



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

World Vegetable Oil Consumption Expands and Diversifies

Nancy Morgan
(202) 219-0821

Spurred by income and population growth in developing countries—as well as rapidly expanding food processing industries in Asia and other developing areas—the global growth in consumption of vegetable oils is outpacing that of most other agricultural products. Consumption of vegetable oils worldwide grew at an average annual rate of 4.2 percent over the past decade.

Consumption of vegetable oils also was buoyed by relatively low prices during the late 1980's. Prices have been held in check by high U.S. soybean oil stocks and abundant world supplies of other oils, particularly palm and rapeseed oil.

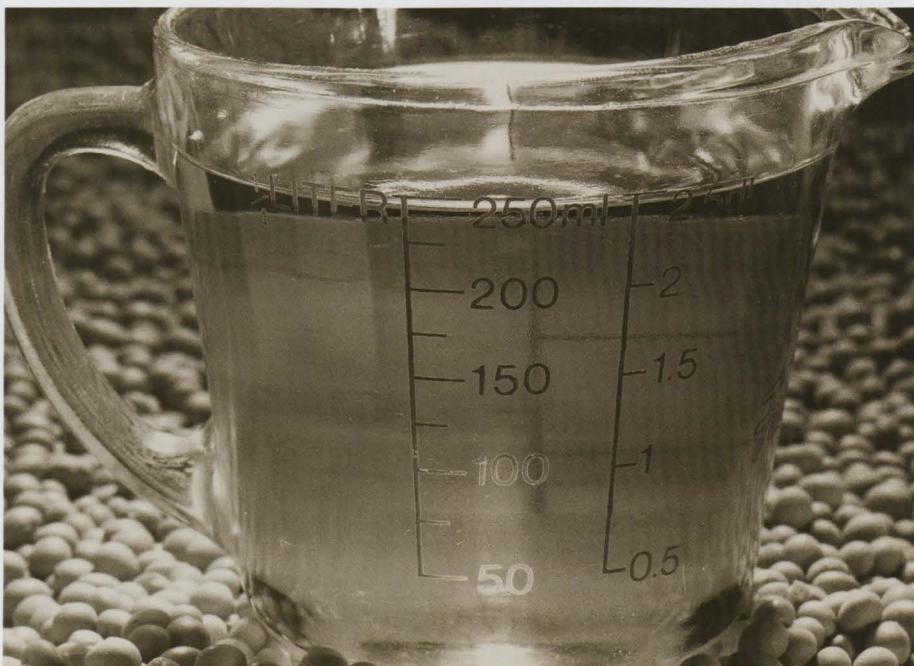
Recent Policies Expand Production

Vegetable oils are derived from oil-bearing crops, such as soybeans, rapeseed, palm kernel, and olives. Oilseeds also yield protein meals, which are used with grains in livestock feeds because of their relatively high protein content. Both oil content and protein levels of meal differ, depending on the specific oilseed.

Since the 1950's, soybean oil has been the leading vegetable oil in production and in use worldwide. However, world supplies of other vegetable oils, notably palm and rapeseed, have been growing, gradually reducing the relative importance of soybean oil. This growth can be attributed to the more competitive prices of other oils, but also to many countries'

policies during the 1980's to promote domestic production of oilseeds and foster self-sufficiency in vegetable oils.

The European Community (EC) and Indian policies stimulated the production of oilseeds, particularly rapeseed, through a system of government supports which guarantee producers minimum prices for production. Rapeseed production in



World growth in consumption of vegetable oils—at an average annual rate of 4.2 percent over the past decade—is outpacing that of most other agricultural products.

The author is an agricultural economist with the Commodity Economics Division, Economic Research Service, USDA.

the EC grew 12 percent annually in the 1980's, and growth in India exceeded 8 percent. This compares to the 3-percent annual growth rate for overall world oilseed production. Similarly, differential export taxes and export subsidies in Brazil and Argentina have fostered expansion in those countries' exports of oilseed meals and oils.

The recent resolution of a trade dispute between the United States and the EC over EC oilseed subsidies, however, could lower EC oilseed production in the near future (see box for provisions of the agreement).

United States Dominates World Oilseed Market

The U.S. soybean industry drives both the U.S. and the world oilseeds markets. Accounting for approximately one-quarter of world oilseed production, U.S. soybean output leads prices and production prospects in other export-oriented oilseed producing countries. The United States is a major player in world export markets for soybeans and meal, accounting for 66 percent of world trade in soybeans and 20 percent of soybean meal.

