Agriculture, is working on a refinement of the system to permit anestrous females—those whose estrous cycles have been temporarily stopped—to be brought into estrus, thus permitting the entire herd's reproductive cycle to be synchronized.

Prostaglandins also are used in pig production, this time to shorten a pregnancy so that a producer can be present when it's time for his sows to give birth. A specific prostaglandin permits control of the time of birth to within 24 to 30 hours. More baby pigs can be saved if a producer is present at farrowing time, and use of the prostaglandin permits the producer to schedule farrowing for a convenient time.

Obviously, prostaglandins play a role in an astonishing variety of biological processes. Yet until recently nothing was known about their actions. "There's still so much that hasn't been discovered yet," says Fried.

One area about which little was known until the recent spurt in research was that of prostaglandin production. A good deal of research is now done into why prostaglandins are produced.

Dr. William Lands of the University of Illinois Medical Center in Chicago, is studying possible connections between nutrition and prostaglandin synthesis. According to Lands, prostaglandins, thromboxanes and leukotrienes are produced from precursors that are produced by dietary polyunsaturated fatty acids. Varying intake of foods that provide PUFA could affect prostaglandin production, he says.

Prostaglandins, thromboxanes and leukotrienes are classed as eicosanoids and are produced from an arachidonic precursor. Their conversion is accomplished with various enzymes. Different enzymes are responsible for production of different eicosanoids. Aspirin blocks certain enzymes responsible for the conversion of arachidonic acid, but not others. Because of this, it affects some prostaglandin functions without affecting others.

No generally accepted theory is available as to why prostaglandins and related compounds are produced, or what their role actually is. Researchers believe prostaglandins serve as both an alarm and a regulatory function in the body. The alarm function may be that they are produced to signal to the body that something is wrong, or that some change has taken place.

The fact that every tissue produces prostaglandins, with functions peculiar to that tissue, suggests that prostaglandins may serve a regulatory function. The theory is that the prostaglandins are the regulatory substances of the body, and that their presence in the various tissues may be the body's way to control the different parts of the systems. Lands refers to the eicosanoids as "defense mobilization substances" that, he says, can be considered both as alarms and regulatory substances.

Eicosanoids can overreact and this is the cause of many human disorders, Lands says. According to Lands, such disorders as heart attacks, strokes, asthma, arthritis and even sunburn can be traced to an imbalance of eicosanoids. Although researchers know that such imbalances are associated with many disorders, they don't know yet what causes the imbalances. They want to learn what actually stimulates prostaglandin production, and what is responsible for imbalances in prostaglandin levels.

"The more we learn, the more we realize how ignorant we really are," says Lands. But each new insight presents a new pathway for exploration. Prostaglandins and their related compounds may be a key to solving many of the biological mysteries that have puzzled scientists for many years.

Traders seek aid

Oilseed and oilseed product marketers around the world are seeking governmental actions or inactions to improve their sales opportunities.

The EC Seed Crushers and Oil Processors' Federation (FEDIOL) has sought European Commission (EC) action on a complaint that Argentine oil meal exports to Europe are improperly supported by various tax and financial schemes. If the EC agrees with FEDIOL, it could levy an extra import duty on Argentine meal.

Meanwhile, the National Sunflower Association in the United States has decided not to pursue a complaint that Argentina was engaging in unfair competition. The complaint may be resubmitted later.

Argentina and Brazil were targets of a National Soybean Processors Association (NSPA) complaint, which the office of the U.S. Trade Representative decided to try to resolve through bilateral talks. NSPA complaints about Spain, Portugal and Malysia remain active.

U.S. complaints against a proposed vegetable-oil consumption tax within the EC drew support from the Economic Ministers of the Association of South East Asia. Additional objections were expected to be filed by Singapore, the Philippines and Thailand. Southeast Asia's palm oil industry might be hurt by the proposed tax. The EC failed to reach agreement concerning the tax during a meeting in Greece, but the topic was expected to be discussed at another meeting of the commission this month.

