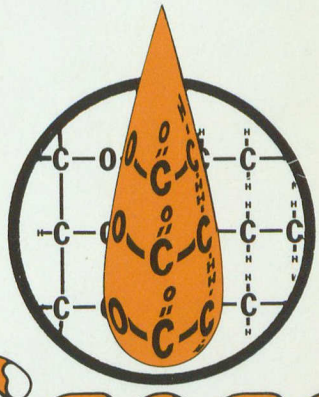

Fats & Oils in Canada

ANNUAL REVIEW 1979

DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

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CHAPTER I

SOYBEANS IN CANADA - PAST, PRESENT AND FUTURE

Based on an Article by

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The soybean (botanically Glycine max (L.) Merrill) is an annual legume which has been cultivated in the Orient for at least 3,000 years. The most recent authoritative reference (Hymowitz, 1970) places its earliest domestication around the 11'th century B.C. in the eastern half of North China. The progenitor of the cultivated soybean (Glycine soja) is a vine-like plant with small black seeds that still grows in the wild state in China, Japan, Korea, Taiwan, Manchuria and adjacent areas of the Soviet Union. The cultivated soybean was introduced from North and Central China to Korea and Japan during the period from 200 A.D. to 300 B.C.

Introduction of Soybeans to Canada

The introduction of soybeans to Canada followed that in the United States, with the first beans grown at the Ontario Agriculture College, Guelph, in 1893 by C.A. Zavitz. Over the next 30 years Zavitz continued to evaluate soybean introductions for yield and maturity and to determine optimal dates of planting, row width and seeding rate. In 1924 he released the variety OAC 211, the first soybean variety registered in Canada. The crop became important in Ontario because of the demand for oil created by World War II, the same demand that resulted in the large expansion of U.S. production. Prior to 1942 10,000 to 20,000 acres were grown annually with about half of it for hay. The first crushing plant was built at Chatham in 1934, and remained viable for only a few years. During the late 1930's the only market for seed was either the linseed processing plant of Maple Leaf Mills or Toronto Elevators. In 1944, spurred by the demand for oil caused by the war, the large Victory Soy Mills plant was erected in Toronto. The company launched a very active campaign to promote the crop and the area in production increased to 254 000 acres by 1954.

Importance of the Soybean

Soybeans are the most important single source of fats and oils in the world, accounting for an estimated 40 per cent of edible vegetable oil production in 1979, and 22 per cent of all fat and oil production if palm oils, industrial oils, animal fats and marine oils are also included. In the protein meal market soybeans are even more dominant, contributing 61 per cent of world production in the crop year 1977/78. The major producing countries with estimated 1978/79 production (tonnes) figures are:

United States	50 149 000
Brazil	11 000 000
China	10 500 000
Argentina	3 500 000
Soviet Union	650 000
Indonesia	500 000
Canada	475 000
Europe	460 000
Other Countries	2 307 000
Total	79 541 000

(Source: Soybean Digest Bluebook, 1979)

The United States dominates world trade in soybeans and soybean products. In the last three years Brazil, and to a lesser degree Argentina, have become significant factors in the market. Almost all of the Chinese production is utilized domestically. Canada produces slightly more than one-half of one per cent of the total world production.

Utilization

The seed of the soybean must be split into its two most valuable components, oil and protein, if its full value is to be obtained commercially. The seed on a moisture-free basis contains about 20 per cent oil, 40 per cent protein, 30 per cent carbohydrate, 5 per cent fibre and 5 per cent ash. The oil is extracted using the solvent hexane. The residual after oil extraction (meal) contains 44 per cent protein. If the seed coats are removed mechanically before solvent extraction the meal will contain 49 per cent protein. The meal is steam "toasted" as it leaves the solvent extractor to vaporize the hexane and to destroy anti-nutritional factors. Raw soybeans contain a number of anti-nutritional factors that inhibit the growth of monogastric animals. The principal such compound is soybean trypsin inhibitor. It is readily inactivated by moist heat.

The soybean oil after refining is used to produce salad oil and salad dressings. After partial hydrogenation, bleaching and deodorization more stable salad oils are produced as well as special shortenings and margarine oils. Soybean oil is often blended with other oils to produce products with special properties. Once refined the principal vegetable oils are largely interchangeable and price and availability will dictate which is used. Food uses account for 93 per cent of U.S. soybean oil utilization, industrial uses only 7 per cent. Soybean oil is used in paints, varnish, resins, plastics and other drying oil products as well as for soap manufacturing. Petroleum-based products have captured many markets where soybean oil could be used.

A by-product of soybean oil is lecithin, the oil-phosphatide mixture obtained after degumming. Soybean lecithin is used as a food emulsifier, wetting agent and antioxidant. It is added in small amounts in chocolate, cocoa, candies, margarine, cake mixes, ice cream and instant and baby foods. Lecithin is widely used in the pharmaceutical industry as an emulsifying agent.

Soybean meal is used almost entirely as a protein feedstuff for livestock. About 3 per cent of the meal is used directly in human foods. Soybean protein is relatively high in the essential amino acids lysine, leucine and isoleucine which are low in cereal proteins. Therefore soybean protein can be used very effectively to supplement cereal proteins. Soybean protein is somewhat low in the sulfur-containing amino acids cystine and methionine. Fortunately cereal proteins are relatively high in these amino acids.

The 49 per cent protein meal was developed for poultry rations. It is used in rations for young pigs. The 44 per cent meal is used mainly for older pigs and for cattle. In cattle feeding urea is increasingly used in place of much of the soybean meal. Other protein sources - meat meal, fish meal, rapeseed meal - may be in part substituted for soybean meal. As with vegetable oils, price and availability often dictate which source is used.

Food Uses of Soybeans

The crop was, and to a considerable degree still is, grown in the Orient to be utilized directly in various food products. The seeds of the soybean are used to prepare a wide range of foods that supply a major part of the protein in the diet of the people of these countries. Some of these oriental foods are becoming available in Canada and it is of interest to describe them in some detail.

Soy Milk - the soaked beans are ground with ten parts water, boiled to reduce the beany, bitter flavour and the solid residue separated from the liquid (milk).

Tofu - the protein in soymilk is precipitated to form a cheese-like curd.

Sufu - sterilized tofu is inoculated with a fungus and incubated for three to seven days.

Miso - cooked soybeans are mixed with cooked rice, wheat or barley containing the fungus Aspergillus oryzae and fermented for about two months.

Soy sauce - cooked soybeans are combined with ground wheat, inoculated with Aspergillus oryzae, yeast and lactic acid bacteria and fermented for about five days. Salt is added and the mixture fermented in large vats for three to 12 months. The mash is strained to give soy sauce.

Tempeh - an Indonesian food prepared from cooked soybeans or soybean grits incubated with a mold Rhizopus oligosporus.

Hamanatto - whole cooked beans are mixed with wheat flour and inoculated with Aspergillus oryzae. The fermented beans are packed with salt, spice, wine and water and aged for several months.

Natto - whole cooked soybeans are inoculated with the bacteria Bacillus natto and incubated at 40°C for 12 to 20 hours. The product is sold in the incubation package and must be used almost immediately.

These processes change the somewhat unpalatable, bland tasting soybean into a rich diversity of foods. The various fermentations with microorganisms increase the availability and digestability of the nutrients in the soybean seed.

In Canada, a small amount of soybeans or soybean meal is used directly for human consumption. Soybeans can be the sole source of proteins for humans if supplemented with synthetic methionine. Small amounts of cereal or meat protein will also supply the necessary methionine. However, soy protein is seldom used alone.

Four main products are produced. Full fat flour (40 per cent protein) is made from beans with only the hulls removed. Defatted flour (50 per cent protein) is made from meal after the oil has been extracted. Soy protein concentrates (70 per cent protein) are made from meal from which the carbohydrates have been removed by extraction with aqueous alchols or dilute acids. Soy protein isolate (more than 90 per cent protein) is made by extraction of the protein with dilute alkali followed by precipitation of the protein in dilute acid.

Some protein is lost in this process and soy protein isolates cost at least five times as much per pound as soy flour.

Very little soy protein is used "as is". Most is added to other foodstuffs to improve their functional properties, i.e. to improve fat or water absorption. Soy flour is added to baked goods (bread, cakes, cookies, pancake mixes) at rates of 4-5 per cent. Processed, prepared and canned meat products take the second largest amount of soy protein.

Textured soybean protein is often mentioned as a replacement for meat. It is made either by extrusion starting with soy flour, or by forming fibres of coagulated protein starting with soy protein isolate. These products have a fibrous texture and "chewiness" and with appropriate flavours they can be made into simulated meat.

Soybeans in Ontario

Soybeans are Ontario's fourth most important cash crop in terms of dollar value, coming after tobacco, vegetables and grain corn. Production is concentrated in southwestern Ontario. The major producing counties, and their acreage in 1978 were:

Essex	192 000
Kent	205 000
Lambton	170 000
Elgin	63 000
Middlesex	40 000
Other	7 000
Total (Ontario)	705 000

The Ontario crop since 1949 has been marketed under terms negotiated on behalf of the producers by the Ontario Soya-Bean Growers' Marketing Board. The Board determines each year with soybean processors and dealers the terms and conditions of sale. These include such matters as moisture discounts, handling and cleaning charges. The price of Ontario beans is determined by and is similar to the Chicago price, with allowance for the cost of transportation and relative currency values.

The Ontario grown soybeans are processed at three plants: Victory Soya Mills (owned by Proctor and Gamble) in Toronto, Canadian Vegetable Oil Processing Limited (owned by Canada Packers) in Hamilton and the recently completed Maple Leaf Monarch plant (affiliated with Unilever Corporation) in Windsor. The CSP Foods Plant in Altona, Manitoba, has in some years crushed limited amounts of soybeans imported from the U.S. Total crushing capacity in Ontario is about 35 million bushels per year.

