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The Lard Market at Home and Abroad

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HIGHLIGHTS OF LARD ECONOMICS

The Lard Market at Home and Abroad[1]

By Rainer Schickele and Theodore W. Schultz[2]

The price of onions in Abyssinia may not mean a great deal to the Iowa farmer, but the price of lard in Germany does.

This is because about one-third of the American commercial lard produced is exported, and the Iowa farmer depends upon hogs for about two-fifths of his income, and lard represents about one-fifth of the value of the live hog. Naturally, he should be interested in every possible means to profitably dispose of lard. (See fig. 1.)

The two basic factors which influence the price of lard—indirectly influence the prices paid to the farmer for his hogs—are the domestic market and the foreign market for lard.

In Bulletin No. 319 the competitive position of lard in relation to lard substitutes was described in some detail. It is the purpose of this bulletin to discuss primarily the competition which lard is facing from vegetable oils, and the foreign trade and tariff situation affecting the lard market.

A brief review of the domestic situation with reference to lard and lard substitutes, however, will help to visualize the picture as a whole and furnish the background for the understanding of the lard export and oil tariff situation.

The following facts are important in any consideration of lard and its struggle against lard substitutes, commonly known as lard compounds and vegetable shortenings in the American market:

1. Lard as it is sold today—with the exception of a few brands or grades—is an unstandardized product.

Because of this lack of standardization, many consumers have come to regard lard with disfavor; and accordingly it sufers greatly from intense competition from lard substitutes. These substitutes, for the most part, are highly standardized.

Factors chiefly responsible for the lack of standardization

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[1] "Improving the Domestic Market for Lard." Bul. No. 319, Iowa Agr. Exp. Sta., and this study are both based upon the technical and economic analysis set forth in Research Bul. No. 171. "Competitive Position of Lard in the Market of Animal and Vegetable Fats and Oils." Iowa Agr. Exp. Sta. March, 1934.

[2] This abridgement of certain phases of Research Bulletin No. 171 was prepared by Joseph G. Duncan of the Bulletin Office Staff.

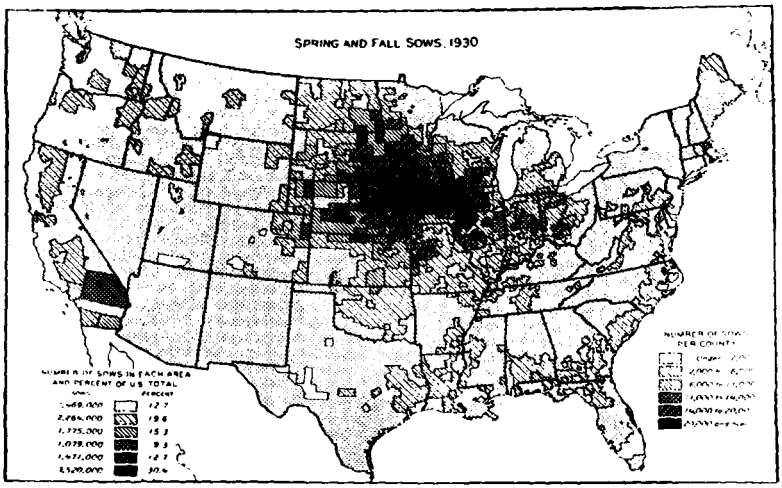

Fig. 1. Shows the location of the hog enterprise in the United States. Observe the striking concentration of hogs in Iowa. Practically all Iowa counties have more than 20,000 sows farrowing in spring and fall, and many of them greatly exceed this figure. Source: U. S. Dept. of Agr., Bur. of Agr. Ec.

of lard, in brief, are: (a) Production of lard is very scattered. In fact, it is correct to say that lard is produced wherever a hog is slaughtered, whether it be on a farm, in a small butcher shop, or in a large packing establishment; (b) difficulties that packers have to overcome before they can manufacture thoroughly standardized lard grades; and (c) many packers are involved both in the lard substitute and lard business. These packers through the manufacture and sale of lard substitutes are able to dispose profitably of certain packing house by-products and thus derive an important share of their income through the sale of lard substitutes.

2. To improve the domestic market position of lard and aid it in its competitive struggle against lard substitutes will necessitate the manufacture of a thoroughly standardized product superior to that commonly sold today.

In addition, educational and promotional campaigns could play a large part in aiding lard in its competitive position. The present advantageous position of lard substitutes has been helped materially by extensive advertising.

The sale of lard substitutes has increased in recent years until today about two-thirds of a pound of substitutes is consumed for each pound of lard.