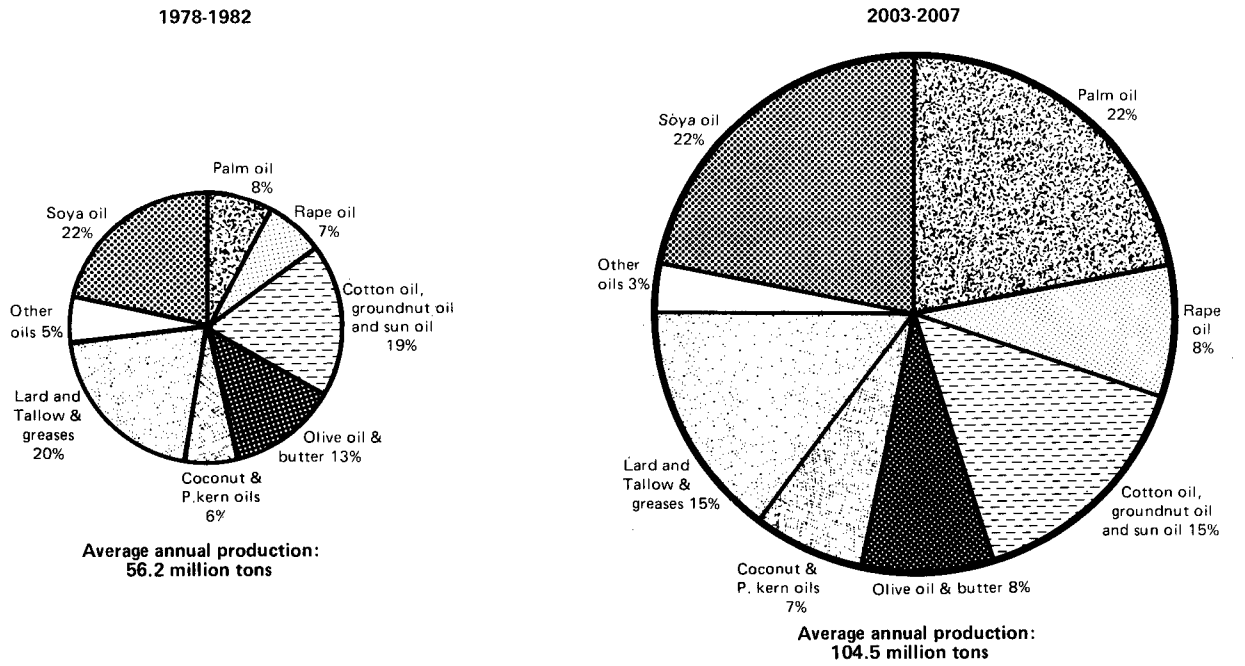
Follow the sun

The National Sunflower Association is gearing up a 2-year sunflower-oil promotional campaign to be called "Follow the Sun."

The campaign is designed to increase domestic use of sunflower oil in institutional markets—the food companies that use edible oils to produce snack food, bakery goods and processed foods. Based on a market analysis by Experience Inc., NSA believes potential users have inconsistent and sometimes incomplete information about sunflower oil. NSA will add a staff member, who will be a food technologist or chemist, whose assignment will include providing information to food-industry scientists and maintaining contacts with the food-processing industry.

Promotion of sunflower oil directly to consumers will be left to the food companies marketing products containing the oil.

MAJOR OILS & FATS: Shares of Total Production (percent)



Forecast for oils

Palm, palm kernel and coconut oils will increase their share of world fats and oils production significantly during the next 25 years, according to a special report from Oil World, the German fats and oils weekly newsletter, marking its 25th anniversary.

Whereas, in recent years, the 3 tree oils' share of world production has been about 14% (about 7.9 million tons), by the year 2007 their total production should be about 30 million tons, or 28.5% of world production, the newsletter said. Increased acreage and higher yielding varieties were cited as the main factors in such an increase.

Soybean oil now represents about 22% of annual production and will continue to do so in 2007, a figure that will be matched by palm oil, Oil World said. Rapeseed and sunflowerseed oils also will show increased production, according to Oil World. Rapeseed oil production is forecast to rise sharply for the next 5 years, then reflect a growth pattern like that for all fats and oils. Sunflower oil production also is expected to increase sharply for the next 5 years, then rise at a rate below that for all fats and oils, the report said.

