											Purchasing Power		Index numbers of Wisconsin farm real estate values
Year and month	Grain	Meat animals	Dairy products	Poultry products	Fruits and vegetables	Cotton and cotton seed	All groups 29 items	Prices paid by farmers for commodities 1910-14 = 100	Ratio of prices received to prices paid	Index numbers of U. S. farm real estate values	Grain	Livestock	Milk	Poultry products	Four leading cash crops	Fruits and vegetables	Unclassified	All groups 29 items	All groups milk excluded 29 items	Ratio of prices received to prices paid	Ratio of prices received for milk to prices paid		
1910	104	103	100	104	91	113	103	98	106	-----	101	101	98	103	84	100	108	99	99	101	100	-----	
1911	96	87	97	91	106	101	95	101	93	-----	111	95	90	91	99	100	112	91	92	90	89	-----	
1912	108	95	103	101	110	87	99	100	99	97	111	96	103	101	117	90	111	103	101	102	103	97	
1913	92	108	100	101	92	97	100	100	99	100	85	110	105	100	94	102	82	104	102	104	108	100	
1914	103	112	100	104	100	86	102	101	101	103	93	111	104	104	105	106	85	105	105	104	103	103	
1915	120	104	98	108	89	78	100	106	95	103	117	101	103	101	90	89	88	101	99	96	97	104	
1916	126	120	102	116	122	119	117	128	95	108	125	119	123	117	143	151	103	122	122	99	100	117	
1917	217	173	128	167	202	187	176	180	118	117	300	175	172	185	208	197	138	174	175	116	116	124	
1918	226	202	163	182	162	245	200	178	112	129	216	200	206	184	157	218	178	198	192	111	116	133	
1919	231	206	173	206	189	247	209	208	102	140	188	206	223	186	204	254	172	215	206	105	110	143	
1920	231	273	188	222	249	248	205	206	99	170	211	179	206	219	238	215	172	203	300	99	100	171	
1921	112	108	148	181	148	161	118	186	75	167	114	102	184	160	161	215	119	126	122	82	86	168	
1922	105	113	184	139	152	156	124	152	81	130	100	107	180	141	143	178	128	124	119	82	86	154	
1923	114	106	148	145	138	216	155	153	36	135	102	99	165	141	123	116	121	137	111	90	109	147	
1924	129	109	134	147	124	211	134	154	37	130	118	108	146	146	129	137	130	138	116	83	91	159	
1925	158	139	137	151	160	177	147	159	42	127	133	103	150	150	154	129	116	144	138	91	94	180	
1926	129	146	136	158	189	122	138	158	27	124	114	145	153	168	218	128	119	153	153	87	97	125	
1927	128	129	138	141	153	125	137	154	85	119	121	136	167	144	153	143	121	154	142	100	108	122	
1928	130	150	140	180	146	162	139	156	90	117	130	145	170	158	140	169	118	156	143	100	109	120	
1929	121	156	140	189	136	145	135	155	89	116	116	152	182	180	144	177	114	156	148	100	105	119	
1930	100	134	123	126	158	102	117	146	80	115	95	128	128	124	171	154	99	120	130	88	88	117	
1930																							
Jan.	118	146	126	178	187	126	134	152	88	-----	114	141	145	172	160	173	101	145	146	95	93	-----	
Feb.	113	150	129	184	189	121	131	152	85	-----	109	144	136	156	164	173	99	143	146	88	91	-----	
March	107	151	126	116	189	113	126	151	83	-----	103	143	135	149	180	172	96	138	139	91	90	-----	
April	110	146	126	117	187	120	127	150	85	-----	103	139	135	151	186	172	98	136	140	91	89	-----	
May	104	142	123	110	193	119	124	150	85	-----	100	134	126	115	201	173	96	133	136	88	84	-----	
June	104	141	118	103	192	115	125	149	82	-----	99	134	119	101	201	173	96	127	135	85	80	-----	
July	92	127	115	101	172	99	111	148	78	-----	96	123	120	86	188	134	95	122	124	82	81	-----	
August	101	119	117	107	149	84	108	147	74	-----	90	118	125	106	156	134	100	128	118	84	88	-----	
Sept.	100	122	123	125	146	83	111	146	76	-----	91	120	138	122	180	134	103	121	129	90	91	-----	
Oct.	92	123	125	129	127	76	108	144	74	-----	86	121	134	120	145	134	105	127	121	88	93	-----	
Nov.	80	118	124	146	114	80	103	142	73	-----	77	113	126	141	136	134	104	122	118	86	89	-----	
Dec.	80	113	117	127	106	78	97	139	70	-----	77	109	119	112	127	124	100	113	108	81	86	-----	
1931																							
Jan.	77	112	107	110	108	72	94	138	69	-----	75	104	107	104	127	134	99	108	105	77	78	-----	
Feb.	75	108	101	79	106	78	90	137	66	-----	72	95	101	78	123	134	95	96	98	73	74	-----	
March	74	106	101	92	109	80	91	136	67	-----	70	94	97	93	114	134	94	97	96	71	71	-----	
April	74	106	99	90	120	78	91	134	68	-----	71	93	85	85	127	134	94	92	99	67	68	-----	
May	74	99	91	77	119	74	86	131	66	-----	70	92	80	79	115	134	94	87	93	66	61	-----	

¹Prepared by the Bureau of Agricultural Economics, United States Department of Agriculture.

²Purchasing power of the farmer's dollar expressed as the ratio of the index number of the prices received to the index number of the prices paid for commodities farmers buy.

³Average of estimated values, 1912-14 = 100.

⁴Includes potatoes, tobacco, manure, and clover seed.

⁵Includes dry beans, flaxseed, hay, dry peas, sugar beets, and wool.

⁶The ratio of the index number of prices received for Wisconsin farm products to the United States index number of prices paid for commodities farmers buy.

⁷The ratio of the index number of Wisconsin milk prices to the United States index number of prices paid for commodities farmers buy.

⁸These index numbers are based on retail prices paid by farmers for commodities used in living and production, reported quarterly for March, June, September, and December.

⁹The index for other months are straight interpolations between the successive quarterly indexes.

¹⁰Provisionary.

Current data may be obtained from the Wisconsin Crop and Livestock Reporter, a monthly publication of the Federal-State Crop Reporting Service for Wisconsin.

TABLE NO. 44. PRICES PAID TO UNITED STATES PRODUCERS FOR FARM PRODUCTS.

	Wheat bu.	Corn bu.	Oats bu.	Barley bu.	Rye bu.	Buckwheat bu.	Flaxseed bu.	Hogs cwt.	Beef cattle cwt.	Veal calves cwt.	Sheep cwt.	Lambs cwt.	Milk cows head	Chickens lb.	Eggs doz.	Butter lb.	Wool lb.	Beans bu.	Hay ton	Clover seed bu.	Potatoes bu.	Sweet potato's bu.	Horses head	Cotton lb.
1910-14	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	10.7	28.4	38.4	15.5	2.25	11.74	8.96	82.7	78.5	139	12.3
Jan.	89.3	58.0	39.9	92.2	72.4	71.1	131.0	10.1	11.1	8.73	4.75	5.73	10.8	10.9	28.4	38.4	15.5	2.25	11.74	8.94	82.7	78.5	139	12.3
Feb.	88.0	56.5	40.0	92.2	71.1	70.9	131.0	10.1	11.1	8.73	4.75	5.73	10.8	11.2	31.5	36.9	15.7	2.25	11.74	8.94	82.7	78.5	139	12.3
March	88.0	56.5	40.0	92.2	71.1	70.9	131.0	10.1	11.1	8.73	4.75	5.73	10.8	11.6	17.1	24.4	15.0	2.25	11.74	8.94	82.7	78.5	139	12.3
April	88.0	56.5	40.0	92.2	71.1	70.9	131.0	10.1	11.1	8.73	4.75	5.73	10.8	11.8	17.7	24.7	17.3	2.25	11.74	8.94	82.7	78.5	139	12.3
May	90.0	58.7	41.8	94.1	73.5	72.5	132.5	10.2	11.2	8.78	4.80	5.79	10.7	11.8	18.7	24.7	17.3	2.25	11.74	8.94	82.7	78.5	139	12.3
June	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	11.8	18.7	24.7	17.3	2.25	11.74	8.94	82.7	78.5	139	12.3
July	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	11.9	18.7	24.7	17.3	2.25	11.74	8.94	82.7	78.5	139	12.3
Aug.	85.0	54.1	36.9	89.7	69.9	68.9	129.9	9.8	10.8	8.63	4.68	5.68	10.6	12.0	17.2	23.6	16.8	2.25	11.74	8.94	82.7	78.5	139	12.3
Sept.	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	11.9	18.7	24.7	17.3	2.25	11.74	8.94	82.7	78.5	139	12.3
Oct.	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	11.8	22.3	26.6	17.1	2.25	11.74	8.94	82.7	78.5	139	12.3
Nov.	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	11.8	22.3	26.6	17.1	2.25	11.74	8.94	82.7	78.5	139	12.3
Dec.	86.0	54.9	38.9	90.6	70.4	69.4	128.4	9.9	10.9	8.68	4.73	5.73	10.6	12.0	17.2	23.6	16.8	2.25	11.74	8.94	82.7	78.5	139	12.3
Average	87.4	56.2	38.5	91.9	71.4	70.9	132.2	10.0	11.1	8.78	4.80	5.79	10.7	10.7	28.4	38.4	15.5	2.25	11.74	8.96	82.7	78.5	139	12.3
1914	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1915	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1916	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1917	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1918	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1919	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1920	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1921	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1922	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1923	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1924	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1925	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1926	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1927	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1928	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1929	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1930	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
1931	112.9	72.4	45.8	107.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
January	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
February	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
March	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
April	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
May	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
June	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
July	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
August	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
September	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
October	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
November	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5
December	101.7	77.3	43.1	102.4	83.4	82.4	158.0	14.0	15.0	10.47	5.31	6.30	12.2	12.2	33.8	43.8	18.0	2.85	12.42	9.45	103.8	98.0	161	13.5

†As reported by the United States Department of Agriculture

INDEX NUMBERS OF U. S. FARM PRICES* (1910-1914=100)

	Wheat	Corn	Oats	Barley	Rye	Buckwheat	Flaxseed	Hogs	Beef cattle	Veal calves	Sheep	Lambs	Milk cows	Chickens	Eggs	Butter	Wool	Beans	Hay	Clover seed	Potatoes	Sweet potato's	Horses	Cotton†
1914	98	112	101	82	95	107	78	104	118	114	105	106	121	106	104	100	99	100	96	90	100	96	96	86
1915	126	112	113	93	128	119	93	91	112	111	115	118	118	108	102	102	126	127	89	85	75	84	93	72
1916	133	117	109	107	189	192	126	113	126	122	138	138	124	116	114	110	156	189	88	108	143	91	93	109
1917	229	216	159	174	215	210	167	187	187	153	207	206	146	146	156	141	166	293	112	120	273	138	104	173
1918	231	232	152	203	246	243	212	220	178	179	239	238	166	181	183	169	326	274	162	188	166	183	98	238
1919	244	242	174	171	185	214	238	234	182	186	206	219	167	207	209	198	327	195	173	268	200	179	87	239
1920	256	232	200	195	223	232	214	180	180	172	194	201	182	232	232	218	214	181	179	266	358	251	85	259
1921	125	89	80	82	143	150	89	108	104	115	101	121	120	192	187	151	96	126	106	116	148	136	98	106
1922	117	90	80	81	103	123	122	116	102	112	131	164	100	166	183	138	163	164	95	123	139	130	58	162
1923	112	124	104	91	89	130	140	98	106	117	145	177	113	164	140	160	212	177	103	126	121	119	59	215
1924	126	141	112	110	107	141	129	106	100	119	148	181	113	167	161	166	212	159	111	143	126	166	58	216
1925	172	155	111	116	137	142	145	163	118	150	187	208	118	177	156	161	221	174	106	174	166	196	58	179
1926	154	108	97	90	111	117	123	143	122	140	161	165	153	190	146	163	156	140	109	190	267	173	58	172
1927	137	123	113	106	119	121	118	134	136	148	158	182	151	177	181	167	174	136	101	210	190	130	85	128
1928	129	138	123	112	129	127	116	121	173	172	187	204	183	184	140	172	203	190	99	212	119	128	85	150
1929	117	135	111	91	120	181	146	140	174	178	194	201	181	193	149	172	178	210	97	167	136	136	87	143
1930	92	130	98	76	81	128	125	122	132	145	114	138	151	162	117	144	119	151	95	120	181	162	82	100
January	123	133	113	88	120	138	173	123	179	175	150	162	186	135	180	140	148	169	96	111	220	131	85	138
February	113	130	109	83	108	185	161	133	170	173	160	176	178	137	131	146	140	167	93	106	212	181	84	121
March	103	123	103	83	94	184	159	129	169	162	158	155	166	134	99	142	127	155	91	104	204	131	84	111
April	105	138	105	90	98	181	153	121	167	159	127	140	163	133	128	130	119	163	91	106	216	127	84	118
May	97	129	99	79	89	181	139	134	161	147	113	138	161	169	220	138	110	165	90	103	216	128	85	115
June	87	117	84	74	89	182	140	137	183	145	118	145	166	181	111	145	109	161	88	114	214	134	83	110
July	87	127	88	76	76	184	115	116	184	136	102	133	146	145	113	130	110	158	87	116	174	136	81	94
August	80	124	82	74	74	126	112	114	171	127	98	129	134	144	120	181	111	158	98	122	123	141	80	91
September	87	127	88	76	76	184	115	116	184	136	102	133	146	145	113	130	110	158	87	116	174	136	81	94
October	80	125	92	77	74	126	112	114	171	127	98	129	134	144	120	181	111	158	98	122	123	141	80	91
November	78	117	88	70	65	125	91	119	183	182	91	112	125	147	119	145	116	132	105	145	147	138	80	81
December	49	106	82	64	67	116	82	118	133	127	93	113	126	142	124	141	110	119	105	145	158	123	48	79
1931	71	111	83	64	65	112	89	111	122	123	93	109	124	142	89	123	106	-----	92	135	148	130	47	71
January	68	106	81	60	52	112	85	104	127	137	95	109	127	147	75	106	94	-----	95	131	146	125	47	70
February	66	88	78	63	48	106	74	96	118	121	91	111	119	158	54	105	86	-----	91	128	132	121	47	74
March	66	85	75	65	48	109	75	93	114	111	99	110	115	144	79	114	85	-----	90	120	127	121	48	77
April	67	83	76	65	45	105	74	91	109	109	34	107	114	145	95	115	87	-----	88	119	123	122	47	76
May	67	87	49	66	46	100	74	98	103	108	79	108	110	135	80	105	81	-----	83	125	125	118	48	70