3. **Replacement of one oil by another in the oil industries.**

In order to understand the effects of tariffs on the consumption of oils and fats and on the competitive position of lard in relation to the food and soap oils, it is essential to discuss briefly the factors which determine the uses of oils and fats in the various industries and the possibilities for diverting cottonseed oil away from lard substitute manufacture into other uses.

The extent of replacing one oil by another in the various oil-using industries is determined by two sets of factors: (1) The physical properties of the oils, and (2) their respective price relationships. The less suitable an oil is for a specific purpose, the cheaper it must be as compared with other more suitable oils if it is to replace them. This is in order to offset the higher processing cost, or loss in consumption when the quality of the finished product is altered.

COTTONSEED OIL SUPREME IN SUBSTITUTES MANUFACTURE

In the manufacture of lard substitutes cottonseed oil can replace readily all other fats and oils. Since cottonseed oil, however, already constitutes about 85 percent of all raw materials used in the manufacture of lard substitutes, only little can be gained by having cottonseed oil replace the small amounts of tallow, oleo stearin and palm oil which are employed (see fig. 2). Other ingredients, in addition to these, are negligible. Edible tallow and oleo stearin are by-products of packing houses, many of which make lard substitutes; this has provided the plants with a profitable outlet for their tallow and oleo stearin.

It is not probable that coconut oil will ever furnish strong competition to cottonseed oil in the manufacture of lard substitutes. The amount of coconut oil used in the manufacture of lard substitutes is limited because of its properties, namely, it causes smoking and strong foaming when mixed with other fats for frying. Then, too, the shortening power of a lard substitute made from coconut oil is not entirely satisfactory.

Sesame and palm oil were used in lard substitute manufacture to some extent in 1931 when they supplemented the small cottonseed oil supply of that year rather than replaced it (see

