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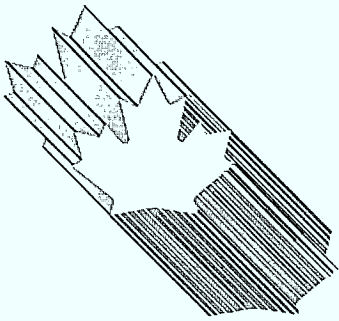


Industry, Science and
Technology Canada

Industrie, Sciences et
Technologie Canada

Oilseed Crushing

Canada



INDUSTRY PROFILE

OILSEED CRUSHING DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION LIBRARY

1988

JAN 25 1989

FOREWORD

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In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to survival and growth. This Industry Profile is one of a series of papers which assess, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological and other key factors, and changes anticipated under the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the papers.

The series is being published as steps are being taken to create the new Department of Industry, Science and Technology from the consolidation of the Department of Regional Industrial Expansion and the Ministry of State for Science and Technology. It is my intention that the series will be updated on a regular basis and continue to be a product of the new department. I sincerely hope that these profiles will be informative to those interested in Canadian industrial development and serve as a basis for discussion of industrial trends, prospects and strategic directions.

Minister

Canada

1. Structure and Performance

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INDUSTRIELLE REGIONALE

Structure

The oilseed crushing industry consists of firms which process oilseeds into crude vegetable oil and protein meal. The oilseed is crushed and the oil is extracted from the resulting meal. The oil is subsequently refined and further processed to produce, for example, salad oils, margarines and alkyds for various industrial uses. Refined vegetable oil is used in a wide range of other food products. Protein meal is incorporated into animal feed, pet foods and various products for human consumption.

The two major oilseeds processed in Canada are canola (improved varieties of rapeseed) and soybeans. Relatively small quantities of flaxseed and sunflower seed are also processed domestically. Soybean processors currently use 75 percent of Canadian soybean production, while canola crushers use 40 percent of Canadian canola production.

Canola is crushed mainly for its oil because its seed yields about 40 percent oil and 60 percent meal. Canadian canola varieties are the most advanced in the world based on quality and nutrition. Soybeans are crushed more for the meal since they yield about 78 percent meal and 17 percent oil, which tends to be a by-product.

In 1986, employment in the industry was 1052 and shipments were valued at \$732 million (2.3 million tonnes). Crude canola and soybean oil accounted for the largest percentage of shipments, followed by protein meal, and other products, including lecithin, seed hulls and screenings. The relative proportion of canola and soybean crushings varies from year to year.

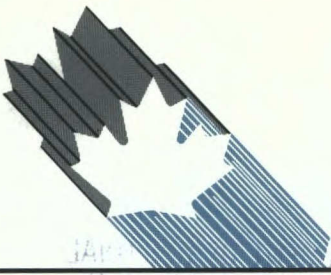
Exports of oilseed products consist mainly of canola oil and canola meal. Major Canadian canola oil markets are the United States, India and Algeria, while the major markets for canola meal are the United States, Japan, Norway and the Republic of Korea. Total exports in 1986 were valued at \$200 million, of which oil accounted for \$142 million and meal \$58 million. Canada is a net exporter of oil but a net importer of meal. Soybean meal is the major import item, accounting for \$168 million of the total imports of all oilseed products, which amounted to \$236 million in 1986. About two-thirds of the soybean meal imports go to eastern Canada and one-third to western Canada. Other imported products include palm oil, olive oil and various other edible oils.

Major international competitors in the oilseed products market include the United States, the European Community (E.C.), Brazil, Argentina and Malaysia. Canola and soybean oil compete on the international market with other substitute oils such as palm, peanut and cottonseed.



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Imports, Exports and Domestic Shipments 1986

The canola crushing industry is dominated by two major companies, CSP Foods Ltd. and Canada Packers Inc., which own five of the eight crushing plants in the industry and account for 56 percent of total crushing capacity. Soybeans are processed in three plants of approximately the same size, all located in Ontario. Ownership is primarily Canadian, with the exception of two foreign-owned companies, which are both located in Ontario. The Japanese own 50 percent of one western Canadian crushing plant. The bulk of crude oils are refined in separately owned establishments which form the edible oil refining industry. This industry refines oils from a variety of sources including animal, marine and vegetable. There are, however, some forward linkages. Four of the oilseed crushers also fully refine part of their output.*

* Statistics Canada includes some refined oil within the total output of oilseed crushers.

