Trends in Fats and Oils Consumption, 1953-1957[1]

LEONARD SMITH and DAVID C. HULL, Utilization Research Division, National Cotton Council of America, Memphis, Tennessee

THE PURPOSE of this presentation is to provide a brief, objective picture of trends in factory consumption of fats and oils by major end-uses during the period 1953–1957, to point up significant competitive shifts among these materials, and to explain some of the changes in consumption relationships.

Quantity data for this paper were obtained from reports published by the Bureau of the Census and by the Department of Agriculture. With the exception of hydrogenated oils, all quantity figures relate to primary materials as defined by the Bureau of the Census.

Factory consumption of fats and oils in 1957 was approximately one billion pounds higher than the 7.4 billion pounds consumed in 1953. Among the major fats and oils contributing to total usage, soybean oil increased from 2.3 billion pounds to 2.7 billion pounds and was consumed in larger quantities each year than any other competing material. Cottonseed oil increased slightly, from 1.2 billion to 1.3 billion pounds. Other vegetable oils, principally coconut, linseed, corn, and peanut oil rose from 1.5 billion to 1.7 billion pounds because of an increase in coconut and corn oil consumption. The use of edible animal fats climbed from 400 million to 800 million pounds during the period. On a percentage basis this was the most significant change that occurred and was the result of competitive gains of edible tallow and lard in food products. All other fats and oils, mainly inedible animal fats, declined from 2 billion to about 1.9 billion pounds.

Figure 1 shows the changes that occurred in the percentage share of total factory consumption held by each of the major fats and oils each year during the period 1953–1957. Soybean oil obviously dominated the field, accounting for about 31 to 32% each year. Cottonseed oil had its best year in 1954 when it represented 23% of the total. Cottonseed oil's decline since 1954 reflects the competitive gains of soybean oil and edible animal fats. The percentage of factory consumption represented by coconut, linseed, and other vegetable oils remained fairly constant each year.

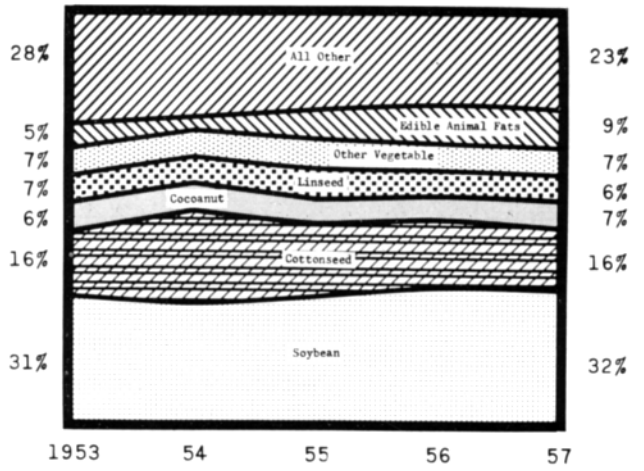

FIG. 1. Fats and oils, percentage share of factory consumption.

Edible animal fats declined from 5% in 1953 to less than 3% in 1954, then rose to 9% in 1956 and 1957 as a result of competitive gains of these materials in shortening and, to some extent, margarine. All other fats and oils declined from 28 to 23% of total consumption during the period because of a decrease in demand for some of the nonedible products such as soap, paint, and varnish.

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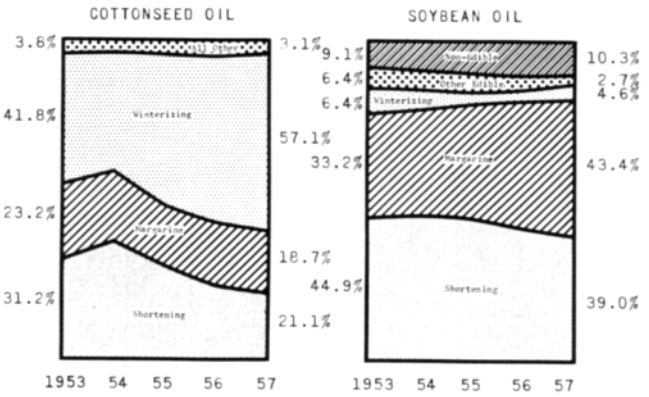

FIG. 2. Percentage distribution by end-use.