Fats and oils from other sources should increase, but at not as rapid a rate, Oil World said. Sources in this category include animal fats, fish, cottonseed, olive, tung, peanut, sesame, linseed and castor oils.

Australian output doubles

Australia's oilseed harvest, currently beginning, should yield about 672,000 metric tons, more than double the 332,000 metric tons of a year ago, according to Oil World, the German fats and oils newsletter.

Rains during early 1983 replenished subsoil moisture depleted by several years of drought in major crop areas. In addition, new varieties of rapeseed resistant to disease are now available to growers. Oilseed acreage increased to 586,000 hectares from 372,000 hectares a year ago.

Oil World's production forecast by crops (with the previous year's production in parentheses) are: soybean, 105,000 (38,000); cottonseed; 263,000 (164,000); peanuts, 40,000 (25,000); sunflower, 188,000 (93,000); rapeseed, 22,000 (6,000); safflower, 49,000 (3,000); and linseed, 5,000 (3,000).

Australia's oilseed-crushing industry has an estimated annual capacity of 600,000 metric tons, which means Australia should be exporting sizable quantities of oilseeds for the first time since 1978/79, while its imports should decline. Australian imported record amounts of oilseeds and fats and oils during calendar year 1983.

Harshaw/Filtrol join

Formation of the Harshaw/Filtrol Partnership announced late last year will not mean any immediate changes to firms that use the catalysts and clays produced by those firms, but it does mean some job title changes for a few AOCS members.

Thomas J. Murray is national accounts manager for Harshaw Catalysts in Cleveland. AOCS Governing Board Member-at-Large Robert C. Hastert is now business manager for Harshaw Catalysts and will be operating out of the Cleveland office, rather than his previous Beachwood,

Ohio, office. AOCS member R. T. Krai also moves from the Beachwood office to the Cleveland office.

On the Filtrol side, AOCS member R. T. Smith is business manager for Filtrol's clays, operating from the Oakland office. Woody Sorenson continues as general sales manager for Kaiser Chemicals, the parent firm for Filtrol.

"Customers using Harshaw and Filtrol products will continue to be called on by separate salesmen," Hastert said. Tom F. Oonk has been named vice-president of international operations and John B. Toogood is vice-president for sales.

Hexane use may decline

Use of hexane in the United States is forecast to decline by 1.8% annually through 1990 in a new market study of aliphatic hydrocarbon solvents by Frost & Sullivan Inc.

Hexane is used primarily for vegetable-oil extraction and rubber polymerization, the report said, and accounts for about 19% of the total aliphatic hydrocarbon market. The total aliphatic hydrocarbon solvent market was about 695 million gallons in 1981; projected total demand in 1990 is 607 million gallons, according to Frost & Sullivan.

The report, "Aliphatic Solvents in the U.S. (#1148)," costs $1,300. Frost & Sullivan offices are located in New York and London.

Soviets at 76% capacity

The Soviet Union's oilseed-crushing industry operated at approximately a 76% capacity rate during 1983, according to a report from Weyland Beeghly, agricultural attaché at the American Embassy in Moscow.

The Soviet Union has about 100 oilseed-crushing plants with an average capacity of about 400 metric tons a day, Beeghly's report said. About 70 of the plants are solvent-extraction plants, the others are oil-press operations. In 1979, the Soviet crushing industry operated at about 80% of capacity. Estimated operational rates for 1980, 1981 and 1982 were 73.3%, 73.7% and 74%, respectively.

Efficiency of crushing plants was indicated in reports on processing losses. In sunflower solvent-extraction plants, oil losses were 1.04% in 1981, the last full year for which data was available; losses in press operations were 2.77%. On the meal side, losses in solvent plants were 0.60%; in press operations, 2.27%. Comparable figures for soybean plants were: oil, 1.09% (solvent extraction), 4.74% (press); meal, 1.08% (solvent), 4.72% (press). For cottonseed, the figures were: oil, 1.24% (solvent), 4.63% (press); meal, 0.53% (solvent), 3.80% (press).

Production of vegetable oils during 1982 was officially reported as (in thousand metric tons): sunflower, 1,463.8; cottonseed, 729.2; soybean, 285.0; castor, 13.5; mustard, 11.1; corn, 8.9; linseed, 3.1; and others, 15.46.