Is dairying doomed in Wisconsin?. 1935

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IS DAIRYING DOOMED IN WISCONSIN?

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PUBLIC DISCUSSION OUTLINE

A. What is the problem?

1. Increased production of dairy products in other states.
2. Reduced "paying power" of consumers of dairy products.
3. Changing markets for Wisconsin dairy products.

B. How can the government aid in solving the problem?

4. Extension of past aids to the dairy industry.
5. Subsidize established dairy producers.
6. Production adjustment program for the dairy industry.

C. How can individuals aid in solving the problem?

D. How can cooperatives aid in solving the problem?
(Note: While topics C and D may be of equal or even greater importance than topic B, because of the prominent role of the A.A.A. in our agriculture, it seems well to emphasize topic B in this year's bulletin.)

E. Resolved:
That production adjustment under the A.A.A. would be a practical method of increasing Wisconsin dairy incomes.

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Six or seven decades ago Wisconsin was primarily a wheat growing state. With the opening of new wheat fields in the Dakotas and Montana, and the exhaustion of Wisconsin soil by exclusive cropping to wheat, the growing of wheat became unprofitable and Wisconsin farmers turned to dairying. Wisconsin is now the leading dairy state and produces about one-tenth of all the milk produced in the United States. Can Wisconsin retain this position, or may history repeat itself and Wisconsin lose it's supremacy in the dairy industry? Are there factors now at work that will cause dairying to increase in other states, even though prices of dairy products remain relatively low? Some point to the loss of our foreign markets for wheat, pork, and cotton, to the present emphasis on erosion control, and to the A.A.A. programs as things that will cause other states to go into dairying. It is such things that raise the question, "Is Dairying doomed in Wisconsin?" To a state where dairying is as important as in Wisconsin, the problems of our dairy industry should demand the attention not only of dairymen but of all other citizens of the state.

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A. WHAT IS THE PROBLEM?

1. INCREASED PRODUCTION OF DAIRY PRODUCTS IN OTHER STATES.

Dairy Products on Domestic Basis. When the dairyman considers foreign trade he thinks just of the tariffs on butter and cheese as a protection against foreign competition. Since 1920 the United States has been a net importer of dairy products, that is, they imported more dairy products than they exported. Before 1920, however, with the exception of seven years the United States was a net exporter of dairy products. Thus it has been only during comparatively recent years that the United States has imported more dairy products than they export and even during recent years they have exported considerable quantities of evaporated milk. During the decade 1920-1929 exports of evaporated milk were 15% of our total production. How the United States changed from an exporter to an importer of dairy products is shown in Table 1.

TABLE 1.--Net Imports or Exports of Butter, Cheese, Condensed and Evaporated Milk, and All Dairy Products in Terms of Milk Equivalent, United States, 1878-1935.

Period or year ending June 30	Butter		Cheese		Cond. & Evap. Milk	Total all Dairy Products	
Annual Average	Net Exp. 1,000 lbs	Net Imp. 1,000 lbs	Net Exp. 1,000 lbs	Net Imp. 1,000 lbs	Net Exp. 1,000 lbs	Net Exp. 1,000 lbs	Net Imp. 1,000 lbs.
1878-87	22,540		111,915			1,592,482	
1888-97	16,183		64,122			981,058	
1898-07	17,084		9,972			457,963	
1908-14	2,877			39,050	8,608		403,354
1915-20	16,218		21,221		380,604	1,266,835	
1921-25		10,850		32,021	207,868		613,948
1926-30		1,065		74,634	111,696		933,723
1931	983			56,063	78,242		362,567
1932		252		55,556	65,189		362,629
1933	396			54,510	39,272		423,281
1934	847			45,488	37,832		319,638
1935		21,561		47,100	47,019		

United States Department of Commerce
Data compiled by the Dept. of Agr'l. Economics, University of Wisconsin.

Many Farm Products on Export Basis. Although dairying changed from a net exporting to a net importing basis about 15 years ago, many important farm enterprises remained on an export basis. The percentage of total production that was exported during the decade 1920-1929 of our important export crops is given in Table 11.

TABLE 11. Percentages of United States production of specified farm products exported, 1920-1929.

Product	Percentage Exported	Product	Percentage Exported
	per cent		per cent
Cotton	55	Rice	23
Rye	48	Evaporated milk	15
Lard	34	Barley	15
Tobacco	34	Oranges	8
Wheat	23	Apples	8
		Pork (incl. lard)	7

It is interesting to note that rice, which is commonly thought of as a product of the cheap labor of the Orient, was one of our exports.

United States Department of Agr'l. Data compiled by Department of Agricultural Economics University of Wisconsin.

Proportion of Total Agricultural Production Exported.

TABLE111. Proportion of Farm Production exported, United States, 1910-1933.

Year	Gross Income from farm Production	Approximate farm value of exports	Ratio of exports to production
1910	$6,238,000,000	$652,000,000	10.5%
1915	7,595,000,000	1,129,000,000	15.3
1920	13,566,000,000	1,960,000,000	14.4
1925	11,968,000,000	1,462,000,000	12.2
1930	9,454,000,000	765,000,000	8.0
1931	6,968,000,000	489,000,000	7.0
1932	5,331,000,000	441,000,000	8.5
1933	6,256,000,000	617,000,000	9.9

Compiled by the United States Department of Agriculture, A.A.A. Statement issued September, 1935.

Changes in Exports of Farm Products. The changes in our exports of farm products are shown in Table 1V. The average exports during the years 1910-1914 are taken as 100, and the table shows that for every 100 units of farm products exported during those years, only 54 units were exported during the year July 1934-July 1935.

TABLE 1V. Index Numbers of Quantities of Principal Agricultural Exports, United States 1920-21 to 1934-35
(1909-10 to 1913-14=100)

Year beginning July	44 commodities	44 commodities except cotton	Cotton fibre	Grains and grain products	Cattle and meat products	Dairy products	Fruits	Tobacco
1920-21	127	212	64	329	154	524	108	129
1921-22	137	218	76	317	153	571	105	118
1922-23	112	182	59	246	169	406	121	116
1923-24	104	153	67	143	179	451	214	152
1924-25	126	167	95	225	140	496	184	110
1925-26	106	123	93	117	114	327	211	137
1926-27	136	143	131	188	98	288	301	132
1927-28	112	138	92	188	98	263	258	125
1928-29	117	141	99	174	102	243	372	144
1929-30	97	117	82	130	104	221	216	153
1930-31	90	101	81	104	74	190	337	150
1931-32	98	91	103	104	63	123	305	110
1932-33	85	64	100	42	63	74	255	102
1933-34	83	65	97	34	65	72	248	120
1934-35	54	46	60	21			197	95

Yearbook of Agriculture, 1935
Table 445, page 635.

Thus, although dairying no longer depends on the foreign market to any considerable extent, many farm products still do depend upon the foreign market. During the years 1925-1929, one out of every six of our acres grew crops that finally were sold to foreign lands. Because we are now a creditor rather than a debtor nation, and because our own tariffs make it hard for foreign countries to sell to us, it is becoming increasingly difficult for the products of this one acre in six to be sold in foreign markets. Will these acres that formerly produced for foreign sale be used for production of products for the domestic market? If so, what does this mean to the present dairy regions? We have used tariffs as a protection against foreign competition. What will we do if milk production increases in other parts of our own country?

Possible Shifts in American Agriculture. The following quotation suggests what shifts in American agriculture might result from a loss of our foreign markets. "Had there been no AAA reduction programs, the intense, liquidating economic pressure that bore down so ruthlessly on most of American agriculture which ordinarily sells a part of its production abroad, in all probability, would have continued to date, except for those crops cut sharply by the drought. Farm prices of export products dropped much more than did farm prices of other agricultural products. At the beginning of 1933, prices of the first group were about 40 per cent of prewar prices, while farm commodities which are on a domestic or import basis,

stood at 80 per cent. Accordingly, farm families producing products that are on a world basis suffered considerable more from price and income decline, expecially since 1930, when foreign lending stopped, than have those in the sheltered group." This story is told vividly by Table V.

TABLE V. Relative Loss of Farm Income.

Class of Products	Income in Millions of Dollars		Decrease in 1932 Farm Income in Percent of 1925-'29 Av.
	1932	1925-'29	
Grain*	332	1463	77.3%
Cotton and Cottonseed*	431	1463	70.5%
Other Crops & Livestock*	265	669	60.4%
Hogs, Cattle, & Sheep*	1117	2788	59.9%
Tobacco*	111	262	57.6%
Fruits & Nuts*	340	695	51.1%
Wool & Sugar**	98	192	49.0%
Poultry & Eggs**	603	1164	48.2%
Vegetables**	596	1089	45.3%
Dairy Products**	1260	1958	35.6%

* On World Market Basis
** On Home Market Basis

"Observe the two extremes, grain and dairy products. Grain is on a world market basis. In 1932, the income which farmers received from it was 332 million dollars compared to the 1925-1929 annual average of 1,436 million dollars. Relatively, the 1932 figure was only 22 per cent of the pre-depression level. In contrast, the income derived from the farm sales of dairy products in 1932, was 64 per cent of the 1925-1929 level; it declined from 1,958 to 1,260 million dollars. The first five classes of products shown are on an export basis; each had its 1932 income level cut by more than one-half. Those products that have the equivalent of a home market experienced less than a 50 per cent reduction.