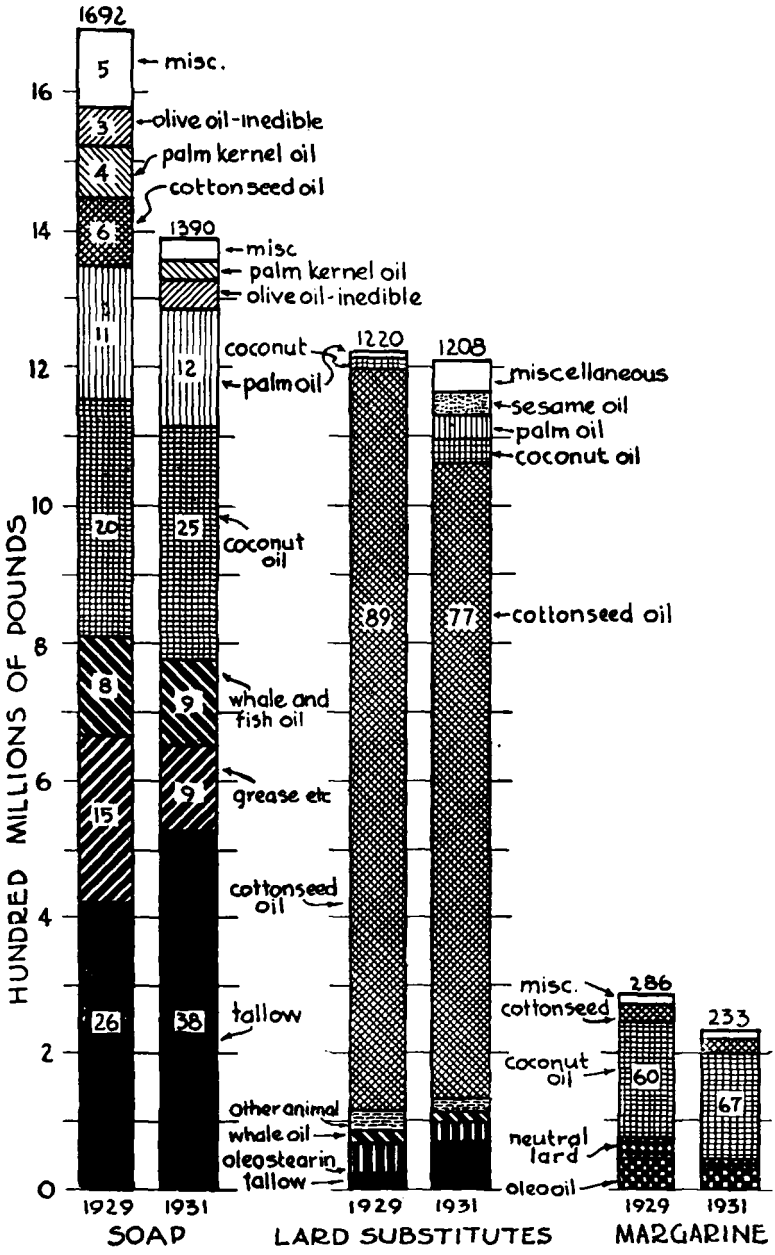

Fig. 2. Oils used in making soap, lard substitutes and margarine. Note the predominance of cottonseed oil as a raw material used in making lard substitutes. Cottonseed oil supplied, in 1929, 89 percent of the total oils used in lard substitutes.

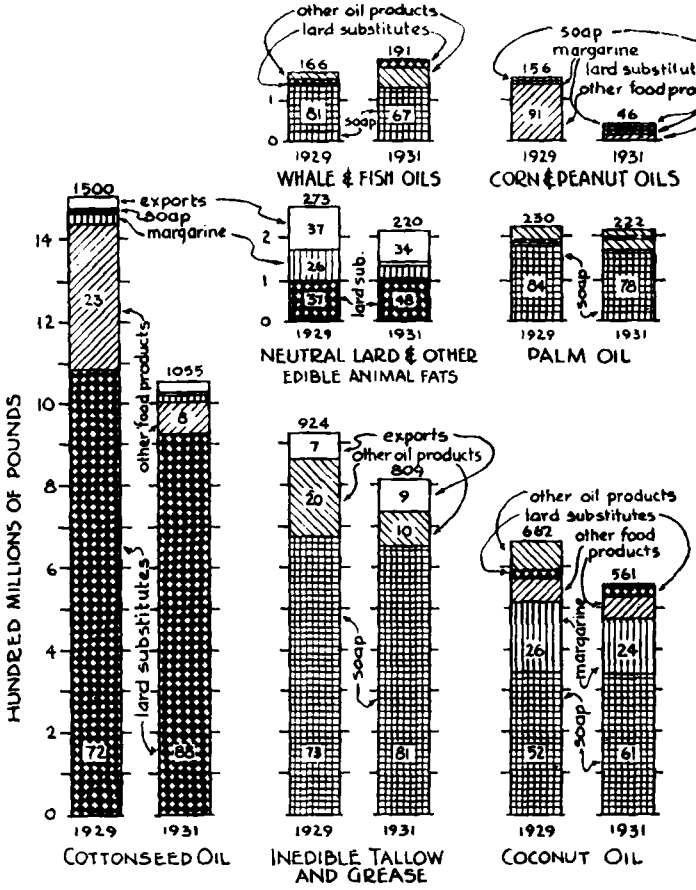

Fig. 3. Distribution of the major fats and oils consumption in various industries. The bulk of the cottonseed oil (88 percent in 1931) is used in making lard substitutes. Although the soap industry consumes upwards of 80 percent of the inedible tallow and grease and over one-half of the coconut oil, it absorbes only a negligible amount of cottonseed oil.

fig. 3). Technically, however, sesame and palm oil are in the same class as corn and peanut oil in that they can readily replace cottonseed oil, if and when prices favor their use.

From a technical viewpoint there is no reason why cottonseed oil cannot be substituted for corn, peanut and sesame oil in the vegetable cooking oils and salad dressings industry.

As to the manufacture of margarine, the use of cottonseed oil as a raw material is not likely to expand, since the production of purely vegetable oil margarine does not favor the use of cottonseed oil.

If the present trend towards vegetable oil margarine were changed and consumers would again want mixed animal and vegetable oil margarine, cottonseed oil could be more readily used in place of coconut oil as a major raw material.

As mentioned before, the price relationship between certain oils to a large extent determines the amount that is used by a particular industry. Changes in price relations between oils, however, must show some signs of permanency before they will induce manufacturers to change their production processes to take advantage of the price shift.

DIVERSION OF COTTONSEED OIL AWAY FROM LARD SUBSTITUTES

Cottonseed oil, lacking any physical properties that make it decidedly superior for any one use, can be substituted—within limits—for almost any other oil. It is the only domestically produced soft oil which is available in large and uniform quantities. Also, it may be processed easily. The use of cottonseed oil to supplant other oils in the soap industry, however, is not as practicable as to use it in the food industries. In the soap kettle, cottonseed oil competes with most all of the other fats and oils, inedible as well as edible, such as tallow and grease, whale and fish oils, palm oil and many other vegetable oils most of which are cheaper than cottonseed oil. (See fig.2.) Moreover, cottonseed oil does not offer any preferable physical properties when used in making soap. Rather to the contrary, it has several undesirable properties. Soap made of cottonseed oil has a tendency to become rancid; in addition, its color and softness make it unfit as a raw material for many soap grades.

