

Palm Oil on the Rise

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The fat and oil industry is becoming more aware of palm oil than ever before, because for the first time in history it is being produced in quantities that are of significant volume in relation to the fats and oils from other sources. Furthermore that volume is in a strong growth phase that will extend at least until 1980, and it will be reaching the market in a reasonably steady supply each month of the year.

In the grouping of oils and fats by source, the palm classification includes coconut, palm and palm kernel. Coconut oil has been the largest of the three; palm oil holds second place; palm kernel oil is last. In the years ahead palm oil is expected to attain first place, leaving coconut second and palm kernel last. Presently the palm group makes up only 11% of world fats and oils production. Edible vegetable oils represent 50%; animal fats 30%; marine and industrial oils 8%.

This grouping relationship is likely to change significantly in the 1970's. Edible vegetable oils can increase if grain appears less profitable than oilseeds, or if some low-oil-yielding crop acreage is switched to higher-oil-yielding crops. Animal fats will have a modest, rather steady growth in response to meat and milk needs. Marine and industrial oils will also expand modestly, depending on the demand for fish meal and on industrial and economic growth. But the palm oil expansion prospect is greatest.

Palm oil is best grown in a belt around the middle of the globe, from about 15 degrees north of the equator to 12 degrees south of the equator. This includes Southeast Asia, Central Africa, the Northern half of South America and nearly all of Central America. These are the areas of the world which are aggressively seeking economic growth and where labor is most economical. There is concerted effort to change from less profitable crops to something more valuable. In parts of these areas there is a need to change from bananas because of disease problems affecting that crop. Rubber has become less profitable, and there is land which can be placed into use which has never grown a cash crop.

New oil palm plantations have been planted in these areas in the 1960's, and they are now coming into production. Some additional planting continues even now. There are also efforts being made to improve production of existing plantations. Fertilizer use is expanding; disease and pest controls are being used, and more satisfactory marketing methods are being developed to curtail harvest losses.

Some fruiting occurs the third year after planting. By the time the tree is five years old, about 50% of the yield potential has been reached. At 10 years the tree is in full production. Yields will continue at this level until it is about 30 years old. After this time the tree is so tall that harvesting becomes difficult, so yields decline.

Palm oil is produced from the fleshy part of the fruit, which has an appearance somewhat like dates, another member of the palm family. Palm kernel oil is produced from the seeds. Harvesting must be done when the fruit is ripe; otherwise it falls to the ground and quickly decomposes.

Since the reasons show little fluctuation near the equator, fruit is produced all year long. Therefore harvesting is a continuous operation. This provides a rather constant supply of palm oil and palm kernels. There is some seasonality to the crop, however, which is apparently due to variations in the seasonal occurrences of rainfall.

Palm oil is especially constant in supply since the palm fruit soon decomposes and therefore cannot be stored. Palm kernels can be stored and crushed as needed. Thus it follows that palm oil is produced entirely in the country of origin, but palm kernels may be exported for crushing elsewhere. Some producing countries, however, have built and are constructing facilities to crush more of the palm kernels. This further enhances the economic growth prospect in those countries by providing another step in the industrialization programs. In addition the greater availability of palm kernel meal in those countries will stimulate an expansion of livestock feeding programs. The meal, which is what remains after the oil is removed, has 23% protein. This compares with copra meal at 21% and unhulled sunflower meal at 20%.

Properties and Uses

Palm oil is a semisolid fat at room temperature. It has about equal balance of saturated and unsaturated fatty acids. It competes with other fats and oils in the manufacture of shortening and margarine, and with tallow in soap making.

Palm kernel oil is solid at room temperature. It is known as a lauric oil because of its high content of lauric acid. It is similar to coconut oil, so may be used in confections, pastries and margarine, as well as soap and fatty acids.

