Feature

Canola
Making inroads in the U.S.

The following article updating canola's acceptance in the U.S. by growers, processors and food manufacturers, since it gained generally recognized as safe status, was written by JAOCS *Newswriter Anna Gillis.*

Will canola oil be a success in the U.S.? Canadian oil and seed exporters and U.S. refiners, food processors and plant breeders believe it will.

Canola's future has looked more and more golden since the U.S. Food and Drug Administration (FDA) gave canola oil generally recognized as safe (GRAS) status three years ago. Since 1985, U.S. imports of canola oil and seed have climbed sharply, several major U.S. oil-refining companies have introduced canola products into the domestic market, and U.S. and Canadian plant breeding companies have stepped up efforts to develop canola varieties suitable for varying growing conditions across the U.S. A major coup for canola occurred in August 1986 when Procter & Gamble (P&G) introduced a reformulated Puritan Oil containing 100% canola oil; in 1987, Puritan received the American Health Foundation's Food Product of the Year Award.

Is GRAS status alone enough to guarantee canola's prosperity? Industry representatives do not think so. They say price, availability, the U.S. government's farm program, acceptance of the crop by growers and the development of canola varieties will influence its ability to succeed in the U.S. market in the long term. Short-term, labeling may be the important determinant.

U.S. food and drug regulations require products containing canola oil to be labeled as containing low-erucic acid rapeseed oil (LEAR). The name "canola" may accompany LEAR, but may not appear alone on the label. Last year the Canola Council of Canada, arguing that the term "canola" is more readily recognized by consumers than low-erucic acid rapeseed, asked FDA to permit the name "canola" to stand alone on labels. The American Soybean Association (ASA), however, petitioned FDA to prevent any use of the name "canola."

Although FDA is working to amend labeling rules so the canola name can be used alone, FDA's Raymond Gill said the agency is watching the progress of the Free Trade Agreement between the U.S. and Canada. Last October, the two countries initiated a tentative agreement that will remove all tariff and many nontariff barriers to agricultural trade over a 10-year period beginning Jan. 1, 1989. One term of the agreement requires that "the Parties (U.S. and Canada) shall accept the use of the terms 'canola oil' and 'low-erucic acid rapeseed oil' as synonymous." The Canadian Parliament and U.S. Congress have not yet ratified the agreement; if they do, the acceptance of the name canola will be automatic, Gill said.

The label question has slowed the switch to canola oil by U.S. food manufacturers, according to Stephen Eure, director of government relations for the Snack Food Association (SFA). "There's a general consensus in the industry (SFA includes most of the nation's major manufacturers of salty snack foods) that more people would use it if the name were changed. The name canola has a friendlier 'flavor' than low-erucic acid rapeseed oil, and it's better known than LEAR among consumers," he said. Canola oil could be a convenient solution to some of the snack-food industry's image problems, Eure said.

"The food processing industry, as a whole, gets a black eye over the saturated fat issue. The use of canola oil from this perspective makes a lot of sense. However, canola's use has been limited due to the name, and it has only been in the past few years that the industry has felt the heat to switch formulations," Eure said, noting canola oil has the lowest saturated fat level of all the vegetable oils. The Sun Potato Chip Co. in Chandler, Arizona, for instance, has switched to canola oil and explicitly states on its redesigned packaging that the switch was made based on the oil's profile as a healthy oil, Eure added.

Food company interest

Two years ago, SFA conducted a survey of its 140 member companies to determine which oils were used by the industry. At that time, no company reported using the oil, but Eure estimates a handful do now.

Frito-Lay, an SFA member, has not yet added canola to the list of oils it uses, but if or when it does, "Health will be a contributing factor, not a driving factor," Lane Burtz said. Burtz is Frito-Lay's director of oil purchasing.

The company has conducted tests with the oil over the past several years and will conduct more taste tests this year. However, Butz said, it will not sell products using canola oil if they don't pass those tests. "The oil is probably interchangeable, but we want to make sure."