EFFECT OF OIL TARIFFS ON DOMESTIC LARD MARKET

The chief raw material in the manufacture of lard substitutes is cottonseed oil. In fact, about four-fifths of the annual production of lard substitutes is made from cottonseed oil.

The important position of cottonseed oil in the manufacture of lard substitutes has considerable bearing upon the problem of tariffs on fats and oils.

Presumably, hog producers are but one of several agricultural groups interested in reducing oil imports by means of

high tariffs. Hog producers, who wish to better the price of lard—indirectly better hog prices—want to see the price of cottonseed oil increased and, as a result, the price of lard substitutes raised. Thus, by increasing the cost of manufacturing lard substitutes the competitive position of lard in relation to lard substitutes would be improved. To accomplish this they would like to see as much cottonseed oil as possible diverted away from the manufacture of substitutes and into other products, primarily into soap, without at the same time having other oils take the place of cottonseed oil in the lard substitutes manufacture. This means, that the prices of all other fats and oils competing with cottonseed oil would have to be higher relative to cottonseed oil prices than they are at present, in order to induce the shift of cottonseed oil away from lard substitutes into soaps and other products, and at the same time to prevent its replacement by other oils in lard substitute manufacture.

IMPOSSIBLE TO PROTECT LARD DIRECTLY BY TARIFFS

There is no direct way of protecting the domestic lard market by tariffs since neither lard nor cottonseed oil is imported. Both are definitely on an export basis.

But hog producers may contend that if the imports of foreign oils were curtailed, the price of vegetable oils would be increased. Consequently, with higher prices for vegetable oils, the cost of making lard substitutes would be raised. This, then, would aid lard in its struggle with lard substitutes. Furthermore, the curtailment of oil imports presumably would induce the wider use of cottonseed oil in the soap industry. These hopes, however, might not be realized if such a highly protective oil tariff policy were adopted. In the first place, indications are that lard substitutes are manufactured and marketed on a much wider profit margin than lard, so that a considerable increase in vegetable oil prices may be absorbed by the processors' margin without increasing the retail price of lard substitutes. In the second place, soap manufactures may prefer to continue the use of the foreign oils despite their higher prices and raise soap prices accordingly, instead of shifting over to cottonseed oil which would involve, in many cases, a deterioration of the soap quality.

In the past, the tariffs on foreign oils and fats have not prevented the foreign oils from gradually capturing the soap industry and crowding out cottonseed oil. To what extent higher tariffs on foreign oils, including a tariff on coconut oil from the Philippine Islands, would benefit lard prices and hog producers, is difficult to estimate. A reasonable interpretation of the technical and economic facts that are set forth in Research Bulletin No. 171 indicates that the benefit would be insignificantly small, at best, if not negative. One must also consider the widespread repercussions in America's foreign trade and retaliations of foreign countries against American trade that probably would result from such an oil tariff policy.

AMERICAN LARD EXPORTS ARE IMPORTANT

The lard export market is of major importance to the Corn Belt hog producer. Before the war, and particularly again in recent years, the export value of lard has exceeded that of wheat.

Foreign markets play a much more important part in determining the price of lard than they do in the case of pork. This is indicated by a study of the exports of the two commodities. The United States exports between one-fourth and one-third of its total lard production. Prior to 1929, about half of the lard produced under federal inspection entered export channels. Since then the proportion has fallen off. Yet, in 1932, about one-third of the federally inspected lard was exported. (See fig. 4 and table 1.)

Pork, in contrast, does not figure greatly in export trade. It has never accounted for more than 20 percent of the total federally inspected production; and, since 1924 it has declined,

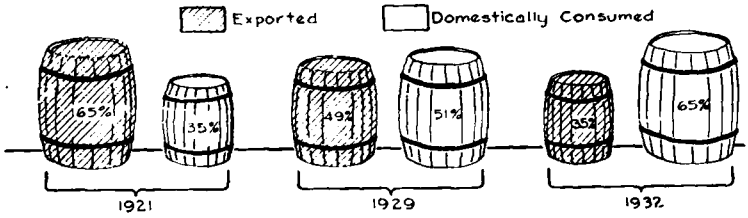

Fig. 4. Decrease in the proportion of federally inspected lard entering export trade. In 1921, nearly twice as much lard was exported as was used by American housewives, while by 1932, the proportion was reversed.