TABLE NO. 45. PRICES PAID TO WISCONSIN PRODUCERS FOR FARM PRODUCTS*

	Wheat bu.	Corn bu.	Oats bu.	Barley bu.	Rye bu.	Buckwheat bu.	Flaxseed bu.	Hogs cwt.	Beef cattle cwt.	Veal calves cwt.	Sheep cwt.	Lamb cwt.	Milk cows head	Milk cwt.	Butterfat lb.	Chickens lb.	Eggs doz.	Butter lb.	Wool lb.	Dry beans bu.	Hay (tons) ton	Clover seed bu.	Potatoes bu.	Horses head	
1910-14																									
January	90.0	55.5	37.6	70.6	87.6	73.0	170.0	7.14	8.68	7.38	4.14	5.92	51.75	1.47	33.0	10.4	28.4	21.0	21.0	2.25	12.78	8.33	50.7	189.83	
February	89.5	55.5	38.4	71.2	87.6	73.0	170.0	7.14	8.68	7.38	4.14	5.92	51.75	1.47	33.0	10.4	28.4	21.0	21.0	2.25	12.78	8.33	50.7	189.83	
March	89.5	55.5	38.4	71.2	87.6	73.0	170.0	7.14	8.68	7.38	4.14	5.92	51.75	1.47	33.0	10.4	28.4	21.0	21.0	2.25	12.78	8.33	50.7	189.83	
April	89.5	55.5	38.4	71.2	87.6	73.0	170.0	7.14	8.68	7.38	4.14	5.92	51.75	1.47	33.0	10.4	28.4	21.0	21.0	2.25	12.78	8.33	50.7	189.83	
May	81.2	56.4	40.2	71.6	89.9	74.8	179.8	7.40	5.08	6.56	4.78	6.12	53.90	1.10	27.6	11.7	15.4	19.2	19.2	19.2	17.17	13.06	8.20	48.4	189.20
June	81.2	60.4	40.2	69.6	89.8	73.4	170.0	7.30	4.90	6.44	4.42	5.46	54.90	1.08	27.6	11.6	15.4	19.2	19.2	19.2	17.17	13.06	8.20	48.4	189.20
July	81.2	62.0	41.0	67.6	87.6	73.8	182.4	7.38	4.92	6.44	4.42	5.46	54.90	1.12	27.6	11.9	16.8	19.6	19.6	19.6	17.17	13.06	8.20	48.4	189.20
August	82.2	63.0	42.2	68.6	87.6	73.8	182.4	7.50	4.96	6.44	4.42	5.46	54.90	1.21	28.0	12.0	17.8	20.4	20.4	20.4	17.17	13.06	8.20	48.4	189.20
September	82.2	63.0	42.2	68.6	87.6	73.8	182.4	7.50	4.96	6.44	4.42	5.46	54.90	1.21	28.0	12.0	17.8	20.4	20.4	20.4	17.17	13.06	8.20	48.4	189.20
October	81.0	62.2	42.2	67.6	87.6	73.8	182.4	7.45	4.94	6.44	4.42	5.46	54.90	1.37	31.3	11.1	22.8	25.6	19.6	19.6	17.17	13.06	8.20	48.4	189.20
November	80.0	63.4	42.2	67.6	87.6	73.8	182.4	6.94	4.82	7.34	4.02	5.66	54.75	1.47	33.0	10.8	25.4	30.0	19.8	19.8	17.17	13.06	8.20	48.4	189.20
December	80.0	63.4	42.2	67.6	87.6	73.8	182.4	6.78	4.78	7.34	4.06	5.66	54.75	1.51	33.0	10.0	25.4	31.4	20.0	20.0	17.17	13.06	8.20	48.4	189.20
Average	90.8	59.5	38.0	69.2	89.1	72.8	171.1	7.85	4.91	7.23	4.25	6.01	53.65	1.855	30.3	11.2	21.5	28.1	30.1	2.25	12.78	8.33	50.7	189.83	
1914	89.5	53.6	39.1	65.7	85.2	72.8	138.2	7.65	5.82	8.22	4.54	6.80	56.90	1.31	30.0	11.6	22.8	28.4	19.0	2.25	10.00	7.72	50.9	172.80	
1915	114.7	71.9	46.1	83.3	97.0	84.7	135.2	8.55	5.46	7.95	5.00	7.00	62.30	1.30	30.0	11.0	21.7	28.3	25.0	2.25	9.85	9.07	57.2	181.40	
1916	119.4	79.5	44.2	73.6	98.4	94.0	192.2	8.47	5.80	8.87	5.87	8.28	64.80	1.55	34.0	13.0	25.0	32.1	30.0	4.75	11.28	9.40	88.3	155.50	
1917	193.0	143.8	62.4	121.3	155.9	148.5	374.4	14.17	7.62	11.46	8.95	12.38	77.65	2.18	43.0	16.2	38.0	40.0	49.0	6.34	14.23	10.85	163.3	151.80	
1918	206.6	183.8	76.4	125.2	180.5	171.5	395.2	16.09	7.91	12.17	10.23	14.17	88.70	2.80	54.0	20.2	39.5	48.2	63.0	6.34	14.23	12.78	78.0	147.70	
1919	212.7	140.4	65.8	107.8	138.9	138.9	384.8	16.52	9.02	14.31	9.08	12.51	104.25	2.83	54.0	22.9	43.8	57.7	73.0	6.34	14.23	12.78	114.4	143.70	
1920	214.7	187.3	78.6	121.9	182.8	186.8	354.8	12.38	7.82	12.47	7.83	12.52	104.30	3.00	62.0	28.9	45.8	58.1	38.0	6.34	14.23	12.78	141.20		
1921	120.1	59.5	37.3	60.0	104.1	100.1	162.3	7.61	4.57	7.62	8.35	7.37	58.20	1.89	41.7	19.3	32.9	41.7	18.7	3.85	15.04	11.04	79.9	114.30	
1922	107.3	59.2	37.7	55.8	78.3	80.0	209.7	8.32	4.54	7.73	4.92	10.32	57.00	1.64	39.0	19.3	32.5	38.6	18.7	3.85	15.04	11.04	90.0	111.20	
1923	106.0	77.7	42.4	61.7	65.6	84.0	214.4	6.97	4.57	7.99	5.16	10.52	62.35	3.09	46.8	17.3	39.2	45.7	19.9	3.85	15.04	11.04	86.0	111.70	
1924	118.5	64.4	42.9	73.8	77.1	97.8	215.5	7.29	4.67	8.17	5.82	10.53	63.75	1.77	43.4	17.6	39.2	45.7	27.7	3.85	15.04	11.04	106.00		
1925	143.7	102.9	43.9	80.7	98.5	98.8	288.2	10.37	5.18	9.17	6.13	12.26	66.25	1.90	48.8	19.2	38.2	44.2	40.3	3.85	15.04	11.04	84.0	108.20	
1926	187.2	74.8	39.2	65.2	82.1	79.8	302.5	11.70	5.73	10.14	8.18	13.09	80.80	1.92	45.8	21.4	31.3	43.9	35.9	3.67	18.22	15.84	84.0	111.70	
1927	128.1	87.1	46.2	73.8	85.4	84.0	193.7	8.82	4.48	10.32	8.75	11.84	89.85	2.11	50.0	19.2	38.2	47.0	33.0	3.67	18.22	15.84	87.2	113.70	
1928	117.4	92.6	46.0	80.0	98.0	88.0	189.7	8.74	3.32	12.14	4.05	13.37	103.10	2.16	51.5	20.2	37.7	47.3	35.2	4.72	18.08	15.02	65.0	117.80	
1929	111.7	89.3	45.7	63.7	89.7	88.0	237.0	6.50	5.23	12.43	6.07	13.23	107.25	2.06	48.7	22.0	31.5	46.5	34.5	5.38	12.60	15.09	71.2	117.80	
1930	92.1	79.7	38.9	58.0	80.7	87.3	313.0	5.32	6.54	9.87	4.33	8.56	84.40	1.63	39.8	17.4	24.1	37.0	23.8	8.58	11.07	10.52	115.8	105.20	
January	112.3	81.1	44.2	64.8	88.9	86.0	263.2	5.70	7.70	9.87	5.30	11.40	101.1	1.81	43.2	18.5	30.7	37.7	32.4	4.21	10.70	9.60	120.0	118.0	
February	111.1	81.1	44.2	64.8	88.9	86.0	263.2	5.70	7.70	9.87	5.30	11.40	101.1	1.81	43.2	18.5	30.7	37.7	32.4	4.21	10.70	9.60	120.0	118.0	
March	104.7	78.4	42.2	62.0	70.7	87.7	251.1	6.40	8.40	10.80	6.30	10.70	97.7	1.75	40.0	19.4	32.2	38.0	30.0	4.33	10.40	9.70	125.0	115.0	
April	104.0	80.4	42.2	62.0	67.8	86.0	255.0	6.30	7.40	10.10	5.40	10.80	99.0	1.68	40.0	21.0	31.0	38.0	28.0	4.33	10.40	9.70	120.0	115.0	
May	100.7	78.4	42.2	62.0	63.0	86.0	255.0	6.30	7.40	10.10	5.40	10.80	99.0	1.68	40.0	19.8	30.0	38.0	22.0	4.33	10.40	9.70	120.0	115.0	
June	98.7	78.4	41.1	61.0	63.0	87.0	241.1	6.00	7.30	9.50	5.50	10.40	98.0	1.51	38.0	16.7	18.0	34.0	20.0	3.99	10.40	9.70	120.0	115.0	
July	88.7	77.7	41.1	61.0	63.0	87.0	205.0	6.40	6.20	9.50	5.30	10.70	93.0	1.52	36.0	15.6	18.0	34.0	20.0	3.99	10.40	9.70	120.0	115.0	
August	88.7	89.7	37.7	55.5	56.5	91.0	190.0	6.80	5.80	9.50	5.40	10.40	90.0	1.62	38.0	16.6	20.0	38.0	21.0	4.01	11.40	10.30	105.0	107.0	
September	84.0	90.7	37.7	57.5	57.5	92.0	178.0	6.90	6.00	9.20	5.70	7.30	77.0	1.68	40.0	17.0	24.0	42.0	22.0	4.18	11.70	11.20	110.0	106.0	
October	79.0	82.0	36.5	51.0	53.0	106.0	150.0	6.80	5.50	9.20	5.20	6.80	77.0	1.68	41.0	16.0	24.0	39.0	21.0	3.99	12.40	13.50	90.0	104.0	
November	75.0	71.0	32.0	44.0	44.0	150.0	150.0	6.80	5.50	9.20	5.20	6.80	74.0	1.68	38.0	14.5	21.0	37.0	21.0	3.77	12.30	11.60	80.0	100.0	
December	78.0	70.0	33.0	43.0	43.0	148.0	148.0	7.40	5.90	8.00	2.60	6.80	70.0	1.50	37.0	13.9	23.0	34.0	20.0	3.15	11.70	11.00	70.0	97.0	
1931																									
January	78.0	63.0	31.0	49.0	42.0	79.0	135.0	7.20	5.10	8.20	3.20	7.00	68.0	1.35	31.0	15.2	30.0	39.0	19.0	2.39	11.80	11.20	70.0	92.0	
February	72.0	64.0	31.0	47.0	38.0	73.0	130.0	6.80	4.80	7.70	3.50	7.00	63.0	1.25	30.0	14.4	13.0	38.0	18.0	2.61	11.10	10.80	65.0	95.0	
March	70.0	61.0	30.0	46.0	38.0	70.0	129.0	6.70	4.80	6.70	3.40	6.80	63.0	1.28	31.0	15.8	16.5	39.0	15.0	2.62	10.70	10.80	55.0	98.0	
April	70.0	63.0	31.0	47.0	38.0	72.0	131.0	6.90	4.50	6.80	3.70	6.80	63.0	1.08	29.0	17.2	16.1	23.0	17.0	2.71	10.90	10.90	70.0	98.0	
May	70.0	62.0	30.0	43.0	36.0	72.0	131.0	6.30	4.80	6.80	3.50	7.00	61.0	1.01	26.0	15.3	12.9	23.0	15.0	2.63	10.90	11.40	55.0		

INDEX NUMBERS OF WISCONSIN FARM PRICES* (1910-14=100)*

	Wheat	Corn	Oats	Barley	Rye	Buckwheat	Flaxseed	Hogs	Beef cattle	Veal calves	Sheep	Lamb	Milk cows	Milk	Butterfat	Chickens	Eggs	Butter	Wool	Dry beans	Hay (loose)	Clover seed	Potatoes	Horses
1914	99	107	100	80	94	100	81	104	119	114	109	110	125	102	99	104	103	101	98	99	78	87	70	102
1915	128	121	116	91	140	115	80	89	111	110	118	110	116	101	100	98	102	101	125	130	77	91	78	95
1916	131	134	113	113	143	129	113	115	120	123	138	137	141	130	118	116	117	114	151	211	88	106	184	92
1917	217	242	190	175	240	205	260	198	163	158	206	206	145	169	189	180	185	172	315	355	152	242	232	97
1918	232	256	198	181	261	235	220	212	177	162	240	236	163	205	211	204	206	205	264	188	182	242	440	96
1919	234	236	189	155	186	181	225	225	184	185	214	235	154	244	202	208	214	230	180	176	174	249	168	93
1920	238	231	202	178	226	239	207	178	182	172	194	206	184	208	181	188	177	184	143	198	121	113	120	91
1921	132	100	96	97	161	139	95	104	93	105	92	123	108	127	129	185	134	137	138	171	113	125	158	83
1922	116	99	97	90	110	111	119	113	92	107	116	170	106	127	144	156	142	151	188	162	130	146	137	83
1923	116	131	109	99	97	115	125	94	93	111	121	176	116	162	155	154	137	165	200	161	103	179	187	84
1924	125	169	128	107	113	134	126	96	95	113	132	180	119	137	144	156	142	151	188	162	130	146	137	83
1925	165	172	118	117	143	134	139	143	105	127	144	206	133	147	153	171	158	157	200	161	103	179	187	84
1926	161	125	101	96	119	108	129	159	117	140	145	201	180	149	151	191	147	158	179	164	103	186	212	84
1927	136	146	118	106	128	116	113	130	132	146	135	167	167	164	167	172	184	187	184	242	112	210	231	87
1928	126	166	134	116	142	121	111	119	137	169	142	206	139	187	171	155	142	170	186	210	102	181	136	87
1929	128	148	117	98	130	123	139	129	199	172	143	203	200	189	161	186	148	165	172	237	94	171	140	83
1930	103	124	100	84	88	120	124	120	132	102	142	142	137	136	128	135	118	133	113	172	87	119	238	64
January	124	146	117	90	130	123	144	122	165	160	133	152	158	128	154	178	130	117	150	191	82	132	264	69
February	123	146	112	87	117	121	143	131	156	168	124	163	149	127	152	178	128	128	148	194	82	107	263	67
March	116	182	109	89	104	123	140	128	180	190	118	161	168	143	129	191	134	126	182	178	76	106	246	67
April	116	190	111	86	98	113	143	119	151	144	117	140	146	142	137	181	127	148	189	175	82	110	274	67
May	110	186	104	87	91	123	141	122	146	136	107	148	166	145	145	170	116	134	115	187	80	112	300	66
June	107	188	102	88	91	117	142	133	149	137	124	148	181	140	138	154	116	134	104	187	83	119	284	62
July	96	126	90	80	71	122	126	114	136	135	95	142	166	136	131	168	108	123	102	175	83	108	224	62
August	96	187	92	82	81	124	114	113	107	130	83	124	160	132	131	169	116	144	104	172	89	115	183	62
September	81	138	95	86	82	127	99	123	121	130	90	123	143	129	133	145	121	146	109	174	89	124	192	61
October	87	132	96	81	72	129	96	118	110	139	72	116	138	133	131	144	106	136	107	182	94	141	196	62
November	83	122	85	75	61	110	94	117	110	118	82	113	135	109	113	141	117	128	107	141	98	142	180	60
December	81	124	88	74	80	106	89	109	111	108	69	115	129	99	106	139	79	108	100	133	98	132	161	58
1931																								
January	80	128	82	69	62	108	80	101	109	111	77	118	128	92	82	148	70	82	89	131	89	131	154	55
February	30	115	81	66	66	102	73	94	100	106	53	123	121	93	84	152	83	80	80	117	96	119	137	55
March	78	109	78	65	65	96	73	90	93	91	76	117	118	97	101	141	82	87	87	130	83	112	113	58
April	77	110	80	66	62	99	73	97	95	96	80	121	118	92	99	104	87	84	132	84	116	142	57	
May	77	104	75	67	62	98	73	85	94	101	73	114	114	82	94	130	79	88	78	117	83	124	114	59

TABLE NO. 46. INDEX NUMBERS OF WISCONSIN FARM PRICES

(Average price January 1910—December 1914=100)

