U. S. Soybean Oil in World Markets[1]

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FOR SOME REASON when a man has reached a certain age, he finds pleasure in looking back to earlier years. Since my career started when soybeans were new in the Middle West, I found myself closely associated with the crop's early beginnings. The first soybean growers were interested in trying out a new crop. They were also intrigued with the idea that the possible growth in popularity of this agricultural immigrant from ancient China promised results that could become profitable. Soybeans were first raised for seed because the demand for expanding acreage each spring provided good prices in the market. Immediately after World War I selected varieties sold as high as $10 per bushel. When I finished school, my first business association was with a wholesale farm seed company. One of my tasks each year was to buy soybean seed in east central Illinois. It was necessary to go direct to the farm to inspect and try to trade on what might be available to an outside buyer. About this time we started calling soybeans the "IF" crop. If the farmer did not plow them under for green manure, if he did not cut them for hay, then they were harvested for beans.

Each year saw expansion of acreage. Seed supplies soon exceeded planting needs. At this point the small beginning of the soybean industry made its appearance. Names like Funk Brothers, Staley, Allied Mills, Shellabarger, and Archer-Daniels became known as soybean processors. The problems of introducing soybean meal and soybean oil to the domestic trade were many and varied. The need for an association that would provide a common meeting-ground and bring cooperation on these problems among members of the new industry was soon evident. The time was the early 1930's.

Rules for trading soybeans, soybean meal, and soybean oil had to be worked out. As an example, soybean oil was first largely considered a technical oil, and settlements were made on the results of a test called Gardiner Break. Before long good quantities of soybean oil began to be used in food products. Refiners were unhappy buying soybean oil on the Gardiner Break test. I served as chairman of the Oil Trading Rules Committee when an open meeting was held with refiners, at which the refining loss method of settlement was agreed upon and another cause of friction between buyer and seller, in a new industry, was removed.

The year of the big cotton crop came in 1937. Production amounted to almost 19 million bales. In the face of these plentiful supplies, soybean mills were able to merchandise their oil and meal with substantially no carry-over at the end of the crop year. In 1940 soybean oil sold as low as 3¾¢ per pound and meal at $15 per ton. Margins were pretty thin. Low operating costs saved the day.

During the years of World War II, with favorable support prices, soybean acreage increased more rapidly than ever before. With the price of soybeans, soybean meal, and soybean oil controlled, it was necessary to work for the government on a toll-crush basis. A committee of three was appointed to represent processors in these negotiations with government officials. This committee was made up of E. K. Scheiter, "Soybean" Johnson, and myself. Agreement was reached to give expellers a margin of 22¢ per bushel while solvent-extraction equipment was allowed 24¢ per bushel. With priorities from the War Production Board, processing capacity continued to expand to meet war-time needs. The year that followed the termination of the War, with the release of the price ceiling, brought the greatest profits to the industry that had ever been experienced. So expansion of capacity continued.

Price flurries when the Korean situation broke out first brought favorable results, then later there came adjustments and problem markets. But this industry has always looked forward, preparing for the new and greater achievements of tomorrow.

This season's record soybean supply has provided the background for the biggest crush in the history of the industry. It now appears you will average better than four million bushels per month above the 1957–58 record, or a total near 400 million bushels. On the meal side you have been achieving quite a record. The fact that you have found channels of consumption for this season's approximately 9½ million tons of soybean meal is an outstanding accomplishment. It is significant also that exports of soybean meal have expanded this season to about 500,000 tons.

THIS BRINGS US to the oil side of the picture. The use of soybean oil as an important raw material in the manufacture of vegetable shortening began in the 1930's. This market has had a remarkable growth. Last year 34% of our domestic consumption of refined soybean oil was used in shortening. After a slow start margarine now provides a very important market for soybean oil. Last year 34% of our domestic soybean oil consumption went into margarine, representing 84% of the fat composition of this product. The fact that 68% of our total domestic consumption was used in these two food products and only 15% in mayonnaise and dressings reveals that the large salad oil field has used only minor quantities of soybean oil. Intensive technical research should find the answers to make soybean oil more acceptable for broader food uses. Soybean oil demand came to you processors from shortening and margarine manufacturers without any particular effort on your part. This salad oil field is different, already supplied with oils of long usage and strong preference. If domestic outlets for soybean oil are to broaden more rapidly, you soybean processors must lead the way in energetically attacking the problem. But still the remarkable growth of our domestic soybean oil consumption kept pace with your industry's very rapidly expanding production until four years ago. The big, stable, and ever-increasing market at home is one of your industry's greatest assets.