From these figures, we might well conclude that during times of world-wide economic derangement it is better to be a farmer in the sheltered group than in the other. But we might also be induced to inquire into some of the reasons why it has become progressively harder to sell American farm products abroad. Also, why it is probable that the current improvements in farm income, partly ascribable to the activities of the AAA, are temporary. To do this, however, it will be necessary to examine briefly what has happened to the export markets for farm products. A study of the international account book of America will show why the prevailing adverse pressure on exports is likely to result in a fundamental change in the crop and animal pattern of domestic agriculture, unless America's foreign commercial policy is altered materially."

"Vanishing Farm Markets and Our World Trade" by Theodore W. Schultz, Acting Head Agr'l. Econ. Section Iowa State College, World Affairs Pamphlet, No. 11, July, 1935 p.28 Pub. by World Peace Foundation, N.Y.

A second factor which may have an effect on dairying in Wisconsin is the emphasis which is now being placed on erosion control. Most of these plans call for more land in hay and pasture and less in such crops as corn and cotton. This is a shift to crops used for feeding dairy cattle and may affect the extent of dairying in other states.

Crops Controlling Erosion. The dominant role of vegetation, whether it be grass, close-growing cover crops, shrub, or forest cover, as a controlling factor in soil and watery losses, has come to stand out in an exceedingly important way. Highly effective control measures involving vegetation in holding the soil in place is, of course, not all new information. Were it not for this natural force, which has been continually at work throughout the ages, soils never would have developed as we now find them under virgin conditions, even on comparatively slight slopes. Its effectiveness is well shown by the simple comparisons of Table VI which represents soil and water losses from control plots on a wide variety of soils in widely different sections of the country under definite conditions of slope and surface exposure. According to the results presented as soil and water losses, it is apparent that close growing vegetation such as grass, alfalfa, etc., slows down water losses, and decreases soil losses hundreds and even thousands of times when compared with uncontrolled plots.

TABLE VI. Comparison of soil and water losses by surface run-off from selected treatments of the control-plot series at several of the soil erosion experiment stations which show the striking degree of control that is possible through the proper use of vegetation.

Area, soil type, and rainfall (inshes)	Plot treatment*	Soil loss per acre tons	Loss of rainfall
Upper Miss. Valley, La Crosse, Wis. Clinton silt loam, 16% slope (1933 only) 29.11	Bare Soil, uncultivated	21.5	15.9 %
	Continuous corn	59.9	19.2
	Continuous barley	12.0	17.8
	Continuous bluegrass	.003	2.9
Mo.-Iowa, Bethany, Mo. Shelby silt loam, slope 8% (av.3 yrs 1931-33). Av. Annual Rainfall 33.53	Bare soil, uncultivated	112.48	25.98
	Continuous corn	61.16	2.38
	Continuous bluegrass and timothy	.36	7.72
	Continuous alfalfa	.22	3.40
Red Plains, Guthrie, Okla. / Vernon fine sandy loam, slope 7.7% (av. 4 yrs 1930-33) av. annual rainfall 32.92	Bare soil, uncultivated	14.59	26.04
	Continuous cotton	28.05	14.18
	Bermuda grass	.040	1.51
Texas, Ark. La, sandy lands region, Tyler, Tex. Kirvin fine sandy loam, slope 8.75% (av.3 yrs, 1931-33 (av. ann. rainfall 42.31	Bare Soil, uncultivated	12.20	18.20
	Continuous cotton	19.06	18.00
	Bermuda grass	.20	1.50
Cent. piedmont, Statesville, N.C Cecil sandy clay loam, slope 10% (av. 3 yrs, 1931-33). Av. annual rainfall. 42.9.	Bare soil, uncultivated	65.3	32.0
	Continuous cotton	14.0	9.7
	Continuous grass	.8	5.2

*All plots 72.6 ft. long and 6 ft. wide, or 1-1/100 of an acre in size.

Yearbook of Agriculture, 1935
pp. 301-302

Relative Feed Value of Various Crops. Studies made of Wisconsin farms during 1934 by the College of Agriculture, University of Wisconsin, show "that as the percentage of the crop land in alfalfa is increased, not only is more feed produced per farm and per acre but also more livestock are kept upon the same sized farms and farm incomes are larger. This was done with no increase in yields per acre of the individual crops. There was a difference in net profits of over $500 between those farms with less than 15% of the crop land in alfalfa and those having more than 30% of their crop land so used." (See Table V11.)

TABLE V11. More Crop Land in Alfalfa Makes for Better Incomes.

Percent crop land in alfalfa	Crop yields	Labor income in dollars	Crop acres	Fat production per cow in pounds	Feed efficiency
0 to 15%.....	97	21	108	297	126
16 to 30%.....	102	283	88	317	137
31 to 48%.....	97	641	92	325	141

"The most important difference in these farms is the amount and kind of food produced as changes were made in crops grown. As the percentage of alfalfa grown on these farms was increased from less than 15% to more than 30% of the crop land, the total amount of feed was increased nearly 25%. This is illustrated by the farms having less than 80 acres in crops although the same relationship holds for the larger farms."

TABLE V111. More Crop Land in Alfalfa Means More Feed.

Crop Land in Alfalfa	Feed Grown Per Farm*		Feed Grown Per Acre		Nutritive ratio
Range	Nutrients	Protein	Nutrients	Protein	
0 to 15%	122,000	14,200	1,962	229	1 to 7.6
16 to 30%	123,000	15,800	2,251	289	1 to 6.8
31 to 48%	150,000	21,500	2,421	347	1 to 6.0

* "Nutrients" and "Protein" are used to show what the dairyman calls "total digestible nutrients" and "digestible crude protein" as worked out in "Feeds and Feeding" by Henry and Morrison.

Practically as important as the total amounts of feed produced on these farms is the additional amounts of protein available for dairy herds. Although the total feed differences amounted to less than 25% more on the farms with the larger percentages of alfalfa, the amount of protein produced on these farms was 50% greater. This resulted in several advantages to these farms. More protein feeds raised on the farm means protein at less cost than when bought. It also suggests a better balanced ratio with somewhat higher productions per cow. The nutritive ratio of the total feed raised on those farms with small amounts of alfalfa was 1 to 7.6 while an increase in the alfalfa proportion to more than 30% of the crop land reduced the nutritive ratio to 1 to 6.0. The larger amounts of protein made available by more alfalfa may be a factor in the larger productions per cow." (See Table V111).

Crops Giving Most Feed Per Acre. Just why the farms having more alfalfa produce more feed per acre at no great change in costs per acre is not always understood. It should be remembered, however, that in southern Wisconsin an average yield of either corn or hay produces more feed than an excellent crop of small grains. (See Table 1X.)

TABLE 1X. Production of Feed in Southern Wisconsin.

Crop	Digestible Nutrients per bu. or ton	Digestible Crude protein per bu. or ton	Average yield	Production per acre of Total Nutrients	Production per acre of Digestible crude protein
Oats (bu.).....	22.5	3.1	33.0 bu	743	102
Barley (bu.).....	38.1	4.3	27.0 bu	1029	117
Corn (grain-bu.)...	45.8	4.0	47.8 bu	2187	191
Corn (silage-ton)..	354.0	22.0	8.6tons	3044	189
Timothy, clover, & hay (tons).....	994.0	106.0	2.1tons	2087	223
Alfalfa (tons).....	1032.0	212.0	2.7tons	2786	572

Erosion Control and Dairying. "Since control of devastating land erosion in some of the leading farm regions of the Middle West has become a public issue with plenty of funds behind it, good dairy judgement with an eye to future trends should fortify the industry against certain tendencies that erosion control has to cause greater production of milk. That is, in this immediate future it is the duty of the dairy leaders and the rank and file to centralize on delivery of better raw material, manufacture of better products and the opening of new and larger markets for the product of the cow."

"Recent studies in southern Iowa and northern Missouri by the Iowa State College economists and engineers state that erosion control is not simply a case for individual action, but it is affected by economic and social forces. They claim that small farms, excessive corn-hog specialty farming, tenant farming, heavy debt burdens and low farm prices hinder erosion control. On the other hand reasonably large farms, owner operated farms, relatively small debts, fairly good prices, and more dairy and beef cattle or sheep husbandry assist erosion control. Their studies prove that farms deriving more than 50 per cent of total income from hogs and with 44 per cent or more of the crop land in corn have the highest erosion damage. Farms in that area getting more than 30 per cent of their income from dairying crop about 37 per cent of their land to corn and have a medium erosion damage, while farms with more than 35 per cent of their income from beef cattle have as little as 30 per cent of their land area in corn and possess the very lowest erosion damage on the same type of soil."

"The expansion of the dairy enterprise would much facilitate reduction of corn acreage through more balanced crop rotation with more of the land in soil-protecting grasses and legumes, while the large production of manure in dairying tends to reduce soil losses from erosion because of its effect on the organic matter and water-holding capacity of the soil."

They would shift emphasis from corn-hog to beef cattle on 200 acre farms or larger holdings, increase if possible the size of farm units to facilitate this shift, and lastly on 160 acre farms they urge less corn-hogs and more intensive labor-using systems, including more dairying. Then again, the recent suggestions to the AAA by corn-hog committeemen only emphasize the trend toward grass husbandry. And furthermore, we need not go beyond our own state to see attempts to solve the erosion problem by more permanent pastures and meadows. It all sums up to the conclusion that the best farm land is already cultivated, there are no more vast new fertile areas unplowed, and the future problem is one of soil conservation.

Editorial Wisconsin Agriculture and Farmer
August 17, 1935. Page 4.