Soybean acreage in Ontario has increased from 390 000 acres in 1975 to 705 000 acres in 1978. However, this expansion has been almost entirely in the five southwestern counties where soybeans were already grown. With the availability in 1979 of limited seed supplies of the early varieties Maple Arrow, McCall and Evans a significant amount of soybeans was produced in southern and western Ontario, and to some degree in central and eastern Ontario. This trend is expected to continue in 1980. These varieties require 2,550 to 2,700 Corn Heat Units to mature and in a number of cases have produced exceptional yields in the "fringe" areas. They are certainly superior to earlier short season varieties. Coupled with new types of granular inoculant for fields that have not grown beans before, narrower rows and improved harvesting equipment, they are expected to lead to a steady increase in production outside of the five southwestern counties. However, there is the potential for an additional 200,000 acres in southwestern Ontario according to a recent Marketing Board study (Potential Soybean Acreage in Ontario) if soybeans offer a higher return than grain corn or winter wheat.

Development of Short Season Varieties

The justification for the effort to develop a large acreage of soybeans outside of southwestern Ontario has been the magnitude of imports of soybeans, meal and oil. This has been and continues to be sizeable. The situation is outlined below for the 1977/78 crop year.

Whole Soybeans	Quantity (tonnes)
Production	527 361
Imports	262 835
Exports	64 173
Domestic Crushing	728 400
Soybean Oil	
Imports	28 100
Exports	1 400
Domestic Production	125 600
Soybean Meal	
Imports	376 300
Exports	45 600
Domestic Production	575 400

(Source: Fats and Oils in Canada, Annual Review, 1978)

Looked at in terms of dollars (for the calendar year 1978) the import/export figures are heavily in favour of imports.

Raw Soybeans	$ 91 245 000	$ 24 375 000
Oil	19 070 000	742 000
Meal	103 093 000	12 436 000
Total	$ 213 408 000	$ 37 553 000

(Source: Fats and Oils in Canada, Annual Review, 1978)

This is not a new situation. For many years Canada has imported large quantities of soybeans and soybean meal. An encouraging development in 1978 and 1979 has been a significant rise in exports of whole soybeans to the Orient for use in soybean foods such as tofu. Exports to Hong Kong, Japan and Singapore amounted to 62 258 tonnes in 1978 and are expected to be higher in 1979.

Give the incentive to reduce imports by producing more soybeans in Canada, why has the crop not become established outside of southwestern Ontario? To establish a crop in a new area one must first of all have a considerable economic incentive, either in the form of high returns from the new crop or, as has often been the case in Canada, the inability to market the total production of an established crop. There must also be in place, or follow soon after, an efficient system to collect the crop and move it to where it is processed or exported. And, since no crop remains unusually profitable for very long, it is essential that well adapted, high yielding varieties and efficient agronomic techniques be developed to bring about the maximum yield of the crop.

Today in Ontario in the 2,500 to 2,800 Corn Heat Unit area that borders the traditional five county region, interest in soybeans is high, elevators are collecting the crop and crushing plants are within fairly close proximity. In this area soybeans should become an established crop. Eastern Ontario and southwestern Quebec have the potential to produce yields comparably to those in the expansion areas bordering the established production region. Unfortunately, there are no crushing plants closer than Toronto. Country elevators are accepting soybeans for shipment to Toronto but unless returns for soybeans remain very high the interest in the crop will decline as it did in the past.

Soybeans in Quebec and the Maritimes

The remainder of Eastern Canada imports, either from Ontario or from the U.S., considerable quantities of soybean meal and smaller quantities of soybean oil. Soybeans could be grown and fed whole to replace part of the soybean meal. For ruminants no special processing is required. Several hundred acres of soybeans are grown each year in Quebec south of Montreal and fed to dairy cattle. Uncooked soybeans cannot be mixed with the urea often used in ruminant rations as a source of protein-nitrogen. Poultry and hogs require the whole beans to be heat-treated to destroy the trypsin inhibitor they contain. If this is done the soybeans can substitute completely for the equivalent protein in soybean meal. The oil in the whole beans results in soft fat on the finished hogs and in the final few weeks of fattening whole beans should be replaced by soybean meal. Propane-fired roasters and tractor-driven extruders are available to destroy the trypsin inhibitor in whole beans. The latter have been used successfully on a small scale in both Nova Scotia and New Brunswick.

Soybeans as an on-the-farm protein source are attractive where protein meal prices are high, or when the price of oil drops to a level at which it is not economically profitable to extract it from the soybeans. Many hog and poultry producers have close associations with feed supply firms and choose to buy protein meal rather than produce their own. Others do not wish to take time and expertise away from their livestock operations and devote it to growing soybeans. The marketing system is not in place to facilitate the transfer of whole beans from cash crop growers to livestock producers.

Experimental lines of soybeans are available with protein and oil contents of 45 and 16 per cent instead of the usual 40 and 20 per cent. However, yields are not equal to high-oil beans. If yields of such lines are improved whole soybeans might become a viable feedstuff in areas distant from crushing plants.

Soybeans in the Prairies

The situation in southern Manitoba and Alberta differs appreciably from that in Eastern Canada. In the Prairies there are farmers prepared to grow specialty crops and transport them long distances to markets. The example of mustard and lentils comes to mind, and rapeseed is often trucked some distance to a crushing plant.

The infrastructure to handle the crop is in place. A number of crushing plants are located in the area, although only that at Altona has processed soybeans in the past. There is also a market for soybean meal: $36,040,000 in the three Prairie Provinces in 1978. This market has remained remarkably constant since 1974, even though there has been a large increase in rapeseed production and major improvements in the quality of rapeseed meal.

The problem on the Prairies is one of crop adaptation. In the past soybean yields have been variable and generally low. A number of changes have taken place recently that may result in higher and more stable yields. Improve varieties are available. Maple Presto, developed at the Ottawa Research Station of Agriculture Canada, is earlier and of a better plant type than previous very early maturing varieties. It will mature in 95-105 days from planting. The variety McCall from Minnesota, although later than Maple Presto, can be grown in the warmer parts of southern Manitoba. It consistently produces very high yields in its area of adaptation. Both varieties are insensitive to the long hours of daylight in June and July that delay the maturity of most soybeans in northern latitudes. Maple Presto is also relatively insensitive to low night temperatures that delay and reduce pod development. Lastly, both varieties respond well to production in grain drill row widths of seven to 14 inches.

Row width appears to be an important key to satisfactory soybean yields in the Prairies. Improved chemical herbicides obviate the necessity of growing soybeans in wide (30 inch) rows and cultivating to control weeds. Narrow rows produce higher yields and taller plants with the lowest pods higher off the ground. In addition narrow rows "crowd out" late germinating weeds and provide a "shelter-belt" effect within the crop.

Lastly, improved grain drill-type planters developed for narrow row production in the U.S. are becoming available. These should improve stand establishment, often a problem in Manitoba. The new flexible, floating combine cutter heads for soybeans allow pods very close to the ground to be harvested. These will be necessary if growers are to harvest the full potential yield of the crop. For fields where soybeans have not been grown before recently developed granular forms of bacterial inoculant are a reliable means of establishing nodules on the plants and so permitting the crop to produce a significant proportion of its own nitrogen and seeds with high protein levels.

There is diversity in the soybean germplasm to overcome some of the problems still remaining. There are more drought-tolerant strains, and lines that carry the lowest pods higher off the soil. Research in Wisconsin and France suggests that other lines are able to germinate at lower soil temperatures. It will be several years before these can be fully evaluated and incorporated into early varieties. In the future it is possible that the new varieties and those that may be released in the next two years, together with new agronomic practices and equipment, and coming at a time of high nitrogen prices and large supplies of wheat, may form the basis for a sizeable area of soybean production on the Prairies.

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CHAPTER 2

WORLD PRODUCTION AND TRADE IN OILS, FATS AND MEALS

World Oils and Fats: Calculated Production

World production of oils and fats in 1980 is forecast to increase by approximately 10 per cent to 59.2 million tonnes, compared to 54.9 million tonnes in 1979.

All categories of oils and fats show projected increases in 1980, but the main portion of the increase is accounted for by the edible vegetable oil sector which is shown rising from 30.0 million tonnes in 1979 to 33.2 million tonnes in 1980.

Major Oils and Fats: World Production, Disappearance and Stocks

According to Oil World, opening stocks of oils and fats, along with production, total supplies, disappearance and ending stocks, all show increases for the 1979/80 period. The order of magnitude of these increases is about four per cent.

World Production of Oilmeals

Oil World is estimating the world production of oilmeals increased by about five per cent in 1978/79 compared to the preceding year. The major portion of the increase is attributable to soybean meal, the production of which went from 50 959 000 tonnes in 1977/78 to 54 678 000 tonnes in 1978/79.

Table 1

WORLD OILS AND FATS: CALCULATED PRODUCTION[1/]

(Thousands of Tonnes)

	1976	1977	Estimated 1978	Forecast 1979	Forecast 1980
EDIBLE VEGETABLE OILS					
Cottonseed	2 767	2 913	3 221	3 033	3 281
Peanut	3 593	3 172	3 169	3 541	3 529
Soybean	10 168	9 142	11 288	12 177	14 411
Sunflowerseed	3 669	3 741	4 670	4 558	5 362
Rapeseed	2 964	2 516	2 733	3 764	3 617
Sesame	630	601	647	616	650
Safflowerseed	329	211	250	329	330
Olive	1 806	1 333	1 636	1 558	1 609
Corn	408	410	436	445	455
TOTAL	26 334	24 039	28 050	30 021	33 244
PALM OILS					
Coconut	3 422	3 069	3 149	3 003	3 293
Palm Kernel	503	548	576	617	662
Palm	3 050	3 333	3 547	3 913	4 300
Babassu	125	90	95	100	100
TOTAL	7 100	7 040	7 367	7 633	8 355
INDUSTRIAL OILS					
Linseed	745	685	937	822	964
Castor	301	335	422	422	425
Oiticica	15	14	14	14	14
Tung	111	100	98	105	100
Olive Residue	186	153	137	146	153
TOTAL	1 358	1 287	1 608	1 509	1 656

	1976	1977	Estimated 1978	Forecast 1979	Forecast 1980
ANIMAL FATS					
Butter (Fat Content)	4 800	4 944	4 984	5 095	5 200
Lard	3 380	3 556	3 669	3 699	3 800
Tallow, Grease	5 471	5 815	5 949	5 888	5 865
TOTAL	13 651	14 315	14 602	14 682	14 865
MARINE OILS					
Whale	15	15	15	15	15
Sperm Whale	82	66	57	55	55
Fish	983	980	1 021	1 011	1 015
TOTAL	1 080	1 061	1 093	1 081	1 085
GRAND TOTAL	49 523	47 742	52 720	54 926	59 205

1/ Years indicated are those in which most of given oil was produced. Includes oil equivalent of seed production.