GENERAL INDEX NUMBERS OF WISCONSIN FARM PRICES¹

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	108	104	101	98	93	82	83	87	102	101	103	103	99
1911	90	86	85	81	78	79	87	94	85	90	105	109	91
1912	111	107	101	105	100	94	85	97	102	107	109	111	102
1913	107	106	104	101	95	96	97	101	106	111	113	115	104
1914	118	113	107	101	97	96	99	104	106	107	108	108	106
1915	107	108	100	100	97	96	94	95	104	109	113	101	104
1916	113	113	120	118	110	106	111	121	133	140	145	150	122
1917	151	161	184	176	175	170	166	172	185	196	194	202	174
1918	205	205	191	193	175	170	180	194	209	226	237	244	195
1919	223	203	205	206	209	210	219	227	216	217	224	231	215
1920	231	231	213	216	216	206	202	208	198	186	179	163	208
1921	154	144	149	133	111	106	115	128	125	130	131	131	123
1922	120	123	124	120	119	123	122	119	122	130	140	143	124
1923	150	143	141	123	128	126	130	124	141	143	143	144	137
1924	144	141	133	123	118	113	120	128	128	130	130	134	123
1925	139	137	143	139	136	137	143	148	144	153	159	160	144
1926	160	157	154	153	149	146	147	144	149	156	161	164	152
1927	162	160	154	151	146	147	143	151	154	163	163	164	154
1928	161	157	153	150	140	149	156	162	164	161	169	165	155
1929	156	156	157	153	150	146	151	157	159	160	167	153	155
1930	145	142	138	136	132	127	123	128	131	127	122	118	128
1931	106	99	97	92	87								

¹Based on prices of thirty important Wisconsin farm products representing about 97 per cent of the cash income of Wisconsin farmers.² PreliminaryGRAINS²

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	108	105	104	102	101	100	102	102	100	97	95	98	101
1911	102	102	104	107	100	106	108	109	114	120	122	121	111
1912	124	125	126	129	130	126	120	105	93	87	86	83	111
1913	82	81	81	80	83	83	84	87	89	90	83	86	83
1914	86	85	84	85	86	86	87	84	104	100	106	110	93
1915	110	110	113	112	112	114	121	112	101	96	100	104	117
1916	112	115	112	110	112	111	110	123	136	146	153	157	125
1917	187	183	170	194	228	229	235	213	203	204	204	213	200
1918	223	238	250	265	247	232	208	196	183	163	133	155	216
1919	177	168	173	187	192	191	196	201	192	188	191	204	188
1920	217	215	218	236	262	256	241	217	198	176	158	144	211
1921	186	189	183	120	113	117	115	110	106	98	89	92	114
1922	98	99	105	107	108	107	108	94	88	82	87	102	100
1923	103	104	104	106	107	105	100	87	87	100	101	102	103
1924	102	105	106	108	107	113	113	127	123	139	134	140	112
1925	153	162	164	165	166	140	134	128	116	108	109	110	133
1926	130	119	113	113	113	112	115	117	111	111	112	112	113
1927	114	117	117	117	122	120	127	122	121	121	120	126	121
1928	157	130	137	143	155	153	149	121	109	112	112	114	180
1929	114	120	121	118	112	108	112	120	117	118	114	116	116
1930	114	109	103	103	100	99	86	90	81	86	77	77	85
1931	75	72	70	71	70								

¹Includes wheat, corn, oats, barley, rye, buckwheat.MILK²

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	114	108	99	95	89	86	85	89	101	103	108	109	98
1911	101	96	85	74	70	74	72	90	95	108	118	122	90
1912	128	114	104	95	84	86	89	83	103	111	121	124	103
1913	119	113	108	90	82	82	82	99	110	113	119	127	105
1914	123	116	107	99	89	89	89	100	104	108	115	115	104
1915	112	106	104	104	99	98	98	90	98	108	121	128	109
1916	122	122	127	115	104	100	99	115	136	147	153	162	133
1917	157	151	160	184	158	153	152	162	191	207	214	228	173
1918	226	221	198	176	165	155	160	198	217	257	281	285	206
1919	247	231	217	209	205	210	215	226	227	240	255	265	225
1920	255	284	313	312	297	198	194	202	203	194	188	175	206
1921	194	189	168	147	108	100	110	128	123	138	144	145	130
1922	126	125	124	119	112	114	120	122	130	147	168	181	130
1923	158	151	172	185	181	158	164	188	186	170	175	173	165
1924	179	170	160	186	126	127	129	137	131	151	157	145	140
1925	145	146	149	147	146	144	143	149	161	163	169	158	150
1926	167	161	155	145	142	138	143	144	149	161	170	178	152
1927	178	175	167	162	157	155	157	161	169	150	163	166	167
1928	135	172	170	164	153	160	168	169	172	176	178	178	170
1929	170	172	168	166	157	164	163	167	163	167	165	166	162
1930	143	158	156	153	139	119	120	126	133	134	126	119	129
1931	107	101	97	85	81								

¹Annual average is based on a weighted average of monthly quotations.² Preliminary.POULTRY PRODUCTS²

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	109	120	108	90	81	81	81	81	98	105	114	120	109
1911	121	126	122	101	86	82	81	81	94	94	106	119	91
1912	127	122	107	83	82	81	82	80	99	106	118	122	101
1913	113	102	107	83	83	82	82	80	95	114	126	133	104
1914	127	120	107	83	87	86	82	84	104	106	118	127	104
1915	132	130	120	93	86	83	85	85	95	105	122	132	101
1916	130	131	125	93	93	99	104	112	115	156	165	158	117
1917	150	153	159	141	146	146	142	146	164	166	169	171	135
1918	199	185	183	156	156	157	177	185	198	218	243	254	184
1919	230	227	205	189	182	178	183	187	211	234	275	295	219
1920	252	227	204	189	182	178	183	187	211	234	275	295	219
1921	245	185	160	123	116	118	119	123	145	145	157	162	141
1922	188	156	115	111	118	118	118	123	145	145	157	162	141
1923	175	144	115	118	122	109	111	118	135	145	157	162	141
1924	160	144	115	107	111	113	116	127	145	145	157	162	141
1925	215	145	120	121	124	136	143	145	163	163	174	179	166
1926	170	144	136	141	141	143	145	145	163	163	174	179	166
1927	173	151	135	133	131	134	135	135	163	163	174	179	166
1928	177	151	135	133	131	134	135	135	163	163	174	179	166
1929	144	160	138	134	139	145	146	146	163	163	174	179	166
1930	122	153	113	121	115	101	98	106	122	120	141	113	124
1931	104	78	98	95	79								

¹Includes chickens and eggs.

INDEX NUMBERS OF WISCONSIN FARM PRICES, MILK EXCLUDED (24 Items)

Yr.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	102	100	103	101	97	87	87	88	102	100	97	98	99
1911	88	84	81	88	84	82	82	87	94	93	93	98	92
1912	89	100	99	105	105	102	101	100	101	102	98	98	101
1913	87	97	100	101	98	100	102	103	106	106	108	108	102
1914	110	110	107	104	105	103	103	105	111	111	106	102	101
1915	108	101	96	97	98	99	100	99	98	102	98	99	99
1916	102	109	113	113	116	118	123	128	133	132	138	135	122
1917	145	160	168	187	193	187	180	174	178	184	173	183	178
1918	198	189	183	187	184	184	191	199	202	197	193	202	192
1919	200	183	192	207	213	210	218	228	206	198	194	203	205
1920	208	206	213	213	224	219	210	204	193	183	169	152	200
1921	146	180	182	117	113	110	120	124	122	122	119	120	123
1922	113	124	124	122	125	126	134	117	114	115	113	116	119
1923	114	110	107	109	109	108	108	110	117	117	113	112	111
1924	112	113	107	108	108	108	110	125	124	128	122	124	116
1925	132	128	135	131	127	121	145	145	137	144	149	153	138
1926	154	156	164	168	156	164	182	144	149	151	156	159	153
1927	147	145	141	139	137	139	140	141	140	146	143	143	143
1928	138	138	137	137	143	139	147	150	156	146	142	142	143
1929	137	141	147	148	144	148	152	158	156	159	150	150	148
1930	146	146	139	140	136	135	124	119	129	131	118	108	130

as all other prices together. It will be noted by comparing Figure 67 with Figure 68 that the Wisconsin index tends to follow changes in milk prices rather closely.

Figure 67 and Table 46 show the variation in the Wisconsin index from 1910. Prices increased through 1914 at a small but uniform rate. The influence of the war on the trend of prices became evident during the late months of 1915. The war peak was reached in December 1918 when the index stood at 244 or 144 per cent over 1910—1914 levels. Prices declined rapidly during 1920 and 1921, reaching a low point in June 1921 with the index only 5 points above pre-war. Prices made only a small seasonal advance during the late months of 1921. The closing months of 1922 showed definite improvement. Price levels were comparatively favorable during 1923, the index reaching 150 in January but taking a seasonal decline to 126 in June. Conditions in 1924 were less favorable than in 1923. The price situation made a rapid improvement during 1925 and continued upward until October 1928 when farm prices entered the current state of depression. The trend of prices was only slightly downward in 1929 but fell disastrously in 1930. The index number for 1930 was 129 as compared with 155 for 1929 and 156 for 1928. The trend has continued downward during the early months of 1931 so that by April Wisconsin farm prices were practically at pre-war levels.

Wisconsin and United States Farm Price Levels

The Wisconsin index of farm prices is roughly comparable to the United States index of farm prices. The two series are alike in manner of construction and method of weighting. They differ slightly in base period. The base for the United States series is August 1909 to July 1914, while the Wisconsin series is based upon the five-year period January 1910 to December 1914.

Figure 67 compares the Wisconsin index with the United States index. One striking difference between the two series is that the United States index does not exhibit the seasonal variation which is so pronounced in the Wisconsin series. The Wisconsin index is strongly influenced by price changes of eggs and milk, distinctly seasonal commodities, and which receive less weight in the United States index.

The Wisconsin index reached a war time peak about six months prior to the peak for United States farm prices. Milk prices reached a peak in December 1918, while some other prices, notably for grains and cotton, continued upward well into 1920.

Important differences between the two series are apparent since the war. Wisconsin and United States farm price levels were virtually even during 1922 and 1923. A decline in milk prices during 1924, increases in grains and meat animal prices during 1924 and 1925 brought the Wisconsin index below United States

levels. Following the middle of 1925, Wisconsin prices have been well above United States prices. The difference was particularly great during 1927, when the Wisconsin index was at 154 and the United States index was at 131. During 1931 the two series fell in response to the general depression. However, Wisconsin prices have not fallen to levels as low as those for the United States. The unprecedented level of grain prices, together with unsatisfactory livestock and cotton prices has sent the United States farm price index well below pre-war levels. In February 1931 the United States index was at 90 while the Wisconsin index was at 99.

The primary reason for the more favorable price situation in Wisconsin since the war is found in the prices of milk which have tended to run above the prices of other farm commodities. This seems to be true even during the current depression. Wisconsin prices while low are relatively higher than United States prices, indicating that from the price standpoint dairying is still more profitable than other forms of agriculture for Wisconsin farmers.

Milk Prices

During the last ten years the income from milk has made up about one-half of the total farm income of Wisconsin. In addition to the direct income from milk, approximately one-third of the other farm income came from cattle, calves, and indirectly from dairy by-products so that rough-

31 YEARS OF WISCONSIN MILK PRICES

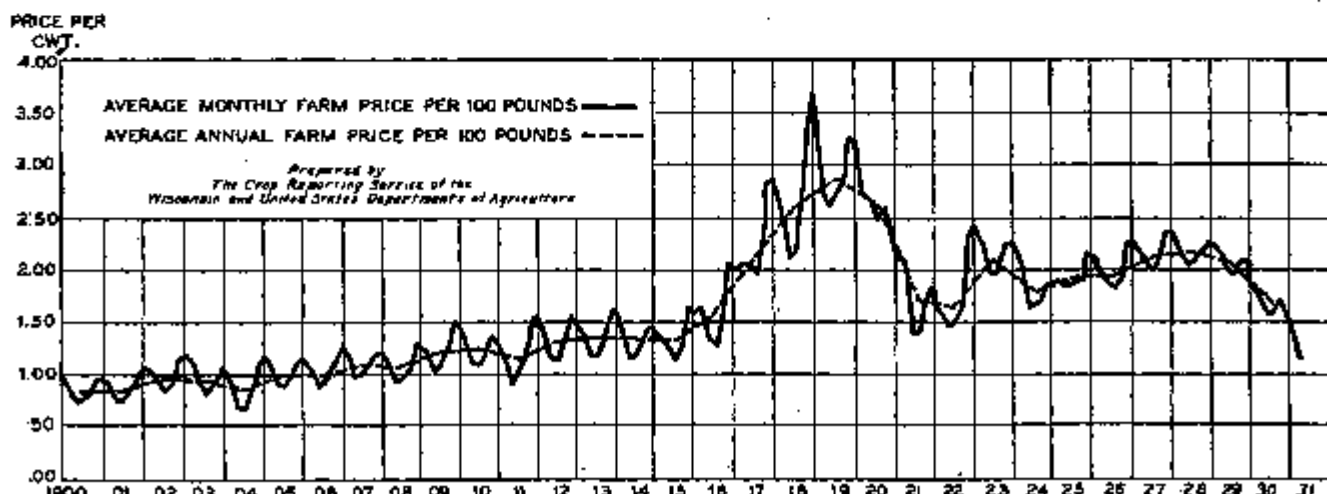


Fig. 68. The milk prices from 1900 to 1930 have been secured from old records obtained from farmers and dairy plants. Prices from January 1930 and following are the monthly prices received by Wisconsin crop reporters. The December, 1918 average price of \$3.64 per hundredweight was the highest ever obtained by Wisconsin farmers. While milk prices have been relatively favorable from the war period to 1930, depressions occurred in 1931, 1934, and 1935. The present low stage of milk prices dating from October 1933, is the longest and most severe on record.

TABLE NO. 47. WISCONSIN FARM PRICES OF MILK WITH INDEX NUMBERS.

(\$1.255 average price per cwt. 1910-14=100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year*													
Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index													
1900	1.04	82	.97	77	.87	89	.78	80	.69	55	.70	55	.73	58	.78	60	.79	62	.89	70	.94	74	.96	76	.82	85
1901	1.03	84	.93	78	.84	85	.78	82	.74	68	.73	58	.75	59	.80	63	.87	63	.91	72	.97	77	1.04	83	.84	86
1902	1.02	84	1.06	84	1.00	81	.96	78	.89	70	.83	66	.80	63	.81	64	.82	73	1.03	81	1.12	89	1.18	93	.96	78
1903	1.17	92	1.13	89	1.13	89	1.06	88	.90	71	.83	66	.80	63	.81	64	.87	68	.91	72	.96	76	1.03	81	.94	74
1904	1.04	82	.99	78	.91	72	.80	68	.67	53	.64	51	.66	51	.69	55	.81	64	.85	75	1.08	85	1.16	92	.84	85
1905	1.21	98	1.15	93	1.06	85	1.02	81	.89	70	.85	67	.87	69	.93	74	.98	76	1.03	81	1.10	87	1.15	91	1.00	79
1906	1.16	92	1.11	88	1.02	81	.86	68	.80	63	.83	66	.85	65	.93	74	1.04	82	1.11	88	1.21	96	1.27	100	.99	78
1907	1.27	100	1.22	96	1.16	92	1.11	88	.97	77	.96	76	1.00	79	1.05	83	1.11	83	1.16	92	1.20	95	1.24	98	1.10	87
1908	1.28	97	1.20	95	1.12	89	1.04	82	.90	71	.90	71	.93	74	.97	77	1.05	83	1.12	94	1.26	100	1.30	112	1.07	85
1909	1.28	107	1.28	101	1.23	97	1.14	90	1.01	79	1.02	81	1.06	84	1.15	91	1.27	100	1.35	107	1.42	113	1.51	119	1.21	98
1910	1.44	114	1.36	108	1.25	99	1.20	95	1.12	89	1.03	86	1.11	88	1.21	96	1.30	103	1.37	108	1.49	116	1.54	122	1.34	108
1911	1.22	101	1.20	95	1.08	85	.94	74	.89	70	.94	74	1.04	82	1.14	90	1.21	96	1.34	108	1.49	116	1.54	122	1.34	108
1912	1.56	123	1.44	114	1.31	104	1.24	98	1.19	94	1.09	88	1.13	89	1.18	93	1.20	103	1.41	111	1.53	121	1.67	134	1.30	108
1913	1.56	119	1.43	113	1.36	108	1.27	100	1.16	92	1.16	92	1.16	92	1.25	99	1.30	110	1.45	115	1.50	118	1.61	137	1.32	108
1914	1.56	123	1.43	115	1.35	107	1.25	99	1.18	93	1.18	93	1.17	92	1.27	100	1.32	104	1.37	108	1.45	115	1.48	116	1.31	104
1915	1.42	112	1.36	108	1.32	104	1.22	98	1.15	93	1.15	93	1.14	90	1.24	98	1.34	106	1.53	121	1.62	128	1.62	128	1.30	108
1916	1.56	123	1.43	116	1.31	104	1.27	100	1.25	99	1.25	99	1.25	99	1.45	115	1.50	118	1.58	121	1.65	128	1.65	128	1.30	108
1917	1.56	123	1.43	116	1.31	104	1.27	100	1.25	99	1.25	99	1.25	99	1.45	115	1.50	118	1.58	121	1.65	128	1.65	128	1.30	108
1918	1.56	123	1.43	116	1.31	104	1.27	100	1.25	99	1.25	99	1.25	99	1.45	115	1.50	118	1.58	121	1.65	128	1.65	128	1.30	108
1919	1.56	123	1.43	116	1.31	104	1.27	100	1.25	99	1.25	99	1.25	99	1.45	115	1.50	118	1.58	121	1.65	128	1.65	128	1.30	108
1920	1.56	123	1.43	116	1.31	104	1.27	100	1.25	99	1.25	99	1.25	99	1.45	115	1.50	118	1.58	121	1.65	128	1.65	128	1.30	108
1921	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1922	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1923	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1924	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1925	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1926	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1927	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1928	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1929	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1930	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1931	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1932	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1933	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1934	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1935	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1936	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1937	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1938	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1939	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1940	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1941	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1942	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1943	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1944	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1945	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1946	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1947	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1948	3.22	255	2.96	234	2.70	213	2.70	213	2.82	207	2.44	193	2.45	194	2.86	232	2.57	203	2.45	194	2.38	188	2.32	175	2.50	205
1949	2.07	164	2.01	159	2.10	166	2.08	164	2.00	158	1.92	152	1.92	152	2.14	169	2.42	191	2.62	207	2.71	214	2.82	223	2.18	172
1950	2.82	225	2.80	221	2.51	198	2.26	178	2.06	165	1.98	155	2.14	169	2.35	186	2.75	217	2.85	227	3.56	281	3.64	288	2.80	208
1951	3.13	247	2.86	221	2.73	217	2.64	209	2.59	205	2.66	210	2.72	215	2.86	228	2.87	227	2.83	240	3.23	255	3.26	259	2.58	205
1952	3.22	255	2.96	234	2.70	213	2.70	213																		