Adjusted Acres. What will be the effect of the A.A.A. production adjustment program on the production of dairy products in other states? Under the 1934 crop adjustment contracts about 36 million acres of land were taken out of production of crops for which there were adjustment contracts as follows:

Corn.....	12,700,000 acres
Wheat.....	7,800,000 acres
Cotton.....	14,600,000 acres
Tobacco.....	700,000 acres
	35,800,000 acres

While the shift from corn to legumes or grass crops may result in some reduction in feed production it must be remembered that much of the pork produced from the corn formerly grown on the "adjusted" areas found its market in foreign lands. The shift from wheat, cotton and tobacco to legume and grain crops will result in additional feed for livestock. It appears, therefore, that the net result of the shift from the production of crops under adjustment programs to suit building crops would be some increase in the production of feed for livestock especially cattle and sheep. However, it is somewhat less certain that this will result in a more rapid increase in dairy production than would have resulted from continued low prices for wheat, pork, and cotton.

2. REDUCED "PAYING POWER" OF CONSUMERS OF DAIRY PRODUCTS.

Consumption of Dairy Products Maintained. The annual per capita consumption of dairy products in the United States is given in Table X. These figures are obtained by dividing the total consumption by total population. They do not mean that every person ate these amounts of dairy products. Some ate much more. Some persons used little, if any, dairy products. Moreover, during the depression years some persons decreased their production of dairy products, and since the average consumption was maintained this means that others must have increased their consumption.

TABLE X. PER CAPITA, ANNUAL CONSUMPTION OF DAIRY PRODUCTS IN THE UNITED STATES, 1920-1934.

Year	Milk equivalent all products	Milk used in cities and villages	Butter	Cheese	Condensed and Evaporated milk		
					Cond.	Evap.	Total
	Gallons	Gallons	Pounds	Pounds	Pounds	Pounds	Pounds
1920	-	-	14.7	3.50			10.17
1921	-	38.0	16.1	3.50			11.40
1922	-	-	16.5	3.70			12.69
1923	-	38.1	17.0	3.90			13.25
1924	91.7	38.6	17.38	4.20			14.00
1925	92.1	38.9	17.39	4.26			14.87
1926	94.6	39.3	17.76	4.36	2.75	11.56	14.31
1927	94.4	39.6	17.49	4.14	2.60	11.59	14.19
1928	94.2	39.8	17.12	4.11	2.56	12.50	15.06
1929	94.3	40.8	17.29	4.62	2.75	13.83	16.58
1930	94.8	40.6	17.30	4.71	2.66	13.68	16.34
1931	96.7	40.0	18.00	4.49	2.29	13.70	15.99
1932	95.3	40.0	18.14	4.39	1.80	14.41	16.21
1933	92.7	38.8	17.64	4.51	1.66	14.23	15.88
1934	-	-	18.2	4.70	1.71	15.41	17.12

1920-1932 mimeographed report
Bureau of Agricultural Economics
November 23, 1933.

Consumers' Incomes Reduced. If the consumption of dairy products did not fall off during the depression they why was there so drastic a decline in the prices dairy farmers received for their product? One answer that has been suggested is the reduced "paying power" which consumers have had during recent years. During the year 1929 factory workers in all manufacturing industries in this country received a total of $221,937,000. In that year the average retail price of butter for the United States was 55 cents per pound. The total amount received by these factory workers during 1932 was $93,757,000 and the retail price of butter was 27 cents per pound. For every $100 these factory workers received during 1929 they received but $42 during 1933, and the retail price of butter during 1933 was about one-half as high as it was during 1929.

The relative amounts that factory workers have received and the retail price of butter are given in Table XI. This table shows the amount these workers received each year 1924-34 for every $100 received during 1929.

TABLE Xl. Index Numbers of Factory Payrolls and Retail Price of Butter, United States, 1924-1934.

Year	Factory payrolls	Retail Price of butter
	Index Nos.*	cents
1924	88	52
1925	93	55
1926	95	53
1927	94	56
1928	94	57
1929	100	55
1930	82	46
1931	62	35
1932	42	27
1933	45	27
1934	57	31

*1929=100

United States Bureau of Labor Statistics. Federal Reserve Board Index of Factory Payrolls

Cause of Reduced "Paying Power". The cause of this reduced "paying power" of the consumers of dairy products is found in the reduced production of industrial goods. In a general way farm products are exchanged for factory products. When few factory products are produced there are only few factory products to be exchanged for farm products. The reduction that occurred during the years 1930-1932 in the production of factory goods is illustrated in Table Xll which gives the number of automobiles and the pounds of creamery butter produced during the years 1923-1934.

TABLE Xll. The Production of Passenger Automobiles (including taxicabs) and the Production of Creamery Butter in the United States, 1923-34.

Year	Production	
	Automobiles*	Creamery Butter**
	Number	1,000 pounds
1923	3,624,717	1,319,698
1924	3,185,881	1,444,934
1925	3,735,171	1,455,625
1926	3,783,987	1,536,205
1927	2,936,533	1,564,227
1928	3,815,417	1,554,216
1929	4,587,400	1,617,344
1930	2,784,745	1,597,747
1931	1,973,090	1,667,452
1932	1,135,491	1,694,132
1933	1,573,512	1,762,688
1934	2,177,919	1,653,792

* United States Department of Commerce, 1932.
** United States Department of Agriculture.

Decrease in all Industrial Products. Of course automobile manufacturers are not the only ones who reduced production. If we put all factory made products together into an average or composite product, we find that for every 100 units produced in 1929 there were but 54 units produced in 1932. In other words, the factories of this country produced only a little over half as much in 1932 as they did in 1929. Because so little was being produced city people had but little with which to pay farmers for their products.

Industrial Production and Purchasing Power of Farm. How the purchasing power of farm products has changed with changes in industrial production since 1929 is indicated in Table XIII.

TABLE XIII. Index Numbers of Industrial Production and Purchasing Power of Farm Products, 1929-1934.

Year	Index Numbers 1929=100	
	Industrial Production*	Purchasing Power of Farm Products**
1929	100	100
1930	79	91
1931	67	74
1932	53	64
1933	63	67
1934	66	77

* Federal Reserve Board

** United States Department of Agriculture

3. CHANGING MARKETS FOR WISCONSIN DAIRY PRODUCTS.

Use of Wisconsin Milk in 1932. Although Wisconsin has less than 3% of the total population of the United States over ten per cent of all milk produced in this country is produced in Wisconsin. This means that Wisconsin milk will be used in different ways than will be the milk produced in a state with a larger proportion of the total population and producing less milk. How Wisconsin milk was used in 1932 is given in Table XIV.

TABLE XIV. Production and Utilization of Milk Produced in the United States and in Wisconsin, 1932.

	UNITED STATES		WISCONSIN	
	Million pounds	per cent	Million pounds	per cent
PRODUCTION				
By cows on farms	101,863	97.30	10,992	99.71
By cows not on farms	2,826	2.70	32	.29
Total	104,689	100.00	11,024	100.00
UTILIZATION				
For factory products	44,755	42.75	8,011	72.67
Butter	34,046	32.52	3,578	32.46
Cheese				
American	3,801	3.63	2,278	20.66
All other	1,082	1.03	613	5.56
Total	4,883	4.66	2,891	26.22

(Con't on following page)

TABLE XIV. (Con't. from page 12)

	UNITED STATES		WISCONSIN	
	Million pounds	per cent	Million pounds	per cent
Concentrated milk				
Evaporated	3,611	3.45	1,409	12.78
Condensed	247	.24	44	.40
Total	3,858	3.69	1,453	13.18
Other				
Ice Cream	1,840	1.76	56	.51
Powdered Cream	2	.002	—	—
Powdered Whole milk	91	.09	20	.18
Malted milk	35	.03	13	.12
Total	1,968	1,882	89	.81
As milk and cream by city population				
In Wisconsin	—	—	826	7.49
Shipped out of state	—	—	787	7.14
Total	31,991	30.56	1613	14.63
On farms where produced				
As milk and cream	11,969	11.43	522	4.74
For farm butter	11,536	11.02	71	.64
Fed to Calves	2,806	2.68	330	2.99
Total	26,311	25.13	923	8.37
Other Uses (1)	1,632	1.56	477	4.33
TOTAL	104,689	100.00	11,024	100.00

(1) Other uses includes various consumption items not estimated separately, chiefly butterfat lost in the skimming of milk of farms for sale of butterfat, shrinkage and loss in the marketing of butterfat from farms, milk purchased by people on farms (including both purchases by those who have no cows and purchases by others while all of their cows are dry), milk used for feeding or for making butter by non-farm families keeping cows, whole milk fed to livestock other than calves, and commercial ice cream mix used elsewhere than in factories reporting. These items are partially offset by differences between the production and the utilization indications as here calculated.

United States Bureau of Agricultural Economics, 1930-1932.

Utilization of Milk Produced in Various Geographic Regions in the United States. Many dairy states in this country are not in a fluid milk zone. Therefore, they must depend largely upon the sale of manufactured dairy products, rather than fluid milk, for their dairy incomes. Data on the utilization of milk in the various regions of this country is given in Table XV.

TABLE XV. Percentage of Total Milk Produced in Different Geographic Regions That is Utilized for Specific Purposes, 1929-33 Av.