Canadian production of oilseeds is highly regionalized. Of the eight companies in the industry, five are in western Canada, accounting for 51 percent of shipments, and three are in Ontario, accounting for 49 percent of shipments. Canola is grown and processed mainly in western Canada, whereas soybeans are mostly grown and processed in southwestern Ontario. This pattern, however, is slowly changing as a result of plant breeding efforts. For example, two of the three Ontario firms now crush some Ontario-grown canola. Western crushers produce for their regional market, eastern Canadian markets and export markets through Vancouver; Ontario crushers focus mainly on the eastern market. Favourable transportation rates assist the western crushers in gaining access to the markets through Vancouver and in eastern Canada.

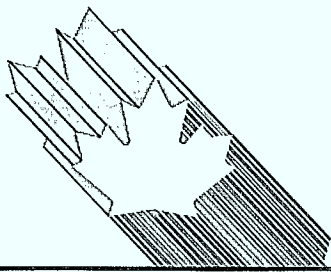
Canola is freely traded in Canada, with futures trading available through the Winnipeg Commodity Exchange. Canola crushers may hedge oilseed purchases through the Commodity Exchange, or purchase directly from producers. Soybean crushers negotiate prices and purchases directly with dealers, brokers and growers, on the basis of ground rules agreed to with the Ontario Soybean Growers Marketing Board. Both soybean and canola crushers use the Chicago Board of Trade futures exchange to hedge oil and meal sales.

Performance

Since 1973, total industry shipments and exports have increased while exports have remained steady. Employment since 1982 has been declining as plants continue to modernize by incorporating labour- and energy-saving technologies and more efficient oil extraction procedures.

Profitability is cyclical in the canola crushing industry. Crushing margins tend to fluctuate dramatically because of the volatility of product and input prices. The Japanese market, with its high vegetable oil tariffs, provides a constant demand for large quantities of canola seed. Fluctuations in the world demand for vegetable oils and meals can present canola crushers with high oilseed costs but low product prices, with the result that crushing margins are decreased.

Eastern soybean crushers also face pressures on profits as a result of operating below capacity. Increased domestic market share for canola oil at the expense of soybean oil has led to a decrease in soybean crushing and the import of soy meal. Access to the U.S. soybean oil market has been blocked by a 22.5 percent import tariff. Operating at full capacity, the soybean crushing industry could conceivably produce enough soybean meal to replace all imports into eastern Canada.



A major step in the mid-1970s was the development of improved rapeseed varieties (referred to as canola) which made this crop more acceptable as a source of edible oil and protein meal in Canada. Plant breeding in Canada has virtually eliminated erucic acid and glucosinolates, two undesirable elements in canola oil and meal respectively.

Over the past 10 years, the domestic market share for canola oil and meal has increased significantly. In 1975, canola oil accounted for about 33 percent of the Canadian vegetable oil market as compared to 36 percent for soybean oil. However, by 1988 the canola market share had risen to about 63 percent, as compared to 20 percent for soybeans. Other vegetable oils (e.g., corn, sunflower and peanut oil) make up the remainder. In 1975, canola meal represented 16 percent of the Canadian vegetable protein-meal market, while soybean meal held fully 77 percent. In 1986, their respective shares were 22 percent and 72 percent.

Internationally, oilseed markets have not met the expectations of Canadian processors, partly because the shift from dairy fats (butter) to vegetable oils (margarine) has slowed, while international production of other competing oils, such as palm oil and coconut oil, has increased. As well, most edible-oil importing nations are third-world countries with limited purchasing power. These buyers make their purchasing decisions primarily on price and tend to give preference to palm oil and South American soybean and sunflower seed oil. As a result of these factors as well as the direct export subsidies employed by other competing nations, the Canadian industry is primarily dependent on the domestic market and, to a lesser extent, the U.S. market.

2. Strengths and Weaknesses

Structural Factors

The international market for edible oil and protein meal is extremely price-competitive. Direct export subsidies and non-tariff barriers (NTBs) make it difficult for the Canadian oilseed crushing industry to achieve any substantial penetration of offshore markets. In the edible oil market, canola and soybean oil are undercut by oils with lower production costs, such as palm oil: its lower price is a prime determinant in penetrating developing-country markets. The quality of canola and soybean oil is an asset in developed, health-conscious markets such as the United States and Canada. In these markets, quality and nutritional considerations outweigh the price advantage of other oils. In addition, oilseed crushers do not have to compete with export subsidies to the same extent as in offshore markets. Major markets for the canola crushing industry are the domestic and U.S. markets, followed to a lesser extent by offshore markets. The soybean crushing industry in Canada produces primarily for the domestic market.