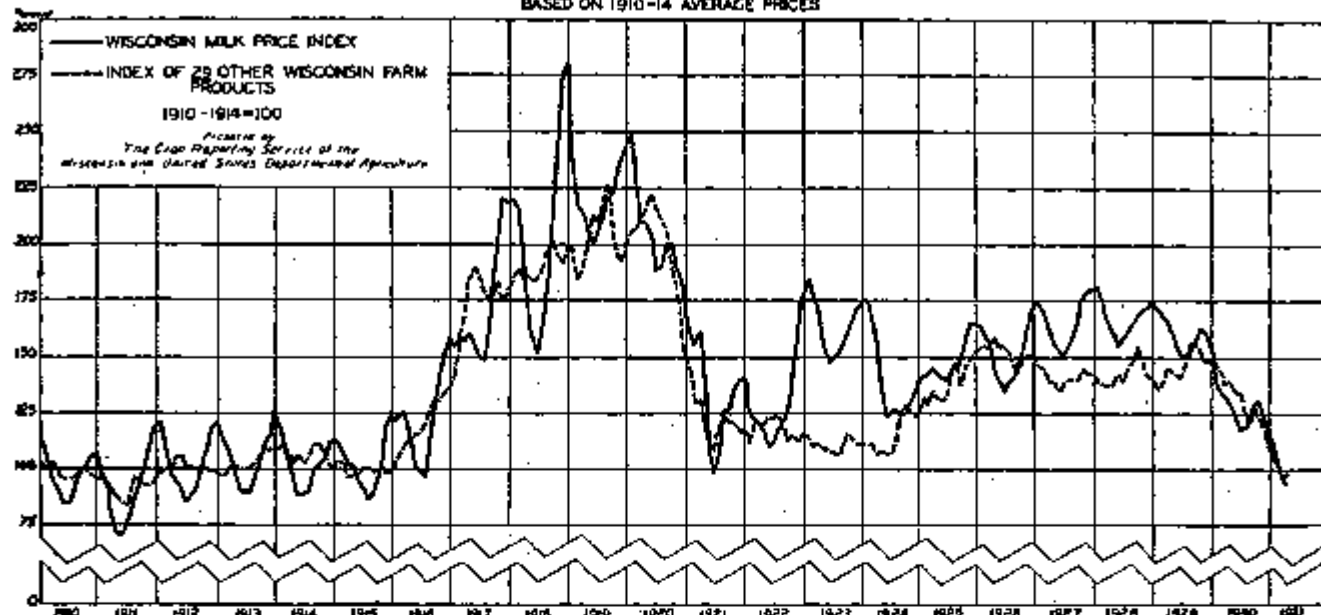
COMPARISON OF WISCONSIN MILK PRICES WITH OTHER FARM PRODUCTS
BASED ON 1910-14 AVERAGE PRICES

Fig. 70. Wisconsin farm prices of milk have been relatively more favorable than prices of other Wisconsin farm products since the war. The spread was particularly evident during 1923 when the index of milk price was at 165, while other products was at 111. Milk prices were only slightly higher than other prices in 1924, 1925, and 1926, but were well above other prices from 1927 to 1929. For 1930, milk prices were at 139 as compared with pre-war while the index of other prices was 130, indicating that milk prices were slightly, although not significantly, below other Wisconsin farm price levels.

market milk receiving stations are available from 1910.

While the trend of milk prices has been upward since 1900, the prices have been subject to cyclical fluctuations. From 1900 until the war pe-

riod small but well marked dips occurred in milk prices about every two or three years. The years 1901, 1904, 1906, 1908, 1911, and 1915 were years of lower prices.

The influence of the war upon milk

prices became evident during the late months of 1915 eventually forcing milk prices to a December 1918 peak of \$3.64 per hundredweight or 188 per cent above the average price for 1910-1914. The rapid recession in

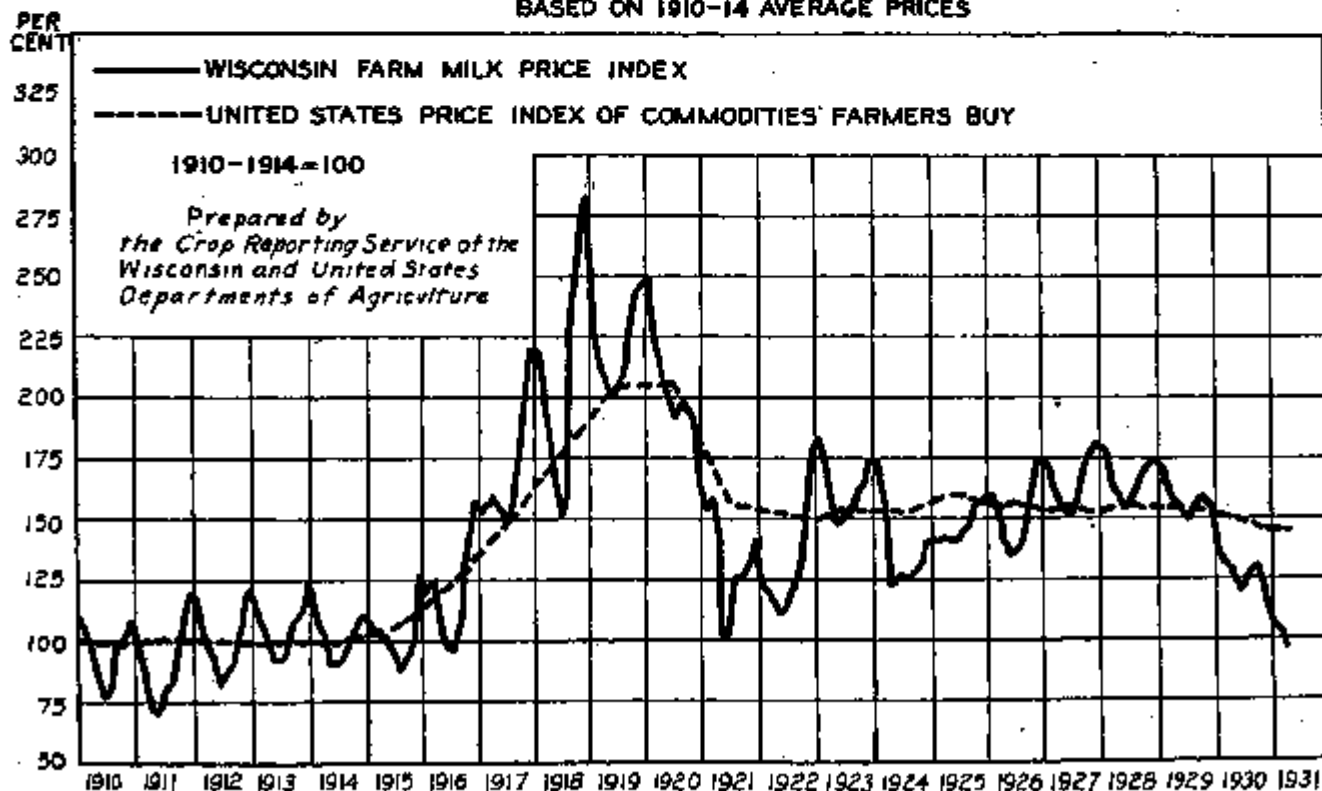
PRICES OF MILK AND COMMODITIES FARMERS BUY
BASED ON 1910-14 AVERAGE PRICES

Fig. 71. United States prices of commodities which farmers buy expressed as a per cent of 1910-1914 prices did not decline as sharply after the war as prices of farm products. This depreciated the purchasing power of farmers. United States farm prices have been well below the price level of commodities purchased by farmers. Wisconsin milk prices have been above or comparatively close to this level since the war, indicating that the Wisconsin dairyman with a regular income from milk sales, has been better off than most farmers. The disastrous decline in milk prices in recent months has pushed the price of milk far below the prices paid by farmers.

TABLE NO. 49. ESTIMATES OF WISCONSIN FARM PRICES OF MILK BY UTILIZATION AND BUTTERFAT PRICES WITH INDEX NUMBERS
(Average price 1910-14 = 100)

MILK SOLD FOR THE MANUFACTURE OF CHEESE

(\$1.283 average price per cwt. 1910-14 = 100)

	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Year ¹	
Year	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index
1910	1.58	123	1.44	112	1.21	94	1.15	90	1.18	92	1.22	98	1.20	94	1.25	97	1.20	101	1.33	104	1.40	109	1.41	110	1.28	101
1911	1.64	124	1.22	95	1.10	86	1.00	77	1.06	82	1.00	70	1.01	79	1.01	79	1.14	89	1.24	97	1.38	108	1.48	118	1.11	87
1912	1.63	127	1.53	119	1.51	118	1.34	104	1.23	98	1.22	96	1.23	96	1.29	101	1.37	107	1.61	125	1.65	129	1.62	126	1.41	110
1913	1.53	119	1.37	107	1.28	98	1.15	80	1.17	81	1.22	95	1.18	89	1.25	97	1.37	107	1.39	108	1.43	111	1.59	124	1.31	102
1914	1.68	127	1.54	120	1.48	114	1.30	101	1.19	95	1.18	92	1.14	89	1.23	96	1.31	94	1.31	94	1.34	104	1.36	106	1.20	101
1915	1.83	134	1.33	108	1.21	94	1.24	97	1.30	101	1.22	95	1.14	89	1.14	89	1.30	101	1.41	110	1.56	121	1.58	128	1.80	131
1916	1.71	133	1.50	125	1.45	113	1.38	106	1.26	98	1.28	93	1.26	95	1.51	118	1.73	128	2.16	188	2.25	176	2.30	179	1.60	125
1917	2.05	180	2.06	181	2.09	187	2.10	184	2.08	182	2.08	181	1.97	154	2.12	165	2.46	200	2.62	204	2.64	206	2.70	210	2.22	173
1918	2.63	207	2.57	200	2.13	160	1.86	143	1.84	143	1.88	155	2.21	172	2.40	187	2.65	220	3.51	274	3.69	288	3.60	288	2.58	197
1919	2.91	227	2.32	181	2.40	203	2.52	196	2.63	208	2.69	210	2.85	222	2.78	217	2.63	221	2.96	222	3.26	256	3.28	254	2.77	218
1920	2.92	228	2.63	205	2.54	189	2.46	189	2.53	173	2.02	157	1.96	153	2.13	168	2.80	179	2.82	182	2.35	184	2.01	157	2.30	179
1921	2.17	186	2.10	184	1.91	141	1.18	92	1.31	102	1.39	108	1.47	111	1.60	117	1.58	122	1.82	142	1.70	133	1.71	133	1.53	119
1922	1.63	127	1.63	127	1.49	116	1.18	98	1.31	102	1.39	108	1.47	111	1.60	117	1.58	122	1.82	142	1.70	133	1.71	133	1.53	119
1923	2.34	182	2.14	167	1.80	148	1.86	144	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145
1924	1.99	158	1.78	142	1.60	125	1.66	124	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139
1925	2.08	158	1.82	142	1.64	124	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139	1.78	139
1926	2.16	166	1.90	150	1.72	134	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145	1.86	145
1927	2.36	178	1.98	154	1.84	143	1.82	142	1.88	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145	1.87	145
1928	1.94	151	1.89	147	1.85	144	1.74	138	1.78	137	1.71	136	1.64	130	1.76	136	1.64	130	1.76	136	1.64	130	1.76	136	1.64	130
1929	1.72	134	1.84	123	1.59	134	1.54	120	1.45	118	1.40	109	1.35	106	1.42	111	1.50	119	1.53	119	1.50	117	1.39	109	1.49	116
1930	1.29	101	1.17	91	1.15	90	1.00	78	1.02	79	1.02	79	1.02	79	1.02	79	1.02	79	1.02	79	1.02	79	1.02	79	1.02	79

¹Weighted average of monthly quotations.

²Preliminary.