In anticipation that canola might be added to Frito-Lay's oil stable, the company aimed to contract about 45,000 acres of the crop in Minnesota and North Dakota this year, according to a report in *Canola Digest*. These efforts were not a "roaring success," according to Burtz, who estimated that only several thousand acres actually were contracted. He cited grower unfamiliarity with the crop as the main reason for lower-than-expected interest. Despite limited success in the first year, the company will continue to contract for canola as it does for corn and potatoes, Burtz said, noting that Frito-Lay prefers to depend on U.S. growers rather than foreign markets for its commodities. National Sun Industries in Enderlin, North Dakota, will crush the contracted canola.

Other companies are in varying stages of evaluating canola. The Campbell Soup Co. and Lamb-Weston Inc. plan to introduce products containing canola oil pending resolution of the labeling issue. Lance Inc. of Charlotte, North Carolina, already has switched to canola oil in many of its baked snack foods.

Campbell Soup began evaluating canola oil more than 10 years ago, according to Glen Jacobson, Campbell's manager of lipid and dairy science. During that time, the company has noticed an overall improvement in the oil's quality and flavor stability. Based on these improvements, the company decided to use canola oil at its Canadian facilities. The oil is used by the company in Canada for its Pepperidge Farm cakes and in canned goods containing sauces made with nonhardened fats. "Canola oil will be used in selected products in the U.S. as soon as the name change becomes official," Jacobson said.

Describing canola as "an oil that's here to stay," Jacobson expects it will eventually represent an appreciable portion of the U.S. edible oil market, especially if U.S. farmers decide to grow the crop. "It will come up at the expense of sunflowerseed oil and safflowerseed oil, and, if price is in line with oils of similar qualities, it could become part of the line of oils used by companies," he said. "Its nutritional attributes are in its favor."

Lamb-Weston Inc., a Portland, Oregon, company which provides frozen potato products and pizza to the institutional and quick-service food industries, might begin using canola oil in one of its french-fry lines this year. Health considerations are the driving factor in plans to introduce product lines containing canola, according to Dave Kelley, Lamb-Weston's marketing director.

"An increasing number of customers are leaning toward unsaturated oils. The potential looks particularly good for customers in the noncommercial market segments such as schools, hospitals and universities," Kelley said. However, the company's major customer—the fast-food industry—is not likely to make a quick switch to canola. "None of those customers has asked for canola oil; in fact, only one has asked specifically for vegetable oil. Many still want tallow."

Lance Inc. is one company that has said "no more tallow, lard, coconut or palm kernel oil" in its products. After two years of reformulating, Lance eliminated these oils in May and now uses only canola, sunflowerseed, cottonseed and soybean oils in its cookies, crackers and other snack foods. "We made the switch because we wanted to be the white-hatted guys," Price Gwynn III, Lance's vice president, said.

The average snack food buyers do not know what they are eating; they do not know their cholesterol levels, and they may not care, Gwynn said. "But, market research says 2–25% of the population is nutrition-literate. We're aiming for those customers with a keener appreciation for nutrition."

Canola's FA profile

Canola oil contains 6% saturated fatty acids, 10% α-linolenic acid, 26% linoleic acid and 55% oleic acid. All things being equal, this profile gives companies an incentive to switch, according to industry representatives. The key reason for P&G's interest in canola oil is its unique fatty acid composition, according to J. Edward Hunter, a researcher with the company's food product development division.

"We believe that canola oil's fatty acid composition is consistent with current health professional advisory statements and emerging research with respect to diet and chronic disease," Hunter said earlier

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this year at the Canola Council's annual meeting. He suggested that canola oil's low saturate level fits into recommendations by the American Heart Association and National Institutes of Health Consensus Conference that people reduce their saturated fat intake.

Canola oil's linoleic acid levels are adequate but not excessive, and the α-linolenic acid present may reduce platelet aggregation, consequently lowering the risk of thrombosis, Hunter added. It also may be instrumental in lowering blood pressure, and thus, may be useful in the treatment and prevention of hypertension. Hunter cited several studies that indicate monounsaturates may be helpful in reducing serum cholesterol levels without lowering high-density lipoprotein levels. "We anticipate that additional work may confirm further that monounsaturated fatty acids may be beneficial for individuals needing to reduce their plasma total and LDL (low-density lipoprotein) cholesterol levels," Hunter said.