PRODUCT	North Atlanta	East North Central	West North Central	Southern	Western	United States
	percent	percent	percent	percent	percent	percent
Creamery butter	3.16	32.24	62.61	10.79	38.79	32.24
Cheese	3.45	13.10	.79	.93	4.41	4.72
Evaporated milk	1.52	6.98	.61	1.08	6.58	3.17
Ice Cream	7.32	2.79	1.17	1.82	3.13	2.91
As fluid milk and cream in cities and villages	76.62	27.49	10.62	26.00	29.92	30.85
On Farms as milk and cream	6.21	8.33	10.17	21.16	8.04	11.04
For farm butter	5.79	4.29	7.60	30.19	4.29	10.62
Fed calves	2.81	3.20	3.16	1.57	3.24	2.80

United States Department of Agr'l.
Bureau of Agricultural Economics

The sum of the percentages for North Atlantic States is over 100 because some milk used as fluid milk and cream is shipped in from other states.

Percentage Distribution of Total U. S. Butter and Cheese Production. The percentage of the total United States production of creamery butter and of American cheese that was manufactured in each geographic division and in Wisconsin is shown in Table XVI.

TABLE XVI. Percentage of Total United States Production of Creamery Butter and American Cheese Manufactured in each geographic division and in Wisconsin, 1923-1933.

Group of States*	Creamery Butter		American Cheese	
	1923	1933	1923	1933
	Per cent	Per cent	Per cent	Per cent
New England	1.2	.2	.4	.1
Middle Atlantic	2.6	1.6	13.0	6.9
East North Central	31.1	26.9	76.1	67.5
West North Central	45.5	50.4	2.6	5.9
South Central	4.5	7.4	.1	7.2
South Atlantic	.7	.7	.1	.2
Mountain	4.2	5.0	3.3	3.7
Pacific	10.2	7.8	4.4	8.5
Wisconsin	11.3	9.0	73.7	58.4

*New England - Maine, New Hampshire, Vermont, Mass. Rhode Is. Conn.
Middle Atlantic - New York, New Jersey, Pennsylvania
East North Central- Ohio, Indiana, Illinois, Michigan, Wisconsin
West North Central- Minn. Iowa, Mo. No. Dakota, So. Dakota, Nebr. Kansas
South Atlantic - Del. Md. West Va. Va. D. C., No.C., S.C., Ga., Fla.
South Central - Ky., Tenn., Ala., Miss., Ark., La., Okla., Texas
Mountain - Mont., Idaho, Wyo., Nev., Utah, Colo., Ariz., NewMexico
Pacific - Washington, Oregon, Calif.

Dept. of Agricultural Economics
United States Department of Agr'l.

Wisconsin's share of both creamery butter and American cheese production was smaller in 1933 than in 1923. This does not mean necessarily that Wisconsin was losing its place as the leading dairy state. It may mean that the milk produced in Wisconsin is being used for different products. While, as indicated in Table XVl, Wisconsin's share of total creamery butter production fell 2.3%, and of American cheese, 15.3%; Wisconsin's share of total milk production fell less than 1.0% and its proportion of evaporated milk production increased 5.8%.

Out-of-State Sale of Wisconsin's Dairy Products. Wisconsin produces approximately 10% of all dairy products produced in this country and has only about 3% of the nation's population. It is evident then that a large proportion of Wisconsin's dairy products must be sold out of the state.

TABLE XVll. Estimated percentage of Wisconsin's Dairy Products sold Outside of the State, 1931.

Cheese	98%
Powdered Whole Milk	96-97%
Condensed Milk	92-93%
Casein	91-92%
Powdered Skim Milk	89%
Powdered Butter Milk	80%
Butter	62%

Data Compiled by the Department of Agricultural Economics, Wisconsin College of Agriculture.

B. HOW CAN THE GOVERNMENT AID IN SOLVING THE DAIRY PROBLEM?

4. EXTENSION OF PAST AIDS TO THE DAIRY INDUSTRY.

Although the dairy industry has not adopted a production control program under the Agricultural Adjustment Act, the government in the past has done certain things which dairymen have asked for as aids to the dairy industry. These past aids include tariffs on dairy products, oleomargarine legislation, work indicating the health value of dairy products, tuberculosis and Bang's disease campaigns, and investigation to find ways of reducing the cost of producing milk and of improving the quality of dairy products. Will any extension of these past programs be sufficient to solve the dairy problem?

Importation of Butter Dependent on Relative New York and London Butter Prices. Information regarding the imports and exports of dairy products given in Table 1 shows that during the five years since June 30, 1930 the United States exported more butter than they imported in three of these years, and imported more than they exported in two years. Whether or not the United States will import butter depends upon the relative prices of butter in New York and London. If the price in New York is higher than the London price by more than one tariff, we will import butter. The difference between New York and London prices is given in Table XVlll. (On following page)

TABLE XVIII. Number of Cents by Which New York Price of 92-Score Butter was Higher Than the London Price of Finest New Zealand Butter, by Months, 1929-1935.

Month	1929	1930	1931	1932	1933	1934	1935
	cents	cents	cents	cents	cents	cents	cents
January	7.8	2.8	2.2	7.4	6.6	3.3	16.0
February	12.3	3.0	1.2	5.3	5.6	8.4	17.0
March	12.2	7.3	1.7	3.7	5.5	7.7	15.5
April	9.6	11.1	1.0	.9	8.6	5.7	18.2
May	7.4	6.8	*	1.6	7.5	5.9	9.9
June	6.7	4.1	*	.1	6.8	7.3	5.0
July	5.2	5.6	*	.8	6.8	7.3	4.0
August	6.1	9.9	2.3	2.5	2.2	9.3	
September	7.6	12.2	8.2	2.2	1.3	9.2	
October	6.3	15.1	11.6	2.6	1.8	11.9	
November	5.2	12.6	10.6	8.0	2.2	12.8	
December	5.9	8.0	13.3	10.4	2.3	15.3	

*New York price less than London price.
Tariff on butter April 5, 1926-June 18, 1930-12¢; June 18, 1930-14¢.

Bureau of Agricultural Economics
United States Department of Agr'l.

Production, Wholesale Price, and Importation of Butter, 1934-1935. The imports of butter into the United States were especially heavy during early 1935. Information as to butter production, wholesale price, and imports is given in the following table.

TABLE XIX. Production, wholesale price*, and imports of butter, in United States, by months, 1934-1935.

Month	Production		Price		Imports	
	1934-1935		1934	1935	1934	1935
	thousand pounds		cents		thousand pounds	
January	113,425	100,130	19.8	34.2	52	539
February	107,427	97,003	25.3	36.2	46	3,656
March	123,305	107,060	25.3	31.7	29	4,929
April	133,637	127,460	23.7	34.5	47	8,860
May	174,976	175,096	24.5	27.3	53	2,665
June	182,783	196,603	24.9	24.2	57	1,437
July	172,322	186,562	24.5	23.9	69	177
August	165,190	157,839	27.4	25.0	83	149
September	143,761	141,141	25.8	26.1	98	122
October	133,817	119,602	26.9	28.1	155	108
November	110,655		29.4	32.3	182	
December	102,702		30.9		235	

*92-score butter at New York

Bureau of Agricultural Economics
U. S. Department of Agriculture
Bureau of Foreign and Domestic
Commerce, U. S. Department of Commerce

Tariffs on Dairy Products.

TABLE XX. Tariff Duties on Dairy Products, United States, June 18,1930

Butter	14¢ per lb.
Cheese	7¢ per lb. (not less than 35% ad valorem)
Fresh milk	6½¢ per gallon
Fresh cream	56.6¢ per gallon
Casein	5½¢ per pound

Farmers Ask More Laws Against Oleomargarine. "The Wisconsin Council of Agriculture today stood in favor of further legislation against oleomargarine. The decision to demand protection for Wisconsin farmers came in the face of retaliatory measures from southern states. At the next session of congress the council will recommend further measures for an additional 5 cent tax on oleo manufactured and sold in the United States and for a combined import and excise tax of at least 5 cents a pound on all imported oils and fats.

It also favored legislation against shipping oleo into states where there is a law against it, unless the tax is paid by the shipper. "Anti-Wisconsin" boycotts by southern states because of the oleo tax were deplored in another resolution which pointed out that while southern cotton planters sold $8,000,000 worth of cotton seed oil to the oleo industry annually, Wisconsin dairymen bought $24,000,000 worth of cotton seed products."

Wisconsin State Journal
October 25, 1935.

Per Capita Consumption and Retail Price of Butter and Oleomargarine.

TABLE XXI. Per capita Consumption and Retail Price of Butter and Oleomargarine, United States, 1919-1934.

	Per capita consumption		Retail Price	
	Butter	Oleomargarine	Butter	Oleomargarine
	pounds	pounds	cents	cents
1919	14.8	3.3	67.8	38.5
1920	14.7	3.5	70.1	38.9
1921	16.1	2.6	51.7	30.2
1922	16.5	1.7	47.9	27.5
1923	17.0	1.8	55.4	28.4
1924	17.38	2.1	51.7	29.7
1925	17.39	1.9	54.8	30.4
1926	17.76	2.1	53.1	30.4
1927	17.49	2.2	55.6	28.3
1928	17.12	2.5	56.5	27.4
1929	17.29	2.7	55.1	27.2
1930	17.30	2.8	46.1	25.5
1931	18.00	2.3	35.4	20.0
1932	18.14	1.7	27.4	15.2
1933	17.64	1.8	27.2	13.0
1934	18.2	1.9	31.2	13.5

U.S.D.A. Bureau of Agr'l. Econ.
U. S. Dept. of Labor

Oleomargarine Manufacturers Demand Right to Compete with Butter Industry. Oleomargarine manufacturers say that if they have a product that comes in competition with butter and can make a profit out of its sale, they should have an opportunity to compete with butter. There is considerable logic in their position. But the fact remains that the return to the dairy farmer is of vastly more importance to the nation than the profits of the manufacturers of oleomargarine, largely a by-product.