MILK SOLD FOR THE MANUFACTURE OF CONDENSED AND EVAPORATED MILK PRODUCTS

(\$1.449 average price per cwt. 1910-14 = 100)

	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Yearly Index	
Year	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index
1910	1.64	113	1.54	108	1.48	102	1.40	97	1.18	81	1.04	72	1.15	79	1.27	88	1.48	100	1.54	106	1.68	115	1.74	120	1.39	96
1911	1.71	118	1.65	114	1.51	104	1.12	82	1.12	77	1.12	77	1.23	85	1.35	93	1.41	97	1.60	104	1.62	112	1.67	115	1.59	99
1912	1.69	117	1.57	108	1.48	102	1.41	97	1.33	98	1.16	82	1.32	91	1.41	97	1.46	101	1.55	107	1.63	113	1.69	117	1.45	100
1913	1.89	127	1.71	118	1.68	116	1.56	108	1.40	97	1.30	80	1.32	91	1.41	97	1.50	104	1.58	105	1.64	113	1.71	118	1.52	105
1914	1.76	121	1.59	117	1.62	112	1.47	103	1.33	92	1.28	88	1.36	94	1.43	99	1.42	100	1.56	108	1.69	110	1.60	110	1.48	103
1915	1.58	109	1.50	104	1.44	99	1.31	90	1.22	84	1.19	82	1.21	84	1.32	91	1.36	94	1.41	97	1.52	105	1.65	114	1.37	95
1916	1.86	115	1.64	118	1.62	112	1.46	106	1.48	108	1.40	97	1.41	97	1.50	104	1.63	112	1.80	124	2.01	139	2.26	168	1.58	118
1917	2.21	133	2.07	123	2.08	123	2.15	124	2.22	132	2.17	130	2.27	137	2.30	139	2.44	149	2.73	159	2.98	168	3.15	178	2.37	154
1918	3.10	144	3.03	140	2.84	126	2.47	111	2.14	104	1.91	133	2.00	132	2.65	163	2.83	169	3.36	232	3.62	250	3.70	256	2.73	186
1919	3.68	161	3.28	147	2.87	126	2.80	123	2.73	122	2.73	122	2.73	122	2.73	122	3.47	160	3.51	162	3.63	164	3.56	164	3.18	158
1920	3.51	154	3.30	144	2.91	121	2.76	119	2.73	122	2.73	122	2.73	122	2.73	122	3.08	153	3.48	171	3.32	160	3.97	198	2.84	156
1921	1.92	123	1.98	127	2.16	140	2.14	138	1.73	119	1.46	101	1.56	103	1.84	127	1.79	124	1.78	123	1.84	127	1.83	126	1.82	126
1922	1.68	114	1.53	106	1.51	104	1.47	102	1.40	103	1.50	104	1.70	117	1.73	119	1.90	124	2.00	133	2.25	153	2.48	172	1.73	119
1923	2.53	176	2.48	170	2.36	163	2.31	160	2.02	144	2.06	144	2.22	153	2.29	158	2.33	161	2.37	164	2.25	153	2.28	157	2.29	158
1924	2.38	167	2.18	151	2.13	146	1.89	131	1.71	118	1.67	115	1.65	115	1.67	115	1.73	119	1.73	119	1.73	119	1.93	133	1.84	127
1925	2.01	139	2.01	139	2.00	138	1.86	137	1.94	134	1.94	134	1.92	137	2.07	143	2.06	144	2.20	163	2.23	153	2.31	153	2.04	141
1926	2.24	153	2.15	147	2.06	144	2.01	138	1.87	123	1.85	123	1.87	129	1.96	135	2.06	144	2.14	148	2.32	163	2.39	165	2.04	141
1927	2.42	167	2.39	165	2.26	155	2.24	155	2.01	138	2.05	142	2.05	142	2.20	152	2.27	157	2.36	163	2.42	167	2.43	168	2.24	153
1928	2.44	169	2.37	164	2.24	155	2.12	148	2.12	148	2.12	148	2.23	154	2.30	159	2.36	163	2.37	164	2.38	164	2.56	168	2.38	157
1929	2.38	161	2.29	153	2.25	155	2.12	148	2.07	143	1.99	137	1.96	137	2.04	141	2.12	146	2.13	146	2.14	146	2.42	160	2.13	146
1930	1.89	131	1.80	124	1.71	118	1.63	116	1.71	118	1.62	112	1.57	108	1.62	112	1.72	118	1.77	122	1.68	117	1.67	116	1.69	117
1931	1.46	101	1.39	96	1.37	95	1.26	87	1.16	79	1.16	79	1.16	79	1.16	79	1.16	79	1.16	79	1.16	79	1.16	79	1.16	79

¹Weighted average of monthly quotations.

²Preliminary.

PRICE PER CWT. MILK PRICES PAID BY CHEESE FACTORIES
CONDENSERIES AND MARKET MILK DISTRIBUTORS IN WISCONSIN 1910-30

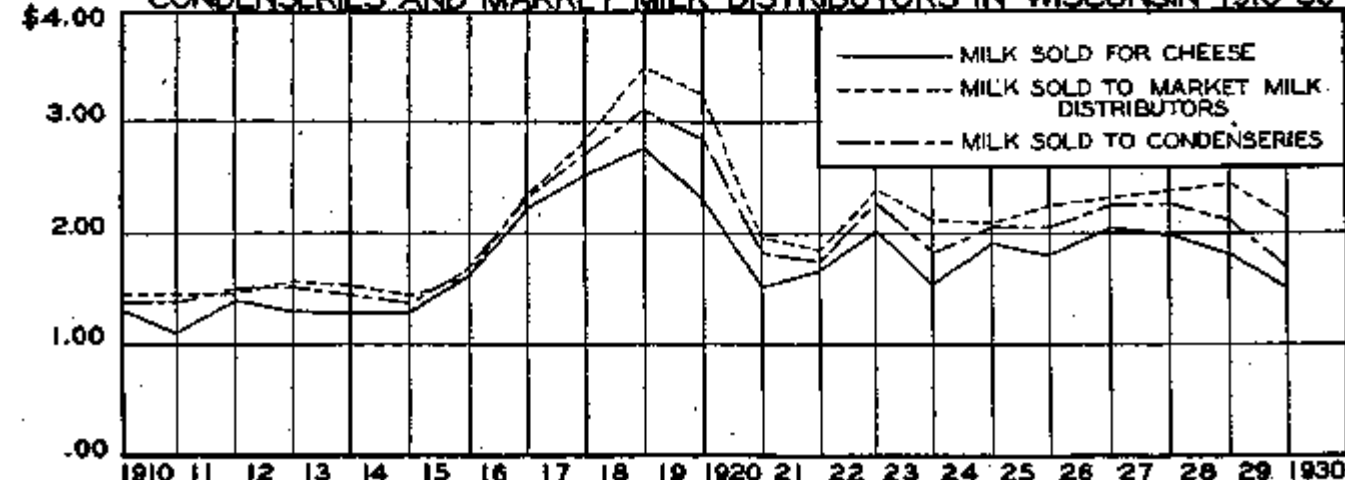


Fig. 78. Milk sold for the three important utilizations has shown about the same price movements although prices are maintained at different levels. The spread in price between the three series has been greater since the war than in pre-war years. From 1910-1914, during the early development of the condensary industry, prices paid by condenseries were virtually at market milk levels. Condensary prices are now substantially lower than market milk prices. Market milk prices seem to be more stable than either condensary prices or prices at cheese factories. During the last year, market milk prices have not dropped as much as prices paid for other uses.

TABLE No. 49. ESTIMATES OF WISCONSIN FARM PRICES OF MILK BY UTILIZATION AND BUTTERFAT PRICES WITH INDEX NUMBERS

(Average price 1910-14=100)

MILK SOLD TO CITY MARKET MILK DISTRIBUTORS

(\$1.484 average price per cwt. 1910-14=100)

	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Year ²	
Year	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index
1910	1.54	104	1.39	94	1.30	94	1.32	89	1.09	73	1.09	73	1.09	73	1.39	94	1.47	99	1.78	119	1.84	124	1.76	119	1.42	96
1911	1.62	109	1.62	109	1.39	94	1.32	89	1.09	73	1.09	73	1.32	89	1.47	99	1.62	109	1.82	109	1.62	109	1.62	109	1.42	96
1912	1.47	99	1.42	96	1.39	94	1.32	89	1.24	84	1.09	73	1.39	94	1.69	114	1.69	114	1.69	114	1.62	109	1.62	109	1.46	98
1913	1.69	114	1.69	114	1.62	109	1.62	109	1.24	84	1.24	84	1.39	94	1.69	114	1.69	114	1.76	119	1.76	119	1.76	119	1.57	106
1914	1.69	114	1.69	114	1.62	109	1.62	109	1.24	84	1.24	84	1.32	89	1.69	114	1.69	114	1.76	119	1.69	114	1.69	114	1.56	104
1915	1.69	114	1.47	99	1.47	99	1.39	94	1.24	84	1.24	84	1.32	89	1.47	99	1.54	104	1.64	104	1.64	104	1.64	104	1.43	96
1916	1.62	109	1.64	109	1.47	99	1.39	94	1.24	84	1.24	84	1.32	89	1.47	99	1.76	119	1.76	119	1.64	104	1.64	104	1.50	106
1917	1.85	132	1.98	142	1.93	150	2.28	152	1.88	127	1.79	121	2.25	153	2.41	162	2.68	162	2.85	162	3.12	210	3.16	215	2.31	155
1918	2.22	217	3.20	216	3.11	210	2.58	174	3.08	167	1.68	127	2.39	166	2.68	164	3.07	207	3.40	226	3.85	248	4.00	270	2.86	193
1919	3.96	247	3.81	245	3.26	221	3.06	208	2.72	183	2.82	190	3.41	230	3.64	239	3.94	249	3.88	240	3.85	250	3.80	250	3.46	238
1920	3.70	249	3.85	256	3.14	213	2.96	201	2.97	200	3.99	231	3.43	231	3.82	244	3.63	245	3.64	245	3.45	241	3.60	175	3.33	181
1921	2.23	160	2.18	147	2.17	145	2.16	147	1.85	125	1.85	126	1.94	131	2.39	164	1.86	113	1.84	124	1.85	125	1.83	126	1.90	124
1922	1.66	112	1.59	107	1.61	108	1.64	111	1.62	109	1.61	108	1.81	122	1.99	134	2.01	135	2.04	137	2.30	155	2.38	161	1.83	128
1923	2.42	183	2.38	160	2.36	159	2.35	156	2.11	142	2.05	138	2.41	162	2.56	170	2.65	172	2.61	176	2.66	174	2.64	174	2.34	160
1924	2.50	186	2.39	161	2.39	154	2.07	136	2.09	139	2.00	135	2.07	136	2.19	149	2.16	144	1.90	138	2.02	136	2.01	135	2.15	144
1925	1.95	131	1.95	131	2.06	138	2.03	137	1.95	131	1.99	134	2.06	140	2.10	142	2.19	148	2.24	151	2.25	152	2.27	153	2.08	140
1926	3.15	147	3.17	146	2.14	144	2.16	146	2.17	146	2.13	143	2.17	144	2.30	154	2.41	162	2.45	165	2.47	166	2.48	167	2.25	152
1927	3.39	161	3.43	163	2.34	153	2.30	155	2.20	143	2.14	144	2.20	143	2.34	156	2.46	167	2.47	166	2.51	169	2.52	170	2.34	161
1928	3.44	164	3.36	159	2.44	154	2.40	156	2.26	145	2.23	145	2.35	158	2.47	166	2.48	166	2.49	168	2.58	173	2.49	168	2.39	161
1929	3.60	166	3.46	155	2.47	166	2.39	154	2.26	145	2.20	145	2.33	157	2.46	167	2.48	178	2.56	179	2.52	177	2.49	162	2.43	164
1930	2.83	158	2.26	152	2.23	150	2.19	143	2.03	137	1.96	132	1.96	132	2.16	146	2.20	146	2.20	146	2.12	143	2.00	135	2.12	143
1931	1.77	119	1.89	114	1.68	112	1.54	104	1.47	99																

¹Weighted average of monthly quotations.²PreliminaryWISCONSIN FARM PRICE OF BUTTERFAT¹

(\$0.20 average price per lb. 1910-14=100)

	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Year ²	
Year	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index
1910	35	116	31	103	32	106	31	103	29	98	28	93	29	96	30	99	31	103	30	99	32	106	31	103	30.6	101
1911	28	93	27	90	28	93	23	76	23	76	24	79	25	83	26	85	27	89	30	99	34	113	36	119	27.1	90
1912	37	123	31	103	31	103	22	106	29	96	27	90	27	90	27	90	30	99	31	103	36	118	36	119	30.5	101
1913	35	116	32	106	32	106	36	119	34	127	30	99	29	96	28	93	30	99	33	109	33	109	33	109	32.6	106
1914	34	118	32	106	32	106	36	119	36	126	30	99	28	93	28	93	30	99	31	103	32	106	34	113	30.0	99
1915	33	109	32	106	31	103	31	103	29	96	29	96	31	103	26	85	27	89	29	96	23	109	35	118	30.3	100
1916	38	129	37	123	36	119	37	123	32	106	30	99	30	99	32	106	32	106	37	123	41	138	42	139	34.9	113
1917	43	142	43	142	44	146	46	152	42	139	40	132	42	139	45	149	47	156	50	166	51	169	55	182	45.3	156
1918	54	179	54	179	54	179	47	156	46	152	46	152	47	156	48	159	51	169	52	173	53	173	54	179	54.0	179
1919	56	185	56	185	56	185	67	222	62	205	57	189	58	192	60	199	60	199	61	203	60	199	73	243	64.9	215
1920	72	233	72	233	72	233	67	222	66	215	59	185	58	185	60	199	60	199	61	203	61	203	62	206	72.9	233
1921	55	185	46	152	43	142	40	132	38	119	36	119	37	123	38	126	40	132	44	146	46	152	46	152	41.7	138
1922	36	116	27	90	28	93	27	90	26	85	25	83	26	85	27	89	28	93	30	99	31	103	32	106	30.0	99
1923	51	169	50	164	50	164	50	164	44	146	41	136	42	139	40	132	40	132	40	132	40	132	40	132	46.3	151
1924	55	185	53	175	53	175	49	162	41	136	40	132	41	136	42	139	44	146	45	149	46	152	47	156	45.7	151
1925	43	142	42	138	42	138	47	156	44	146	44	146	45	149	45	149	46	152	47	156	52	172	54	179	46.3	153
1926	50	166	48	158	48	158	44	146	42	139	43	142	42	139	42	139	44	146	47	156	50	164	56	182	46.7	151
1927	54	179	54	179	54	179	53	175	49	162	47	156	46	155	44	146	45	149	46	152	47	156	52	172	46.3	153
1928	56	185	53	175	53	175	50	166	50	166	49	162	49	162	52	172	52	172	52	172	53	175	54	179	51.6	171
1929	52	172	53	175	53	175	50	166	46	152	47	156	46	155	47	156	48	159	50	164	48	156	47	156	45.7	151
1930	42	139	40	133	40	133	40	133	40	132	39	119	39	119	38	126	40	132	41	136	38	126	37	123	39.9	129
1931	31	103	30	99	31	103	29	96	26	85																

¹Prices from January 1910 to July 1920, inclusive, are estimates based upon historic data. Beginning August, 1920 to date prices are Wisconsin farm prices of butterfat from United States Department of Agriculture.²Weighted average of monthly prices.

general price levels during the post-war depression of 1921 brought milk prices to parity with 1910-1914 levels. The 1921 depression began in June 1920, when the milk prices went below the price for the same month in the preceding year, and continued until May 1922, a period of two years. This depression was followed by a marked rise in milk prices which carried them to satisfactory levels in 1923. A second decline began in December 1923 and continued until May 1925, a period of sixteen months. A third and less severe depression covering eight months occurred from April to November 1926. For two years following this depression Wisconsin milk prices continued upward reaching \$2.35 in December 1927, or 86 per cent over pre-war prices.

The present depression, the fourth since the war, began in October 1928. Milk prices have declined almost con-

tinually since the beginning of the depression, making only very slight seasonal gains during the late summer months of 1929 and 1930. This depression is undoubtedly the most prolonged and severe on record. Milk prices have declined for over thirty months, while the depressed condition of milk prices following the war lasted only 24 months. The average price for 1930, \$1.63 per hundredweight, was the lowest for any year since 1916. The average price from January 1910 to December 1914 was \$1.265. Milk prices during the opening months of 1931 have declined to this pre-war level.