SOURCE: United States Department of Agriculture FOP 22-79.

Table 2

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE AND STOCKS [1]

(Thousand Tonnes)

Primarily for Food:

	1975/76	1976/77	1977/78	1978/79 [2]	1979/80 [2]
Soybean Oil					
Opening Stocks [3]	833	1 190	995	1 220	1 320
Production	10 245	10 014	11 600	12 527	12 800
Disappearance [4]	9 888	10 209	11 375	12 427	12 500
Ending Stocks [3]	1 190	995	1 220	1 320	1 620
Cottonseed Oil					
Opening Stocks [3]	240	210	197	209	205
Production	2 557	2 763	3 043	2 933	3 100
Disappearance [4]	2 587	2 776	3 031	2 937	3 060
Ending Stocks [3]	210	197	209	205	245
Groundnut Oil					
Opening Stocks [3]	305	440	405	304	395
Production	3 208	2 759	2 589	2 827	2 875
Disappearance [4]	3 073	2 794	2 654	2 772	2 850
Ending Stocks [3]	440	405	340	395	420
Sunflowerseed Oil					
Opening Stocks [3]	780	440	240	330	305
Production	3 410	3 401	4 314	4 368	4 880
Disappearance [4]	3 750	3 601	4 224	4 393	4 660
Ending Stocks [3]	440	240	330	305	525
Rapeseed Oil					
Opening Stocks [3]	225	240	270	290	325
Production	2 642	2 876	2 771	3 462	3 730
Disappearance [4]	2 627	2 846	2 751	3 427	3 620
Ending Stocks [3]	240	270	290	325	435
Sesame Oil					
Opening Stocks [3]	44	45	45	44	48
Production	611	612	659	689	690
Disappearance [4]	610	612	660	685	690
Ending Stocks [3]	45	45	44	48	48

	1975/76	1976/77	1977/78	1978/79 [2]	1979/80 [2]
Olive Oil					
Opening Stocks [3]	421	710	706	710	750
Production	1 775	1 460	1 545	1 660	1 570
Disappearance [4]	1 486	1 464	1 541	1 620	1 620
Ending Stocks [3]	710	706	710	750	700
Coconut Oil					
Opening Stocks [3]	323	355	330	335	320
Production	3 094	2 742	2 859	2 584	2 870
Disappearance [4]	3 062	2 767	2 854	2 599	2 790
Ending Stocks [3]	355	330	335	320	400
Palm Kernel Oil					
Opening Stocks [3]	70	73	77	65	73
Production	503	558	501	583	630
Disappearance [4]	500	554	513	575	620
Ending Stocks [3]	73	77	65	73	83
Palm Oil					
Opening Stocks [3]	333	353	526	560	730
Production	2 650	2 922	2 948	3 545	3 800
Disappearance [4]	2 630	2 749	2 914	3 375	3 630
Ending Stocks [3]	353	526	560	730	900
Butter, Fat Content					
Opening Stocks [3]	867	959	1 051	1 135	1 181
Production	5 363	5 565	5 614	5 623	5 700
Disappearance [4]	5 271	5 473	5 530	5 577	5 650
Ending Stocks [3]	959	1 051	1 135	1 181	1 231
Lard					
Opening Stocks [3]	260	250	275	267	277
Production	3 905	4 127	4 200	4 411	4 520
Disappearance [4]	3 915	4 102	4 208	4 401	4 457
Ending Stocks [3]	250	275	267	277	340
Fish Oil					
Opening Stocks [3]	370	320	326	384	419
Production	996	978	1 085	1 169	1 100
Disappearance [4]	1 046	972	1 027	1 134	1 129
Ending Stocks [3]	320	326	384	419	390

	1975/76	1976/77	1977/78	1978/79 2/	1979/80 2/
Food Oils & Fats, Total					
Opening Stocks 3/	5 071	5 585	5 443	5 889	6 349
Production	40 959	40 777	43 728	46 381	48 265
Total Supplies	46 030	46 362	49 171	52 270	54 614
Disappearance 4/	40 445	40 919	43 282	45 923	47 277
Ending Stocks 3/	5 585	5 443	5 889	6 349	7 337
Primarily for Non-Food:					
Linseed Oil					
Opening Stocks 3/	117	149	182	165	145
Production	641	713	760	759	770
Disappearance 4/	609	680	777	779	750
Ending Stocks 3/	149	182	165	145	165
Castor Oil					
Opening Stocks 3/	150	120	84	84	86
Production	315	298	327	367	360
Disappearance 4/	345	334	327	365	350
Ending Stocks 3/	120	84	84	86	96
Tallow & Greases					
Opening Stocks 3/	436	437	482	520	514
Production	5 664	5 944	6 049	6 050	6 100
Disappearance 4/	5 643	5 899	6 011	6 056	6 070
Ending Stocks 3/	437	482	520	514	544
Tung Oil					
Opening Stocks 3/	30	20	17	19	21
Production	108	106	99	101	100
Disappearance 4/	118	109	97	99	98
Ending Stocks 3/	20	17	19	21	23
GRAND TOTAL					
Opening Stocks 3/	5 804	6 311	6 208	6 677	7 115
Production	47 667	47 838	50 963	53 658	55 595
Total Supplies	53 471	54 149	57 171	60 335	62 710
Disappearance	47 160	47 941	50 494	53 222	54 545
Ending Stocks 3/	6 311	6 208	6 677	7 115	8 165

FOOTNOTES TO

MAJOR OILS & FATS: WORLD PRODUCTION, DISAPPEARANCE, AND STOCKS[1/]

1/ October - September

2/ Preliminary

3/ Estimated

4/ Estimated of the balance

SOURCE: Oil World, Hamburg, November 16, 1979

Table 3

WORLD PRODUCTION OF OILMEALS [1/]

(Thousand Tonnes)

	1974/75	1975/76	1976/77	1977/78 [2/]	1978/79 [3/]
Soybean Meal	36 917	44 683	43 545	50 959	54 678
Cottonseed Meal	9 788	8 416	9 079	10 109	9 887
Groundnut Meal	3 605	4 429	3 835	3 665	4 002
Sunflower Meal	4 408	3 936	4 017	5 099	5 343
Rapeseed Meal	3 894	4 149	4 459	4 322	5 394
Sesame Meal	766	722	724	783	821
Copra Meal	1 460	1 805	1 600	1 659	1 506
Palm Kernel Meal	554	591	632	581	681
Linseed Meal	1 166	1 244	1 373	1 463	1 472
Fishmeal & Solubles	4 586	4 531	4 234	4 338	4 647
GRAND TOTAL	67 144	74 506	73 497	82 977	88 431

[1/] October-September crop year.

[2/] Preliminary

[3/] Estimated

SOURCE: "Oil World", Hamburg, November 16, 1979.

CHAPTER 3

CANADIAN OILSEED PRODUCTION, PROCESSING AND TRADE IN FATS AND OILS

Canadian Oilseeds: Area, Yield, Production

Rapeseed production increased slightly in 1979 due to a larger seeded area. The yield declined slightly and the total production was only slightly more than in 1978.

Flaxseed production increased sharply to 835 700 tonnes due to a larger seeded area. The average yield declined by about 10 per cent compared to 1978.

Soybean production increased due to a slightly larger seeded area coupled with an excellent average yield.

Sunflowerseed production nearly doubled in 1979 due to an increase in seeded area.

Mustardseed production declined in 1979 in line with a decreased production area and a lower average yield.

Canadian Oilseed Processing

There were increases in the volume of oilseeds processed in Canada in the crop year 1978/79 compared to the previous crop year. Rapeseed showed a large increase to 725 100 tonnes. Soybeans showed a smaller increase to 742 600 tonnes. Data for flaxseed and sunflowerseed is not available.

Canadian Imports of Fats and Oils

Imports of edible vegetable oils declined in 1979, reflecting the increased availability of domestically - produced rapeseed and soybean oils. Total fats and oils imports declined to 129 607 tonnes in 1979, compared to 149 469 tonnes in 1978.

Canadian Exports of Fats and Oils

Exports of edible vegetable oils increased in 1979, mainly because of larger rapeseed oil exports. Total exports of 307 961 tonnes included 149 267 tonnes of inedible tallow.