Wisconsin State Journal
July 15, 1935

Effects of Cashman Law on the Dairy Industry. "On July 1, 1935 Gov. La Follette signed the Cashman bill boosting the tax on the butter substitutes from 6 to 15 cents a pound in Wisconsin. The southern states had threatened to build a trade wall against Wisconsin products if the Cashman bill became a law. They are now carrying out their threats. The Jelke Co., a manufacturer of "oleo", notified the Menasha Carton Co., of Menasha, Wisconsin that it was cancelling its business with the Menasha concern, which amounts to $350,000 a year. The Jelke business kept 500 men at the Menasha plant busy for three months each year. In a letter to the carton company the Jelke Company asked that its entire inventory be cleared out, since it was discontinuing whatever business it was doing with any Wisconsin company as the result of the "prohibitory" tax. The southern cotton states last year bought $17,000,000 worth of goods manufactured in Wisconsin, in addition to large quantities of butter, cheese, and condensed milk. About 40 per cent of this $17,000,000 is spend for wages. Already, it was reported by George F. Kull, secretary of the Wisconsin Manufacturers' Association, the paper mills of the Wisconsin and Fox River Valleys have been threatened with the loss of more than $1,000,000 in business previously done in southern states. Milwaukee concerns manufacturing machinery and textiles mostly have been threatened with the loss of $2,500,000 in business annually, according to Kull.

The shoe industry of Wisconsin also faces a heavy loss in southern patronage if the 15 cent tax is not revoked, Kull has learned from the shoe concerns of Wisconsin. The a luminum business of Manitowo , West Bend and Kewaskum also stand to suffer as the result of retaliation.

The oleomargarine concerns have threatened to attack the constitutionality of the 15 cent tax in the courts. Sponsors of the original 6 cent tax fear that a court test might result in throwing out the 6 cent tax as well as the higher duty. Last year, with a 6 cent tax, only 29,601 pounds of "oleo" were sold in Wisconsin through legal channels, although it is estimated that many thousands of pounds have been bootlegged into the state for consumption by persons not able to afford butter.

The sales tax was first levied in 1932 following a constant clamoring by the dairy interests, who sought to protect their butter market. The law placed a $1,000 license on the manufacturer of "oleo", one of $500 on the wholesaler, and one of $25 on the retailer. Hotels, restaurants, boarding houses, bakeries and other smaller users were required to pay a smaller license.

As a result of the 6 cent tax the number of retailers in Wisconsin dropped from 5,000 to three last year, although early in 1935 the number of retailers jumped to 30, because a high butter price had created a demand for the cheaper substitute. Cashman, in pushing his 15 cent tax through the legislature, was frank in stating that he wanted to bar the substitute from the state entirely. Persons who feel the new tax is too drastic point out that the loss of several millions of dollars a year in business is too high a price to pay to keep 29,601 pounds of "oleo" out of the state each year."

The Milwaukee Journal
July 7, 1935

Need to Increase Domestic Consumption by Educational Program. "The consumption of milk and its products at the present time is far below what it should be. In order to supply the amount of milk necessary for adequate consumption it would require the production of at least 50 per cent more milk than is now being produced. The amount necessary for this adequate consumption is based upon very careful research work and conclusions of the leading food authorities of this country. The increase in number of cows has not much more than kept pace with increasing population, while the per capita consumption of milk and its products at the present time, as stated above, is 50 per cent below what it should be. Even with this large increase in number of cows there would be a shortage of milk today if we had not improved the efficiency of our cows during the past fifteen years.

Let us consider for a moment the possibility, in fact the certainty, of materially increasing the consumption of butter through a nation-wide promotive campaign. Food authorities state that the yearly consumption of butter should be at least 28 pounds by each person. The consumption in this country would then be equal to or slightly below that of several other countries such as Canada and Australia. This increase would require the production of 1,250,000,000 pounds more butter than was made last year. While it may take several years to reach the desired or maximum consumption of butter, actual experience in two comparatively inexpensive and short educational campaigns indicate it will be an easy matter to secure an increased consumption of four ounces a month or three pounds per year by each person. This small increase would mean 375,000,000 pounds more butter yearly than is now being produced or nearly four times the total amount of surplus which accumulated during the last half of 1933.

About 44 per cent of all the milk we now produce is used in the making of butter. Approximately 43 per cent is used as fluid milk and table cream. Outstanding food authorities of the world say everyone should use one quart of milk daily. Present consumption is about 60 per cent below this amount. If we increased the use of milk only one-fifth as much as scientists recommend, it would dispose of more than twice the amount of last year's surplus. Cheese consumption in this country is less than one-third of what it should be, while the ice cream we use can be more than doubled to the advantage of our health and pleasure.

If all branches of this great dairy industry could get together and raise an adequate sum for educational and advertising work for all dairy products and start toward the goal which science tells us is in front of this industry, namely, a fifty per cent increase in consumption of all dairy products, the difficulties of agriculture would soon become only a memory and cease to be a nightmare. Will we spend one dollar to get two hundred dollars?"

"Dairy Industry's Obligation", by M. D. Munn, Hoard's Dairyman, Vol. 79, No. 13, July 10, 1934. p. 307.

Consumption of Dairy Products in United States and Foreign Countries. We are a long way from the saturation point when it comes to use of dairy products by the average person in this country. According to federal statistics the average yearly consumption of butter per person is only 18 pounds or 1/21 of a pound a day in the United States, In contrast to this the average of Australia is 29 pounds a year, of Canada, 30 pounds, and of New Zealand, 36 pounds.

When it comes to cheese our showing is even worse for we each annually use on the average a paltry four to five pounds. At the same time the British consume 9 pounds, the Germans 9.5 pounds, the Danes 13.2 pounds, the French and Dutch 13.5 pounds each, and the Swiss 23 pounds.

TABLE XXII. Per Capita Consumption of Cheese, Butter, and Whole Milk in Various Countries.

Country	Per Capita Consumption						Milk Equivalent[1]			
	Cheese		Butter		Whole Milk		Cheese	Butter	Whole Milk	Total[2]
	Year	Lbs.	Year	Lbs.	Yr.	Lbs	Lbs.	Lbs.	Lbs.	Lbs.
Switzerland	1930	16.1	1930	13.4	1927	70.4	161	282	605	1048
Netherlands	1930	14.3	1930	19.6	1929	42.7	143	412	367	922
Denmark	1931	13.1	1931	14.6	1927	22.0	131	307	189	627
Italy	1928	12.1	1928	2.8	1913	4.2	121	59	(3)	(3)
Norway	1929	10.8	1927	9.6	1927	56.0	108	201	482	791
Germany	1928	10.6	1928	16.5	1930	24.0	106	347	206	659
France	1931	10.5	1931	8.5	1931	29.5	105	178	254	537
Sweden	1929	10.2	1928	16.5	1914	69.7	102	346	(3)	(3)
Great Britain	1930	8.5	1933	23.5	1932	25.0	85	494	215	794
New Zealand	1930	4.8	1930	36.2	1927	37.4	48	760	322	1130
United States	1932	4.4	1932	18.1	1932	40.0	44	380	344	768
Australia	1930	4.3	1930	29.8	1926	37.1	43	626	319	988
Canada	1930	3.7	1930	30.3	1929	54.7	37	636	470	1143

1. The following conversion factors were used: 1 lb of cheese = 10 lbs. milk
   1 lb of butter = 21 lbs. milk
   1 gallon milk = 8.6 pounds
2. This total includes only cheese, butter, and whole milk, it does not include other dairy products.
3. Data not available.

Bureau of Agricultural Economics
United States Dept. of Agriculture

Need Educational Program for the Dairy Industry. "A survey by the U. S. Department of Agriculture points out that a proper diet and food supply for all Americans would require the use of 335 million acres of land. Today, only 270 million acres are in use.

Remembering that our population is stabilizing and that many hold grave doubts as to the possibilities of rebuilding our export trade back to a point where it was several years ago, it would seem only common sense that we must gradually come to some equalization in agriculture for the good of all concerned. In this balanced economy--an economy of plenty--milk should be an outstanding factor.

We changed our own diet habits, perhaps without knowing it. We changed because someone told us to. We were told, over and over again, through advertising, quantities of advertising--millions of dollars worth. We gave the ice cream people, the orange people, the tomato people, to name only a few, the opportunity to found great businesses on our changes in appetite.

Is there any reason why these impelling forces, that we know can and do change people's habits, cannot be brought to bear upon milk and butter and cheese? Is there any valid reason why we cannot get the average American to eat just a little bit more than one-fifth of an ounce of cheese a day, or six-tenths of a pint of milk or two ounces of butter? A fractional rise even in these low figures would get a great national dairy industry upon its feet. No one state could begin to supply the demand. No fighting for markets would be necessary. National health would be greatly improved. And agriculture as a whole would be vastly better off.

A nation wide educational program for dairy foods will bring about these improved conditions. It is time that every state in the Union set about following the example now set by Wisconsin and New York."

"Milk, and a New Rural Economy for America", by Chester P. Holway. Wisconsin Agriculturist and Farmer June 22, 1935. pp. 6-7.

5. SUBSIDIZE ESTABLISHED DAIRY PRODUCERS.

Present Consumption of Dairy Products in Wisconsin Cities. "While I do not have available at this time a cooperative record of milk drinking, I do know that our consumption of milk falls far short of the standards recommended by the nation's greatest nutrition authorities. Such scientists invariably urge at least a quart a day for every child and suggest a pint a day for adults.