But the U.S. share of world markets for soybeans and products—meal and oil—has eroded significantly since the 1970's. While the volume of U.S. soybean and soybean meal exports remained relatively high over the 1980's, increased competition—particularly from Brazil and Argentina—reduced the market share of both U.S. soybean and meal exports by around 16 percent. Similarly, U.S. exports of vegetable oils, mainly soybean oil, have declined substantially since the early 1980's, dropping from 15 percent of the world market in 1978 to an estimated 6 percent in marketing year 1993/94.

While soybeans make up most of U.S. oilseed production, production of cottonseed, sunflowerseed,

and peanuts is also growing. Although canola generates much interest, it constitutes but a small fraction of U.S. oilseed production, amounting to less than 1 percent of total oilseed area in 1992 (155,000 acres).

World Trade in Vegetable Oils Shifts

With government policies stimulating large production of oilseeds and influencing trade patterns, the composition of world vegetable oil markets is changing. While soybean oil continues to dominate world consumption of vegetable oils, competing oils dominate the growth in vegetable oil trade (fig. 1).

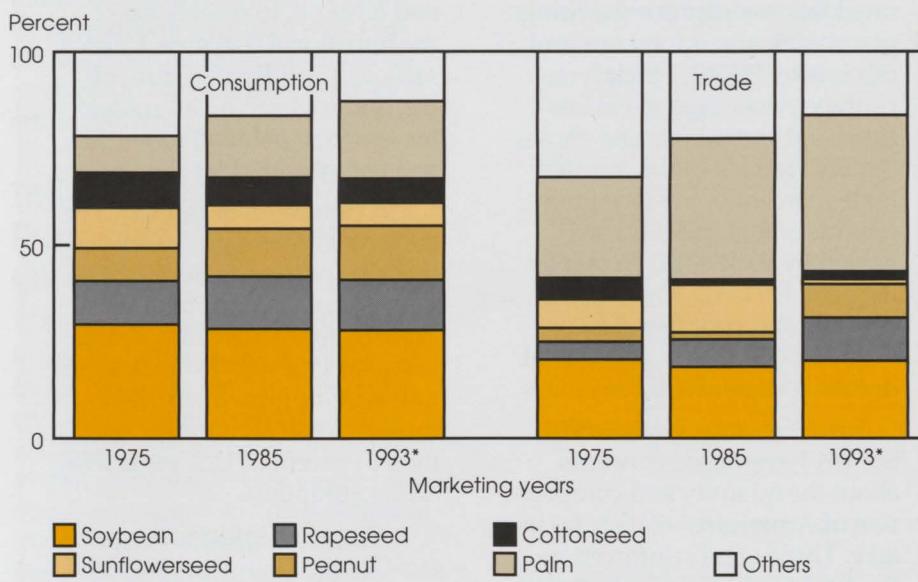
Competitors include palm oil and oil from the "soft" oilseeds (so called because they yield more oil), such as rapeseed and sunflowerseed. Oil from these soft seeds, particularly edible rapeseed, are getting more interest in developed countries due to their perceived health benefits.

EC-U.S. Oilseed Agreement To Reduce EC Oilseed Growing Area

On November 20, 1992, the United States and the European Community (EC) averted a potential trade war when they agreed to resolve an oilseed dispute over the EC's subsidies on oilseeds.

The key feature of the agreement limits the EC's oilseeds growing area, starting in marketing year 1994/95, by mandating a reduction in support payments to oilseed producers if acreage planted exceeds a maximum separate base area. This is reinforced by an agreement to reduce planted area by the general arable crops setaside percentage, or at least by a minimum of 10 percent in the following year.

Figure 1
Growth in World Trade in Soybean Oil Is Outpaced by Other Oils



*Forecast.

Canola oil, derived from edible rapeseed, has the lowest saturated-fat content among all major vegetable oils. Edible rapeseed contains approximately 40 percent oil, compared with soybeans' 18 percent. Sunflowerseed, another soft oil-seed, has a higher oil content of 44 percent. Sunflowerseed oil also is low in saturated fats. Consequently, both canola and sunflowerseed oils tend to command a price premium over other oils, especially in the United States where they occupy niche markets due to their perceived health benefits.