Figure 1 shows the monthly consumption of palm oil in the U.S. for the past five years. Most of this use was

TABLE I
U.S. Consumption of Palm Oil (Million Pounds)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1966	.....	.....	.....	.....	3.4	4.5	4.4	7.7	8.3	9.6	7.7	7.8	53.4
1967	7.8	8.0	8.4	7.5	8.3	8.1	6.4	6.5	6.8	6.5	6.5	5.0	85.8
1968	5.8	4.9	5.9	6.2	7.4	7.7	6.9	9.7	8.3	12.5	11.5	10.6	97.4
1969	12.6	10.9	12.5	12.5	12.6	11.8	10.1	10.4	14.2	16.0	13.9	10.9	148.4
1970	6.7	7.5	7.8	9.5	8.3	7.5	8.0	11.2	10.4	13.7	12.5	14.4	117.5
1971	12.2	12.4	13.8	13.5	12.3	14.2	14.2	15.8	17.3	.....	.....	.....	125.7*

* Total January-September.

TABLE II
U.S. Imports of Palm Oil (Million Pounds)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1967	20.4	11.7	6.5	1.3	.....	.....	.....	.....	9.8	2.6	5.6	4.4	64.3
1968	.8	4.7	17.0	1.3	.....	3.4	8.7	.1	18.8	14.8	12.1	16.7	111.1
1969	13.4	15.6	7.4	18.0	6.7	.....	33.0	17.9	5.7	22.0	8.9	11.2	159.6
1970	7.8	12.1	2.9	8.4	.2	21.9	13.5	6.8	6.2	23.8	4.3	33.1	140.9
1971	11.0	24.6	24.1	24.9	14.9	13.2	5.6	12.1	15.4	.....	.....	.....	145.8*

* Total January-September.

TABLE III
Palm Oil Production (Thousand Metric Tons)

Location	1966	1967	1968	1969	1970	1971 ^a
Congo (Kinshasa)	147	179	240	246	250	250
Nigeria	508	325	370	425	488	500
Indonesia	174	174	188	189	215	225
Malaysia	190	226	283	351	430	500
World Total	1,268	1,164	1,357	1,503	1,712	1,835

^a Estimated.

as an ingredient in shortening. This tabulation reflects several influences: (a) the expansion in supplies; (b) increased use in recent months due to higher priced competing vegetable oils; and (c) a temporary reduction in supply in the first half of 1970 due to disturbances in Africa which curtailed shipments from that source.

Monthly imports are shown in Table II. These show roughly the same pattern as the consumption table, except that some months are sharply higher than others. This is mostly a reflection of logistical situations. In some months several shipments arrived, when in others there were few or no receipts.

Palm kernel oil statistics of these factors are available, but not shown here because there is a high degree of constancy.

There is no import duty in the U.S. on palm oil. Palm kernel oil enters with a duty of one-half cent per pound.

Production Outlook

Nigeria has been the world's largest producing country for palm oil and palm kernel oil. In most years from 1960-1966 that country produced close to half of the world total of both. The Congo was second in importance in the early 1960's. In the same period Indonesia was third and Malaysia was fourth.

The production profile has been changing in the past few years, however; Malaysia is rapidly surging to the front as a result of an aggressive planting campaign which began in the early 1960's. Both acreage and production have increased more than five-fold in the past 10 years, which compared with the annual average of 1957-60.

Total area devoted to oil palm in Malaysia in 1970 was 665,000 acres. Matured producing acreage was only about half that amount. Acreage is expected to reach one million by 1975. Production in 1970 was 430,000 metric tons, of which exports were 370,000 metric tons. Before 1980 it is expected that production will reach one million tons, most of which will be exported. Table III shows production in leading countries for the last six years.