The Canadian canola industry has been pleased with P&G's commitment to promote the health benefits of canola oil, according to Canola Council President Allan Earl. "The way P&G has placed us has made us respect our own product more and has helped us reposition ourselves in the Canadian market. We always knew we had a good oil. We just never knew how good." Earl anticipates the oil could become a major oil in the U.S. someday; for now, however, it fits into the "health" niche.

A U.S. commodity oil?

Some are convinced canola will not remain categorized for health markets alone. "Canola oil will be a commodity oil," according to Frank Flider, general manager of Agro Ingredients Inc., a subsidiary of Calgene Inc. Agro Ingredients is a vegetable fats and oils products distributor based in Des Plaines, Illinois.

In the three years since canola oil received GRAS status, Agro's canola oil sales volume has increased, Flider said, noting 8–10% of all U.S. imports of refined Canadian canola oil imports end up in Agro oil products. Flider estimated 90% of Agro's canola oil sales are used in commercial products, with the balance used for testing purposes. Most sales have been to small and middle-sized food companies, a trend Flider expects will continue until the name "canola" can be used alone on labels. "We're optimistic about canola's future because many of the people who come to us come because their customers are asking for canola," Flider said.

Bunge Edible Oil Corp., Durkee Industrial Foods Corp., Colfax Inc., C&T Refinery Inc. and Kraft Food Ingredients Group refine and sell canola oil. Bunge began selling a 100% canola salad oil and liquid shortening to its food service customers in July 1986. In June 1988, C&T started packaging canola oil for institutional markets, and Durkee introduced a refined, bleached, deodorized and slightly hydrogenated canola oil.

Although canola oil is available in the U.S., "it is a mistake to think there are a multitude of customers," Abbott Dressler, executive vice president of Colfax, said. None of the company's familiar name brand accounts uses canola and this is unlikely to change unless the name change is approved and availability is guaranteed, Dressler said. The only acceptance has been in institutional sales where labeling is not an issue, he added.

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C&T's Vice President of Operations David Logsdon said that company's main success with canola oil has been in bulk sales to the institutional sector. He said the company was particularly pleased in July when sales of packaged canola oil represented 10% of total packaged goods sales just one month after the company began packaging the oil.

Logsdon believes several national manufacturers already may have given in-house approval for canola use following an evaluation period, and are now poised to go ahead following a favorable FDA decision on labeling. But even with FDA approval and acceptance by companies, "It really is premature to guess how well the oil will do," Logsdon said. "If sales of oil were predicated only on health qualities, this oil has potential."

Canola oil's entry into the U.S. market has been aided by price and stability, as well as its health profile. U.S. Department of Agriculture (USDA) figures for average oil prices from October 1987 to June 1988 indicate canola oil has been priced lower than palm oil and domestic soybean oil. In that time, the average FOB ex-mill Rotterdam price for canola was $378 per metric ton (MT) compared with $398 for palm oil and $464 for soybean oil.

According to Logsdon, higher peanut oil prices caused some users to switch to lightly hydrogenated canola oil earlier this year, and Flider said some snack food producers are using it instead of winterized, hydrogented soybean oil, which is higher-priced than canola oil. Higher prices for domestic oils caused by U.S. agricultural programs also help canola, Dressler said. In the long run, canola prices may be competitive with those of soybeans, and, "It will come closer than any other oil to giving soy a run for its money," Flider said.

Canola oil's stability also makes it attractive to buyers. When hydrogenated and fractionated, canola oil has an AOM stability in excess of 100 hours and can go as high as 125 to 130 hours, while fractionated soybean oil has an AOM of less than 100 hours, Logsdon said. In fact, stability is such a strong selling point that Durkee Industrial Foods Corp. promotes canola as much for its high stability as for its

low saturate level, according to Teresa Rodriguez, assistant product manager for high stability oils at Durkee. At Agro, the oil is marketed as a replacement for coconut oil in nondairy creamers; the company also is evaluating canola's potential in confectionary uses.

