

World Production Trends—Edible Fats and Oils¹

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ABSTRACT

In the past decade, production trended upwards at nearly a million tons a year. Below-trend growth in foreign production between 1968 and 1970 sparked sharp price rises in 1969 and 1970, which in turn stimulated a strong increase in foreign production in 1971 and 1972. This increase appears likely to continue in 1973, barring unfavorable weather. Continued expansion of production, however, could again lead to depressed prices and a subsequent diminution of growth, repeating the price and production cycle of the sixties.

World production of fats and oils in 1971 totaled ca. 41 million metric tons, up 10 million tons in a decade. Thus world production of fats and oils has trended upward at an annual rate of a little over 1 million metric tons. Over 750,000 tons of this annual increase has occurred in foreign countries and 265,000 tons in the U.S.

Of the 41 million tons produced last year—something over 30 million tons—nearly three-fourths was produced in foreign countries. The remaining fourth—10 million tons—was produced in the U.S. The phenomenal rise in the production of U.S. soybeans during the past decade has probably attracted the most attention, and U.S. edible vegetable oil output has increased more percentage-wise, than foreign output of these oils. However, within the sector of edible vegetable oils, production abroad has registered a much larger increase in terms of absolute tonnage—4.25 million tons compared with our increase of 2.6 million tons.

Edible vegetable oils include cottonseed, peanut, soybean, sunflowerseed, rapeseed, sesame, safflower, olive and corn. These nine oils amount to 20.5 million tons, that is, half of the world's production of fats and oils. Animal fats include butter, lard, tallow and greases and amount to 12.8 million tons, or a little over 30% of the grand total. The third largest group is that of the palm oils—coconut, palm kernel, palm, and babassu kernel—which amounts to 4.4 million tons or somewhat over 10%. So these three groups—the edible vegetable oils, the animal fats and palm oils—account for ca. 38 million of the 41 million tons.

The remaining 8% consists of the industrial oils—linseed, castor, oiticica and tung—and the marine oils.

Which items have shown the greatest growth? Perhaps we can start by designating those that have the least propensity for growth. Too rapid expansion in the animal fats would not be expected. After all, animal herds can't be drastically increased world-wide within a few years, nor can their yields of meat, lard, tallow, milk or butterfat. Production of animal fats has increased in the 10 year period, 1961-71, by ca. 2 million tons, nearly 3% a year. There are differential rates of growth within the animal fat category. Lard has been expanding at less than 1% a year, butter at ca. 15% annually, and tallow and grease at over 3%.

Compared to the 2 million ton, 28% expansion in the animal fats, the expansion in the edible vegetable oils has been much more dynamic—nearly 7 million tons and fully

50% in the same 10 year period. Of course, one would expect considerable variation in the rates of expansion of the different vegetable oils. Again we can start by first indicating those with the least potential for growth. Olive oil immediately comes to mind. We envision gnarled old trees growing on the most barren land of Mediterranean countries, usually on very small, poor farms ill-adapted to mechanization or other advanced practices. Olive production in this period has not increased one bit. One can say olive production, aside from the usual cycle of good years alternating with bad years, is completely static.

Another fairly static oil crop is cottonseed. Obviously cottonseed is a byproduct of cotton production. And the vistas for cotton have been hemmed in by man-made fibers. Over the last 10 years cottonseed has expanded at less than 1.5% a year.

Peanut oil output, too, has shown little dynamism, gaining less than 2% a year. From the standpoint of supplies going into international trade, there has been no increase at all in peanut oil; rather there has been a decrease. The explanation is that India and the U.S., each of which consumes virtually all of the peanuts it produces, have scored considerable gains in production. On the other hand the major exporters Nigeria and Senegal have suffered severe declines in their output. Peanut oil used to be close behind soybean oil as the second most important vegetable oil. It has since been displaced by sunflowerseed oil which is in second place and is far behind soybean oil in terms of tonnage.

By this process of elimination we come to the vegetable oils which have enjoyed truly dynamic expansion: rapeseed, soybean and sunflowerseed. In 10 years, rapeseed oil has expanded 97%, soybean 86% and sunflower 82%. These represent growth rates of 8-10% per year.

The increase in rapeseed, due mainly to more acres planted, has been spectacular in Canada and France. In Canada, now the world's leading producer and exporter by a wide margin, difficulties in marketing wheat stimulated diversion of land to rapeseed and oilseed prices have been high for over 2 years. In France the Common Agricultural Policy of the Common Market provides for a price to farmers far above world prices. Rapeseed has also been substantially increased in Poland, India and West Germany.

In the case of soybeans it's simply a matter of the U.S. Since 1961, when we produced 60% of the world's soybeans, we have more than doubled our production, due mainly to more planting, and we now account for three-fourths of the world production over 90% of the world's exports.