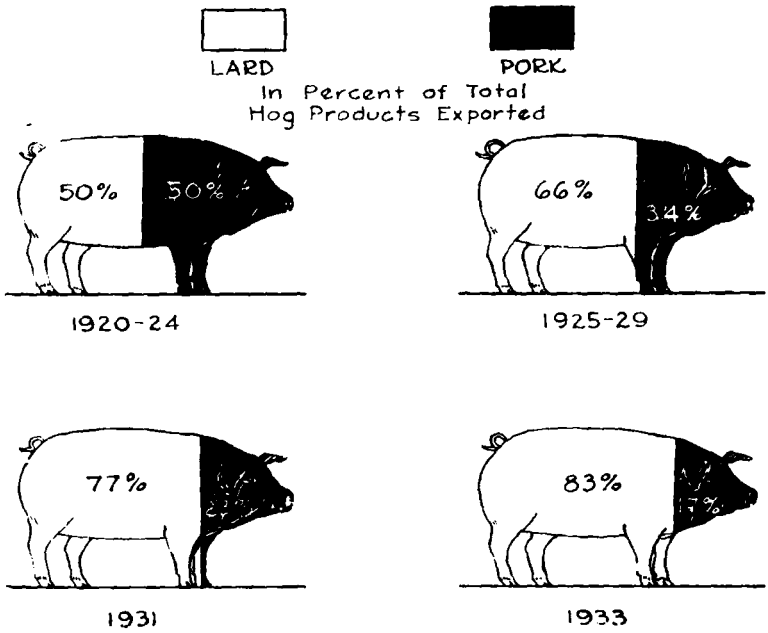

Fig. 5. Increase in the share lard has come to hold in our hog product exports. During 1920-24, lard represented 50 percent of the total hog products exported. By 1933, it constituted 83 percent of the total.

until in 1931, it represented only about 3 percent of the total production (see table 1). Accordingly the foreign market situation is decidedly more important in determining the price of lard than it is in the price of pork.

It is also noteworthy to observe the increasing proportion that lard has come to represent of our total hog products exports. (See fig. 5.) Prior to, and shortly after the World War pork exports were just as important as lard exports. During the war the extraordinary European demand for meat caused the proportion of lard exports to drop to less than one-third as to quantity and to nearly one-fourth as to value. Since then, however, the scene has changed rapidly. Lard has come to represent an ever-increasing share of the total hog products entering export trade; in 1932, it accounted for 83 percent, or more than four-fifths, in quantity, and 76 percent in value (see fig. 5 and table 2). Thus, lard gradually has become the only important, strongly predominating export product of the American hog industry. While it is true that lard exports are under considerable economic pressure abroad, pork exports have all but disappeared.

UNITED STATES IS LEADING LARD EXPORTER

The United States is by far the most important lard exporting country. Before the war, more than 97 percent of the total volume of world exports of lard came from the United States; the remaining 3 percent originated chiefly in Denmark and China. Since then the Netherlands have taken second place among the lard exporting countries with a net export of 5 to 8 percent of the total volume. Denmark has increased her share until in 1931 she accounted for nearly 8 percent. China and Hungary each have about 1 percent of the total exports. Yet, over 80 percent of the lard entering world commerce originated in the United States (see table 3).

The chief customers for American lard are Great Britain, Germany, Cuba, Mexico and the Netherlands. Before the war, Great Britain and Germany took more than 65 percent of the American lard exports; from 1920 to 1927, they took about 60 percent; and from 1928 to 1930, only 55 percent. During the world-wide depression of the last 3 years (1930-32), however, German and especially English purchases of American lard have not fallen off as those of other countries. In 1931 and 1932, these two countries took about 70 percent of the total American lard exports (see table 4). A year ago Germany placed severe tariff restrictions upon lard imports. More recently, in March, 1934, Germany has further greatly reduced lard imports by establishing quotas on future imports.

Cuba and Mexico, which before the war took 10 percent, increased their purchases of American lard in 1930 to nearly 22 percent of the American exports. These dropped to 11 percent in 1932.

There are possibilities of developing the Central and South American lard market in the event that the European market contracts. England, however, is by far the most stable and dependable market for American lard.

THE GERMAN LARD MARKET

Germany has been the second largest foreign consumer of American lard. At present the German oil and fat market is passing through a period of adjustment which is of particular importance to the American hog producer. Because the Ger-

man market for lard is fairly typical of other European countries and because it is so different from the market in the United States one should give some attention to the factors affecting production and consumption of lard in Germany.