During the past five years more than 95% of cottonseed oil and between 85 and 90% of soybean oil were consumed in food products. As a result, the competition between the two major oils is, and has been very intense. It should be pointed out that cottonseed is a by-product of the cotton industry, and soybeans on the other hand are produced primarily for their yield of oil. The supply of cottonseed oil is dependent on the supply of cottonseed, which in turn is determined primarily by factors affecting cotton production; cottonseed output cannot adjust to changing price levels of competitive oilseed; and cotton-acreage limitations in recent years have resulted in lower cottonseed production. These factors have contributed greatly to competitive gains of soybean oil at the expense of cottonseed oil in food products.

A comparison of the percentage distribution by end-uses for cottonseed oil and soybean oil is presented in Figure 2. End-use distribution of cottonseed oil shifted significantly between 1953 and 1957 with winterizing gaining in importance at the expense of margarine and shortening. Winterizing accounted for about 42% of cottonseed oil consumption in 1953 compared with slightly more than 57% in 1957. In the case of soybean oil the distribution pattern changed during the period but not as much as that of cottonseed oil. Expanded use of soybean oil in margarine resulted in the displacement of shortening as the largest outlet for soybean oil. In 1957 more than 43% of soybean usage went into the production of margarine compared with 33% in 1953.

Shortening is the largest single outlet for fats and oils. Total consumption (Figure 4) rose from 1.6 billion pounds in 1953 to a record high of more than 1.8 billion pounds in 1955, then declined to slightly less than 1.7 billion pounds in 1957. On the basis of quantity, soybean oil is the most important material used in shortening. Consumption increased to a record high of more than 900 million pounds in 1955. After 1955 consumption trended downward to about 800 million pounds in 1957, largely the result of competitive inroads by edible animal fats. Cottonseed oil attained its highest consumption level, 630 million pounds, in 1954. After that, consumption declined rapidly to 260 million pounds because of combined competition from soybean oil and edible lard and tallow. It is significant that the use of edible animal fats increased from 250 million to nearly 600 million pounds during the period with a large part of this gain occurring in years when total fats and oils consumption in shortening turned downward.

Figure 4 illustrates the competitive effect of price on the consumption of each of the major fats and oils used in shortening. Generally consumption followed a trend counter

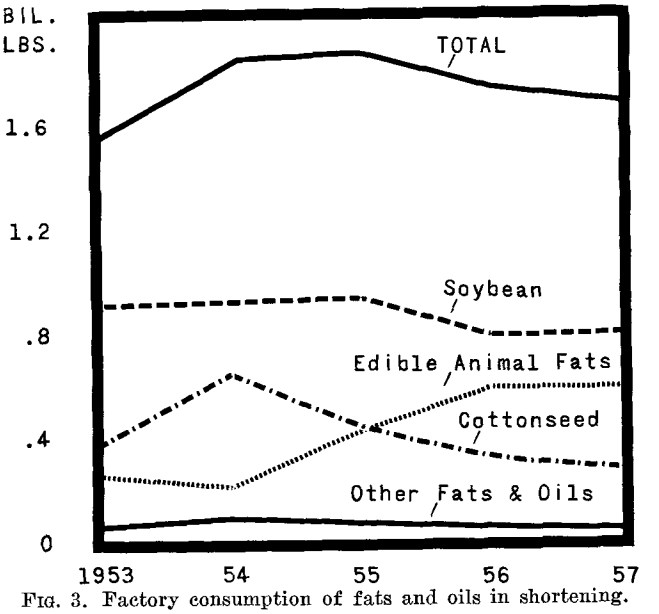

FIG. 3. Factory consumption of fats and oils in shortening.

to the trend in price. Soybean oil consumption reached its highest point in 1955 when the average annual price was at its lowest level, 11.6¢ per pound,[2] for the entire period. As prices increased between 1955 and 1956, consumption declined. From 1956 to 1957 the decrease in prices of soybean oil caused only a slight rise in consumption, which reflected the rising importance of edible tallow as a competing material. Cottonseed oil consumption generally followed a trend counter to its price trend except from 1954 to 1955 when the degree of decline in lard prices, 15.7 to 10.6¢ per pound,[3] greatly exceeded the decline in cotton-