U.S. Changes Fueled by Health Concerns

U.S. canola oil imports increased ten-fold between 1985 and 1992, from 40,000 metric tons to an estimated 400,000 metric tons. Canada, one of the largest producers of canola, accounted for an average of 85 percent of U.S. canola oil imports.

Canola is the name given to seed, oil, and meal derived from the rapeseed plant that has been bred to reduce erucic acid and glucosinolates—elements that present potential health risks to humans

and reduce the palatability and nutritional value of meal as a livestock feed. "Canadian oil-low acid" rapeseed is commonly known as canola, and the term in many cases is used interchangeably with "edible rapeseed." In most parts of the world, high-erucic-acid rapeseed varieties continue to be produced for human consumption. However, the low-erucic-acid varieties are becoming increasingly popular and have come to dominate production in Europe and Canada.

In January 1985, the U.S. Food and Drug Administration granted "GRAS" (generally recognized as safe) status for low-erucic-acid rapeseed oil. Prior to that time, there was no domestic U.S. rapeseed production, and food companies could not use canola oil in their products.

Heightened concerns about the quantity and composition of dietary fat intake have stimulated interest in vegetables oils that are low in saturated fat. While all vegetable oils are cholesterol free, many vegetable oils have relatively low levels of saturated fats, compared with palm oil which contains 51 percent (fig. 2).

Palm Oil Trade Up, Despite Health Concerns

Health concerns about the high level of saturated fat have caused the United States to reduce imports of palm oil. Allegations that tropical oils (such as palm) are detrimental to health resulted in numerous U.S. food companies replacing tropical oils in their products. U.S. imports of palm oil dropped from a high of 277,000 tons in 1985 to an estimated 105,000 tons in 1992/93. The EC continues to be the major importer of palm oil.

However, developing countries are hampered by foreign exchange constraints and thus continue to buy palm oil, which is less expensive. Consequently, palm oil's market share has expanded from 26

Americans Consuming More Canola and Olive Oils

Oils and fats have traditionally been a major component of our daily food intake, with dietary fat constituting an average 37 percent of Americans' total calories.

Fats and oils are usually divided into animal and vegetable fats. Consumption of animal fats—such as butter, lard, and edible tallow—has remained stable. Vegetable oils, low in saturated fats, are capturing a rising percentage of our total fats and oils intake. Health officials encourage Americans to eat less saturated animal fats and cholesterol. Vegetable oils accounted for 86 percent of the 14 million pounds of fats and oils consumed by Americans in marketing year 1991/92. Soybean oil, corn oil, and cottonseed oil accounted for 82.5 percent of total domestic vegetable oil supplies.

Since the early 1960's, nutritionists have raised concerns about the quantity and composition of Americans' dietary fat intake. These were reinforced by the 1988 Surgeon General's Report

on Nutrition and Health urging Americans to lower their intake of fat—especially saturated fat—and cholesterol. Attention was focused on the composition of fats, such as polyunsaturated, monounsaturated, and saturated.

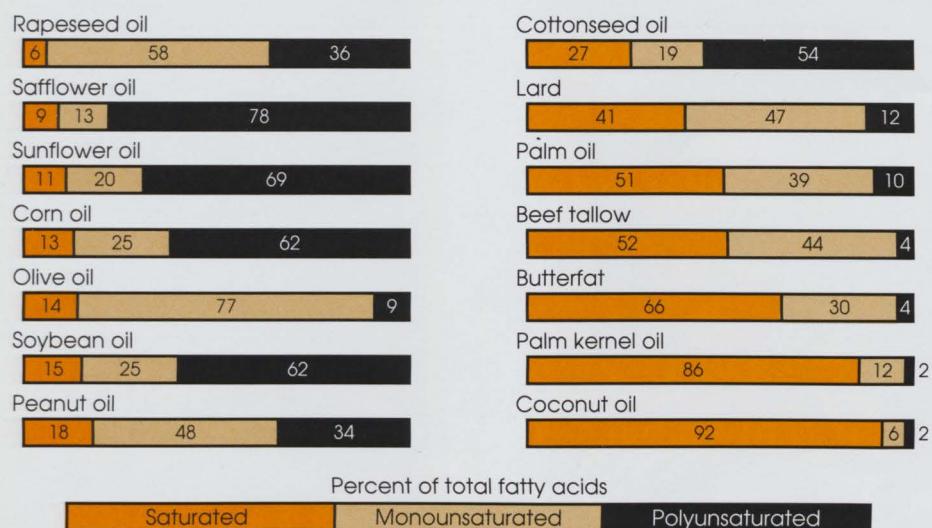
These concerns created a fertile environment for the industry to aggressively market vegetable oils, such as canola and olive oil, to meet some of the nutritional concerns. Canola, safflower, sunflower, corn, olive, and soybean oil all contain far less than palm oil's over 51-percent saturated fat content.