Although the oil has gained in prestige and there has been a steady increase in the number of major manufacturers sampling canola oil, Rodriguez stressed canola is still a newcomer to the U.S. market, and it will take time to convince companies to change their formulations.

For the oil to have universal acceptance, "it will have to be given a fair chance," Dressler said. That will occur if the name change is approved and if ASA does not launch a counter-campaign as it did against tropical oils. "The next limiting factor will be availability. A move to canola by a few volume users will quickly take away the majority of oil coming into the U.S.," Dressler said.

Canada, the supplier

Canada is the dominant supplier of canola products to the U.S. Canadian sales to the U.S. have increased steadily since 1984, according to data from Statistics Canada. In 1984, 1,063 MT of canola seed, 108,351 MT of canola meal and 4,023 MT of canola oil were exported. By 1987, those levels had risen to 12,099 MT of seed, 211,917 MT of meal and 76,990 MT of oil. USDA figures indicate that 44,881 MT of Canadian canola oil were imported between January and May 1988, up from 27,268 MT for the same period last year.

According to Chad Russell, an oilseed analyst with USDA's Foreign Agricultural Service, total rapeseed oil imports (this includes high- and low-erucic acid oils) could reach 150,000 MT in calendar year 1988, a 10-fold rise since 1985. USDA's preliminary forecast for 1989 indicates 200,000 MT of rapeseed oil may be imported. Edible, or low-erucic acid, oils account for most of the increase, Russell said.

"The U.S. is Canada's fastest-growing market," according to Simon Sigal, director of the oilseeds division in Agriculture Canada's Grain Marketing Bureau. He said Canadian canola producers hope to export 150,000 MT of oil to the U.S. next year.

Sigal calls the U.S. a "tremendous market" and believes demand for canola oil could increase quite rapidly. However, Sigal and Earl concur that Canada would have difficulty meeting a sudden, sharp increase in demand due to production limitations at home and obligations in other markets. If the U.S. market becomes quite large and if Canada is to supply the market, agronomic changes would have to occur in Canada, Sigal said.

Canadian production is limited by the availability of arable land. Wheat, barley and canola compete for acreage; consequently, canola area is highly dependent on price and rotation schedules, Sigal said. So far, the maximum area devoted to canola has been eight million acres, but there are people who think acreage could go as high as 10 million acres on a consistent basis, he added. However, the only way to have a significant expansion in area would be to change the crop rotation cycle, and that can occur only if canola develops disease resistance, Earl said. Canadian agronomists now suggest that canola be planted only once in four years as a way to limit disease.

Canada produced 3.85 million MT of canola in 1987, according to Statistics Canada. Nearly 2.05 million MT of canola seed were exported; 1.53 million MT went to Japan and more than 366,000 MT went to Mexico, Canada's major seed customers. The balance was crushed domestically, to produce 633,000 MT of oil, nearly half of which was exported. With only 300,000 MT of oil available for export, Canada would not be able to supply a huge demand from the U.S., Sigal said. "The key to expanded exports would be major increases in yields through improved agronomics or development of high-yielding hybrids."

The European Economic Community (EEC) has low-erucic acid rapeseed oil in abundance and could supply the U.S. This concerns Canadian exporters who, as Earl said, "could be flooded out of the U.S. market." When European oil entered the U.S. earlier this year, Canada could not afford to match the price but was still able to compete based on service and technical support, according to Les Rankin, general

manager of commodity marketing for CSP Foods Ltd. In a report in *Canola Digest*, Rankin blamed the U.S. Export Enhancement Program and EEC subsidies for creating the circumstances that allowed European oil to be competitive in the U.S.

Some Canadians worry that European rapeseed oil may be higher in erucic acid content than Canadian canola oil and this could taint canola's name. To be graded "canola," the oil cannot contain more than 2% erucic acid. If there are doubts about quality, the Canadian industry would not want "to be tarred with the same brush," Sigal said.