Canadian expertise in canola crushing and refining has been instrumental in developing new markets. Technical missions inform buyers and potential buyers about processing and product utilization of canola and its products. Although competitors such as the E.C. are now growing improved varieties of rapeseed, Canada possesses the most advanced varieties of canola, which are adapted to Canadian growing conditions. The technological edge incorporated in these varieties is essential to maintaining market share in Canada and in certain export markets, such as the United States. Canola has the disadvantage of low yields by comparison to other oilseeds such as the soybean or European rapeseed.

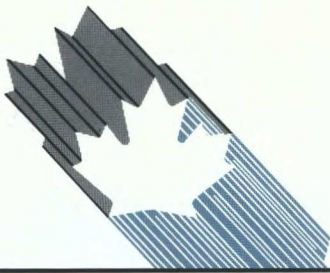
Canola oil is gaining recognition internationally as a high-quality oil with significant nutritional benefits. This increasing recognition, and its acceptance by Procter and Gamble in the United States for its major vegetable oil brand, Puritan Oil, is opening up a new and potentially lucrative market in the United States for canola oil. The American Health Foundation named Puritan Oil "Food Product of the Year" for 1987. On the other hand, canola oil has inherent qualities which make it less suitable for margarine than soybean oil.

A problem which has plagued the canola crushing industry in the past is the recurring shortage of oilseed for crushing, caused by production fluctuations and strong demand for oilseed. This situation has put domestic crushers at a disadvantage in developing and maintaining export markets, as prices are bid up through competition with Japanese crushers for Canadian canola seed. Japanese crushers, for example, import one-third to one-half of Canadian canola production and are able to pay high prices because their domestic market production is supported by a high import tariff on vegetable oil.

The net effect of this tariff is to protect Japanese oilseed processors from imports and allow them to sell their oil at far above world prices in the Japanese market. The tariff gives them the latitude to outbid Canadian crushers for oilseed whenever supplies become tight. In the past three years, canola seed production has increased and supplies have been sufficient for the crushers' needs.

Although both soybean and canola meal are used as protein supplements in animal feed, nutritional considerations and user preferences for soybean meal limit the amount of canola meal used in animal rations in Canada and in export markets. Canola meal is lower in protein and higher in fibre than soymeal and has less digestible energy.

Soybean meal, with a minimum protein content of 48 percent and a maximum fibre content of 3.5 percent, is the protein supplement of choice in much of Canada. Soybean meal production is restrained due to the limited market prospects for soybean oil in Canada. The western Canadian soybean-meal market (200 000 tonnes) is supplied from border plants in the United States.



Canadian soybean crushers face competition from subsidized exports in offshore markets. The high U.S. import tariff on soybean oil limits penetration of the American market.

For both soybean and canola crushers, the competitiveness and viability of the refining and further-processing industries are important factors. Approximately 65 to 75 percent of the crude oil produced is refined domestically. At present, Canadian refineries are generally smaller and less specialized than those in the United States, with the result that their production costs are higher.

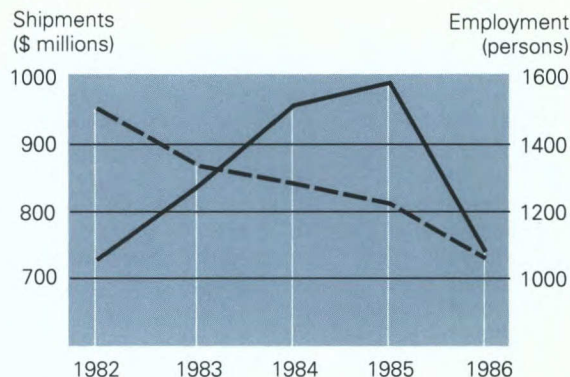
Trade-related Factors

Crude and refined vegetable oils are subject to worldwide import regulations and high tariffs to protect local crushers and refiners and, in some cases, growers as well. In Canada, tariffs are applied on both crude vegetable oils and refined oils which range from 7.5 to 15 percent respectively for oils other than canola. The tariffs on canola oil are 10 percent (for crude) and 17.5 percent (for refined). Raw oilseed and meal can enter Canada duty-free. Duty-free entry under the General Preferential Tariff (GPT) rate is accorded to imports of crude oils (e.g., palm and coconut) and some refined oil fractions from developing countries.

U.S. tariffs range from four percent on crude or refined corn oil to 22.5 percent for crude or refined soybean oil. The tariff on canola oil is 7.5 percent. Meal tariffs, which range from 7¢ to 26¢ per kilogram do not constitute a major import barrier. Soybeans enter the United States duty-free, while canola seed faces a tariff of 9¢ per kilogram.