Table 4

CANADIAN OILSEEDS: AREA, YIELD, PRODUCTION

	1975	1976	1977	1978	1979	1975	1976	1977	1978	1979
	(Thousands of Hectares)					(Yield Per Hectare, Kilograms)				
Flaxseed	567	324	596	518	927	788	857	1 091	1 040	902
Rapeseed	1 628	720	1 453	2 806	3 439	1 002	1 165	1 359	1 201	1 035
Soybeans	158	153	202	263	283	2 318	1 628	2 546	1 802	2 373
Mustardseed	66	22	74	98	62	746	983	1 058	1 036	860
Sunflowerseed	25	20	68	87	164	1 172	1 166	1 167	1 290	1 347
	Production (Tonnes)					Oil Equivalent (Tonnes)				
Flaxseed	444 613	276 900	650 300	538 500	835 700	157 361	105 209	230 206	190 629	295 838
Rapeseed	1 723 668	836 900	1 973 100	3 349 700	3 560 700	722 217	350 661	826 729	1 403 524	1 491 933
Soybeans	366 808	250 400	517 100	475 134	671 700	66 025	45 072	93 078	85 524	120 906
Mustardseed	50 122	35 200	79 380	103 420	53 300	-	-	-	-	-
Sunflowerseed	29 937	24 000	80 967	113 853	220 900	11 975	9 600	32 387	45 541	88 360

Oil Conversion Factors:

Flaxseed.....	35.4%
Rapeseed.....	41.9%
Soybeans.....	18.0%
Mustardseed....	Not Applicable
Sunflowerseed..	40.0%

SOURCE: Statistics Canada, Catalogues # 22-002; 22-007.

Table 5

CANADIAN OILSEED PRODUCTION BY PROVINCE

	AREA (Thousand Hectares)			YIELD (Kilograms per Hectare)			PRODUCTION (tonnes)		
	1977	1978	1979	1977	1978	1979	1977	1978	1979
FLAXSEED									
Manitoba	304	304	506	1 086	1 044	929	330 217	317 517	469 900
Saskatchewan	243	182	324	1 118	1 117	800	271 794	203 211	259 100
Alberta	49	32	97	485	1 191	1 100	48 263	38 102	106 700
RAPESEED									
Manitoba	202	425	567	1 437	1 361	1 160	290 302	578 336	657 700
Saskatchewan	587	1 133	1 335	1 430	1 281	960	839 155	1 451 510	1 281 400
Alberta	627	1 170	1 416	1 284	1 182	1 049	805 135	1 383 471	1 485 500
British Columbia	36	73	121	1 071	839	1 125	38 556	61 236	136 100
SOYBEANS									
Ontario	202	263	283	2 610	1 807	2 373	527 366	475 138	671 700
SUNFLOWERSEED									
Manitoba	67	82	154	1 185	1 328	1 355	79 379	108 863	208 700
Saskatchewan	-	-	10	-	-	1 220	-	-	12 200
MUSTARDSEED									
Manitoba	16	25	10	1 021	1 161	950	16 330	29 030	9 500
Saskatchewan	40	53	38	1 191	950	795	47 628	50 349	30 200
Alberta	17	20	14	907	1 202	971	15 422	24 041	13 600

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 6

CANADIAN IMPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE Vegetable Oils	1975	1976	1977	1978	1979
Soybean Oil	20 881	31 205	28 138	28 069	22 234
Cottonseed Oil	11 289	5 200	5 497	4 723	4 285
Corn Oil	10 172	16 418	15 482	19 707	16 627
Peanut Oil	6 848	6 734	6 845	6 460	5 461
Coconut Oil	25 816	29 647	24 218	22 313	25 712
Palm Oil	41 283	55 001	31 179	23 205	18 366
Palm Kernel Oil	5 093	10 351	7 192	7 252	8 807
Olive Oil	1 987	5 096	4 840	2 814	2 676
Cocoa Butter	4 362	5 008	4 835	3 562	3 495
Sunflowerseed Oil	170	271	59	171	460
Vegetable Oils & Fats NES	2 965	3 156	2 270	3 235	2 032
Vegetable Cooking Fats & Packaged Salad Oils	693	144	423	163	23
TOTAL	131 559	168 231	130 978	121 674	110 178
Animal Fats					
Lard	12 118	19 246	17 841	13 106	10 751
Butter 1/	4 565	12	13	4 165	6
TOTAL	16 683	19 258	17 854	17 271	10 756
Marine Oils					
Fish & Marine Oil	879	299	410	654	308
TOTAL	879	299	410	654	308
TOTAL EDIBLE OILS AND FATS	149 121	187 788	149 242	139 599	121 242

PRIMARILY INEDIBLE	1975	1976	1977	1978	1979
Castor Oil	1 909	1 313	1 311	1 684	1 721
Tung Oil	692	734	699	680	640
Inedible Tallow 2/	1 668	832	590	398	1 483
Animal Oil & Fats	487	652	568	4 810	1 186
Animal Grease 3/	4 154	1 700	1 790	2 298	3 335
TOTAL INEDIBLE OILS & FATS	8 910	5 231	4 958	9 870	8 365
TOTAL EDIBLE & INEDIBLE FATS & OILS IMPORTS	158 031	194 332	154 200	149 469	129 607

1/ Butter imports have been converted to oil equivalent, using the factor of 81 per cent.

2/ This class includes both edible and inedible tallow. The proportions are not known.

3/ This category includes Animal Grease, NES and Wool Grease and Lanolin.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 7

CANADIAN EXPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE Vegetable Oils	1975	1976	1977	1978	1979
Soybean Oil	2 074	--	23	1 406	9 626
Rapeseed Oil	19 811	42 501	102 700	82 348	119 476
Margarine & Shortening	268	706	634	1 559	955
Vegetable Oil & Fats	944	6 974	1 413	3 512	7 220
TOTAL	23 097	50 181	104 770	88 825	137 277
Animal Fats					
Butter (Oil Equiv.)[1/]	23	2 861	273	189	16
TOTAL	23	2 861	273	189	16
Marine Oils					
Herring Oil	2 277	5 315	4 124	3 679	6 274
Whale Oil	--	5	14	11	--
TOTAL	2 277	5 320	4 138	3 690	6 274
PRIMARILY INEDIBLE					
Linseed Oil	3 562	5 108	5 717	8 099	4 650
Inedible Tallow[2/]	97 871	109 884	140 829	138 053	149 267
Marine Oils[3/]	2 615	4 789	11 902	5 707	5 166
Animal Fats & Oils	1 463	3 282	6 931	5 062	5 311
TOTAL INEDIBLE FATS AND OILS	105 511	123 063	165 379	156 921	164 394
TOTAL EDIBLE AND INEDIBLE FATS AND OILS	130 900	181 425	274 560	249 625	307 961

FOOTNOTES TO

CANADIAN EXPORTS OF FATS AND OILS

1/ Butter exports have been converted to oil equivalent, using the factor of 81%.

2/ This class includes both edible and inedible tallow. The proportions are not known.

3/ Marine oil exports listed under "Inedible Oils" include sun-rotted cod liver oil, a non-specified group of fish and marine oil, and fish liver and visceral oils. While most of these oils can be assumed to be of an inedible grade, a small quantity of edible soy may have been included.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 8

CANADIAN CRUSHINGS OF VEGETABLE OILSEEDS AND PRODUCTION OF OIL AND MEAL BY CROP YEAR

(Tonnes)

CRUSHINGS	1974/75	1975/76	1976/77	1977/78	1978/79
Flaxseed	x[1]	x[1]	x[1]	x[1]	x[1]
Rapeseed	275 973	347 161	549 714	630 300	725 100
Soybeans	635 110	722 988	684 995	728 400	742 600
Sunflowerseed	7 134	20 029	x[1]	x[1]	x[1]
TOTAL	918 217	1 090 178	1 234 709	1 358 700	1 467 700
OIL PRODUCTION					
Flaxseed	x[1]	x[1]	x[1]	x[1]	x[1]
Rapeseed	108 483	141 698	225 805	259 000	296 300
Soybeans	108 344	122 694	115 616	125 600	129 000
Sunflowerseed	2 671	8 328	x[1]	x[1]	x[1]
TOTAL	219 498	272 720	341 421	384 600	425 300
MEAL PRODUCTION					
Flaxseed	x[1]	x[1]	x[1]	x[1]	x[1]
Rapeseed	157 763	197 376	314 903	357 500	416 700
Soybeans	499 183	569 467	540 689	575 400	576 700
Sunflowerseed	2 553	7 266	x[1]	x[1]	x[1]
TOTAL	659 499	774 109	855 592	932 900	993 400

[1] Confidential - to meet secrecy requirements of the Statistics Act

SOURCE: Statistics Canada, Catalogue No. 22-007

CHAPTER 4

THE CANADIAN RAPESEED SITUATION

Canadian Rapeseed Production

In response to market demand and favourable prices, rapeseed production in the crop year 1978/79 reached a record level of 3 497 100 tonnes, almost double the previous year's production. Starting stocks were up slightly from the previous year.

Domestic crushings increased over the previous year as did exports of seed and oil, but exports of rapeseed meal dropped approximately 5 per cent to 162 500 tonnes.

Exports of Rapeseed

Exports of rapeseed increased approximately 65 per cent to 1 988 267 tonnes. Japan purchased 1 157 771 tonnes, and was again our major market.

Exports of Rapeseed Oil

Exports of rapeseed oil for 1979 were 4 597 tonnes above 1978 level of 114 879 tonnes. India received over 70 000 tonnes while Chile, Japan, Algeria and Hong Kong were also important markets.

Exports of Rapeseed Meal

Although exports of rapeseed meal declined approximately 5 per cent, to 162 500 tonnes in 1979, the value of the rapeseed meal increased 11 per cent over 1978 levels to $27,931,000.

Table 9

CANADIAN SUPPLY AND DISPOSITION OF RAPESEED
RAPESEED OIL AND RAPESEED MEAL
(Crop Year)

RAPESEED	1974/75	1975/76	1976/77	1977/78	1978/79
			(Tonnes)		
Stocks, Starting	280 912	399 913	1 048 648	199 000	325 000
Production	1 163 476	1 748 616	836 886	1 973 100	3 497 100
Exports	592 987	683 026	1 017 871	1 013 600	1 642 295
Domestic Crushings	275 968	347 160	549 714	630 300	725 100
RAPESEED OIL					
Exports	19 240	32 633	91 648	73 500	109 969
Domestic Production	108 483	141 698	225 806	259 000	290 040
RAPESEED MEAL					
Exports	10 672	27 984	107 088	156 300	172 476
Domestic Production	157 763	197 376	314 903	357 500	416 933

SOURCE: Statistics Canada, Catalogue No. 22-007.