Three important circumstances cause the German lard market to be different from the market in this country. These are:

(1) Probably more than one-third of the lard is consumed as bread spread. This causes lard to face the competition of butter and the higher margarine grades.

(2) Margarine is widely used as a cooking fat.

(3) Lard is strictly on an import basis; its price, as a result, is directly influenced by tariffs and other trade restrictions.

Because margarine is used so extensively as a cooking fat, lard faces a double front of competition. On one front, it must compete with bread spreads like butter and margarine; on the other, it must fight other cooking fats like margarine, lard substitutes and cooking oils.

Germany is unable to produce enough lard for her own use. The German hog industry produces chiefly the bacon type of hogs, with their live weights averaging considerably lighter than those in the United States. The lard yield per 100 pounds of live hog is estimated at 4.5 percent in Germany, while the American hog yields about 15 percent.

The chief competitor of American lard in Germany is Danish lard. This competition has increased in the years since 1920—when Denmark furnished 1.4 percent of the German lard imports—to 1932 when it accounted for 22 percent of the German imports. Late figures for 1933, however, show a tendency for imports of Danish lard to decline.

The duty on lard imports to Germany has been raised repeatedly during last year (1933) until in July it amounted to about 15 cents per pound. On the surface this would seem to be almost prohibitive were it not for the failure of domestic production to meet the German lard demand. For complete self-sufficiency Germany's production would have to be increased about 70 percent if the previous amount of lard consumption were to be maintained. Thus, for the immediate

future German self-sufficiency in the lard market is beyond all possibilities as production cannot be increased enough within the course of a few years to satisfy domestic demands.

Lard constitutes in the United States about 32 percent of the total fatty foods, compared with only 17 percent in Germany. Lard substitutes, rather important in the United States, representing 23 percent of the total fatty foods, contribute less than 5 percent in Germany. Butter shares almost the same position in both countries—around 38 percent, while margarine accounts for 36 percent of the total in Germany, compared with only 6 percent in the United States. In pounds per capita, margarine in Germany is more important as a cooking fat than lard and lard substitutes combined. Thus, margarine is the chief competitor of lard in the German market (see table 5).

In appraising the prospects for American lard in Germany one should not lose sight of the tendency for national self-sufficiency which is likely to continue for some years. The recent quota restrictions on lard imports represent a further step in this direction. Because of the genuine deficiency of lard in Germany, however, it is conceivable that lard might well become a major commodity for tariff bargaining and reciprocal trade agreements between Germany and the United States.

LARD MARKET IN GREAT BRITAIN

The most important buyer of American lard is Great Britain, taking between 30 to 45 percent of the total American exports. Since 1921 British lard imports have varied remarkably little, and about 85 percent are furnished by the United States.

The British market is the most dependable of all foreign markets for American lard. Canadian lard furnishes the chief competition in the British market for American lard since it is exempt from the 10 percent ad valorem duty collected on lard imports.

The American hog producer need not worry unduly over the chances that Canadian competition will increase. Canada is not likely to push its lard exports much farther, chiefly because of the relatively good market outlet Canada has for the

bacon type hog. This type of hog dominates in Canada; it yields comparatively little lard. Furthermore, the Canadian Department of Agriculture is successfully encouraging the hog industry to continue the development of the bacon type of hog.

The chief competitor of lard in the British Isles is margarine. Recent figures indicate a slight decrease in margarine production and consumption in European countries. Any general decline of margarine consumption in these countries, in all probability, will better lard's market position.

There is one important distinction between the English and German lard market. While Germany seems committed to a policy of rigid protectionism—that is, high duties and even quotas on lard imports—England is not likely to go so far in her trade restrictions. Lard imports of England apparently will be affected last and least by tariff policies, compared with the imports of other pork products, or even other foodstuffs.

AMERICAN LARD IN OTHER FOREIGN MARKETS

LARD EXPORTS TO CUBA REDUCED

Until 1929, Cuba ranked third in importance in the export trade of American lard, taking more than 10 percent of the total lard exports. But exports to Cuba have fallen off sharply since 1929, declining from 80 million pounds to 22 million pounds in 1932, and to 4 percent of the total lard exports.

This decline is partly the result of Cuban tariff legislation which will gradually increase duties on lard until a peak of 10.95 cents per pound is reached. This step was taken after the United States had enacted high sugar tariffs.