Our production of soybean oil during the current season will total about 4,260 million pounds. Domestic consumption will amount to an impressive 3,250 million pounds. To the excess production of one billion pounds of soybean oil should be added 400 million pounds of cottonseed oil, making a combined surplus over domestic needs of 1.4 billion pounds. For the coming season the gross production surplus of the two oils is likely to approach two billion pounds. Export demand from "dollar" markets may be smaller for both cottonseed oil and soybean oil. The remaining surplus available for disposal through "aid" programs may reach the formidable total of 1,600 million pounds. This is our surplus problem.

Oil surpluses began to appear as early as 1951–52, caused basically by the increasing production of soybean oil. For four years the increasing production was temporarily offset by drawing off 1.4 billion pounds of oil under the cottonseed package programs. With the virtual liquidation of these CCC cottonseed oil stocks in late 1955, the Public Law 480 program was extended to soybean oil and some 450 million pounds were shipped to aid countries in 1955-56. Each subsequent year has seen expansion of Public Law 480 and I.C.A. shipments whereas sales of soybean oil to dollar markets have remained very small. These aid shipments have gone mainly to new markets—countries which previously imported very little edible oil from any source—and there is very little question but that these additional markets would not have opened up without these programs. Over-all consumption has increased in these markets, but we must recognize that this expansion of our exports has depended not only on financial aid but partly also on tem-

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porary factors such as local production shortfalls as in the Mediterranean, Argentina, and Yugoslavia. This in no way detracts from the energy and initiative of the Washington agencies and of industry groups which have assisted in promotional activity. The program has been successful, but unfortunately it has meant that we have put most of our eggs in one basket.

Our experience with this method of disposal has not been without its difficulties. I refer to the timing of contract placements with foreign countries and the subsequent delays of the export movement that so frequently occur. The fact that obscure delays do take place causes some disturbance in the soybean oil market. A domestic refiner must operate with extreme caution in fear of some unexpected development. Regardless of this mild complaint, Public Law 480 has provided export movement of soybean oil that avoided accumulation of unmarketable surpluses and prevented extreme market weakness.

ENOUGH of what has happened. Let us look ahead to next season. Assuming favorable weather over the next few weeks, new crop production of soybeans may be about 10% below last year's record. Combined with this season's carry-over, this should give us a supply almost equal to that of 1958–59 or a little below 600 million bushels. The continuing increase in processing capacity would indicate a higher rate of crush. I suppose the meal will find a home since livestock and poultry trends still point to greater numbers. Moreover additional protein usage is possible through the further expansion of improved feeding. Feed demand should absorb increased tonnage, especially if we may assume that the price of meal will remain competitive to other feed materials.

Some decrease in domestic soybean oil consumption will probably take place next year. Increase in lard production of nearly 270 million pounds will cause this commodity to be more competitive. The large cotton crop will increase cottonseed oil by 250–300 million pounds. The lower support price for cottonseed, if the full difference is charged to cottonseed oil, amounts to 2¢ per pound below 1958 crop oil. This may allow cottonseed oil to regain some of the ground it has lost during the years of severe cotton acreage restriction.

Lard production this year will go slightly over 2,700 million pounds, or 625 million pounds in excess of domestic usage. Exports absorbed 600 million pounds with 45% going to west Europe (mainly United Kingdom). The coming year will see an increase in production of 10%. This means an excess over current consumption levels of almost 900 million pounds. Unwieldy stocks can be avoided only by larger exports. American lard is now the cheapest edible fat in the world. Under these circumstances larger shipments of bulk lard to the United Kingdom seem assured, but there is only limited scope for such marketing in the rest of western Europe.

Since the United States will have large surpluses, beyond domestic needs, in three categories of edible fat production, we must look to the world situation better to understand our position. Europe is by far the largest fat and oil importer. There is no edible vegetable oil which is exported that does not find its major market in the margarine-consuming countries of Europe. The same countries are the preponderant outlet for edible purposes of whale, herring, and sardine oil. While northern Europe and the United Kingdom use butter in good volume, the *per-capita* consumption of margarine exceeds any place in the world. Vegetable shortening is relatively unimportant except in the United Kingdom. Apart from the compulsory use of rapeseed oil where the domestic oilseed is protected, as in Germany and Sweden, the margarine and shortening industries rely almost entirely on imported oilseeds, oils, and fats.

Under tariff preference systems some European countries look to established sources for the major portion of their oil supplies. France imports her peanuts and oil needs from French West Africa and controls the production. In very much the same way the United Kingdom attracts peanuts and peanut oil out of Nigeria, likewise palm kernels, palm oil, and palm kernel oil. Belgium looks to the Belgian Congo. West Germany, with the largest oil consumption of any European country, without overseas territory, must buy her oils on a competitive basis in the world markets. Europe is not yet inclined to consider the United States in the same light as her older and nondollar sources of supply but rather as a seller of surpluses when they become burdensome. It is here that the Soybean Council has done valuable spade work, but much remains to be done.