Table 10

CANADIAN EXPORTS OF RAPESEED

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Algeria	--	--	38 266	74 498	43 986
Australia	--	--	5	--	18
Bangladesh	47 688	25 662	17 530	28 969	13 151
Belgium-Luxembourg	508	--	248	1 000	750
Brazil	--	--	27	1	89 600
Czechoslovakia	--	--	--	2 500	2 490
Denmark	--	--	18	73	--
Finland	--	103	82	116	44
France	--	--	1 519	755	38 676
Germany, West	5 651	15 058	66 843	50 364	232 532
India	14 142	--	13 650	207 013	18 823
Italy	2 008	2 956	1 930	--	15 080
Japan	579 385	687 076	746 082	801 229	1 157 771
Korea, South	--	7 268	--	162	38 152
Morocco	--	--	--	--	24 155
Netherlands	18 426	16 682	111 876	36 545	275 488
Singapore	--	--	12 887	--	--
Spain	919	4	70	253	1 244
Sweden	56	211	104	1	--
Switzerland	3 953	--	--	2 794	--
United Kingdom	3 324	13 358	5 884	1 365	11 091
United States	123	6 491	563	466	316
USSR	--	--	--	--	24 898
Venezuela	9	--	--	27	--
Other	--	--	10 359	1	2
TOTAL	676 199	774 873	1 027 943	1 208 132	1 988 267
TOTAL VALUE ($'000)	223 549	185 971	310 047	369 549	631 446

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 11

CANADIAN EXPORTS OF RAPESEED OIL

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Algeria	--	--	3 216	--	6 030
Australia	122	--	2 917	3 314	3 348
Bangladesh	--	5 542	7 000	9 014	2 698
Chile	--	--	--	500	12 178
Ecuador	--	--	504	--	--
Egypt	--	745	2 160	--	--
Germany, West	--	--	2 217	--	--
Haiti	--	--	2 434	--	--
Hong Kong	590	2 069	5 133	5 592	5 987
India	9 438	23 248	66 794	78 525	70 069
Japan	3 019	8 481	6 415	12 516	8 665
Khmer Rep.-Laos	--	--	--	14	--
Lebanon	--	290	650	--	--
Leeward-Windward Is.	--	--	--	14	14
Madagascar	--	--	284	--	--
Mexico	--	--	--	178	938
Morocco	--	--	--	2 818	3 528
Mozambique	--	--	--	515	--
New Zealand	--	--	--	118	121
Pakistan	--	--	--	7	170
Singapore	--	--	--	--	696
South Korea	--	--	--	104	1 600
United States	963	2 124	2 064	1 650	2 607
Zambia	--	--	--	--	149
Other Countries	5 678	--	1 002	--	678
TOTAL	19 811	42 501	102 700	114 879	119 476
TOTAL VALUE ($'000)	15 683	23 081	61 907	66 489	85 073

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 12

CANADIAN EXPORTS OF RAPESEED OILCAKE AND MEAL

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Chile	--	--	--	--	3 836
Germany, West	1 965	4 686	57 565	94 005	56 932
Ireland	--	--	1 000	--	950
Japan	--	121	4 001	11 822	108
Korea, South	--	--	--	--	3 849
Netherlands	5 756	26 941	7 967	6 209	3 382
Norway	--	--	24 395	30 666	51 054
Taiwan	--	--	2 051	5 699	--
United Kingdom	12 392	16 127	21 968	21 597	35 564
United States	552	3 696	8 232	992	6 792
Other	--	--	9 212	--	33
TOTAL	20 666	51 573	136 393	170 990	162 500
TOTAL VALUE ($'000)	2 115	6 089	19 639	25 056	27 931

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 13

QUALITY DATA FOR WESTERN CANADIAN RAPESEED, SURVEY SAMPLES OF 1978 AND 1979 CROPS

	1978 Survey				1979 Survey			
WESTERN CANADA	Oil[1/] Content	Erucic[2/] Acid Content	Protein[3/] Content	No. of Samples	Oil[1/] Content	Erucic[2/] Acid Content	Protein[3/] Content	No. of Samples
No. 1 CRS	41.3	1.4	36.8	432	41.8	--	38.2	313
No. 2 CRS	41.1	0.9	38.8	51	41.5	--	39.9	60
No. 3 CRS	40.1	1.4	40.7	7	41.7	--	42.3	15
All Grades	41.3	1.3	37.1	490	41.7	1.3	38.6	393
ALL GRADES BY PROVINCES								
Manitoba	41.5	0.6	37.6	90	41.9	0.7	39.6	85
Saskatchewan	41.9	0.8	37.5	204	42.1	1.0	39.3	164
Alberta	40.5	2.2	36.4	196	41.1	2.1	37.2	144

1/ Oil content of seed is reported on an 8.5% moisture basis.

2/ Expressed as percent of total fatty acids in the oil.

3/ Protein content is reported on the oil-free meal and an 8.5% moisture basis.

SOURCE: Canadian Grain Commission, Grain Research Laboratory, Winnipeg.

Table 14

SUMMERFALLOW AND STUBBLE CULTIVATION OF RAPESEED

Seeded Area	Summer-fallow	Stubble	Total
		- hectares -	
1975	1 282 881	437 070	1 719 951
1976	700 526	153 379	853 905
1977	978 146	438 284	1 425 430
1978	1 809 389	922 298	2 731 687
1979	2 029 000	1 289 000	3 318 000
Distribution		- per cent -	
1975	75	25	100
1976	78	22	100
1977	69	31	100
1978	66	34	100
1979	61	39	100
Average Yield Per Seeded Hectare		- tonnes per hectare -	
1975	1.065	0.824	1.003
1976	1.244	0.875	1.166
1977	1.451	1.171	1.368
1978	1.306	1.138	1.250
1979	1.063	.984	1.032
Production		- tonnes -	
1975	1 363 059	360 609	1 723 668
1976	691 735	133 811	825 546
1977	1 422 027	512 565	1 934 592
1978	2 363 240	1 050 077	3 413 317
1979	2 156 000	1 269 000	3 425 000

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 15

RAPESEED VARIETIES, ACREAGE SEEDED AND PERCENTAGE OF EACH VARIETY BY PRAIRIE PROVINCES - 1979

VARIETY	SASKATCHEWAN		ALBERTA		MANITOBA		PRAIRIES	
	%	Acres ('000s)	%	Acres ('000s)	%	Acres ('000s)	%	Acres ('000s)
Altex	0.6	20.3	1.2	42.2	-	-	0.8	62.5
Candle	12.6	417.0	46.4	1,623.6	2.1	29.6	25.3	2,070.2
Midas	11.9	391.8	0.9	33.4	6.0	83.7	6.2	508.9
Regent	26.5	875.6	6.1	213.2	41.3	577.8	20.3	1,666.6
Span	-	-	0.8	27.2	0.6	8.4	0.4	35.6
Torch	18.3	604.6	32.4	1,134.6	20.6	288.2	24.7	2,027.4
Tower	27.2	895.6	11.3	394.1	29.2	408.8	20.7	1,698.5
R-500	0.7	22.6	-	-	-	-	0.3	22.6
Others	2.2	72.5	0.9	31.7	0.2	3.5	1.3	107.7
TOTAL	100.0	3,300.0	100.0	3,500.0	100.0	1,400.0	100.0	8,200.0

SOURCE: Based on data supplied by the three Pools and by the Prairie Department of Agriculture.

Table 16

CANADIAN RAPESEED PRICES [1/]

(Crop Year)

MONTH	1974/75	1975/76	1976/77	1977/78	1978/79
	.....	.....	$ per tonne	.....	.....
August	362.00	293.65	232.37	264.20	295.93
September	375.44	262.35	246.03	277.56	313.04
October	421.30	235.01	226.19	285.45	310.50
November	397.71	218.26	255.73	285.45	315.21
December	358.03	194.45	242.07	270.59	315.14
January	322.75	199.30	254.85	281.31	314.86
February	281.75	206.35	347.44	292.15	337.94
March	273.37	205.25	313.94	318.50	327.87
April	283.51	201.06	365.08	337.45 [2/]	303.91
May	250.66	211.20	369.05	340.97	309.07
June	240.30	238.32	334.88	323.90	322.12
July	259.04	255.95	279.98	287.16	326.76
Yearly Average	318.79	226.63	288.80	298.06	316.03

1/ Winnipeg Grain Exchange No. 1 Canadian Rapeseed, basis in-store Thunder Bay, $/tonne.

2/ As of April 1, 1978, basis in-store Vancouver, $/tonne.

SOURCE: Statistics Canada, Catalogue Nos. 22-006 and 22-007.

CHAPTER 5

THE CANADIAN SOYBEAN SITUATION

Supply and Disposition - Soybeans

Canadian production of soybeans in 1979 was 671 700 tonnes compared to 475 134 tonnes in 1978. For the crop year 1978/79, soybean imports amounted to 350 400 tonnes, exports were 90 900 tonnes and the domestic crush volume was 742 600 tonnes.

Soybean Oil

Imports of soybean oil declined during the 1978/79 crop year, exports increased slightly, and domestic production showed a small increase to 129 000 tonnes.

Soybean Meal

Imports of soybean meal increased sharply in 1978/79 to 480 300 tonnes versus 376 300 tonnes in 1977/78. Exports of soybean meal declined, and the domestic production was virtually unchanged at 576 700 tonnes.