Consumption of canola oil in the United States grew more than 200 percent between 1987 and 1991, while that of olive oil grew by more than 300 percent between 1980 and 1991. Despite tremendous growth, however, these oils still account for less than 6 percent of U.S. vegetable oil consumption.

—For more information, contact George Douvelis, (202) 219-0840.

Figure 2

Rapeseed Oil—Known as Canola—Has the Lowest Saturated Fats of All Vegetable Oils



Source: USDA's Human Nutrition Information Service, Agricultural Handbook No. 8-4.

percent of total world vegetable oil exports in 1975 to over 40 percent in 1992/93 (fig. 1).

With much of the growth in vegetable oil consumption occurring in developing countries (fig. 3), palm oil will likely continue to expand its market share in the 1990's.

However, palm oil is derived from oil palm trees, whose slow maturation constrains rapid expansion in production—unlike other oilseeds, which are planted and harvested annually. Palm trees mature and bear fruit in about 5 years. Over the next 30-35 years, the trees yield palm oil from the flesh of the palm fruit (the seed from the same fruit produces another type of oil—palm kernel).

Palm oil is used in a variety of prepared foods, such as vegetable shortenings, frying-oil blends, frozen desserts, margarines, and coffee whiteners. It also has nonedible applications, mainly soap and oleochemicals (chemical compounds used for industrial purposes). While palm oil contains a much higher level of saturated fat than do other oils, it is often preferred

because of its lower price and unique technical characteristics. Palm oil can withstand high heat without smoking and resists oxidation (which contributes to a longer shelf-life with no change in color or odor).

Malaysia and Indonesia produce about 85 percent of world supplies of palm oil and account for the bulk of the global exports. Both are aggressively marketing palm oil through long-term credit deals and joint ventures with customers, such as palm oil refineries overseas to encourage purchases of crude palm oil.

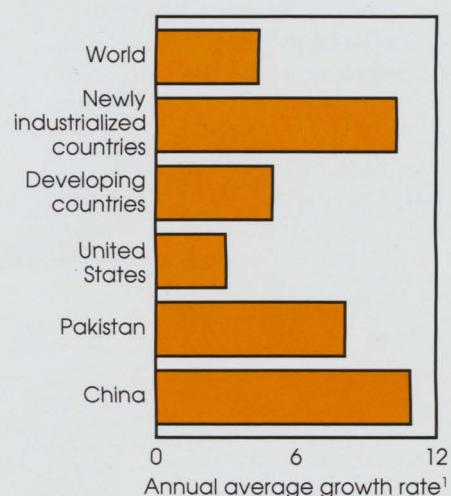
The United States Promotes Vegetable Oil Exports

Expanding oilseed production in South America, the EC, China, India, Malaysia, and Indonesia increased competition for U.S. oilseeds and oilseed products in the 1980's. As a result, U.S. vegetable oil exports began to fall, prompting the U.S. Government to launch a variety of programs in the mid-1980's to promote U.S. exports and

challenge competitors who subsidize their exports. These programs include the Export Enhancement Program (EEP), which provides bonuses to U.S. exporters to help them sell U.S. vegetable oil at competitive prices on the world market. Similarly, the Cottonseed and Sunflowerseed Oil Assistance Programs (COAP and SOAP) stimulate exports of U.S. cottonseed and sunflowerseed oil in designated countries. U.S. vegetable oil exports are also promoted through credit guarantee, food aid, and market development programs (including the Foreign Market Development Program and the Market Promotion Program).

Supported by these programs, U.S. vegetable oil exports are on the rise again. Government-assisted sales accounted for a high of 87 percent of total vegetable oil exports in marketing year 1987/88. Large outlays for these marketing programs, combined with relatively high prices for competing oils, buoyed exports of U.S. vegetable oils in 1991/92 and 1992/93.