The changes in milk prices correspond in a general way to the cyclical movement of business. The general depression of the last two years with its attendant unemployment has diminished the demand for dairy products. Data prepared by the Bureau of Agricultural Economics of the United

States Department of Agriculture indicate that butter prices tend to follow changes in the size of industrial payrolls. The amount of money which consumers spend for butter depends, in a large measure, upon the condition of industry. The demand for cheese is also closely dependent upon changes in the business cycle but is not quite as responsive as the demand for butter. The consumption of fluid milk seems to be related to the size of family income. Reduction in incomes through business depression has resulted in some reduction in fluid milk purchases since 1929. The consumption of butter as measured by trade output was apparently below 1929 levels for 1930. During the opening months of 1931 butter consumption has been above similar months in 1930, indicating that consumer demand is quite active at present price levels. Consumption of condensed and evaporated products was some-

TABLE NO. 54. ESTIMATED RULING PRICE OF AMERICAN CHEESE (TWINS), SHEBOYGAN COUNTY, WISCONSIN, 1879-1931¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1879					7.1		5.7		8.0				
1880					10.1	9.2	10.0	12.0	12.8				
1881					9.5	8.4	9.5	11.1	12.4	12.8			
1882					11.1	10.2	10.6	12.2	11.8	12.1	12.2		
1883					10.4	9.9	9.9	9.8	11.0	11.2	12.5		
1884					12.0	8.2	8.4	10.0	11.1	11.5	10.8		
1885					8.1	6.0	7.6	7.8	8.7	9.6	9.2	8.6	
1886					8.3	7.0	7.3	8.0	9.6	11.0	11.0		
1887					12.1	10.5	7.2	8.3	10.1	10.9	10.2	10.6	
1888					8.4	7.3	8.3	8.0	8.1	10.2	10.4		
1889					7.2	7.1	7.1	7.8	8.7	9.8	8.8		
1890					8.2	7.1	7.1	7.9	9.0	8.6	8.7		
1891					9.6	7.7	7.8	8.6	8.9	10.0	10.0		
1892					8.9	7.6	7.8	9.1	9.8	9.5	9.7	9.3	
1893					10.5	7.8	7.7	7.2	9.6	11.1	11.3	11.0	
1894					8.3	7.9	8.3	9.2	10.2	9.8	9.7		
1895					8.9	7.4	7.6	7.4	7.4	8.9	9.1		
1896					7.3	7.1	7.1	6.7	7.7	8.6	8.5	8.3	
1897					10.3	9.2	7.1	7.1	8.1	8.5	8.4		
1898					9.0	8.3	7.1	7.4	7.4	8.4	8.3		
1899					11.2	8.0	7.9	8.6	9.2	10.6	10.6		
1900					8.8	9.0	8.7	9.6	10.2	10.5	10.4		
1901	10.4				10.0	9.2	9.0	9.3	9.6	9.1	9.8	9.5	9.6
1902					13.1	12.3	9.8	9.8	9.8	10.2	10.5	10.4	10.6
1903					12.6	12.3	10.4	10.3	10.1	10.6	10.6	10.6	10.6
1904	9.1				9.8	8.4	8.1	7.8	8.1	8.0	9.2	10.2	11.4
1905	11.3				12.3	14.1	12.4	9.9	10.2	11.0	11.4	11.7	11.7
1906	11.8	13.0			12.0	11.7	10.2	10.7	11.0	11.3	12.1	12.8	13.1
1907	13.6	14.0	14.2	13.9	14.3	12.4	12.3	12.3	12.3	12.3	12.3	12.3	12.3
1908	11.4	13.3	13.3	11.4	11.2	11.1	11.3	12.2	12.2	12.3	12.3	12.3	12.3
1909	13.9	14.5	14.6	13.5	14.0	12.1	12.0	14.6	14.8	15.4	15.8	15.7	14.6
1910	15.1	16.4	15.0	13.6	13.9	14.6	14.8	14.8	14.8	14.8	14.8	14.8	14.7
1911	13.0	13.2	11.7	12.4	11.2	10.8	12.3	12.0	12.3	12.0	12.8	13.6	13.7
1912	15.9	15.1	14.0	13.8	13.1	14.2	13.8	13.7	13.8	14.7	14.5	14.9	15.6
1913	17.1	15.2	17.8	16.2	14.0	14.0	13.6	13.6	13.6	13.6	13.6	13.6	14.1
1914	14.6	15.0	14.4	14.4	15.1	13.9	13.2	13.1	13.0	13.2	13.1	13.0	13.2
1915	18.3	17.6	16.4	15.9	15.2	14.0	14.2	14.0	14.2	14.2	14.2	14.2	14.2
1916	21.4	21.4	23.8	23.1	23.3	20.9	21.6	24.1	23.8	23.8	23.8	23.8	23.8
1917	21.4	21.4	23.8	23.1	23.3	20.9	21.6	24.1	23.8	23.8	23.8	23.8	23.8
1918	22.8	22.8	25.9	25.0	25.0	22.9	23.0	26.5	26.5	26.5	26.5	26.5	26.5
1919	24.4	25.8	28.5	28.0	28.5	26.5	26.5	29.5	29.5	29.5	29.5	29.5	29.5
1920	29.2	29.2	32.7	32.0	32.0	29.5	29.5	33.0	33.0	33.0	33.0	33.0	33.0
1921	23.7	24.1	23.4	23.4	23.4	21.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0
1922	18.7	19.2	18.0	14.3	15.6	17.1	17.8	17.8	17.8	17.8	17.8	17.8	17.8
1923	25.1	23.8	19.2	21.6	22.0	20.1	21.9	23.6	24.1	23.2	21.0	22.2	
1924	21.3	20.1	19.8	15.1	16.9	17.3	16.5	17.5	18.4	17.0	16.2	18.3	
1925	22.7	21.6	19.3	17.2	17.3	18.0	19.0	20.5	22.2	22.5	23.4	20.1	
1926	24.0	22.7	21.3	19.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6	
1927	24.0	22.7	21.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6		
1928	24.0	22.7	21.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6		
1929	20.8	20.4	20.2	20.2	20.0	20.0	18.5	19.6	20.6	21.1	20.6	19.6	20.2
1930	18.3	18.1	17.2	17.5	16.8	15.0	14.3	15.8	17.0	16.0	15.9	15.0	16.4
1931	14.0	13.4	13.0										

¹The prices of the individual styles were not continuous throughout the entire period. In order to make a continuous series, the prices for twins were used for the time they were available. For the periods when twin prices were not available, prices of other styles were adjusted to a twin basis.

Prices were collected by the Division of Statistical and Historical Research, Bureau of Agricultural Economics, United States Department of Agriculture.

TABLE NO. 51. PRICES OF AMERICAN CHEESE (TWINS), SHEBOYGAN COUNTY, WISCONSIN, 1888-1931¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1888					9.8								
1889					7.2	7.1	7.1	7.8	8.7	9.8	8.8	9.0	
1890					8.2	7.1	7.1	7.8	9.0	8.0	8.7		
1891					9.6	7.7	7.6	8.8	9.9	10.0	10.6		
1892					8.8	7.6	8.3	9.1	9.3	9.5	9.7	9.2	
1893					10.5	7.8	7.7	7.2	9.6	11.1	11.2	11.0	
1894					8.2	7.9	8.3	9.3	10.2	9.8	8.7		
1895					6.9	7.4	7.6	7.4	7.4	8.9	9.1		
1896					7.3	7.1	6.7	6.7	7.7	8.6	8.5	8.3	
1897					10.8	8.2	7.1	7.4	7.4	8.5	8.4	8.3	
1898					9.0	8.3	7.1	7.4	7.4	7.6	8.4	8.8	
1899					11.2	8.6	7.9	8.6	9.2	10.6	10.6	11.1	11.6
1900					8.8	9.0	8.7	9.6	10.2	10.5	10.4	10.0	10.6
1901	10.4				10.0	9.2	9.0	9.3	9.6	9.1	9.8	9.5	9.6
1902					13.1	12.3	9.8	9.8	9.8	10.2	10.5	10.4	10.6
1903					12.6	12.3	10.4	10.3	10.1	10.6	10.6	10.6	10.6
1904	9.1				9.8	8.4	8.1	7.8	8.1	8.0	9.2	10.2	11.4
1905	11.3				12.3	14.1	12.4	9.9	10.2	11.0	11.4	11.7	11.7
1906	11.8	13.0			12.0	11.7	10.2	10.7	11.0	11.3	12.1	12.8	13.1
1907	13.6	14.0	14.2	13.9	14.3	12.4	12.3	12.3	12.3	12.3	12.3	12.3	12.3
1908	11.4	13.3	13.3	11.4	11.2	11.1	11.3	12.2	12.2	12.3	12.3	12.3	12.3
1909	13.9	14.5	14.6	13.5	14.0	12.1	12.0	14.6	14.8	15.4	15.8	15.7	14.6
1910	15.1	16.4	15.0	13.6	13.9	14.6	14.8	14.8	14.8	14.8	14.8	14.8	14.7
1911	13.0	13.2	11.7	12.4	11.2	10.8	12.3	12.0	12.3	12.0	12.8	13.6	13.7
1912	15.9	15.1	14.0	13.8	13.1	14.2	13.8	13.7	13.8	14.7	14.5	14.9	15.6
1913	17.1	15.2	17.8	16.2	14.0	14.0	13.6	13.6	13.6	13.6	13.6	13.6	14.1
1914	14.6	15.0	14.4	14.4	15.1	13.9	13.2	13.1	13.0	13.2	13.1	13.0	13.2
1915	18.3	17.6	16.4	15.9	15.2	14.0	14.2	14.0	14.2	14.2	14.2	14.2	14.2
1916	21.4	21.4	23.8	23.1	23.3	20.9	21.6	24.1	23.8	23.8	23.8	23.8	23.8
1917	21.4	21.4	23.8	23.1	23.3	20.9	21.6	24.1	23.8	23.8	23.8	23.8	23.8
1918	22.8	22.8	25.9	25.0	25.0	22.9	23.0	26.5	26.5	26.5	26.5	26.5	26.5
1919	24.4	25.8	28.5	28.0	28.5	26.5	26.5	29.5	29.5	29.5	29.5	29.5	29.5
1920	29.2	29.2	32.7	32.0	32.0	29.5	29.5	33.0	33.0	33.0	33.0	33.0	33.0
1921	23.7	24.1	23.4	23.4	23.4	21.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0
1922	18.7	19.2	18.0	14.3	15.6	17.1	17.8	17.8	17.8	17.8	17.8	17.8	17.8
1923	25.1	23.8	19.2	21.6	22.0	20.1	21.9	23.6	24.1	23.2	21.0	22.2	
1924	21.3	20.1	19.8	15.1	16.9	17.3	16.5	17.5	18.4	17.0	16.2	18.3	
1925	22.7	21.6	19.3	17.2	17.3	18.0	19.0	20.5	22.2	22.5	23.4	20.1	
1926	24.0	22.7	21.3	19.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6	
1927	24.0	22.7	21.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6		
1928	24.0	22.7	21.0	21.0	21.2	22.8	23.5	25.0	23.6	25.0	22.6		
1929	20.8	20.4	20.2	20.2	20.0	20.0	18.5	19.6	20.6	21.1	20.6	19.6	20.2
1930	18.3	18.1	17.2	17.5	16.8	15.0	14.3	15.8	17.0	16.0	15.9	15.0	16.4
1931	14.0	13.4	13.0										

¹For the years 1889 to 1906 the prices were tabulated from the Sheboygan County News, Sheboygan Falls, Wisconsin, for the years 1907 to 1918 from the business books of the Wisconsin Cheese Exchange, Plymouth, Wisconsin, and for the years 1919 to 1931 from the reports of the Division of Dairy and Poultry Products, Bureau of Agricultural Economics.

For the years 1888 to 1890 the prices were reported as from the Sheboygan County Dairy Board of Trade; for the years 1891 to 1898 and 1900 from the Plymouth Board of Trade, Plymouth, Wisconsin; for the years 1899 and 1901 to 1903 from the Sheboygan Falls Board of Trade, Sheboygan Falls, Wisconsin; for the years 1904 to 1906 from the Plymouth Dairy Board; and for the years 1907 to 1919 from the Wisconsin Cheese Exchange. Prices were collected by the Division of Statistical and Historical Research, Bureau of Agricultural Economics, United States Department of Agriculture.

PRICES OF BUTTER FAT AND AMERICAN CHEESE 1910-1931

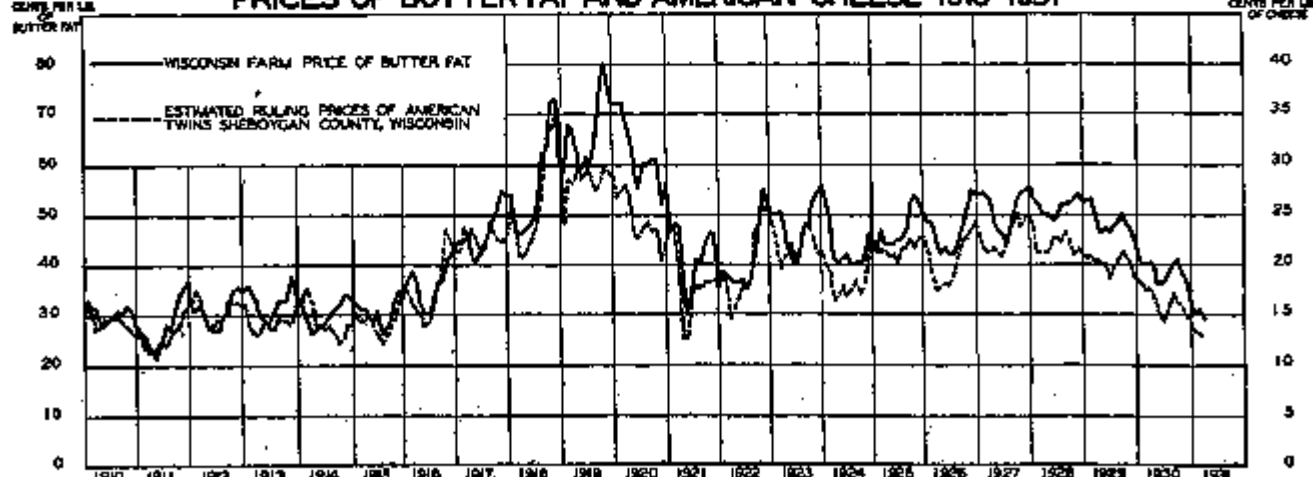


Fig. 73. Cheese and butterfat prices are subject to many similar price-making forces so that the two series are likely to move together. A few differences are apparent. Cheese prices began

TABLE NO. 52. PRICES OF AMERICAN CHEESE (LONG-HORNS) SHEBOYGAN COUNTY, WISCONSIN, 1899-1931¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1899	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1900	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1901	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1902	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1903	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1904	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1905	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1906	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1907	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1908	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1909	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1910	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1911	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1912	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1913	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1914	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1915	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1916	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1917	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1918	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1919	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1920	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1921	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1922	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1923	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1924	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1925	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1926	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1927	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1928	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1929	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1930	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1931	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1

¹For the years 1899 to 1906 the prices were tabulated from the Sheboygan County News, Sheboygan Falls, Wisconsin; for the years 1907 to 1918 from the southern Wisconsin of the Wisconsin Cheese Exchange; and for the years 1919 to 1931 from reports of the Division of Dairy and Poultry Products.

For the years 1900 to 1943 the prices were reported as from the Sheboygan Falls Dairy Board, Sheboygan Falls, Wisconsin; for the years 1904 to 1906 from the Plymouth Dairy Board, Plymouth, Wisconsin; for the years 1907 to 1926 from the Wisconsin Cheese Exchange, Plymouth, Wisconsin; and for 1927 to 1931 from the Farmers' Club Board, Plymouth, Wisconsin. Prices were collected by the Division of Statistical and Historical Research, Bureau of Agricultural Economics, United States Department of Agriculture.

TABLE NO. 53. PRICES OF SWISS CHEESE AT MONROE, WISCONSIN, 1892-1934¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1892	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1893	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1894	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1895	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1896	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1897	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1898	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1899	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1900	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1901	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1902	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1903	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1904	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1905	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1906	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1907	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1908	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1909	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1910	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1911	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1912	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1913	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1914	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1915	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1916	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1917	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1918	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1919	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1920	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1921	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1922	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1923	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1924	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1925	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1926	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1927	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1928	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1929	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1930	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1931	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1932	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1933	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1
1934	11.9	12.4	12.6	9.8	9.8	9.4	10.4	11.1	11.7	11.3	10.7	12.4	11.1

¹The prices of Swiss cheese were tabulated from the Monroe County Herald, Monroe, Wisconsin. Prices were collected by the Division of Statistical and Historical Research, Bureau of Agricultural Economics, United States Department of Agriculture.