No discussion of fat consumption in northern Europe and the United Kingdom is complete without reference to butter. During 1957 and 1958, because of international butter surpluses, larger quantities entered the United Kingdom import market for a time at prices below the cost of production. The retail price of butter even fell below some margarine brands, and by 1958 the consumption of margarine was some 63,000 tons or 16% below the 1956 level. The corresponding decline in West Germany was 40,000 tons, or 6%. There was some contraction in Denmark and Sweden, but elsewhere in western Europe the margarine business held its own. In the early months of 1959 a further contraction of 3% took place in western Europe. Butter surpluses have since decreased, prices have advanced some, and the situation is now more stable. Margarine consumption for the last half of 1959 will exceed the 1958 level, but compared with 1956 the margarine industry will use some 66,000 tons less fat on an annual basis.

Eleven western European countries in 1958 consumed 6,300 million pounds of fats and oils in margarine, shortening, confectionery fats, and salad or cooking oils. Consumption in 1959 will total about the same. But over the past 12 months coconut oil usage declined by about 250–300 million pounds because of the shortage of copra. The consumption of liquid oils increased, namely, peanut oil, cottonseed oil, and soybean oil. In recent months the use of low-priced American lard has begun to increase in the British margarine and shortening industries.

Of this large oil consumption in 11 European countries, the liquid oil total (peanut, cottonseed, and soybean oil) amounted to 3,400 million pounds, of which 540 million pounds were soybean oil. The use of soybean oil in the cheaper brands of margarine has long been a sizable tonnage in northern Europe. Further expansion of the use of soybean oil will be limited not only by the competition of American lard but also by the resistance of those responsible for marketing the premium brands of margarine.

In southern Europe and countries that circle the Mediterranean the olive tree has been the major edible oil source since the beginning of history. Margarine, shortening, and lard are little known. If the olive crop is good, little is required from the outside. Large production years make possible the carry-over of surplus supplies into years of poor production. Public Law 480 has been most successful in Spain and Turkey, where there have been modest advances in industrialization and living standards. Still there is a correlation between the off and on years of the olive production cycle. It has not been established that we can depend upon a continuance of heavy volume exports when there is abundant olive oil production. Further improvement in the standard of living will be the best influence to create markets that are dependable.

NOW LET US return to U.S.-produced soybeans. Exports of soybeans have increased steadily in recent years, from 32 million bushels in the crop year 1952–53 to more than 100 million bushels exported for the current season. This build-up of the demand for U.S. soybeans has come largely from Europe, Japan, and Canada. It appears that our exports will continue to increase as long as China remains only a minor and unreliable source of supply for the free world. In our major soybean export markets there is little evidence of shifting from beans to oil in regard to their purchases from the United States. This strong preference for soybeans, on the part of importing countries, can easily increase exports during the coming season. If we combine this possible increased export requirement with the likely increase in the domestic crush, the total demand for beans would seem to be fully equal to the prospective supply of the crop year ahead. The outlook may be a closely adjusted supply-demand position before the end of the 1959–60 season.

In strong contrast to soybeans, the outlook for soybean oil is that of an exportable surplus well above the exports for the current season. During the present crop year, exports of soybean oil and cottonseed oil seem likely to total about 1,350 million pounds, of which 925 million pounds would be soybean oil and 425 million pounds cottonseed oil. Seventy-five per cent of these total shipments have been financed under Public Law 480 and I.C.A. programs while 25% sold for free dollars. The dependence upon aid programs in the case of soybean oil has been 89% of total shipments while for cottonseed oil it has been 44%. Taking the two oils together, about 53% of total exports will have gone to Spain, Italy, and Turkey while Yugoslavia and Poland will account for 11%. Our export sales of soybean oil for free dollars total little more than 100 million pounds, mostly to Canada, Latin America, and Morocco while only 20 million pounds went to northwest Europe, where the need was supplied in soybeans. At the same time the dollar exports of cottonseed oil to northwest Europe amounted to 200 million pounds and about 30 million pounds to Canada and Latin America.

In the major importing area of northwest Europe, which receives little or no Public Law 480 or other aid, there are signs that soybean oil may gradually come to be accepted in its own right as a component of margarine. For the short term, certainly in the premium brands of margarine, technical objections and popular prejudices will doubtless continue. Soybean oil may partially replace other soft oils (peanut and cotton), but this is much less certain in respect to palm, palm kernel, and coconut oil. Over the last 12 months soybean oil has been favorably priced because high lauric oils have been in short supply. The shift from coconut and palm kernel oil to peanut oil tightened the European peanut oil market. This combination of circumstances caused west Germany to increase her buying of U.S. cottonseed oil during the 1958–59 season.

Now there are signs that the coconut oil supply will shortly begin to recover enough to bring a partial shift away from "soft oils." Here again soybean oil may be affected. If however soybean oil usage should increase amid such competition, the difference would probably be supplied in the form of soybeans from the U.S. or China.