It should be explained at this point that in calculating oil production or oil exports in the Foreign Agricultural Service, we consider the oil as being produced in the country where the oilseed is grown. Thus if the U.S. grows two bushels of beans, containing a total of 21 lb of oil, we figure the 21 lb as U.S. production, even if one of the bushels is exported and 10.5 lb actually crushed out in, say, Japan. In other words, we think in terms of oil equivalent. Similarly, in the case of exports, when we export a bushel of beans, we figure we have exported the equivalent of 10.5 lb of oil.

Brazil has increased production of soybeans sharply too, by several hundred per cent over the last few years. But the 1971 record-large Brazilian crop totaled 73 million bushels, against the U.S. crop of 1 billion, 186 million bushels.

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Sunflowerseed oil production boomed until 1968. The rise was due mainly to larger yields of seed per acre and the higher oil content of improved varieties. The gain was concentrated in one part of the world—in Eastern Europe, comprising chiefly the Soviet Union, followed by Romania, Bulgaria and Yugoslavia. Bad weather in 1969 and 1970 adversely affected the crops in these countries. In Argentina, another major producer, the sunflowerseed crop has been very erratic but appears to be trending upward.

Growth in production of the palm oils has been modest—only 13% in the 10 year span, averaging not quite 1 1/3% a year. Within this group coconut oil, the most important, has actually declined by 7%, while palm, now crowding coconut oil in magnitude, has jumped 50%. A sharp upward tendency in palm oil output started in 1968 and is expected to continue for the next several years. Heavy plantings of palm trees in Malaysia during the 60's are responsible for this increase. Expansion of palm acreage has also taken place in equatorial West Africa and Latin America.

Increased plantings and favorable weather, after years of drought, are also stimulating greater coconut oil production in the Philippines. Thus world production of coconut oil began recovering in 1970 from a depressed level and, given adequate rainfall, should continue to show substantial gains for the next few years.

What about future production of fats and oils? Since few of us are endowed with clairvoyance, we must resort to trend lines, particularly for economic phenomena. And if a trend line is exuberantly upward, we extend it upward into the future, but not quite so exuberantly. If it shows a sharp declining trend, we tend to soften the rate of drop in our projections. If we had been projecting production of horse buggies 50 years ago, we'd probably still be somewhere on a gently declining trend.

Obviously price has an influence on the production of fats and oils. Rising prices stimulate increased plantings, which can make themselves felt as oil production in a fairly short time, in the case of annual crops like sunflowerseed or rapeseed. For tree crops, like palm or coconut, it will be some years before increased tree numbers manifest themselves as oil. Even for annual crops the effect of price on supply is not instantaneous. For example high 1970 prices stimulated greater rapeseed and probably peanut plantings in the spring of 1971 in the northern hemisphere. Given average yields this would result in larger crops harvested in the fall of 1971, which would result in large oil supplies in early 1972. So it would have been say at least a year's lag between a rise in oilseed prices and larger oil supplies. Unusually bad or good weather, by affecting yields, can of

course offset changes in area planted.

We can discern the rough outlines of a price vs. production cycle in the last decade. Rising foreign vegetable oil prices in 1963, 1964 and 1965 apparently stimulated increases in foreign vegetable oil production in 1964, 1965 and 1966. The increase was apparently too much for the market, and prices declined in 1966, 1967 and 1968. This in turn dampened foreign production, in part through reduction of peanut and sunflowerseed acreages in 1969 and 1970. Between 1968-70 foreign production of fats and oils increased only 264,000 tons, while the increase based on the trend would have been over 1.5 million for the 2 year period.

Obviously the point is that with prices having risen more sharply in 1969 and 1970 than in any of the preceding years of the decade, we should see a stimulation of foreign production well above the trend line rate of 750,000 tons annually. This may well manifest itself in 1972 oil production and in 1973 as well, given average weather conditions. At this moment it appears that the biggest increases would be in palm oil, coconut oil and possibly peanuts. Palm and coconut trees are already in the ground, in fact approaching bearing age, and for the next several years the yield per tree will increase as the trees grow larger and approach maturity. In the case of rapeseed, our neighbor to the north has millions of acres of land available for rapeseed if wheat and barley markets appear unpromising. And the Canadians are converting to improved varieties that will yield a much superior oil, almost free of erucic acid. In the case of peanuts, both acreage increases and improved cultural practices could be stimulated in West Africa by the recent high prices of peanuts and peanut oil. I hesitate to speak about sunflowerseed and soybeans, because so much depends on the policy of communist governments in the case of one and that of the U.S. Government in the case of the other. But I think it safe to conclude that attractive prices have an impact on communist as well as capitalist countries. In addition, Argentine sunflowerseed acreage is already responding to the unprecedented sun oil prices, as is Brazilian soybean acreage to the exceptionally high soy prices.

High prices also stimulate the emergence of completely new areas of production, as is now occurring with sunflowerseed in Australia and U.S.

If history repeats itself, in a few years we may again be more concerned with surpluses of fats and oils than shortages.

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