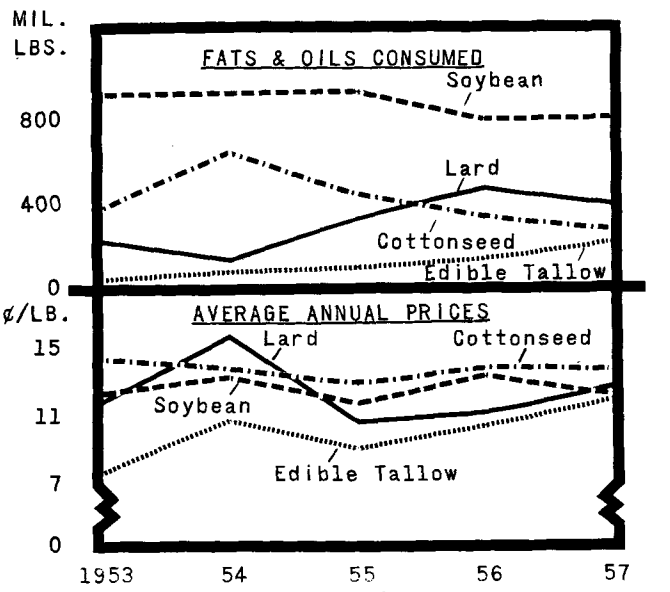

FIG. 4. Shortening.

seed oil prices, 13.5 to 12.7¢ per pound.[4] Lard consumption fluctuated in accordance with the counter trend in prices except from 1955 to 1956 when consumption rose in the face of a slight increase in prices; however this occurred because lard prices were well below the price levels of cottonseed oil and soybean oil. Edible tallow consumption rose steadily each year. Although annual prices[3] of edible tallow also turned upward during this period, they were well below prices of competing materials.

Margarine, the second largest outlet for fats and oils, consumed more than 1.1 billion pounds in 1957 compared with about 1 billion pounds in 1953. As indicated in Figure

[2] Crude tank cars, F.O.B., Midwest Mills.
[3] Loose, tank cars, Chicago.
[4] Crude, tank cars, F.O.B., S.E. Mills.

Introduction

As part of a continuing study of the properties of distilled monoglycerides, it is of interest to know the solubility of water and water solutions in mixtures of oil and distilled monoglycerides.

This phenomenon has several interesting applications. It has been suggested, for example, that water-soluble dyes can be used to replace certain oil-soluble F.D.& C. colors by dissolving water solutions of the dyes in oil.

5, soybean oil gained sharply at the expense of cottonseed oil with consumption increasing from 664 million pounds at the beginning of the period to almost 900 million pounds in 1957. In comparison, cottonseed oil declined from a high of 396 million pounds in 1954 to 235 million pounds in 1957. As the use of other vegetable oils declined, consumption of edible animal fats increased from an estimated 8 million pounds to more than 30 million pounds in the five-year period.

Figure 6 shows production and *per capita* consumption

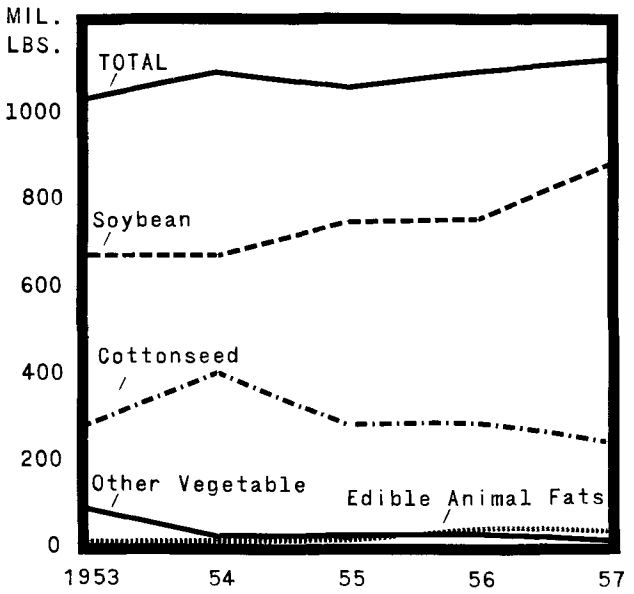

FIG. 5. Factory consumption of fats and oils in margarine.