It will be of interest to you to know that the Board of Health for the City of Milwaukee reported a per capita consumption of milk in that city in 1932 of less than a half quart (.377 of a quart) per day and in 1933 of but .345 of a quart or a drop of 9% from 1932. And the record for Janesville was even lower, being but .242 quart daily percapita or less than a fourth of a quart a day." (For consumption in United States and Foreign Countries see page 20)

"Over-Production or Under-Consumption-Which is It?" by Dean Chris L. Christensen, Wis. College of Agriculture

Consumption by School Children. "To secure some figures on the consumption of milk among rural school children a survey was carried on in 12 widely distributed counties. Some 378 schools with an enrollment of 12,057 children were included in the survey. The results as given to me by Miss Gladys Stillman of our Home Economics staff show:

44% were drinking 3 cups of milk or more daily;
17% were drinking 3 cups of milk daily;
22% were drinking 1 cup of milk daily;
16% were drinking no milk daily
20% of the children were bringing milk to school daily with their lunches;
20% brought milk for their lunch occasionally;
86% of the children were having butter daily;
31% of the children were drinking coffee daily;
10% of the children were drinking tea daily.

These figures would show that there is still great need for further educational work in spreading the value of milk and dairy products to encourage greater consumption. It is quite apparent that the dairy industry has a tremendous opportunity for increasingly improving the consumption of dairy products among the million people in the United States. Research in the field of nutrition has very definitely proven the dietary and food value of milk and its products."

"Over-Production or Under Consumption-Which Is It?" by Dean Chris L. Christensen, Wis. College of Agriculture Extension Service Stencil Circular 149 June, 1934, pp. 4-5.

Need Greater Consumption of Dairy Products. It is frequently argued that a greater consumption of milk and dairy products would be in the interest of the National Welfare. This argument is in some respects similar to the arguments for public support of education, namely that the whole country benefits if all children are given a certain amount of education. Moreover because a greater consumption of milk is considered necessary to the National Welfare, a production control program for dairying is considered undesirable even by some who favor such a program for cotton or for pork.

"The consumption of milk and its products at the present time is far below what it should be. In order to supply the amount of milk necessary for adequate consumption it would require the production of at least 50% more milk than is now being produced. The amount necessary for this adequate consumption is based upon very careful research work and conclusions of the leading food authorities of this country."

"Dairy Industry's Obligation", by M. D. Munn, Hoard's Dairyman, Vol. 79, No. 13, July 10, 1934 p. 307.

Question of Responsibility for National Welfare. But some dairymen are asking, why are we responsible for the National Welfare, why must we keep on producing when prices are low, simply because our product is considered more necessary to the National health than certain other farm products? In other words do dairymen have a responsibility for producing more dairy products than consumers are able to pay for at reasonable prices?

If dairymen do not have a responsibility of producing when dairy prices are very low and when consumers do not have sufficient income to pay reasonable prices, what, if any, is the government's responsibility?

Problem one of Increased Consumption and Controlled Production. "In spite of more cows and greater milk production power, it would be a grave mistake to regard the dairy industry's problem solely as one of over-production. There is a great potential consuming power among the American people for dairy products. There are large sections of the country not now receiving enough dairy products to constitute a reasonably balanced diet.

When we speak of over production in the dairy industry we mean production of quantities of dairy products beyond the ability of consumer purchasing power to absorb at anything above distress prices to farmers. Therefore, we do not think of curtailment of milk production in any absolute or permanent sense as we do in the case of wheat.

There exists in the dairy industry a temporary emergency overproduction. This storage excess is a contributing factor in holding down the prices of the products of milk. Experience with stabilization operations indicates that attempts to raise prices in advance of improvement in consumer purchasing power and without any check-rein on production are followed by such quick upturns in production as to cause a fresh and disastrous collapse in prices. Therefore, we believe it essential that the dairy program should contain as one of its basic features such a method of production control that will restrain production to keep it in step with increases in consumer purchasing power and prevent supply from outrunning demand to the degree that causes disaster.

It is necessary to have a dairy program which offers help to the entire industry. We must recogniz e the interrelation of various dairy commodities to each other, and continually keep the principle in mind that reasonable restraint of production should govern the industry during yhr prtiof og trvobrty in vondumrt purchasing power."

"The Dairy Dilemma", address by
Henry A. Wallace, Sec'y of Agr'l.
January 31, 1934. U.S.D.A.
Pamphlet G-7, P. 10

What the A.A.A. has Done in the Past. "Action under the Agricultural Adjustment Act to improve dairy conditions now includes simply: (1) The issuance of licenses setting minimum prices to producers and carrying market stabilization features; (2) the development or administration of marketing agreements for the butter, evaporated milk, and dry skim milk industries; (3) purchases of butter and cheese for distribution through relief channels; and (4) the removal of cattle afflicted with Bang's disease and bovine tuberculosis. Cattle buying in the drought relief program of 1934 included, of course, the purchase of many dairy cattle but mainly this took the place of nirmal calling."

Report of the Secretary of Agr'l. 1934, p. 52, Issued by U.S.D.A.

Elimination of Diseased Cattle. "The La Follette amendment to the Jones-Connally Act appropriated $50,000,000 to be used (1) in the elimination of cattle affected with Bang's disease and bovine tuberculosis, and (2) in the removal of surplus dairy and beef products. Of $30,000,000 tentatively allotted to disease projects, $17,000,000 has been set aside for the elimination of cattle affected with Bang's disease, and $12,000,000 for the elimination of those affected with bovine tuberculosis, $1,000,000 remaining unallotted. Farmers signing contracts are to receive indemnity payments ranging up to $20 per head for grade animals and $50 per head for purebred animals. It is contemplated that about 1,300,000 disease-infected animals will be eliminated over a period of 18 months. This program has already been put into operation, and will be stressed when the current glut of cattle markets engendered by the movement of cattle from drought areas has subsided."

Report of the Sec'y of Agriculture 1934, p. 52, Issued by U.S.D.A.

Extent of Bang's Disease Control to February, 1935. Several months' work on tuberculosis control and Bang's disease have been carried on by the Bureau of Animal Industry with funds provided through the Jones-Connally amendment to the Agricultural Adjustment Act. These funds have been allocated after conferences with breeders, cooperative organizations, and farm leaders. Indemnities paid for cattle slaughtered as reactors of bovine tuberculosis in cooperation with State sanitary officials amounted to $3,900,000 up to February 15, 1935. To February 15, indemnities amounting to $4,200,000 had been paid to owners of cattle infected with Bang's disease.

Regulations are being drawn up for the experimental work with mastitis which is especially harmful in some fluid milk areas, and for this work a maximum allocation of $1,000,000 has been tentatively set aside.

From July 1 to February 15, the herds tested for tuberculosis contained 11,000,000 cattle, of which 2 percent reacted positively. The Bang's disease program has not been in effect ver long because of the need to concentrate effort on the drought cattle problem. Now that that problem

is less pressing, the Bang's Disease program will be emphasized. From August 1 to February 15, Bang's disease tests were made on 1,000,000 cattle in 38 states. Of those tested 14 per cent showed positive reaction. There are 1,500,000 cattle now on the waiting list for testing under the Bang's Disease program."

"Working Toward Stability for the Dairy Industry", by A. H. Lauterbach, Chief, Dairy Section, A.A.A. U.S.D.A. Extension Service Review, January and February, 1935, p. 3.

Advises Extension of Bang's Disease Control Program in Wisconsin. "Wisconsin dairy farmers will profit by taking advantage of the federal Bang's Disease control program at once", says Dr. Wisnicky, basing his statement on the fact that a herd which is infected with Bang's Disease is estimated to have its production of milk reduced approximately 20%. Dr. Wisnicky stressed giving early attention to the control in order that dairy farmers might relieve themselves of paying the large economic toll which the disease takes annually.

The federal government has furnished funds sufficient to test 20 to 25 thousand additional herds, the message advised, but as these funds were made available under the La Follette amendment to the Jones-Connally bill, they will expire on December 31, 1935, and while efforts are being made for extending the time limit, there is no assurance of the extension being made. (Note: An extension was granted after the writing of this article, ending the program on July 31, 1936.)

Dr. Wisnicky pointed out that the campaign so far has been very satisfactory and that the records on retests of herds that have been tested during the year were showing a marked reduction in herd and animal infection. Over 29,000 herds have been tested in the first 12 months of the program, and these herds have a cattle population of 519,000 the doctor said, and Bang's disease was found to be infecting approximately 15 per cent of the cattle tested. In further explaining the details it was announced that the maximum amount of indemnity obtainable for grade animals reacting to the Bang's test had recently been raised to $25 and that $50 was still the maximum allowed on pure bred animals. In addition to the indemnity the owner receives the meat salvage."

Wisconsin Agriculturist and Farmer July 20, 1935, p. 18.

Amount of Dairy Relief Purchases by the Government. Another method of direct governmental aid to dairymen that does not reduce consumption of dairy products is the purchase of dairy products for relief distribution.

TABLE XXIII. Governmental Purchases of Dairy Products for Relief Purposes, from 1933 to September 12, 1935

Kind of Purchase	No. Lbs.	Value
Butter	63,163,429	$14,837,624.45
Cheese	17,970,382	3,041,820.33
Dry skim milk	8,324,280	496,012.28
Evaporated milk	37,595,984	1,974,674.54
Total	127,054,076	$20,350,131.60

Wisconsin State Journal, Sept. 26, 1935.

Amount of All Relief Purchases by the Government. Since the tabulation of relief purchases as given in Table XXIII, there has been some additional governmental purchases of butter and dry skim milk. The most recent figures available, together with the purchases of sugar and meat products are given in Table XXIV.