MEXICO RANKS FOURTH AS FOREIGN CUSTOMER

Mexico takes fourth place among the foreign customers of American lard. Although her consumption has declined slightly in recent years, she absorbed about 7 percent of the total lard exports of 1932. In 1930 she took 12 percent. Duties on lard entering Mexico have been raised slightly since 1929, amounting in the spring of 1933 to between 3 and 4 cents per pound.

IMPORTS TO NETHERLANDS REMAIN STABLE

The Netherlands is fifth in rank among the importers of American lard. Exports to that country have been relatively stable during the last 10 years. In 1932 the Netherlands took about 7 percent of the American exports. A large proportion of the lard shipped to the Netherlands is re-exported either unchanged or after it has been refined and treated in conformity to the special requirements of other European countries to which the lard is re-exported.

LARD OUTLOOK

Some of our export outlets for lard, however, are seriously endangered at present. Germany, which ranks second among the customers for American lard, has progressively raised the tariff on lard, up to 18 cents a pound in February of this year. And as American lard continued to come in over these high tariff walls, pouring into the German fat market—so strong is the demand for American lard in Germany—the government definitely restricted imports by establishing a quota of 40 percent of the lard imports of the 2 past years. Cuba has been the third largest customer of American lard, until she raised her tariffs on lard at a progressive rate, partly as a response to the high sugar tariff the United States placed on sugar imports.

In spite of these restrictions on lard imports in several foreign countries, lard is, along with cotton, one of the leading agricultural export products of the United States. It has great competitive strength in the world market, certainly much more so than wheat, tobacco or pork. Many foreign nations actually want and need lard, and there is no other significant lard exporter besides the United States. If we would grant other nations the opportunity of exporting some of their industrial products to us at reduced tariff rates, they would most likely be willing to grant us similar privileges of exporting lard to them at more favorable tariff rates and larger quotas.

Several other remedies for the lard situation have been proposed, the expediency of which is rather questionable. A State excise tax on lard substitutes, for instance, would probably have to be exceedingly high, practically prohibitive, if it

were to accomplish its ends. Retaliatory measures of the Southern States against products from the Corn Belt, for example, taxes on fat backs and pork, would probably follow, and such taxes would most likely harm the Iowa farmers more than he could gain by the tax on lard substitutes.

The federal government has levied an excise tax of 3 cents per pound on coconut oil, which amounts to a 3 cent tariff, since all of the coconut oil is imported, chiefly from the Philippine Islands.

Whether the price of cottonseed oil, the chief raw material for lard substitutes, will be increased enough as to raise lard substitute prices and thereby aid lard in its competitive struggle, is very doubtful. Lard, as well as cottonseed oil, is definitely on an export basis. There is no direct way of protecting the domestic lard market by tariffs.

Improving the quality of lard, developing nation-wide standards of lard grades with the objective to offer uniform and high-class lard to the consumer, and promoting export outlets for lard by tariff bargaining and reciprocal trade agreements—these are the only sound and permanently effective remedies for the depressed lard situation.

TABLE 1. LARD EXPORTS IN PERCENTAGE OF LARD PRODUCTION, AND PORK EXPORTS IN PERCENTAGE OF PORK PRODUCTION.*

Year	Lard			Pork		
	Lard exports including neutral lard	In percentage of federally inspected lard production	In percentage of total production	Pork exports (excluding lard)	In percentage of federally inspected pork production	In percentage of total production
	Million pounds	Percent	Percent	Million pounds	Percent	Percent
1910-14	519	54.7	32.2	422	11.3	6.6
1920	643	48.7	31.3	929	20.5	12.5
1921	903	65.5	42.7	759	16.0	9.9
1922	799	50.7	33.9	727	14.1	8.8
1923	1,075	54.5	38.6	960	15.1	10.0
1924	986	51.3	35.9	735	12.1	7.9
1925	719	49.5	32.3	549	10.5	6.7
1926	733	48.4	31.5	426	8.3	5.2
1927	717	46.1	30.4	316	5.7	3.7
1928	801	45.8	30.9	334	5.5	3.6
1929	866	49.1	33.3	379	6.4	4.1
1930	674	44.3	28.8	314	5.7	3.6
1931	601	38.7	25.2	193	3.4	2.2
1932	552	35.1	22.9	108		

* From U. S. Dept. of Agr., Statistics of Meat Production.