In Europe a growing local market for soybean meal is now developing with the new growth of their "infant" broiler industry. In the crop year 1958–59 western Europe will have produced 475 million pounds of soybean oil from American beans. Added to this total have been some unimportant quantities of soybeans from China. Because there is unused crushing capacity, western Europe's primary interest will continue to be soybeans. Crushers in Germany, Holland, Belgium, and Denmark buy American soybeans free of duty and can usually offer oil below the duty-paid cost of soybean oil produced in America. Much will depend upon the future course of meal markets on each side of the Atlantic, but it would take an unexpected development to bring even limited increase in the demand for U.S. produced soybean oil.

The Mediterranean countries have a good outlook for olive oil production at this time. If the present crop prospect is maintained, it should seem highly unlikely for Spain to be anything like the buyer of soybean oil it has been this year. This is especially true since undelivered shipments on current contracts for soybean oil will not arrive until late fall or early winter.

The export outlook to Poland and Yugoslavia can be expected to remain unchanged. A continuing Public Law 480 market will exist in Pakistan and perhaps Burma, but for cottonseed oil rather than soybean oil. Much work must be done to establish acceptability of soybean oil in this whole area. Our shipments of soybean oil to Morocco this year were aided by the relatively high price of peanut oil in the world market. Next season the position can be expected to be more competitive, but we should be able to maintain our shipments of soybean oil. The United Arab Republic has the need, and since experience will be gained because of business consummated this summer, there is reason to anticipate continuation of trading in 1960 if political relations permit.

In the Western Hemisphere some decrease will take place in our oil shipments to Canada because of an increase in the local production of vegetable oil and animal fat. Mexico has been disappointing, but prospects are not completely dead. In our normal Caribbean and Latin American markets local oilseed producers will continue to be heavily protected but still some Public Law 480 possibilities do exist. Brazil is a problem area, but there is some potential for Public Law 480. European-produced oils and Dutch-refined lard compete in several of these markets, but U.S. soybean and cottonseed oil could make a better showing.

Heavy Public Law 480 shipments will shortly be scheduled for Argentina, and there will be requirements to be met in Chile. The main preference heretofore has been cottonseed oil. Strenuous promotional efforts will be needed to develop any sizable soybean oil market in this area. It is a temporary market anyway with most of the business to be done this fall and winter. Unless adverse weather affects the crop again, no repeat can be expected in 1960.

In India oilseed production is falling behind the rapid growth in population. Fat consumption is very low, but so is purchasing power. There is the problem of overcoming the obstacles to moving a heavy import tonnage into the interior. Then comes the fear of disrupting local markets. I cannot be optimistic about the possibilities in India at this time.

PAST EXPERIENCE has shown how new markets can unexpectedly develop. Until we know more about 1959–60 supplies in other countries, it is impossible to evaluate our export prospects accurately. As the situation appears today, it will be quite an impressive achievement if next season's exports of the two vegetable oils equal the 1,350 million-pound total estimated for 1958–59. Under these conditions the 1960 carry-over of soybean and cottonseed oil could range from 500 to 600 million pounds. Although this could well be offset by the likely decrease in the oil equivalent of the 1960 soybean carry-over, such a heavy oil surplus stock would be very unsettling.

The road into 1960 will not be easy. The problem is similar for the crushers of both soybeans and cottonseed in that disposal of the oil surplus presents more difficulty than does the disposal of the protein. More severe competition between soybean, cottonseed oil, and lard can hardly be avoided. While low prices would adversely affect processor margins, export markets would be more easily attracted, provided foreign oil markets do not show a similar decline.

I cannot conclude without referring to another possibility. Hog and poultry producers are likely to operate under very slender margins. If oil and meal proceeds decline more than the cut in the oilseed support levels, it is possible that we could see the government re-enter the cottonseed market or that a buying program could emerge for soybean oil.

With all these imponderables, while government oil programs would be deplored, a realistic view-point must give thought to this contingency. I have always been given to understand that we learn more and grow stronger when there are difficulties to overcome. You seem to be approaching such a period. It is a challenge to be met with resourceful courage and foresight that well could result in a more vigorous, robust industry better attuned to the problems of ensuing years.

The Stepan Chemical Company, Chicago, has started construction on a new administration and research center in Northfield, Ill., to be completed by January 1960. It will house the executive offices of the company and fully equipped laboratories, making possible the consolidation of the firm's research and development staffs.

The Blaw-Knox Company, Chemical Plants Division, Pittsburgh, Pa., has developed a process which gives 80 to 85% protein solubility from oil-bearing seeds through a refinement of their vapor desolventizing-deodorizing process for treating oil-extracted flakes. This process was first applied in a soybean plant in Japan and produces seed flakes having a soluble-protein content of 86%.