Figure 3
Asia Dominates Growth in Vegetable Oil Consumption



Note: Newly industrialized countries are Taiwan, South Korea, Hong Kong, and Singapore.
¹1975 to 1993.

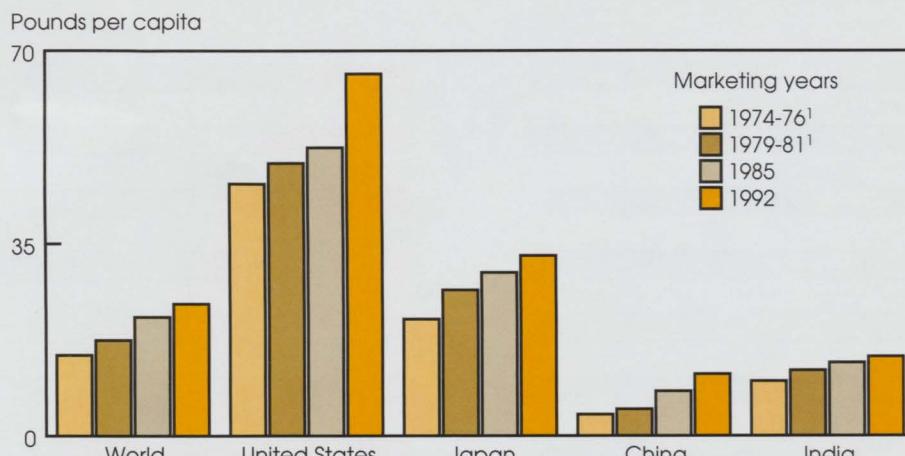
Food Processing Industries Expand Global Demand

The United States and the EC continue to be the largest consumers of vegetable oils, accounting for approximately one-third of world consumption. However, growth in demand is strongest in the newly industrialized countries in East Asia and in developing countries, such as China, India, and Pakistan (fig. 3). Developing countries are consuming more vegetable oils because of rapid growth in population and income. As incomes increase, preferences shift toward more processed foods and more food prepared away from home.

Vegetable oils are an important ingredient in processed foods and food prepared in foodservice establishments. Growth of food processing industries in developing countries is anticipated to strengthen demand for vegetable oils. While lower priced palm oil will supply much of the higher demand in the short term, escalating health concerns about saturated fats may constrain long-term demand and strengthen demand for other types, such as soybean, canola, and sunflowerseed oils.

Future increases in demand for vegetable oils may depend heavily on what happens in China—the world's second largest vegetable oil importer. Until 1985, China was self-sufficient in vegetable oil production. Since 1986, however, consumption has substantially outpaced production, and vegeta-

Figure 4
Per Capita Consumption of Vegetable Oils Indicates Room for Growth in China



¹Average.

ble oil imports—led by palm oil from Malaysia—have soared from 114,000 tons in 1980 to a forecast 1.4 million tons in 1993/94.

Chinese consumption of vegetable oils, estimated in 1992/93 at 11.2 pounds per capita, has expanded dramatically since the mid-1970's due to growth in population and per capita income. However, China's per capita consumption is still substantially below the world level of 23.9 pounds per year, and far below the U.S. level of 65.8 pounds (fig. 4). Given China's low per capita consumption of vegetable oil compared with that in developed countries, there is considerable potential for increased consumption of oils.

China's Government is promoting food processing industries (which produce, for example, instant noodles, crackers, cookies, and traditional Chinese pastries) in rural inland areas close to major crop growing areas in an effort to increase rural industrial development. The growing food processing sector, stimulated by market reforms and increased liberalization of imports (which lower prices

for inputs) should trigger increasing demand for vegetable oils.

Interest abounds in investing in food processing industries in the newly industrializing countries of Asia and elsewhere. Such investment provides opportunities for greater vegetable oil trade, as food processing industries expand and require more vegetable oil inputs.

References

McCormick, I., and R. Hoskins. "Canola: Prospects for an Emerging Market," *Oil Crops Situation and Outlook Report*, OCS-31. USDA, Economic Research Service, Oct. 1991.

McCormick, I., and B. Hyberg. "What's in the Future for Canola?" *Agricultural Outlook*, AO-188. USDA, Economic Research Service, Aug. 1992. ■