of margarine and butter from 1947 to 1957. The combined production of margarine and butter increased from 2.4 billion to 3 billion pounds during this period. *Per capita* consumption of margarine and butter combined has increased about one pound since 1947. *Per capita* consumption of margarine jumped from 5 lbs. in 1947 to well over 8 lbs. in 1957 as butter consumption dropped from 11 lbs. *per capita* to 8.5 lbs. in this period. In 1957, for the first time, margarine exceeded butter on a *per capita* consumption basis, 8.6 lbs. for margarine compared with 8.5 lbs. for butter.

Factory consumption of fats and oils winterized for use in salad oils, cooking oils, and related products, where clarity or lack of cloudiness is an essential quality, amounted to 860 million pounds in 1957, a decline of about 4% from the previous year (Figure 7). Although winterizing is defined as a process rather than as a final product, for statistical purposes it is treated as a final product in this report. In addition to the winterized oils, significant quantities of vegetable oils are consumed in commercial pro-

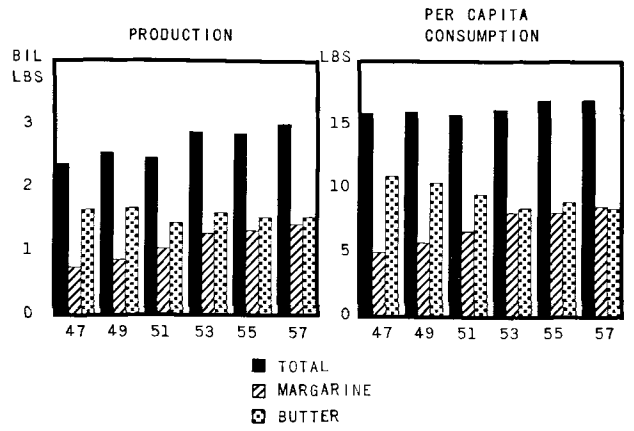

FIG. 6. Margarine and butter.

duction of salad dressing, mayonnaise, sandwich spreads, and French dressings without being winterized. According to a survey by the Department of Commerce, vegetable oil consumption in this semi-solid product group amounted to 438 million pounds in 1956. These figures are not included in Figure 7.

Winterization of cottonseed oil rose from almost 500 million pounds in 1953 to more than 700 million pounds in 1957, an increase of 44%. Soybean oil declined from 129 million pounds to about 52 million pounds during the same period. Corn oil, the only other oil winterized in significant quantities, averaged slightly less than 100 million pounds annually from 1953 to 1957.

Mellorine is a frozen dessert product, using vegetable oil primarily rather than butter fat. It is not a large consumer of vegetable oil, but it is an outlet which only

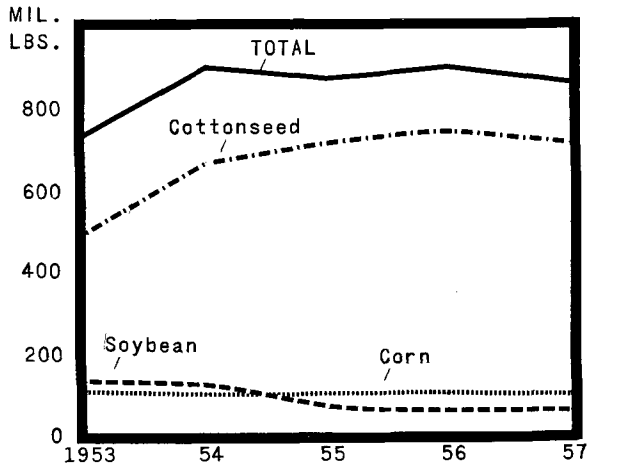

FIG. 7. Factory consumption of vegetable oils in winterizing.

recently assumed sizeable proportions and one for which the potential may be significant. Total consumption of vegetable oils in Mellorine rose from 10 million pounds in 1953 to 15 million pounds in 1956, then declined slightly in 1957. During the five-year period cottonseed oil accounted for approximately 45% of consumption each year; soybean oil, 45%; and other vegetable oils, primarily coconut oil, about 10%.