Table 17

CANADIAN SUPPLY AND DISPOSITION OF SOYBEANS,

SOYBEAN OIL AND SOYBEAN MEAL

(Crop Year)

SOYBEANS	1974/75	1975/76	1976/77	1977/78	1978/79
			(Tonnes)		
Production	300 457	366 808	250 384	527 361	515 600
Imports	344 273	371 026	391 608	262 835	350 400
Exports	9 498	22 289	24 820	64 173	90 900
Domestic Crushings	635 096	722 975	684 995	728 400	742 600
SOYBEAN OIL					
Imports	19 557	30 810	26 704	28 100	26 100
Exports	5 587	1 043	--	1 400	1 800
Domestic Production	108 344	122 694	115 616	125 600	129 000
SOYBEAN MEAL					
Imports	271 149	343 814	339 244	376 300	480 300
Exports	83 527	69 335	51 333	45 600	41 300
Domestic Production	499 183	569 467	540 689	575 400	576 700

SOURCE: Statistics Canada, Catalogue Nos. 22-006, 22-007 and unpublished data.

Table 18

CANADIAN IMPORTS OF SOYBEANS AND SOYBEAN OIL

Soybeans

-Tonnes-

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Chile	--	--	--	--	4
Germany, West	1	--	--	--	--
Hong Kong	3	17	6	17	44
Japan	4	--	8	--	--
People's Republic of China	13	--	9	57	51
Singapore	--	--	4	2	2
United Kingdom	--	--	8	--	--
United States	385 444	397 560	317 935	324 369	350 991
TOTAL	385 465	397 577	317 970	324 445	351 092
TOTAL VALUE ($'000)	86 210	81 136	98 953	91 245	107 807

Soybean Oil

-Tonnes-

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
France	1	--	--	--	--
United States	20 881	31 205	28 138	28 069	22 234
TOTAL	20 882	31 205	28 138	28 069	22 234

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 19

IMPORTS OF SOYBEAN OIL BY PROVINCE

	1975		1976		1977		1978		1979	
	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $
Nova Scotia	1	1/	10	6	--	--	--	--	1	1/
New Brunswick	1 614	1 267	1 036	545	1 199	791	1 773	1 351	1 163	1 043
Quebec	1 490	822	2 056	788	436	282	936	752	205	187
Ontario	11 681	8 196	17 767	8 396	16 367	10 321	14 796	10 156	11 916	9 140
Manitoba	2 752	1 572	4 646	1 865	4 160	2 191	2 563	1 585	2 285	1 558
Saskatchewan	250	155	225	100	490	264	157	104	552	380
Alberta	343	236	1 931	734	3 246	1 896	5 489	3 526	4 163	2 899
British Columbia	2 747	2 142	3 532	1 783	2 238	1 468	2 355	1 596	1 950	1 502
TOTAL	20 881	14 394	31 205	14 222	28 137	17 216	28 069	19 070	22 234	16 710

1/ Less than $1,000.

SOURCE: Statistics Canada, Unpublished Data.

Table 20

IMPORTS OF SOYBEAN MEAL BY PROVINCE

	1975		1976		1977		1978		1979	
	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $
Newfoundland	129	18	--	--	--	--	--	--	--	--
Nova Scotia	3 288	521	19	3	2 913	679	130	32	64	58
New Brunswick	129	18	5 569	1 369	7 797	2 418	9 729	2 998	11 401	3 981
Quebec	91 146	20 062	118 447	25 368	99 456	26 329	103 390	28 260	101 246	30 393
Ontario	49 312	8 574	57 881	12 891	84 149	21 713	114 857	28 222	153 275	43 402
Manitoba	63 070	9 975	69 789	12 250	68 543	16 507	86 357	19 517	95 377	24 942
Saskatchewan	17 808	3 134	16 740	3 227	20 127	5 235	20 806	5 022	33 915	9 776
Alberta	37 904	6 273	42 521	7 120	38 634	9 564	46 306	11 501	49 976	13 168
British Columbia	31 554	5 622	37 896	7 810	29 681	7 861	31 083	7 501	19 303	5 563
TOTAL	50 853	294 343	54 209	348 865	351 302	90 310	412 656	103 093	464 557	131 263

SOURCE: Statistics Canada, Unpublished Data.

Table 21

CANADIAN EXPORTS OF SOYBEANS

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Belgium-Luxembourg	--	--	--	--	18
Denmark	--	--	--	18	--
France	490	73	75	8 749	195
Hong Kong	2 192	5 111	6 502	14 291	7 876
Hungary	--	--	3	--	--
Jamaica	4	--	--	--	--
Japan	3 041	6 825	10 976	34 940	6 498
Malaysia	--	209	227	1 744	394
Netherlands	--	--	3 941	5 463	609
Philippines	--	125	--	--	--
Romania	--	--	1 008	--	--
Singapore	1 020	9 667	2 950	13 027	26 416
Spain	213	--	8 885	--	--
Taiwan	--	--	397	--	--
United Kingdom	30	80	246	--	--
United States	46	351	94	30	593
Yugosolavia	160	--	--	--	--
Other Countries[1/]	--	2 199	2 533	5 808	4 320
TOTAL	8 710	24 653	37 837	84 152	46 919
TOTAL VALUE ($'000)	2 812	6 100	11 047	24 375	14 869

1/ To protect confidentiality under the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 22

CANADIAN EXPORTS OF SOYBEAN OIL AND MEAL

(Tonnes)

SOYBEAN OIL

DESTINATION	1975	1976	1977	1978	1979
Morocco	--	--	--	--	2 911
Netherlands	--	--	--	1 406	3 004
United Kingdom	1 965	--	--	--	787
United States	92	--	23	--	6
Venezuela	--	--	--	--	2 916
TOTAL	2 076	--	23	1 406	9 626
TOTAL VALUE ($'000)	1 391	--	12	742	6 966

SOYBEAN MEAL

DESTINATION	1975	1976	1977	1978	1979
Denmark	--	--	6 748	2 956	--
Germany, West	--	28	3 790	--	--
Hong Kong	--	--	--	800	163
Netherlands	--	--	--	1 001	--
United Kingdom	57 269	59 653	34 333	41 929	21 581
United States	1 723	987	718	1 622	853
TOTAL	58 993	62 711	45 589	48 308	22 951
TOTAL VALUE ($'000)	9 435	11 272	10 747	12 436	6 776

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 23

CANADIAN SOYBEAN PRICES [1/]

(Crop Year)

MONTH	1974/75	1975/76	1976/77	1977/78	1978/79
	.....	.....	$ per tonne	.....	.....
August	263.17	219.22	211.96	207.49	257.86
September	267.03	200.48	227.76	185.63	250.90
October	298.17	175.40	211.09	187.44	273.58
November	265.93	159.83	221.38	187.43	270.43
December	249.21	154.60	243.97	215.75	276.95
January	217.06	160.34	248.43	209.95	277.73
February	186.01	162.36	260.69	205.98	303.40
March	185.28	160.98	304.65	243.13	306.70
April	193.77	160.84	344.51	259.88	297.29
May	177.10	176.83	347.45	273.40	295.20
June	179.40	214.03	298.82	266.61	321.21
July	199.47	224.68	224.82	256.72	308.36
Yearly Average	223.49	180.82	262.25	226.98	286.83

1/ Buying prices, carlots, fob Chatham, No. 2 and better.

SOURCE: Statistics Canada, Catalogue No. 22-006.

CHAPTER 6

THE CANADIAN FLAXSEED SITUATION

Flaxseed Production

Flaxseed production for 1979 was 835 700 tonnes, an increase of 46 per cent over 1978 production of 571 500 tonnes. During 1979 seeded area increased but average yields decreased.

Exports of Flaxseed

Exports of flaxseed increased by 125 408 tonnes over 1978 to 534 825 tonnes in 1979. The value of these shipments increased by approximately 64 per cent during the same period. As in previous years, Japan and Europe were our major markets.

Exports of Linseed Oil and Meal

Exports of linseed oil decreased by 3 449 tonnes during 1979 to a level of 4 650 tonnes. Similarly, exports of linseed meal decreased to 4 518 tonnes in 1979, from 5 583 tonnes in 1978.

Table 24

CANADIAN SUPPLY AND DISPOSITION OF FLAXSEED,

LINSEED OIL AND LINSEED MEAL

(Crop Year)

	1974/75	1975/76	1976/77	1977/78	1978/79
			- tonnes -		
FLAXSEED					
Stocks, Starting [1]	200 950	218 578	380 640	280 400	470 000
Production	350 538	444 523	276 875	402 400	571 500
Imports	406	-	[3]	[3]	98
Exports	267 196	195 107	332 708	337 500	538 369
Domestic Crushing	x [2]	x [2]	x [2]	x [2]	x [2]
LINSEED OIL					
Exports	2 184	5 817	4 525	4 597	7 146
Domestic Production	x [2]	x [2]	x [2]	x [2]	x [2]
LINSEED MEAL					
Exports	196	636	3 679	2 015	5 064
Domestic Production	x [2]	x [2]	x [2]	x [2]	x [2]

[1] Total stocks in all positions

[2] Confidential - to meet secrecy requirements of the Statistics Act

[3] Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 22-007

Table 25

CANADIAN EXPORTS OF FLAXSEED

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Austria	34	36	--	--	10
Belgium-Luxembourg	2 951	1 763	11 658	20 209	9 215
Czechoslovakia	17 717	3 151	5 836	--	3 001
Denmark	--	--	614	3 849	2 500
France	1 848	508	6 722	17 427	14 168
Germany, West	77 619	81 224	117 479	140 737	161 056
Greece	1 050	1 500	--	--	3 055
Italy	--	--	--	--	1 915
Japan	65 330	90 647	78 984	100 863	99 424
Korea, North	--	--	269	--	--
Korea, South	--	1 750	3 373	3 934	5 351
Netherlands	31 516	11 078	25 799	14 800	111 472
Spain	6 580	8 547	11 315	4 329	6 761
Sweden	72	54	2 279	206	208
Switzerland	108	1 468	9 020	1 118	8 961
Taiwan	--	--	911	6 217	180
United Kingdom	15 573	4 672	13 892	11 724	33 942
United States	3 493	40 198	41 107	23 427	50 929
USSR	--	--	--	--	22 677
TOTAL	244 942	246 602	329 366	409 417	534 825
TOTAL VALUE ($'000)	83 815	66 278	93 538	102 424	168 788