TABLE XXIV. Record of Relief Purchases by the Federal Government.

	Dairy Products
67,973,000	pounds of butter
37,596,000	pounds of evaporated milk
17,970,000	pounds of cheese
13,482,000	pounds of dry skim milk
	Sugar
9,000,000	pounds of domestic beet sugar
	Meat Products
766,591,000	pounds of beef and other meats
130,581,000	pounds of pork products
20,742,000	pounds of canned mutton
195,000	pounds of canned goat meat

Consumers' Guide, issued by the Consumers' Counsel of the A.A.A. Vol. 3, No. 1, Dec. 2, 1935. p. 17

Benefits of Present Aids and A.A.A. Adjustments Compared. It should be recognized that the benefits of governmental aid for the eradication of dairy cattle diseases and the purchase of dairy products for relief distribution go to all dairymen. For example a southern cotton farmer and a corn belt farmer who goes into dairying secures benefits from these governmental aids as well as the established dairy farmer in the dairy regions. In this way these programs are different from the A.A.A. adjustment programs in which claim to benefits rests upon a historical base. However, there are probably ways in which direct payments could be made on a historical base. For example, the corn and cotton loan programs suggest such a possibility. One source of revenue for such payments might be the 30 per cent of the gross receipts from duties collected under the customs laws, as provided by section of the amended Agricultural Adjustment Act. If it is thought that a greater production of dairy products is desirable, the proper adjustment of dairy production is an upward adjustment since all dairy products now produced are consumed.

6. PRODUCTION ADJUSTMENT PROGRAM FOR DAIRYING

Various Methods of Adjustment. "Adjustment of farm production to obtain fair prices might be obtained in a number of ways:

1. Voluntary adjustment, with benefit payments to protect cooperators against noncooperators. This is the general plan now being followed.
2. Voluntary adjustment, with penalties against those who refuse to cooperate. This method was followed in the 1934 rice program, and in the 1934 tobacco program. The Kerr-Smith Act taxed noncooperating tobacco farmers to take from them the increase in tobacco price caused by the program. The Kerr-Smith tax supplements and supports tobacco adjustment programs providing rental or benefit payments to cooperators.

3. Compulsory control of production.
4. Buying up of submarginal land by the Government. It would take a long time to bring about much adjustment in commercial farm production thru this means, because production from submarginal lands is only a minor factor in total supply."

"The Processing Tax"
U.S.D.A. Bulletin G-41, issued September, 1935, pp. 2-3

Essentials of a Control Program. If a production program is undertaken for dairying that will meet the present situation, it should, in addition to being voluntary, have the effect of;

1. Making dairying relatively more profitable to established dairymen who cooperate in the program.
2. Bringing about a positive check if not an actual decrease in production.
3. Discouraging farmers engaged in other types of agriculture from becoming dairymen.

Ordinarily, high prices in an industry tend to increase production and encourage other farmers to shift to the more profitable types of production. Low prices, on the other hand, tend to discourage production. In devising a plan to raise dairy prices, full consideration should be given to this basic economic principle.

A.A.A. Adjustment Program for the Dairy Industry. "The production control program submitted to dairy farmers by the Agricultural Adjustment Administration was summarized today by Chester C. Davis, administrator, as follows:

1. AMOUNT INVOLVED--165 million dollars, with possible extension to 300 million dollars, contingent upon Congressional approval of pending amendments.
2. DURATION OF PLAN--One year, with continuance for an additional year, at discretion of Secretary of Agriculture.
3. AVERAGE REDUCTION--None from low winter months' levels, as plan involves checking sales at or near that volume; 10 per cent reduction below the high average volume of the 1932-33 base period.
4. COMPENSATION TO FARMERS--Benefit payments to co-operating farmers who sign contracts to reduce sales between 10 and 20 per cent below their 1932-33 average.
5. PAYMENTS--In addition to higher prices caused by balanced production and besides savings on feeding costs, co-operating farmers would be paid benefit payments. These payments would be at a rate of about 40 cents for each pound of butterfat which they reduce below their 1932-33 sales quota, or they would be about $1.50 on each 100 pounds of surplus fluid milk which they reduce below their 1932-33 milk sales quota, within the prescribed percentage limits.
6. TIME OF PAYMENTS--First payment on acceptance of contract, second after six months.

7. ELIGIBILITY OF PRODUCERS--Plan open to all dairymen. Eligibility to be established by base period delivery or other adequate sales records.

8. METHOD OF PRODUCTION ADJUSTMENT--Left to choice of individual farmers. Fund of $225,000 to advise producers on best-paying methods.

9. LOCAL SUPERVISION--County production control associations and local committees.

10. PROCESSING TAX--To start when program goes into effect, at 1 per cent per pound on butterfat content, and to be gradually advanced to 5 cents per pound as supply comes under control; compensatory tax on oleomargarine.

11. ADDITIONAL FEATURES: (Relief and disease funds subject to increase contingent on Congressional mandate.)

12. RELIEF MILK--At least 5 million dollars to aid in financing distribution of surplus milk to underfed children in cities.

13. FARM FAMILY SUSTENANCE--Allocation of 5 million dollars for purchase and distribution of healthy cows to needy farmers lacking milk cows.

14. TUBERCULOSIS ERADICATION--A fund of at least r million dollars to speed up conquest of bovine tuberculosis.

15. BANG'S DISEASE CONTROL--Possible inclusion of provision for federal participation in testing and sanitary control.

THE DAIRYMEN'S PROBLEM

PRICES--Index for dairy farmers' prices for 1933 was 69, compared to 140 in 1928.

TOTAL CASH INCOME--Declined from $1,847,000,000 in 1929 to $985,000,000 in 1932.

MILK COW POPULATION--Now exceeds 26 million, largest on record.

TREND IN COW NUMBERS--Three per cent higher than in January, 1933; 18 per cent higher than in 1928.

MILK PRODUCTION--Increased from 87 billion pounds in 1924, to nearly 102 billion pounds in 1932--2 billion pounds increase from 1930-1932. Production per capita increased from 768 pounds in 1924 to 812 pounds in 1932.

CONSUMER EXPENDITURES--Declined nearly 5 per cent from 1932 to 1933.

SITUATION IN RECENT MONTHS--Production down, prices up.

OBJECTIVE OF PROGRAM--To avert a reverse back to lower prices, to improve the buying power of dairy farmers, eliminate extreme fluctuations in production and prices, and to establish a sound basis for recovery of the dairy industry."

"Dairy Products Under the A.A.A."
by F. F. Lininger. The Brookings
Institution, Pamphlet Series No. 13
pp. 93-94.

Wisconsin Chamber of Commerce Dairy Relief Program. The Wisconsin Chamber of Commerce has submitted a plan for emergency dairy relief. It's essential features are:

A. "A voluntary Control Plan for Dairy products on a butterfat basis:
   1. Features of a control plan that are essential to meet present situation.
      a. Program must make dairying relatively more profitable to established dairymen who co-operate in the program.
      b. Must bring about a positive check if not an actual decrease in the sales from farms.
      c. Must discourage, rather than encourage, farmers engaged in other types of farming from becoming dairymen.
      d. Must be voluntary on the part of participating farmers, and if possible, permit farmer to use his discretion as to methods of accomplishing the required reduction.
   2. Taxes to provide money for benefit payments.
   3. Benefit payments to be made to cooperating farmers.
   4. Allocation and control of sales.

B. Supplementary Measures for benefit of the Dairy Industry.
   1. American farmers must be given preference in the domestic markets if they are to reduce sales.
   2. Emphasize bovine eradication.
   3. Special emergency relief.
   4. Purchase and distribution of dairy products for relief.
   5. Develop a merchandising plan for dairy products."

Pamphlet by John L. Borchard, President, Wisconsin State Chamber of Commerce, 1933, pp. 7-9.

Volume and Price Important in Production Adjustment. Production adjustment is based upon the relation of production to prices. If it is true that small crops bring larger returns than large crops, and if this applies to livestock and livestock products as well as to crops, then production adjustment would increase returns to farmers as a group. Under given conditions of consumer income a small crop will bring higher prices than a large crop. However, since total income depends upon both prices and amount sold, higher prices do not necessarily mean higher income. The prices must be increased sufficiently to offset the effect of smaller volume if total income is to be increased. Of course, there may be some savings in cost of producing a smaller volume, and if this saving is large enough, net income may be increased even if total value of product sold is not increased.

Production Adjustment as Protection for Established Dairy Producers. Another possible reason for favoring a production adjustment program is to protect established dairy producers from the effect of increased production in other regions. Low prices of cotton, beef, and pork relative to prices of dairy products undoubtedly cause many producers of these farm products to increase their production of milk. If it is believed that the cotton and corn-hog programs will tend to accelerate the shift to milk production, then established dairymen might favor an adjustment program with relatively high processing taxes to discourage increased dairy production.

Production Control by Adjustment of Volume of Sales or Prices. An adjustment program might start with fixed prices and not permit sales at less than those prices. However, this does not avoid the problem of establishing the amounts that each dairyman who is permitted to join the program can sell. If prices are to be increased consumers will buy less, and some way must be found of dividing the amount that can be sold at the fixed prices to the various producers who are willing to produce at these prices. This problem is similar to that in a fluid milk market where more milk is produced than can be sold at the fixed price of fluid milk.

Another method of adjustment is that used by the A.A.A. programs. With these programs price is not fixed but the supply is adjusted first and this adjusted supply is sold for whatever price it will bring.