TABLE 2. LARD EXPORTS IN PERCENTAGE OF TOTAL HOG PRODUCTS EXPORTED, AS FOR QUANTITY AND VALUE.*

(Lard, plus hams, shoulders and bacon, plus salted and pickled pork equals 100)

Year ending June	Lard (exclusive of neutral) Percentage		Hams, shoulders, bacon Percentage		Salted and pickled pork Percentage	
	Quantity	Value	Quantity	Value	Quantity	Value
1900-04	45.5	42.9	45.1	49.2	9.4	8.9
1905-09	50.7	46.5	39.1	44.0	10.2	9.5
1910-14	54.4	51.0	40.1	44.1	5.5	4.9
1915-19	30.2	27.0	67.1	71.1	2.7	1.9
1920-24	50.2	44.0	47.5	54.0	2.3	2.0
1925-29	66.2	60.6	31.0	36.5	2.8	2.9
1930	72.2	63.9	24.1	32.0	3.7	4.1
1931	77.2	68.2	20.0	28.6	2.8	3.2
1932	83.2	76.0	14.5	22.0	2.3	2.0

* Basic data for 1900-1929: Taylor, A. E., Corn and Hog Surplus in the Corn Belt, p. 594. For 1930-1932: U. S. Dept. of Com., Monthly Summary of Foreign Commerce.

TABLE 3. DISTRIBUTION OF THE WORLD LARD EXPORTS BY PRINCIPAL EXPORTING COUNTRIES.

	1911-1913	1925-1929	1926	1927	1928	1929	1930	1931
Total volume* of net exports (million pounds)	543	843	818	802	861	920	740	701
Total volume=100	100	100	100	100	100	100	100	100
Net exports from countries (in percentage of total):								
United States	97.3	86.8	85.5	85.0	88.2	90.1	86.8	81.2
Netherlands	---	6.9	6.7	8.1	6.2	4.8	5.0	8.3
Denmark	1.4	2.9	2.4	3.5	3.4	3.0	5.0	7.6
China	1.3	1.3	1.4	1.2	1.0	1.1	1.1	1.1
Hungary	---	1.1	2.8	1.2	.4	.3	1.3	1.0
Irish Free State, Australia, Canada, Madagascar	---	1.0	1.2	1.0	.8	.7	.8	.8

* Basic data from U. S. Dept. of Agr. Yearbook, 1931, p. 855; 1932, p. 793. Exports minus imports of the respective countries giving the net exports of lard.

TABLE 4. PERCENTAGE DISTRIBUTION OF AMERICAN LARD EXPORTS, BY COUNTRIES OF DESTINATION.*

Year	Great Britain	Germany	Cuba	Mexico	Netherlands	Belgium	France	Italy	Canada	Other countries
1910-14	35.6	30.0	8.7	1.5	7.7	3.6	2.5	--	2.1	8.3
1925	31.2	28.0	11.2	6.8	5.4	2.4	0.6	4.1	1.5	8.8
1926	32.2	28.5	11.4	6.5	6.9	1.7	0.6	0.8	1.8	9.6
1927	32.4	27.1	11.8	6.4	5.5	1.9	0.7	1.8	2.3	10.1
1928	31.0	23.7	11.0	7.5	5.1	1.9	1.0	3.5	2.3	13.0
1929	29.2	25.9	9.6	7.5	5.3	2.4	1.3	3.3	2.1	13.4
1930	37.2	17.4	10.1	11.6	5.3	2.0	0.9	1.7	2.1	11.7
1931	44.1	23.4	7.9	8.1	4.9	1.3	0.3	1.3	1.5	7.2
1932	43.3	28.9	4.0	7.1	6.9	1.2	0.4	1.3	1.1	5.8

* Exclusive of neutral lard.
Sources of data:
1910-1924, Wrenn, International Trade in Meats and Animal Fats, p. 14.
1925-1932, from U. S. Dept. of Agr., Monthly Summary of Foreign Commerce.

TABLE 5. CONSUMPTION OF THE MAJOR FATTY FOODS IN THE UNITED STATES AND GERMANY, 1929.

Major fatty foods	Total consumption		Per capita consumption.	
	United States*	Germany**	United States*	Germany ***
	Million pounds		Pounds per capita	
Total consumption	5,375	2,690	44.3	42.3
	Percentage of total		Pounds per capita	
Butter	38.9	39.8	17.3	15.9
Margarine	6.2	36.4	2.8	17.3
Lard	32.3	17.2	14.3	7.2
Lard substitutes	22.6	4.5	9.9	1.9**
Tallow (for direct consumption)	---	2.1	---	---

** Basic data: Blätter für landwirtschaftliche Marktforschung. July, 1930.
*** Basic data: Blätter für landwirtschaftliche Marktforschung. January, 1933.