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 26

CANADIAN IMPORTS OF FLAXSEED

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
United States	337	1/	51	26	98
Other Countries	--	--	18	--	--
TOTAL	337	1/	69	26	98
TOTAL VALUE ($'000)	171	--	45	10	42

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 27

CANADIAN EXPORTS OF LINSEED OIL

(tonnes)

DESTINATION	1975	1976	1977	1978	1979
Belgium-Luxembourg	1 526	1 965	1 717	1 811	--
Netherlands	1 590	2 848	1 724	1 524	3 468
Switzerland	--	--	--	--	1 007
United Kingdom	398	250	2 241	2 944	--
United States	36	34	27	29	141
Venezuela	7	8	7	20	1
Other Countries	3	1	1	--	33
TOTAL	3 562	5 108	5 717	8 099	4 650
TOTAL VALUE ($'000)	3 237	2 758	2 786	3 390	2 929

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 28

CANADIAN EXPORTS OF LINSEED CAKE AND MEAL

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Belgium-Luxembourg	--	481	--	--	--
Germany, West	--	3 150	--	--	--
Netherlands	--	--	3 201	3 187	2 785
Trinidad-Tobago	114	60	91	26	18
United States	80	159	1 430	2 370	1 715
TOTAL	194	3 875	4 726	5 583	4 518
TOTAL VALUE ($'000)	37	835	741	1 087	1 029

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 29

QUALITY DATA FOR WESTERN CANADIAN FLAXSEED, SURVEY SAMPLES OF 1977, 1978 AND 1979 CROPS

	Oil Content[1]			Iodine Value (Wijs Units)			Protein Content[2]			No. of Samples		
WESTERN CANADA	1977	1978	1979	1977	1978	1979	1977	1978	1979	1977	1978	1979
No. 1 CW	44.2	43.7	43.1	195	190	195	40.6	41.2	42.6	215	237	115
No. 2 CW	44.4	43.1	42.4	199	191	199	39.7	40.1	40.4	40	16	16
No. 3 CW	44.7	41.6	40.6	201	188	197	40.1	40.8	37.8	27	2	8
All Grades	44.3	43.6	42.9	196	190	195	40.4	41.1	42.1	289	255	139
ALL GRADES												
Manitoba	44.5	43.5	43.0	197	190	196	40.1	40.8	41.9	156	132	32
Saskatchewan	44.2	43.8	42.9	196	190	196	40.4	41.3	42.0	118	104	89
Alberta	43.0	43.4	43.0	190	192	193	44.2	42.7	43.0	15	19	18

1/ Oil Content of seed is reported on moisture-free basis.

2/ Protein Content is reported on oil-free meal and moisture-free basis.

SOURCE: Canadian Grain Commission, Grain Research Laboratory, Winnipeg.

Table 30

SUMMERFALLOW AND STUBBLE CULTIVATION OF FLAXSEED

Seeded Area	Summer-fallow	Stubble	Total
		- hectares -	
1975	266 289	300 283	566 672
1976	124 646	199 110	323 756
1977	241 198	333 468	574 666
1978	180 089	337 920	518 009
1979	67 000	439 000	506 000
Distribution		- per cent -	
1975	47	53	100
1976	38	62	100
1977	42	58	100
1978	35	65	100
1979	13	87	100
Average Yield		- kg. per hectare -	
1975	918	666	786
1976	1 018	754	855
1977	1 201	962	1 063
1978	1 232	1 000	1 082
1979	1 208	1 016	1 046
Production		- tonnes -	
1975	243 852	200 670	444 523
1976	127 006	149 868	276 874
1977	289 575	320 056	609 632
1978	220 992	337 837	558 829
1979	64 000	406 000	470 000

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 31

FLAXSEED VARIETIES, ACREAGE SEEDED AND PERCENTAGE OF EACH VARIETY BY PRAIRIE PROVINCES - 1979

VARIETY	SASKATCHEWAN		ALBERTA		MANITOBA		PRAIRIES	
	%	Acres ('000s)	%	Acres ('000s)	%	Acres ('000s)	%	Acres ('000s)
Culbert	-	-	-	-	5.6	69.9	3.0	69.9
Dufferin	51.1	408.9	-	-	43.3	540.8	41.5	949.7
Linott	8.2	65.3	0.2	0.4	33.4	417.7	21.1	483.4
Noralta	23.2	185.8	46.1	110.6	6.5	81.5	16.5	377.9
Norland	5.9	47.3	-	-	-	-	2.1	47.3
Raja	3.7	29.3	7.1	17.1	4.7	58.7	4.6	105.1
Redwood 65	7.0	56.3	43.5	104.4	6.3	79.4	10.5	240.1
Others	0.9	7.1	3.1	7.5	0.2	2.0	0.7	16.6
TOTAL	100.0	800.0	100.0	240.0	100.0	1,250.0	100.0	2,290.0

SOURCE: Based on data supplied by the three Pools and by the Prairie Department of Agriculture.

Table 32

CANADIAN FLAXSEED PRICES [1/]

(Crop Year)

M O N T H	1974/75	1975/76	1976/77	1977/78	1978/79
	.....	.....	$ per tonne	.....	.....
August	432.99	336.35	281.18	213.77	238.10
September	461.39	311.00	282.56	218.30	251.94
October	479.95	284.34	274.94	220.15	270.36
November	430.78	258.20	265.83	218.34	268.93
December	420.69	247.48	262.38	209.83	271.14
January	363.17	258.65	273.85	205.30	297.52
February	319.12	257.17	281.83	209.44	345.26
March	308.69	254.32	291.52	230.74	339.31
April	339.10	249.59	333.10	249.53	329.39
May	325.08	258.99	302.69	258.84	324.66
June	307.02	280.84	219.62	249.81	352.18
July	320.95	292.40	242.61	231.02	355.84
Yearly Average	375.67	274.15	274.31	225.97	303.72

1/ Winnipeg Grain Exchange No. 1 CW Flaxseed Basis Thunder Bay.

SOURCE: Statistics Canada, Catalogue Nos. 22-006 and 22-007.

CHAPTER 7

THE CANADIAN SUNFLOWERSEED SITUATION

Sunflowerseed Production

Manitoba was again Canada's leading producer of sunflowerseed accounting for 95 per cent of total production. In 1979 production increased by more than 100 000 tonnes from 1978 to a record level of 220 900 tonnes.

Exports of Sunflowerseed

Exports of unprocessed sunflowerseed continued to increase in 1979 to a level of 89 231 tonnes, 15 112 tonnes higher than in 1978. West Germany and the USA continue to be the principal markets. Total value of the 1979 exports of sunflowerseed was $25,757,000.

Table 33

CANADIAN SUNFLOWERSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	1975/76	1976/77	1977/78	1978/79	1979/80
			- hectares -		
Manitoba	25 091	20 235	66 775	82 153	154 000
Saskatchewan	-	-	-	4 452	10 000
Alberta	-	-	-	-	-
Canada - Total	25 091	20 235	66 775	86 605	164 000
			- yield - kilograms/hectare -		
Manitoba	1 193	1 188	1 188	1 325	1 355
Saskatchewan	-	-	-	1 120	1 220
Alberta	-	-	-	-	-
Canada - Ave.	1 193	1 188	1 188	1 314	1 364
			- production - tonnes -		
Manitoba	29 945	24 047	79 379	108 863	208 700
Saskatchewan	-	-	-	4 990	12 200
Alberta	-	-	-	-	-
Canada - Total	29 945	24 047	79 379	113 853	220 900

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 34

CANADIAN EXPORTS OF SUNFLOWERSEED

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Australia	--	17	15	37	44
Czechoslovakia	--	1 604	6 998	--	--
Denmark	--	18	--	14	29
Germany, West	3 825	3 590	344	43 607	59 553
Netherlands	--	3 001	14 284	17 999	5 380
New Zealand	2	1/	5	2	2
Spain	526	--	--	40	3 458
Sweden	2	4	5	72	75
United Kingdom	34	25	19	340	8 068
United States	874	1 238	2 949	3 913	12 236
Other Countries	2 701	2	1 484	--	386
TOTAL	7 965	9 501	26 103	74 119	89 231
TOTAL VALUE ($'000)	2 623	3 258	6 225	21 675	25 757

1/ Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 35

CANADIAN IMPORTS OF SUNFLOWERSEED OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Austria	5	--	--	--	--
United States	160	271	59	164	458
U.S.S.R.	4	--	--	--	--
Other Countries	1	--	--	7	2
TOTAL	170	271	59	171	460
TOTAL VALUE ($'000)	158	147	43	136	343

SOURCE: Statistics Canada, Catalogue No. 65-007.

CHAPTER 8

THE CANADIAN MUSTARDSEED SITUATION

Mustardseed Production

Production of mustardseed dropped to 53 300 tonnes in 1979 from 103 448 tonnes in 1978. Our exports of 67 388 tonnes in 1979 were mainly to the traditional markets in Europe, Japan and the USA.

Imports of Ground Mustard

The United Kingdom continues to be Canada's major supplier of ground mustard, accounting for over 80 per cent of our 267 tonnes imported during 1979.