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In the long run, Europe is likely to cut back on domestic production and may use more double-zero rapeseed (low in glucosinolates and erucic acid) at home, lowering the amount of oil available for export, Sigal said. "In any case, if the U.S. wants canola, it will have to grow it."

U.S. canola production

Canola area is expanding in the U.S. This past year, the crop has either been tested or grown commercially in Washington, Oregon, Idaho, Montana, North Dakota, Minnesota, Kentucky, Georgia, Tennessee, Mississippi, Missouri, Arkansas, Illinois, Indiana, Ohio, Texas, Oklahoma, Kansas, Alabama, South Carolina, North Carolina and Virginia.

Although USDA does not have rapeseed production figures for the U.S. and has not made projections for long-range development of canola, representatives from U.S. and Canadian agribusiness firms report that area is increasing as more growers decide to try the crop.

In 1988, Allelix Agriculture, a division of the Canadian biotechnology firm Allelix Inc., sold enough canola to seed approximately 35,000 acres in the Dakotas and Kentucky, according to Ian Grant, Allelix's manager of seed products. The ContiSeed Division of Continental Grain Co. has sold seed in North Dakota and Minnesota. Ameri-Can Pedigreed Seed Co., a subsidiary of Calgene Inc., began marketing seed through Terra International Inc. in 1988. The company sells Cascade, a winter variety developed by Dick Auld at the University of Idaho.

Curtis Hennings, marketing director for Spectrum Crop Development Corp. in Ritzville, Washington, estimated growers in Washington, Montana, Idaho and Oregon planted 10,000 acres of canola in late 1987. That yielded approximately 8,000 MT of seed, virtually all of which will be exported to Japan. Spectrum has a joint venture agreement with Continental Grain Co. (Canada) Ltd. and Sumitomo Corp. of Japan to market canola grown in the Pacific Northwest in Japan. Hennings expects farmers to seed 15,000 acres this fall.

Meanwhile, Billy Joe Miles of Miles Farm Supply in Owensboro, Kentucky, predicts 100,000 acres of canola will be planted in Kentucky, southern Illinois and Indiana this fall. Last September, 20,000 to 30,000 acres were planted in the three-state area, but only 12,000 to 20,000 acres were harvested due to dry weather during emergence, Miles said. The seed was shipped to ADM in Windsor, Ontario.

According to Miles, growers in Southeast U.S. are interested in the crop because it can be double-cropped with soybeans, and has been grossing $250 to $350 per acre. In more northern areas, growers are planting canola instead of winter wheat, according to Jim Castagno, commercial director of Allelix Agriculture. "Canola already is competitive in areas where winter wheat yields are less than 35 bushels per acre," he said. "If wheat in the U.S. sold at the world market price (instead of a supported price), canola would penetrate the U.S. market."

Castagno does not expect canola to make a major impact in the U.S. corn belt where winters are too cold for winter varieties and summers are too hot for spring types. However, once varieties are developed for other regions of the U.S., he believes the crop will become more common (see accompanying article). Pricing and U.S. farm policy also will influence the crop's ability to succeed, he said.

Even though U.S. acreage is still small and patchy, industry representatives are optimistic about canola's future in the U.S., particularly following P&G's decision to use canola in Puritan Oil. Their predictions for U.S. canola acreage range from 500,000 acres in the next four or five years to 15 million acres by the turn of the century. Calgene and Ameri-Can are hopeful canola area can reach five to seven million acres within seven years, according to Eric Rey, general manager for Ameri-Can and director of field operations for Calgene. Allelix's estimates for the crop are on the conservative end of a three-to-15-million acre projection, Castagno said.

To attain such levels, the industry will have to face numerous obstacles: the U.S. farm program, an unwillingness by farmers to try a new crop, a shortage of varieties suited to the U.S. According to Auld, any obstacles the U.S. canola industry will face are manageable "now that top management has looked at canola and said, 'It's time for us to be in the business.'"