TABLE NO. 54. PRICES OF BRICK CHEESE, MONROE, WISCONSIN, 1892-1930¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1892													
1893	9.8	10.8	11.8		10.8	9.8	8.1	9.8	9.1	9.5	9.5	9.5	
1894	11.0	10.2	8.5	8.5	7.8	6.6	7.2	7.6	7.9	10.1	11.2	11.2	
1895	9.8	8.8			7.8	7.3	7.9	7.6	7.6	7.8	8.1	8.4	8.3
1896	10.0	9.9	9.2	9.2	6.0	7.0	6.7	6.8	6.8	8.0	9.4	10.0	9.2
1897	7.6	7.8	7.2	7.2	7.8	6.4	6.8	6.8	8.2	9.8	9.5	9.5	7.7
1898	9.8	9.8	9.8		8.2	6.7	7.2	8.2	8.0	8.3	9.8	9.2	
1899	9.8	9.8	10.6	10.2	9.8	7.9	8.0	8.2	9.4	11.2	11.4	10.4	9.7
1900	9.8	9.8	9.8	8.4	6.9	3.1	9.0	9.0	9.3	10.2	10.8	10.4	9.7
1901	10.2	10.4	10.8	11.0	9.0	8.7	8.4	10.0	10.8	10.5	10.4	10.2	10.0
1902	10.2	10.4	10.8	10.8	10.6	9.2	9.8	9.5	9.5	9.9	10.5	10.2	10.0
1903	11.0	11.6	11.8	11.8	10.6	8.8	8.8	8.5	8.2	9.8	10.2	10.8	10.8
1904	10.8	10.2	10.2	10.2	8.0	8.7	7.8	8.0	9.2	10.2	11.0	11.4	9.7
1905	11.0	11.6	11.7	11.2	10.0	8.8	8.8	9.1	9.9	10.6	11.7	11.6	10.7
1906	11.0	10.5	10.5	10.5	7.0	8.8	10.2	10.2	10.5	11.9	12.2	12.2	10.0
1907	12.2			12.0	12.2	11.8	11.4	12.2	12.8	14.0	14.8		
1908	10.2				9.8	8.8	9.2	9.9	10.6	11.2	12.0	12.8	13.8
1909	13.5	13.9		14.0	11.8	11.3	12.6	13.5	13.6	13.9	14.8	15.0	13.8
1910	16.0	15.0	15.0	15.0	11.9	13.6	13.9	14.0	14.2	14.8	15.7	12.8	14.8
1911	12.0	12.0	10.5	10.8	9.4	8.9	9.3	11.6	11.5	11.5	12.6	14.6	15.1
1912	15.0	15.0	17.0	19.0	14.0	13.6	14.2	12.3	14.2	15.8	16.1	15.0	17.0
1913	14.6	14.2	14.0	11.1	12.7	13.5	12.6	13.5	14.0	13.8	13.4	13.6	13.2
1914	16.2	15.1	14.2	12.7	10.7	11.3	11.7	12.4	13.5	11.3	13.5	15.5	15.5
1915	12.0	12.0	12.0	12.3	12.3	12.9	12.6	12.2	13.2	14.2	14.5	15.8	13.8
1916	18.2	16.2	16.6	15.6	16.3	13.9	13.9	16.0	19.9	19.1	21.3	20.3	17.0
1917	19.0	19.0	19.8	19.5	20.1	20.8	20.5	21.4	24.0	25.7	22.8	23.6	21.0
1918	24.0	24.0	24.4	24.9	19.7	19.8	21.8	24.9	27.0	30.0	29.0	30.5	24.0
1919	31.0	24.6	31.4	24.6	30.0	30.0	29.8	33.0	30.0	29.4	29.3	28.0	28.0
1920	27.8	28.0	28.5	24.9	24.0	24.0	24.0	22.6	24.0	23.2	19.6	13.8	23.0
1921	19.0	13.8	13.0	15.5	13.6	13.6	14.6	16.7	17.6	15.4	17.4	15.9	18.0
1922	15.1	12.4	15.0	12.8	13.8	13.2	17.0	17.7	19.2	20.0	20.8	22.7	19.0
1923	22.0	20.6	20.5	19.6	21.0	21.0	20.3	22.6	22.4	22.7	24.5	20.6	21.0
1924	19.0	18.8	18.0	14.8	15.1	14.2	14.6	15.9	15.9	16.1	14.9	16.3	16.1
1925	13.9	17.6	21.1	20.4	18.0	18.5	17.8	19.2	19.0	20.6	21.0	21.6	19.0
1926	21.0	19.1	18.2	15.6	18.0	18.6	17.6	18.5	16.3	13.1	21.5	22.4	14.0
1927	31.2	20.8	20.8	19.5	19.6	20.2	19.8	22.3	22.1	24.2	22.4	24.1	21.0
1928	28.0	28.6	21.0	20.2	22.5	22.5	22.2	22.4	25.6	20.6	20.6	20.1	31.0
1929	18.5	12.0	19.2	18.4	18.8	19.0	17.8	18.9	20.0	21.1	20.2	19.0	10.0
1930	17.5	17.2	17.2	17.0	18.1	14.8	14.1	15.6	17.0	16.2	18.6		

what below 1929 levels during 1930 but has improved in 1931. Cheese consumption is less satisfactory, as consumption for the opening months of 1931 seems to be below 1930 levels.

Inasmuch as milk prices are rather definitely associated with industrial conditions, little improvement in them can be expected prior to improvement in business conditions.

Seasonal Changes in Milk Prices

Milk prices are subject to seasonal fluctuations due largely to month to month changes in milk production. Figure 69 shows the normal seasonal variation in milk prices from 1922 to 1927 inclusive. The normal monthly prices have been expressed as per cents of the average annual prices for the period. When the milk market is undisturbed by unusual price depressions or abnormal situations in milk production, prices tend to change according to the relationship shown in the table below.

Normal Seasonal Fluctuation in Milk Prices, 1922—1929

(Link relative method)

Month	Per cent of annual average price
January	108.0
February	104.6
March	100.0
April	95.7
May	92.1
June	92.2
July	93.9
August	95.7
September	98.9
October	103.5
November	108.9
December	108.4
Year	100.0

Milk prices fall rapidly from the winter peak reaching a low point in May when prices are normally 7.9 per cent below the average for the year. The June price is substantially the same as the May price. Prices recover during the late summer months although the rate of recovery is not as rapid as the decline during the early part of the season. December prices, under normal conditions, are the highest for the season.

During 1929, 1930, and opening months of 1931, milk prices have deviated considerably from the normal season. In both 1929 and 1930 the late season peak has been reached in October rather than December. The price decline during the opening months of 1931 has been more severe than the normal seasonal decline always evident during these months. Apparently there has been a tendency in recent years, because of heavier

SEASONAL BEHAVIOR AND DIFFERENCES BETWEEN PRICES OF MILK BOUGHT FOR VARIOUS USES

(WISCONSIN 1926-30 MONTHLY AVERAGES)

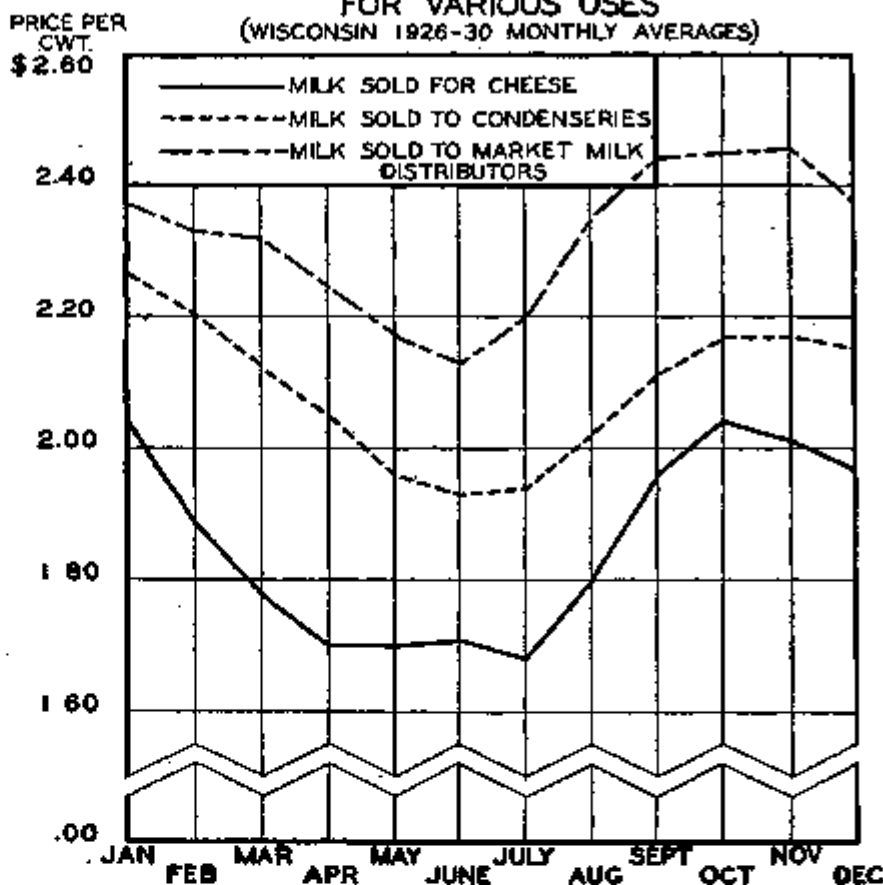


Fig. 74. During the five-year period 1926-1930, the average price of milk sold to market milk distributors was \$2.31 per hundredweight, milk sold to condenseries, \$2.07, and milk sold to cheese factories, \$1.83. Milk prices paid at cheese factories were subject to greater changes from month to month than the more stable condensery or market milk prices.

winter production, to have the winter peak come somewhat earlier than in former periods. Just where the price peak will fall with the return of better milk prices is uncertain, but a new point is likely to develop.

Milk Prices by Utilization

Estimates of the monthly prices paid for milk by cheese factories, condenseries, and market milk distributors from 1910 to 1929 have been prepared from records secured from farmers and dairy plant operators. Beginning with 1930, estimates of prices are made monthly from information provided by dairy reporters.

While the quotations for early years may not indicate absolute prices, they are certainly useful as indications of trend and price differences in the three uses of milk.

Figure 72 shows that market milk prices, representing the highest use for milk, have been substantially above prices paid at cheese factories. Condensery prices occupy a position midway between cheese and market milk quotations.

The spread between the three series seems to have increased following 1918. In the early years, condensery prices were practically at market milk levels. Both market milk and condensery prices were much nearer to cheese quotations during 1910-1914 than in late years. The average price paid by market milk distributors for the five-year period 1910-1914 was \$1.43 per hundredweight. Condenseries and cheese factories paid \$1.45 and \$1.23, respectively. For 1926-1930 market milk prices averaged \$2.31, condensery prices \$2.07, and cheese factory prices \$1.83. Prices paid for market milk were 16 per cent higher than prices at cheese factories in 1910-1914, while in 1926-1930 these prices were 26 per cent above prices paid by cheese factories. The relationship between prices at condenseries and at cheese factories was more uniform. Condensery prices were 13 per cent above cheese factory quotations in both 1910-1914 and 1926-1930.

TABLE NO. 56 WISCONSIN FARM PRICE OF BUTTER¹
(Cents per pound)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1909	---	28	28	27	26	24	24	26	26	28	30	31	27.1
1910	32	30	29	29	28	27	27	28	28	29	30	30	28.9
1911	28	28	24	23	22	22	22	24	25	26	30	32	25.2
1912	24	31	26	28	28	28	25	26	26	28	30	32	28.5
1913	22	32	32	30	28	27	27	26	26	30	30	32	29.4
1914	32	30	28	28	25	25	26	28	28	30	30	31	28.4
1915	31	30	29	28	28	27	27	26	26	27	28	32	28.3
1916	32	31	32	32	31	29	28	29	31	34	38	39	32.1
1917	38	38	40	40	40	38	38	39	42	43	44	46	40.6
1918	48	48	45	42	42	42	43	44	50	56	57	58	48.2
1919	50	52	53	58	58	58	54	54	56	60	60	67	57.7
1920	65	62	62	63	60	58	56	56	56	57	58	58	59.1
1921	51	48	46	42	34	30	30	40	41	44	44	44	41.7
1922	39	38	36	37	30	25	26	36	37	40	45	49	38.6
1923	50	49	48	46	42	42	40	42	44	46	49	52	45.7
1924	52	50	49	48	40	38	40	41	39	39	38	45	45.6
1925	42	39	46	43	41	42	43	43	44	49	49	48	44.2
1926	45	45	44	43	40	41	40	41	43	45	48	48	43.9
1927	50	49	50	50	46	43	48	42	46	47	48	51	47.0
1928	50	48	49	47	45	45	46	46	49	49	51	51	47.8
1929	49	49	50	47	48	45	44	48	46	47	46	44	46.6
1930	37	38	39	38	34	34	38	40	36	37	34	37	37.0
1931	29	28	29	28	23								

¹—Prices to August, 1920, are based upon analysis of historic data. The August, 1920 price and following are from the United States Department of Agriculture.

Market milk prices are evidently more stable than prices received at condensery plants or cheese factories. During the milk price decline of 1924 cheese factory and condensery quotations dropped more sharply than did market milk. The price of market milk in 1924 was 10 per cent below the 1923 price. Condensery prices fell 20 per cent, while cheese factory prices were down 23 per cent. Market milk quotations remained at 1924 levels in 1925 while cheese factory and condensery prices made some recovery.

During the current depression there has been an appreciable lag in the decline of market milk prices as compared with the more sensitive condensery and cheese factory quotations.

Figure 74 shows the average monthly quotations of the three price series for the five-year period 1926—1930. The seasonal movement in

market milk quotations is evidently less severe than for either prices at condenseries or cheese factories. The average monthly price for each type of milk utilization is shown below.

TABLE NO. 57 AVERAGE WHOLESALE PRICE OF 92-SCORE CREAMERY BUTTER¹

(Cents per pound)													
NEW YORK													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910	38	30	33	31	38	28	28	29	30	31	30	30	30
1911	26	26	34	21	22	28	25	28	27	27	27	27	27
1912	38	32	31	33	30	27	27	27	27	27	27	27	27
1913	35	36	37	34	29	28	27	28	32	31	34	36	32
1914	38	29	28	24	26	27	28	30	31	32	33	34	30
1915	34	32	30	31	29	28	27	28	27	29	31	35	30
1916	38	34	37	34	31	30	29	31	31	34	35	39	34
1917	40	44	42	44	40	39	39	41	44	45	46	50	43
1918	52	50	44	42	42	44	45	46	58	58	58	69	51
1919	62	52	53	64	58	52	53	55	59	58	71	72	61
1920	65	56	67	71	61	57	57	55	59	60	63	65	61
1921	52	47	48	46	32	38	40	43	43	47	45	44	43
1922	37	37	38	38	38	37	38	35	41	43	51	54	41
1923	52	50	49	46	42	39	39	44	46	48	53	55	47
1924	53	50	47	38	39	41	40	38	38	39	43	45	43
1925	40	41	46	43	43	42	43	43	48	51	51	49	45
1926	45	45	43	39	41	41	40	42	45	47	51	45	44
1927	48	52	50	50	43	43	42	42	48	48	50	52	47
1928	49	47	49	43	45	44	45	47	49	48	51	50	47
1929	48	50	48	45	44	44	43	43	48	46	43	41	45
1930	37	38	37	39	35	35	35	39	40	40	38	38	37
1931	23	23	29	26	22								

CHICAGO

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1910			41	42	42	42	43	45	55	56	62	67	50
1911	40	49	60	62	57	51	51	52	57	64	69	68	53
1912	63	68	68	64	57	55	55	54	57	67	60	51	58
1913	48	47	47	44	38	33	39	40	42	45	44	43	42
1914	34	37	38	37	34	36	34	34	39	44	50	53	39
1915	50	50	49	45	40	39	38	42	46	47	52	53	46
1916	52	49	46	37	37	38	38	37	37	37	42	43	41
1917	38	40	46	43	41	42	42	42	46	49	50	47	44
1918	43	43	42	38	39	39	40	42	46	49	49	53	43
1919	45	50	49	48	41	40	40	41	45	46	48	51	46
1920	47	46	48	44	43	49	44	46	47	46	49	49	46
1921	47	46	48	44	42	42	41	42	45	44	41	39	44
1922	35	35	37	34	32	32	35	38	38	34	34	31	35
1923	27	27	29	24	22								

¹—From the United States Department of Agriculture.