Prices

A history of price quotations in the U.S. for palm oil is somewhat limited, compared to other fats and oils. This is understandable because it is only recently that this oil has received broad-scale attention. Figure 1 shows a monthly average quotation for palm oil from the Congo as supplied in the USDA's *Fats & Oils*

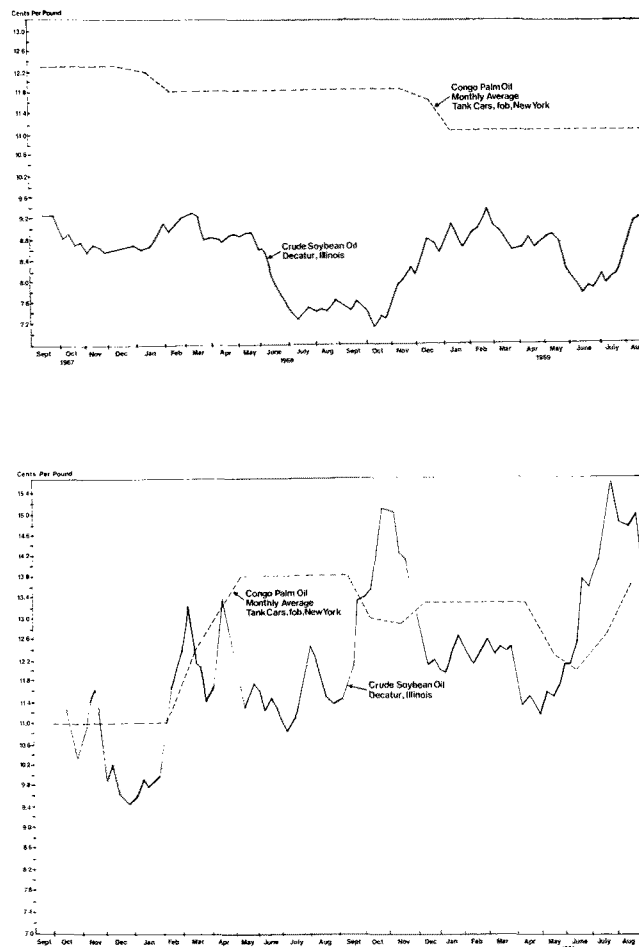


Fig. 1. Palm oil and soybean oil prices.

Situation. Industry sources may have quite a different price picture if they secure palm oil from other origins, but the quoted price averages probably are indicative of approximate values.

It can be noted from the charts that palm oil prices have yielded some of their premium to soybean oil in recent months. This is strongly indicative of the increased competition from newly expanded production. In other words a new era has evolved in which strength in soybean oil may not be fully translated into palm oil prices. It should be noted, however, that some of the relationship can fluctuate just because of changes in ocean freight cost.

NOTICE

Lynn A. Hawkins, Jr., Woodson-Tenent Laboratories, P.O. Box 2135, Memphis, Tenn. 38102, has applied for a Referee Certificate on Cottonseed, Soybeans, Oil Cake and Meal, Protein Concentrates, Cottonseed Oil, Soybean Oil and Other Fatty Oils, Tallow and Grease, Cellulose Yield (Linters). The Chairman of the Examination Board should be contacted by interested parties wishing to comment on this certification. Please write to Edward R. Hahn, Chairman of the Examination Board, Hahn Laboratories, P.O. Box 1177, Columbia, S.C. 29202.

J. C. Lamping Earns Promotion

The promotion of Julius C. Lamping to the position of account manager for the fine chemicals department of the Chemical Division of Hoffmann-La Roche Inc. has just been announced by R. Semmes Clarke, field sales manager, fine chemicals department. In his new position, Lamping will have special account responsibility, as well as the additional duties of assisting his regional manager in sales training and marketing functions.

Lamping has been a field sales representative, first in the Specialities Division and then in the Chemical Division, since joining Roche in 1941. He was the winner of the Barell Award in 1965 and has been a three-time winner of the Top Ten Award for creative salesmanship.

Lamping received a B.S. degree in pharmacy from the University of Cincinnati. He is president of the Chicago Drug and Chemical Association and an AOCS member.