Japanese tariffs on canola and soybean oil range from 17 to 20.7 yen/kg. Oilseeds enter Japan duty-free. The Japanese import tariff currently totals C\$165 per tonne on canola oil. This tariff, since it is not *ad valorem*, has increased from C\$60 per tonne in less than five years with the appreciation of the yen and now represents a formidable barrier. Tariffs for canola and soybean meal are seven percent *ad valorem*.

E.C. tariffs on canola and soybean oil are 10 percent for crude and 15 percent for refined. Canola and soybean meal enter duty-free. Norwegian tariffs for canola and soybean oil are variable; meal enters Norway duty-free. This country is an important spot market for canola meal.



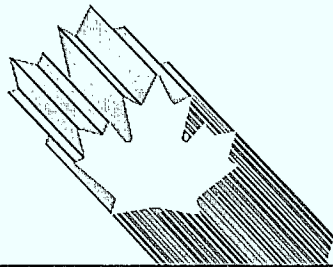
Shipments —————

Employment - - - - -

Total Shipments and Employment

Exports of the oilseed crushing industry face a number of NTBs, especially in offshore markets. In some countries, there is an outright prohibition on canola products (e.g., the Republic of Korea — canola oil). Other countries employ restrictive import licences (Morocco — refined oils), or use state trading agencies to control imports (Algeria). Traditional importers of oilseed products, such as India, are striving for self-sufficiency and have erected tight controls on imports in support of this objective. Where self-sufficiency in oilseed production is not possible, high tariffs and NTBs favour the importation of oilseed for crushing, rather than the importation of oil and meal. A prohibition on imports of margarine into Canada will continue to benefit domestic oil refiners and, indirectly, the crushing industry.

The elements of the Canada-U.S. Free Trade Agreement (FTA) which affect the oilseed crushing industry are the elimination of tariffs on oil and meal over a 10-year period, and the elimination of rail transport subsidies provided through the *Western Grain Transportation Act* (WGTA) for canola products exported through Vancouver for consumption in U.S.-customs territories.

**Other Factors**

The government has assisted the canola crushing industry in various ways including support for research, plant establishment, marketing and transportation through regulation. Federal research assistance played a major role in establishing the canola industry in Canada by helping to develop plant varieties suitable for the Canadian climate with improved nutritional qualities. Agriculture Canada continues to support the industry through the Canola Utilization Assistance Program. Provincial government food processing development centres and the Protein Oil and Starch (POS) Pilot Plant Corporation provide research facilities and expertise for product and process development and testing. Government plant-breeding efforts have developed varieties of soybean that can be grown outside southwest Ontario. Assistance for storage facilities has also been provided to the soybean industry.

The western canola industry receives the benefits of WGTA rates for canola products moved to Thunder Bay-Armstrong in Ontario. Western crushers also enjoy regulated freight rates (Minimum Compensatory Rates) on products moving from Thunder Bay to eastern Canada. WGTA rates apply as far as Thunder Bay to western canola seed moving eastward for crushing in Ontario.

3. Evolving Environment

The overall outlook for vegetable oil and meal is for world demand to exceed production, placing upward pressure on prices in the short term. This trend would likely be reversed in the medium term by increased production in response to higher prices.

Export prospects for canola products outside the United States will depend largely on the extent to which the Multilateral Trade Negotiations are able to bring about a reduction in NTBs, and particularly in domestic and export subsidies on agricultural products. The canola crushing industry should maintain its share of the domestic market. The U.S. market however, holds the potential for increased Canadian exports of canola oil and meal.

In the present trading environment, the soybean crushing industry is likely to remain a domestically oriented industry. Industry expansion will be restrained by competition with canola oil. Additional capacity in eastern Canada may be devoted to canola crushing.

The impact of the FTA on the Canadian oilseed crushing industry is expected to be largely positive. In the short term, it will need some adjustment to meet competitive conditions created by the FTA. This is because the loss of freight subsidies on shipments to the U.S. market through Vancouver, estimated at \$4 million, will outweigh the initial benefit gained by the staged elimination of U.S. import tariffs.

In the longer term, the penetration of the U.S. market for oil and meal will be enhanced by tariff elimination in the United States and changes in product labelling laws to allow the use of the term canola. Market penetration may be curtailed if eastern shipments to the U.S. market via the WGTA and minimum compensatory rates (MCRs) are not permitted under the FTA. The United States is not, at present, a major canola producer. Elimination of Canadian tariffs on canola oil is, therefore, unlikely to affect the industry in the foreseeable future. Canada enjoys an advantage in canola varieties, as well as processing experience, which should ensure its competitiveness in its own domestic market when the FTA becomes effective.