TABLE NO. 58. ESTIMATED AVERAGE FARM PRICE OF MILK 1926-1930

Milk use	Average price per cwt. Five corresponding months 1926-1928												Wtd. Av.
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Milk sold for cheese	\$2.04	\$1.59	\$1.78	\$1.70	\$1.70	\$1.71	\$1.68	\$1.60	\$1.69	\$2.04	\$2.01	\$1.97	\$1.83
Milk sold to condenseries	2.28	2.20	2.12	2.06	1.95	1.93	1.94	2.02	2.11	2.17	2.17	2.15	2.07
Milk sold to market milk distributors	2.37	2.33	2.32	2.35	2.18	2.13	2.30	2.35	2.44	2.45	2.46	2.38	2.31

CENTS PER LB. WISCONSIN AND UNITED STATES FARM PRICES OF BUTTER FAT 1921-31

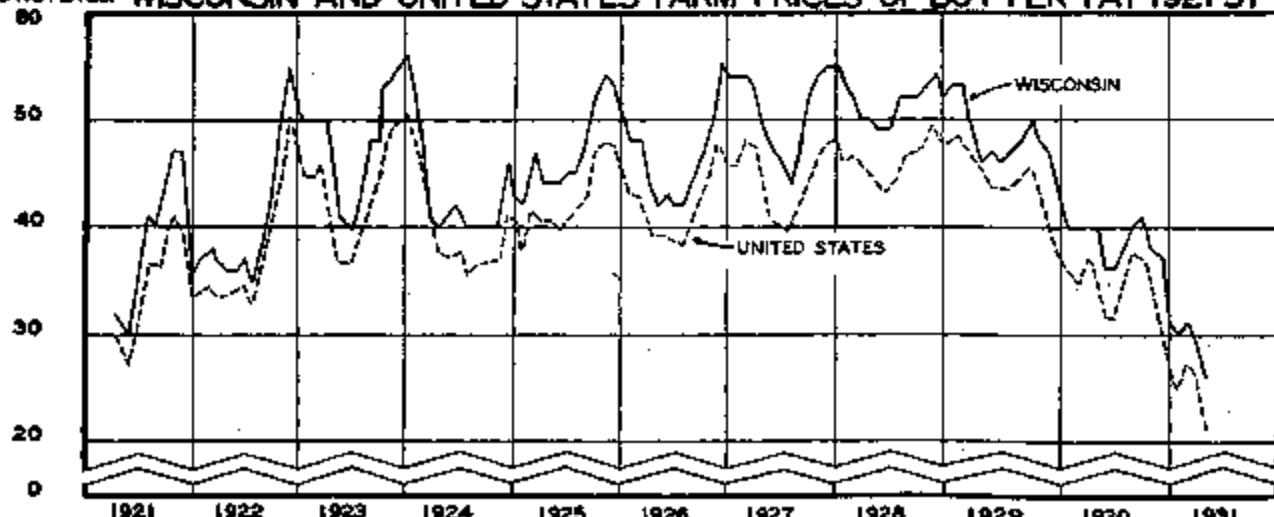


Fig. 75. Wisconsin farm prices of butterfat were higher than those for the United States for the past decade. With the decline of the past two years the spread between the two has been materially reduced. Efficient commercial production and high quality of Wisconsin dairy products account for a large part of this spread.

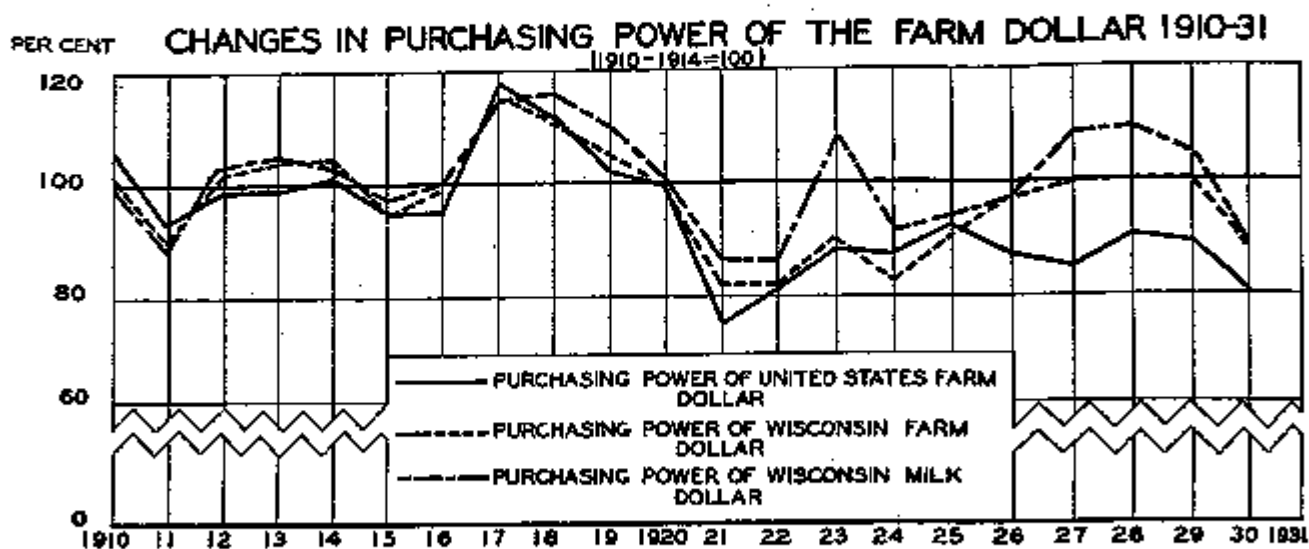


Fig. 76. Because prices which farmers pay did not fall as rapidly after the war, as prices of farm products, the purchasing power of dollars received from sales of farm products has been below 1914-1914 levels, represented by 100 in the chart. The purchasing power of the United States farmer has been well below 1910-1914 levels ever since the war. This index was at 80 for 1930. Since Wisconsin farm price levels depend largely on milk, Wisconsin farmers have been somewhat better off than farmers for the nation as a whole, the 1930 index being at 85. The purchasing power of milk was above 1910-1914 levels during 1923 and again from 1927 to 1929. Low milk prices in 1920 brought the index below 100.

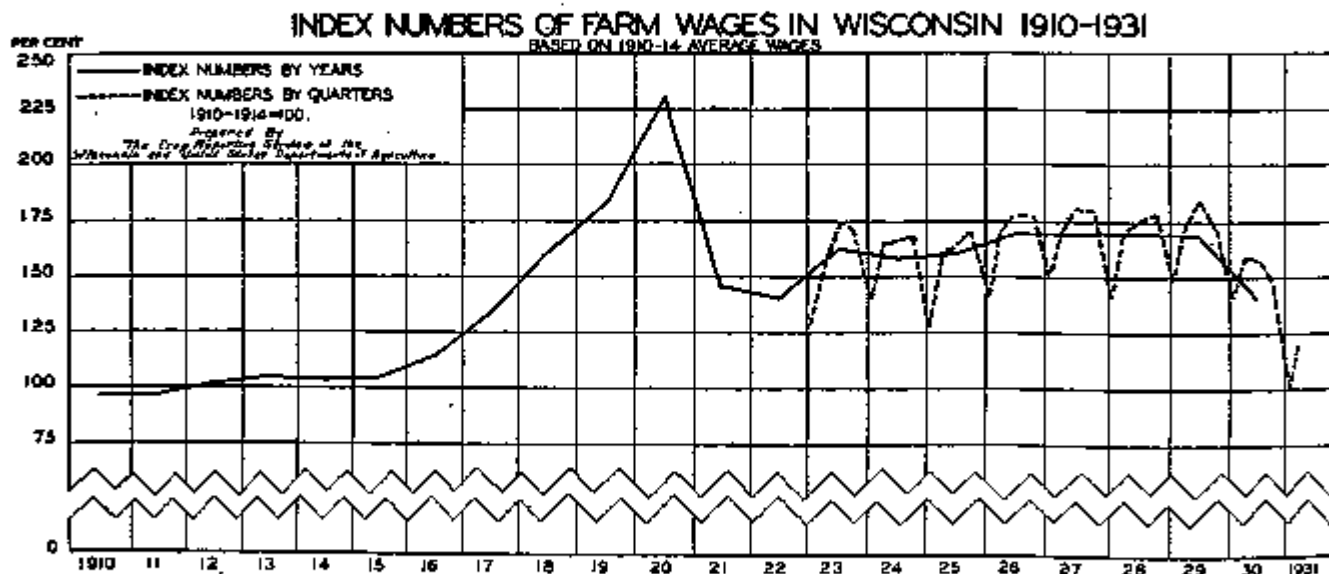


Fig. 77. This chart compares Wisconsin farm wages with the average wages paid during 1910-1914. Wage rates used as the basis for this index have been obtained from Wisconsin crop reporters. Until 1923, wages were reported once per year. Following 1923, wages have been reported quarterly. At present, Wisconsin farm wages are at the lowest point since the war, and only slightly above pre-war rates. Because of relatively high type of farm labor required in the Wisconsin dairy industry, farm wage levels in the state have been relatively high.

Wisconsin Farm Wages

While the largest share of the labor required on Wisconsin farms is performed by members of the farm family, the expenditure for hired labor is a significant item in the farm budget. According to the Census of Agriculture for 1925, the average annual expenditures for labor on farms reporting hired labor was \$253.33 per farm, a total for the state of \$26,836,611. About 69 per

cent of this farm labor bill was paid to workers who were hired by the month with board, 21 per cent was paid to day laborers who received board, 7 per cent to workers by the month without board, and 3 per cent to workers by the day without board.

Employment on Wisconsin farms is distinctly seasonal, although perhaps less so than for many other states because of the prevalence of winter dairying which provides some demand for off-season labor. Farm employment is highest during the August harvest season when the average number of persons employed per farm rises to nearly 2.7. This includes both family and hired labor. The peak of hired labor comes in October, when the opening of school removes a large proportion of the family labor and requires additional hiring.

Records of the United States Department of Agriculture contain information on Wisconsin farm wage rates going back to 1866. Prior to 1923, crop reporters were asked to submit an annual report on farm wages in their community. Following 1923, this information has been submitted quarterly. The Wisconsin rates have been combined into a series of index numbers reflecting wage movement as compared with 1910-1914 levels. In computing this index, the four types of wage rates have been combined according to their relative importance. The annual index for the year 1923 and following has been computed by combining the four quarterly rates in proportion to the amount of hired employment on the four dates. The October rates, coming at the peak of hired employment, are thus most influential in determining the annual index.

Wisconsin wage rates rose rapidly under the combined influence of the shortage of man power and intense agricultural and industrial activity of the war period. The peak was reached in 1920, when farm wages were 181 per cent above 1910-1914 levels. The post-war depression of 1921 and 1922 increased the supply of labor but decreased the demand so that in 1922 wage rates fell to a position 40 per cent above pre-war levels. The industrial expansion which began in 1922 and continued to 1929 attracted rural workers to the city, decreased the supply of labor available for agriculture, and drove farm wage rates to high levels. The average farm labor index for the period was 166 while the average index of Wisconsin farm prices was

at 146, indicating that farm wage levels were 14 per cent above the farm price level. During the entire period, farmers found it difficult to find an adequate supply of efficient farm labor at rates which they considered reasonable. The relationship between wages and prices was one factor encouraging the mechanization of farms.

The farm labor situation has been quite different during the current depression. Factory unemployment has resulted in a significant movement of population from the cities to the small towns and farms. For more than a year the supply of farm labor has been in excess of the demand. On March 1931, the Wisconsin farm labor supply was 18 per cent above normal, while demand was 28 per cent below normal. This unbalanced situation has resulted in a sharp decline in rates. The Wisconsin index for January 1931 was at 101. Wages have improved somewhat with response to increasing seasonal demands for farm labor, but April wages, the last reported, were still at the lowest levels since per-war days.

Farm laborers receive a remuneration in addition to their cash wages. This takes the form of room, board, and washing in the case of unmarried workers and a house and food stuffs in the case of married farm laborers. The value of this additional payment adds materially to the farm laborers income.

A study of farm wage payments conducted by the United States Department of Agriculture shows that Wisconsin farmers estimated that the value of the goods and services received by the hired man was worth \$30.82 per month in 1925. These farmers paid an average wage of \$48.16 per month, so that farm laborers received a total income of \$78.98 per month. The value of the goods and services paid by the farmer amounted to 39 per cent of the total wage payment.

The wages received by Wisconsin hired men are larger than the average for the United States. The average July wage with board for the nation from 1923 to 1930 was \$25.07. Wisconsin workers were paid an average of \$47.10 per month, so that Wisconsin wages were 34 per cent higher than for the United States.

J. C. Folsom, Perquisites and Wages of Farm Laborers. Technical Bulletin 213, United States Department of Agriculture.

TABLE NO. 59.

FARM WAGES IN WISCONSIN¹

Year	Rates Per Month		Rates Per Day		Index Numbers (1910-1914=100)	
	With board Dollars	Without board Dollars	With board Dollars	Without board Dollars		
1866	13.99	21.71	.90	1.25	64	
1868	13.58	22.08	.84	1.18	62	
1874 or 1875	14.28	22.12	.87	1.20	65	
1877 or 1879	13.73	20.94	.79	1.11	62	
1879 or 1880	14.78	23.08	.93	1.12	65	
1880 or 1881	15.37	23.76	.90	1.12	66	
1881 or 1882	17.90	26.21	.99	1.25	67	
1884 or 1885	16.78	23.54	.93	1.20	63	
1887 or 1888	16.30	24.65	.97	1.22	63	
1889 or 1890	16.75	24.20	.87	1.26	63	
1891 or 1892	17.00	25.28	.88	1.30	63	
1893	18.58	26.96	.96	1.24	68	
1894	18.74	24.96	.85	1.11	62	
1895	16.92	25.25	.84	1.11	62	
1898	17.50	26.47	.93	1.24	64	
1899	19.20	27.68	1.08	1.39	72	
1902	22.17	30.78	1.14	1.50	82	
1906	26.83	36.06	1.35	1.75	95	
1909	27.52	36.92	1.35	1.70	100	
1910	26.00	37.35	1.25	1.79	96	
1911	26.20	38.30	1.27	1.76	97	
1912	27.40	38.30	1.46	1.87	101	
1913	28.10	39.30	1.46	1.93	104	
1914	28.00	39.90	1.45	1.87	103	
1915	28.00	40.00	1.45	1.87	104	
1916	31.00	43.80	1.66	2.12	114	
1917	36.00	52.00	2.00	2.52	134	
1918	42.50	60.20	2.46	3.12	163	
1919	48.70	69.00	2.90	3.63	183	
1920	62.00	94.50	3.50	4.38	231	
1921	39.20	56.00	2.20	2.90	143	
1922	37.00	54.00	2.20	2.90	140	
1923	Jan.	35.00	51.00	1.90	2.80	139
	Apr.	44.00	62.50	2.00	2.90	139
	July	47.13	66.27	2.34	3.42	175
	Oct.	48.00	63.50	2.05	3.30	173
1924	Jan.	37.70	55.00	2.10	2.80	141
	Apr.	45.60	61.10	2.20	2.90	165
	July	46.70	62.50	2.30	3.05	167
	Oct.	45.60	62.50	2.50	3.10	169
1925	Jan.	34.00	50.00	2.00	2.70	126
	Apr.	45.00	59.00	2.20	2.85	135
	July	45.00	60.50	2.30	3.00	145
	Oct.	45.50	64.00	2.50	3.25	172
1926	Jan.	38.00	58.00	2.10	2.80	142
	Apr.	49.75	64.00	2.25	2.98	170
	July	49.00	64.25	2.45	3.14	178
	Oct.	48.50	68.00	2.44	3.18	178
1927	Jan.	40.75	59.75	2.10	2.85	150
	Apr.	47.50	63.80	2.25	3.00	172
	July	49.75	67.75	2.45	3.20	181
	Oct.	48.00	67.25	2.55	3.10	180
1928	Jan.	33.50	56.75	2.10	2.85	142
	Apr.	45.75	64.00	2.25	2.95	170
	July	48.50	65.75	2.45	3.10	177
	Oct.	48.75	65.25	2.50	3.10	179
1929	Jan.	40.00	57.55	2.30	3.70	149
	Apr.	48.00	66.00	2.30	3.00	174
	July	50.50	69.50	2.53	3.25	185
	Oct.	46.25	66.47	2.53	3.15	173
1930	Jan.	37.75	55.25	2.10	3.60	141
	Apr.	44.00	63.25	2.15	2.85	160
	July	43.50	59.25	2.15	2.80	156
	Oct.	40.25	56.25	2.00	2.65	147
1931	Jan.	27.00	42.25	1.50	2.25	101
	Apr.	32.75	47.50	1.60	2.25	120
	July	31.90	45.60	1.60	2.15	118

¹ Wage rates collected by United States Department of Agriculture from information provided by crop reporters.