Figure 8 shows consumption of fats and oils in other edible products. This classification includes fats and oils consumed in bakeries, prepared flours, canned soups, candy, etc. Quantity figures are not available for individual products in this group. As indicated in Figure 8, consumption in other edible products increased from 343 million pounds to a high of 447 million pounds in 1955, then gradually declined to about 402 million pounds in 1957. Soybean oil and cottonseed oil suffered competitive losses in this market because of gains by edible animal fats, corn oil, and, to some extent, other vegetable oils. Corn oil in 1956 and in 1957 was the principal oil consumed, accounting for 28 to 30% of the total in both years.

Rather than provide detailed illustrations of consumption trends, market size, and principal fats and oils used in inedible products, this information is summarized in Figure 9. Soap, paint and varnish, lubricants and greases make up the major inedible products. Inedible animal fats are the principal materials consumed in nonedible products while linseed oil ranks as the major vegetable oil going into these outlets.

Consumption of fats and oils in soap has declined from 1.3 billion pounds in 1953 to about 990 million pounds in 1957. Vegetable oils, primarily coconut oil, account for about one-sixth of total consumption in soap with inedible tallow and grease accounting for most of the remainder, reflecting an increase in the use of synthetic detergents.

Total consumption of fats and oils in paint and varnish has been slightly downward since 1953. Total usage in 1957 amounted to 403 million pounds compared with 463

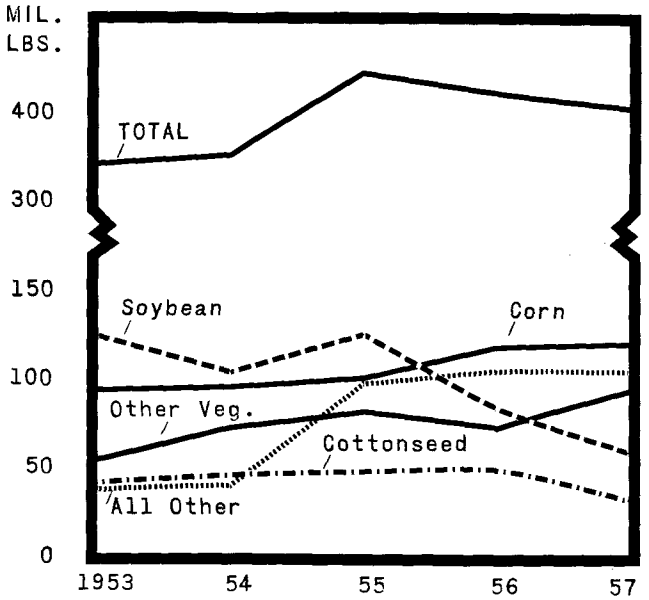

FIG. 8. Factory consumption of fats and oils in other edible uses.

million pounds at the beginning of the period. Linseed oil, because of its superior drying qualities, is the principal vegetable oil used in this product, and soybean oil is next in importance.

Item	1953-57 Trend	1957 Consumption	Major Fats & Oils Used
SOAP	↘	987 Mil. Lbs.	Inedible Animal Fats, Cocoanut
PAINT & VARNISH	↘	403 Mil. Lbs.	Linseed, Soybean
LUBRICANTS & GREASES	↗	121 Mil. Lbs.	Inedible Animal Fats, Fish & Marine Mammal
OTHER NON-EDIBLE PRODUCTS	↗	995 Mil. Lbs.	Inedible Animal Fats, Linseed, Soybean, Cocoanut

FIG. 9. Non-edible products.

Lubricants and greases consumption of fats and oils increased from 65 million pounds in 1953 to a high of 141 million pounds in 1956, then declined to 121 million pounds in 1957. As a percentage of total consumption during the period, vegetable oils accounted for 9% in 1953 compared with 15% in 1957. Inedible tallow and grease, fish and marine mammal oil account for most of the remainder. Consumption of fish and marine mammal oil in 1957 amounted to 50 million pounds, an increase of 196% over 1953 usage.

It is estimated that fats and oils consumption in edible products during 1958 may show a slight increase over 1957 because of the upward trend in population. Fats and oils consumption in the inedible products probably will continue downward because of the decline in general economic activity and continued inroads by products made from materials competitive with fats and oils.

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