Farmers Must Cooperate. "Somehow and some way the dairy industry will have to reach some kind of a decision on milk. The present condition of internal quarrels, plus special disputes on hand with distributors, are doing great damage, and preventing stabilization of the business on a profitable basis.

Is there or is there not a surplus of milk? Is it excessive distributing costs and profits that keep down consumption, thereby creating a surplus? Is there or is there not consuming power for all the milk farmers can produce? Or must farmers exercise some control of production through the basic surplus plan or otherwise?

Most important of all, are rival dairy groups and rival milk-sheds so hopelessly at odds that the government will have to step in to bring order out of chaos?

These are grave questions, familiar to every dairyman, and the answers must be found. The present conditions certainly cannot be tolerated very long. It would be irksome to many farmers to have to work under a strict production allotment, but that is what it may come to."

Editorial by Arthur H. Jenkins,
Editor, The Farm Journal, Phila, Pa.
November, 1933, p. 4.

Many of the questions to which Mr. Jenkins refers in the above article have not been answered. They are questions which must be faced by dairymen throughout this country, and to which Wisconsin dairymen in particular must give intelligent consideration if they are to answer the problem, "Is Dairying Doomed in Wisconsin?"

Suggested Source Material on
IS DAIRYING DOOMED IN WISCONSIN

The materials included in the following list are available at present, and can be secured for loan purposes from the Department of Debating and Public Discussion, University Extension Division, Madison, Wisconsin. In requesting loan package materials from the Department of Debating and Public Discussion it is desirable to give the date upon which the information can be used to advantage, in order that the latest material may be at your disposal. Also, the particular topic on which material is desired should be specified; otherwise a more general package of material will be sent.

GENERAL

1. "America Must Choose", Henry A. Wallace, Secretary of Agriculture, World Affairs Pamphlet No. 3, February, 1934. Published jointly by Foreign Policy Association, New York, and World Peace Foundation, Boston.
2. "Fundamental Facts Now Confronting the Dairy Industry", address by M. D. Munn, President National Dairy Council, December 5, 1934, Chicago, Illinois.
3. "Economic Bases for the Agricultural Adjustment Act" by Mordecai Ezekiel, Economic Advisor to the Secretary of Agriculture, and Louis H. Bean, Economic Advisor, A.A.A., United States Department of Agriculture, 1933.
4. "Adjustments in Wisconsin Dairying", by Dean C. L. Christensen, February 1, 1934.
5. "A Handbook of Dairy Statistics", by T. R. Pirtle, Assistant Marketing Specialist, Bureau of Agricultural Economics, U.S.D.A., November 1933.
6. "Agricultural Planning and Farm Management in the Dairy Regions of the Middle Western States", by George A. Pond, University of Minnesota, December 29, 1934.
7. Yearbook of Agriculture, 1935, U. S. D. A. (Secure this from your local library or write to your national Congress man for a free copy.)
8. Agricultural Adjustment in 1934; U.S.D.A., A.A.A. Bulletin No. G-32, issued 1935. (Secure this from your local library or write to your national Congressman.)

TOPIC 1. Increased Production of Dairy Products in Other States.

9. Agricultural Adjustment in 1934, U. S. D. A., A. A. A. Bulletin, No. G-32 issued 1935.
10. Yearbook of Agriculture, 1935, U.S.D.A.
11. "Facing the Facts in the Agricultural Situation," U.S.D.A. Bulletin No. G-42, September, 1935.
12. "Vanishing Farm Markets and Our World Trade", by Theodore W. Schultz, State College of Agricultural and Mechanical Arts, Ames, Iowa. World Affairs Pamphlet No. 11, 1935

13. "The United States Export and Import Trade in Dairy Products," by Karl H. McDonel, Michigan State College, East Lansing, Michigan. Technical Bulletin, No. 131, January, 1933.
14. "Exports of Wisconsin Dairy Cattle" Bulletin No. 120, Wisconsin1933. Dairy Statistics, Wisconsin Cropland Livestock Reporting Service.
15. "Twenty Years of Grace" by Morris L. Cooke, Chairman, Water Planning Committee of the National Resources Board, Survey Graphic, June, 1935. Survey Graphic, June, 1935.

TOPIC 2. Reduced "paying power" of Consumers of Dairy Products.

16. Agricultural Adjustment in 1934, U.S.D.A., A.A.A. Bulletin No. G-32 issued 1935.
17. Yearbook of Agriculture, 1935, U.S.D.A.
18. "Economic Information for Wisconsin Farmers", Special Circulars, Vol. 6, Nos. 1,4,5, and 6, January, April, May and June, 1935. College of Agriculture, University of Wisconsin, Madison.
19. "Over-Production or Under-Consumption--Which is it?" by Dean C. L. Christensen. Stencil Circular 149, June, 1934, College of Agriculture, The University of Wisconsin, Madison.
20. News Digest, A.A.A. Vol. 2, No. 2, October 13, 1934, p. 4.
21. "The Outlook for the Dairy Industry," by Nils A. Olsen, Chief, Bureau of Agricultural Economics, U.S.D.A., Miscellaneous Publication, No. 124, August, 1931.

TOPIC 3. Changing Markets for Wisconsin Dairy Products.

22. Yearbook of Agriculture, 1935, U.S.D.A.
23. "Economic Information for Wisconsin Farmers" Special Circular, Vol. 6 No. 2, February, 1935. College of Agriculture, the University of Wisconsin, Madison.
24. "Wisconsin as a Dairy State", by Dean C. L. Christensen, Mimeographed article, University of Wisconsin, Madison.
25. "The Outlook for the Dairy Industry" by Nils A. Olsen, Chief, Bureau of Agricultural Economics, U. S. D. A., Miscellaneous Publication, No. 124, August, 1931.
26. "The Dairy Situation", by A. W. Jacob, Extension Economist, Marketing Department, Oklahoma Agricultural and Mechanical College. The Oklahoma Extension News, August, 1935.
27. "The Dairy Situation", Bureau of Agricultural Economics, U.S.D.A., (Office of Information) issues of February 20, 1934 and February 27, 1935.

TOPIC 4. Extension of Past Aids to the Dairy Industry.

28. "Dairy Industry's Obligation", by M. D. Munn, President, National Dairy Council. Hoard's Dairyman, July 10, 1934.
29. "Survey Shows What the Nation Thinks of the Expanding Horizon of the Dairy Industry," by Chester P. Holway, National Butter and Cheese Journal, July 10, 1935.

30. "Vanishing Farm Markets and Our World Trade," by Theodore W. Schultz, State College of Agricultural and Mechanical Arts, Ames, Iowa. In World Affairs Pamphlet, No. 11, 1935.
31. "Economic Information for Wisconsin Farmers", Special Circular, Nos. 4 and 5, April and May, 1935. The College of Agriculture, University of Wisconsin, Madison.
32. "The United States Export and Import Trade in Dairy Products" by Karl H. McDonel, Agricultural Experiment Station, Michigan State College, East Lansing, Michigan, Technical Bulletin, No. 131, January, 1933.
33. "Does Foreign Competition Hurt the American Farmer?", U. S. D. A., A.A.A., Bulletin, G-38, July, 1935.
34. "Digest of Oleomargarine Laws", Hoard's Dairyman, August 10, 1934, p.352
35. "The Question of Canadian Reciprocity", by Wm. C. Welden, Economist of National Cooperative Milk Producers Federation, American Creamery and Poultry Produce Review, April 3, 1935.
36. "The Tariff on Dairy Products", by Ronald R. Renne, Department of Agricultural Economics, Montana State College, Bozeman, Montana. Published by the Tariff Research Committee, Madison, Wisconsin, 1933.

TOPIC 5. Subsidize Established Dairy Producers.

37. Agricultural Adjustment in 1934, U.S.D.A., A.A.A. Bulletin No. G-32; issued 1935.
38. Yearbook of Agriculture, 1935, U.S.D.A.
39. Report of the Secretary of Agriculture, 1934.
40. News Digest, A.A.A., Vol. 2, No. 51, September 21, 1935.
41. "The Dairy Dilemma" address by Henry A. Wallace, Secretary of Agriculture given at Madison, Wisconsin, January 31, 1934. U.S.D.A., A.A.A. Bulletin G-7, February, 1934.
42. "Bang's Disease in Wisconsin", Hoard's Dairyman, August 10, 1935.

TOPIC 6. Production Adjustment Program for the Dairy Industry.

43. Agricultural Adjustment in 1934, U.S.D.A.,A.A.A. Bul. No. G-32;Issued 1935.
44. Yearbook of Agriculture, 1935, U.S.D.A.
45. "Dairy Products Under the Agricultural Adjustment Act", by F. F. Lininger, published by the Brookings Institution, Washington, D.C., 1934.
46. "Production Control of Dairy Products," Economic Information for Wisconsin Farmers, Special Circular, No. 11, Vol. 4, November, 1933.
47. "The Emergency Years, 1933-34," Discussion Statement No. 3, June 20, 1934, Prepared by the Division of Information, U.S.D.A., A.A.A.
48. "The Processing Tax," U.S.D.A., A.A.A., Division of Information, Bul. G-41, September, 1935.
49. "Compilation of Agricultural Adjustment Act as Amended and Acts Relating Thereto" as of August 27, 1935. U.S.D.A., A.A.A., 1935.

Do not limit your reading to the articles included in the above list. Your County Agent and Smith Hughes Agricultural teacher may have information which you can secure. The local papers and monthly magazines to which you subscribe should also be used freely. And lastly, do not hesitate to use whatever materials you may gather from your own experience.

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