There will be opportunities for Canadian soybean oil exports to the United States under the FTA with the removal of the U.S. tariff on soybean oil. These exports will allow an increased amount of crushing in Canada as well as the replacement of soymeal imports.

4. Competitiveness Assessment

The competitiveness of the Canadian crushing industry must be viewed in the context of widespread policies of assistance to local growers, crushers and refiners worldwide. While the Canadian crushing industry is cost-competitive in producing crude oil and vegetable meal for the domestic and U.S. markets, it is finding it increasingly difficult to penetrate offshore export markets in the face of foreign subsidy programs and NTBs. The canola crushing industry is competitive in both the Canadian and U.S. markets. The soybean crushing industry competes primarily for the domestic market. High U.S. tariffs have inhibited penetration of the American soybean market.

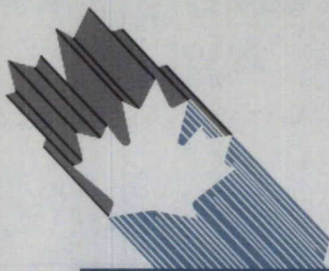
Under the FTA, the canola crushing industry should be well positioned to enhance its penetration of the U.S. market once tariffs are completely eliminated, and to continue to meet the competition in the domestic market.

The soybean crushing industry is also expected to benefit from the FTA. Access to the U.S. vegetable oil market should improve its capacity utilization and economics of production.

For further information concerning the subject matter contained in this profile, contact:

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Attention: Oilseed Crushing
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PRINCIPAL STATISTICS

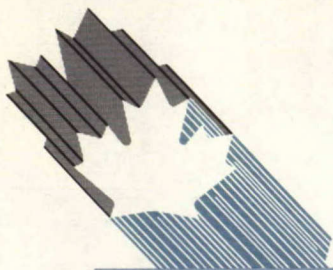
SIC(s) COVERED: 1061 (1980)

	1973	1982	1983	1984	1985	1986
Establishments	10	12	10	10	11	11
Employment	842	1 504	1 342	1 289	1 209	1 052
Shipments (\$ millions)	218	722	834	964	987	732
Shipments ('000 tonnes)	N/A	1 877	1 995	1 999	2 157	2 269
Gross domestic product (constant 1981 \$ millions)	N/A	632.0	653.7	N/A	N/A	N/A
Investment (\$ millions)	2.2	53.0	21.6	13.6	22.5	15.1
Profits after tax (\$ millions)	N/A	161.2	220.5	N/A	N/A	N/A
(% of income)	N/A	2.5	3.2	N/A	N/A	N/A

TRADE STATISTICS

	1973	1982	1983	1984	1985	1986
Exports (\$ millions)	15	152	121	258	274	200
Domestic shipments (\$ millions)	203	570	713	706	713	532
Imports (\$ millions)	38	173	205	286	248	236
Canadian market (\$ millions)	241	743	918	992	961	768
Exports as % of shipments	7	21	15	27	28	27
Imports as % of domestic market	16	23	22	29	26	31
Source of imports (% of total value)			U.S.	E.C.	Asia	Others
		1981	80	6	13	1
		1982	81	6	12	1
		1983	80	6	13	1
		1984	80	5	14	1
		1985	73	5	20	2
		1986	83	6	9	2
Destination of exports (% of total value)			U.S.	E.C.	Asia	Others
		1981	9	34	37	20
		1982	10	23	20	47
		1983	21	14	37	28
		1984	14	11	55	20
		1985	14	4	61	21
		1986	26	4	55	15

(continued)

**REGIONAL DISTRIBUTION — Average over the last 3 years**

	Atlantic	Quebec	Ontario	Prairies	B.C
Establishments — % of total	—	—	27	73	—
Employment — % of total	—	—	31	69	—
Shipments — % of total	—	—	43	57	—

MAJOR FIRMS

Name	Ownership	Location of Major Plants
CSP Foods Ltd.	Canadian	Altona, Harrowby, Manitoba; Nipawin, Saskatchewan
Canadian Vegetable Oil Processing Division of Canada Packers Inc.	Canadian	Hamilton, Ontario
Agri-Industries Ltd.	American	Windsor, Ontario
Victory Soya Mills Division of Central Soya of Canada Ltd.	American	Windsor, Ontario

N/A Not available.

Note: Statistics Canada data have been used in the preparation of this profile.

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