Table 36

CANADIAN MUSTARDSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	1975/76	1976/77	1977/78	1978/79	1979/80
			- hectares -		
Manitoba	9 308	7 285	16 188	25 091	10 000
Saskatchewan	30 757	19 020	40 469	52 601	38 000
Alberta	25 911	8 903	16 997	20 234	14 000
Canada - Total	65 965	35 208	73 654	97 936	62 000
			- yield - kilograms/hectare -		
Manitoba	708	899	1 011	1 159	950
Saskatchewan	739	1 004	1 179	959	794
Alberta	808	1 093	910	1 191	971
Canada - Ave.	762	1 004	1 081	1 056	859
			- production - tonnes		
Manitoba	6 578	6 531	16 329	29 038	9 500
Saskatchewan	22 679	19 051	47 627	50 363	30 200
Alberta	20 865	9 707	15 422	24 047	13 600
Canada - Total	50 121	35 289	79 378	103 448	53 300

SOURCE: Statistics Canada, Catalogue No. 22-002.

Table 37

CANADIAN EXPORTS OF MUSTARDSEED

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Australia	--	--	22	6	18
Belgium-Luxembourg	114	574	435	--	749
Czechoslovakia	108	35	--	308	--
France	290	181	--	--	--
Germany, West	3 483	2 613	2 157	7 622	6 169
India	--	--	--	2 958	6 596
Japan	9 058	7 517	7 024	6 701	5 369
Mexico	272	108	196	429	449
Netherlands	11 057	9 114	14 138	25 435	17 742
Spain	17	40	--	--	254
Sweden	54	54	--	34	54
Switzerland	430	--	1 108	--	--
United Kingdom	1 253	85	18	171	151
United States	31 659	38 526	31 312	29 378	29 080
Venezuela	24	--	--	32	53
Other Countries	19	21	28	9	704
TOTAL	57 841	58 871	56 438	73 339	67 388
TOTAL VALUE ($'000)	22 939	20 946	19 660	25 208	21 757

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 38

CANADIAN IMPORTS OF GROUND MUSTARD

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
France	4	--	9	20	18
Germany, West	2	--	--	--	--
Hong Kong	1/	--	1/	--	--
India	1/	--	--	--	1
Taiwan	2	--	--	--	--
United Kingdom	317	169	241	220	221
United States	65	99	98	43	27
TOTAL	393	269	349	284	267
TOTAL VALUE ($'000)	522	358	548	625	779

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

CHAPTER 9

DEODORIZED FATS AND OILS

Canadian production of deodorized oils in 1979 increased by approximately 12 per cent, with deodorized vegetable oils accounting for most of the volume increase. Rapeseed oil usage continued to increase, particularly for shortening and salad oil.

Imports of vegetable oils and fats (NES) decreased sharply, from 3 235 tonnes in 1978 to 2 032 tonnes in 1979. Cocoa butter imports showed little change, coconut oil increased marginally, and corn oil imports declined. Imports of cottonseed oil, olive oil, palm oil and peanut oil declined, while palm kernel oil imports increased.

Exports of vegetable oils and fats (NES) doubled in 1979 to 7 220 tonnes.

CANADIAN PRODUCTION OF DEODORIZED OILS

- tonnes -

	1978				1979			
	Margarine Oil	Shortening Oil	Salad Oil	Total	Margarine Oil	Shortening Oil	Salad Oil	Total
Vegetable Oils								
Coconut	x	x	x	15 871	x	x	-	x
Corn	x	x	x	24 872	x	x	x	25 284
Cottonseed	x	x	x	x	x	x	x	x
Palm	x	x	x	16 482	x	x	-	x
Peanut	4	x	x	5 940	x	x	x	5 671
Rapeseed	39 825	35 693	55 924	131 442	44 041	55 769	69 152	168 962
Soybean	53 808	47 126	x	116 712	55 515	x	x	122 364
Sunflowerseed	x	2 778	x	14 417	x	x	x	13 528
Other	x	x	-	x	x	x	x	11 065
Total Vegetable Oils	111 361	123 377	99 559	334 297	119 049	150 401	111 087	380 537
Total Animal Oils	x	x	x	x	x	x	-	53 163
Total Marine Oils	x	x	x	x	x	x	-	1 605
Total All Oils	113 824	161 496	99 559	374 879	122 743	201 475	111 087	435 305

x Confidential to meet secrecy requirements of the Statistics Act.

SOURCE: Statistics Canada, Catalogue No. 32-006.

Table 40

CANADIAN IMPORTS OF VEGETABLE OILS AND FATS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Austria	10	1	2	--	--
Brazil	14	212	15	60	--
Denmark	146	23	23	4	12
France	1	13	2	1	3
Germany, West	6	6	9	27	6
Greece	545	1/	--	--	--
Hong Kong	31	29	47	66	70
India	1/	6	1/	--	--
Japan	33	47	98	74	90
Netherlands	64	2	1	20	8
New Zealand	--	10	--	--	--
Paraguay	--	--	--	14	--
People's Republic of China	7	14	19	15	4
Singapore	--	2	--	--	3
Switzerland	3	3	6	2	--

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
United Kingdom	572	331	512	258	140
United States	1 521	2 452	1 528	2 690	1 706
Yugoslavia	6	1/	8	22	--
TOTAL	2 965	3 156	2 270	3 235	2 032
TOTAL VALUE ($'000)	3 129	3 069	3 111	3 823	3 290

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 41

CANADIAN IMPORTS OF COCOA BUTTER

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Belgium-Luxembourg	--	--	--	35	222
Brazil	426	875	416	213	128
Cuba	60	92	75	72	163
Ecuador	--	--	180	--	40
Germany, West	37	--	170	262	663
Ivory Coast	236	299	178	231	108
Jamaica	--	--	10	10	15
Mexico	184	--	--	--	--
Netherlands	1 521	1 612	1 453	1 677	991
Nigeria	--	--	--	100	--
Singapore	--	26	--	--	--
United Kingdom	1 283	1 409	1 714	717	272
United States	613	693	636	245	815
Other Countries	--	--	--	--	78
TOTAL	4 362	5 008	4 835	3 562	3 495
TOTAL VALUE ($'000)	14 378	16 714	24 618	18 841	22 323

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 42

CANADIAN IMPORTS OF COCONUT OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Australia	2 218	1/	1/	359	--
Brazil	--	--	--	--	299
Fiji	1/	--	--	--	--
Finland	68	--	--	--	--
Germany, West	1	--	--	--	--
Indonesia	--	173	--	--	--
Jamaica	--	2	3	2	4
Malaysia	3 902	1 730	4 664	1 934	5 577
Philippines	7 137	18 623	18 827	15 607	15 480
Sri Lanka	10 540	8 190	156	2 785	2 475
United Kingdom	346	174	1	3	2
United States	1 600	752	567	1 623	1 872
Other Countries	--	--	--	--	3
TOTAL	25 816	29 647	24 218	22 313	25 712
TOTAL VALUE ($'000)	11 995	10 847	14 447	15 126	28 914

1/ Less than one tonne.

- - tistics Canada, Catalogue No. 65-007.

Table 43

CANADIAN IMPORTS OF CORN OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
United States	10 172	16 418	15 482	19 707	16 627
TOTAL	10 172	16 418	15 482	19 707	16 627
TOTAL VALUE ($'000)	7 311	8 705	10 612	18 154	14 214

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 44

CANADIAN IMPORTS OF COTTONSEED OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
United States	11 289	5 200	5 497	4 723	4 285
TOTAL	11 289	5 200	5 497	4 723	4 285
TOTAL VALUE ($'000)	7 647	2 863	3 376	3 162	3 402

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 45

CANADIAN IMPORTS OF OLIVE OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
France	30	28	15	35	23
Greece	417	162	107	218	311
Italy	611	525	737	920	915
Portugal	150	106	155	162	169
Spain	709	2 132	3 750	1 266	1 111
United States	29	2 117	62	213	147
Other Countries	40	25	14	--	--
TOTAL	1 986	5 096	4 840	2 814	2 676
TOTAL VALUE ($'000)	4 161	4 646	3 406	4 923	5 941

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 46

CANADIAN IMPORTS OF PALM OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Indonesia	13 085	20 592	15 249	16 254	9 946
Ivory Coast	1 385	--	--	--	--
Malaysia	23 675	31 800	13 972	5 840	6 186
Netherlands	--	--	8	508	--
Philippines	--	250	--	--	--
Singapore	509	1	--	--	1 025
United States	2 627	2 354	1 941	573	1 199
Other Countries	--	2	9	30	10
TOTAL	41 283	55 001	31 179	23 205	18 366
TOTAL VALUE ($'000)	19 547	19 285	17 142	14 763	13 608

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 47

CANADIAN IMPORTS OF PALM KERNEL OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Denmark	--	--	7	16	15
Indonesia	473	2 223	3 905	1 605	1 002
Malaysia	3 966	4 685	2 941	4 552	7 134
Netherlands	13	10	--	--	--
Singapore	--	44	--	250	--
United States	640	3 388	339	845	655
Other Countries	--	--	--	--	1
TOTAL	5 092	10 351	7 192	7 252	8 807
TOTAL VALUE ($'000)	2 565	3 174	3 236	5 387	9 182

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 48

CANADIAN IMPORTS OF PEANUT OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Brazil	2 444	3 602	604	--	1 498
Hong Kong	97	52	40	52	38
Nicaragua	--	693	--	--	--
Senegal	507	--	--	--	--
United States	3 095	2 381	6 201	6 393	3 922
Other Countries	703	--	--	9	3
TOTAL	6 846	6 734	6 845	6 460	5 461
TOTAL VALUE ($'000)	5 950	4 252	5 582	6 964	5 761

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 49

CANADIAN EXPORTS OF VEGETABLE OILS & FATS (NES)

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Barbados	10	13	46	53	138
Colombia	--	443	--	--	--
Cuba	183	4	3	3	3
Emirates, UA	--	13	--	--	11
France	--	--	--	--	2 044
Germany, West	--	2 205	3	--	1
Guyana	6	2	4	383	--
Haiti	111	--	--	--	--
Leeward-Windward Is.	63	45	100	41	190
Netherlands	--	--	57	41	2 475
Saudi Arabia	99	3 156	32	15	--
Trinidad-Tobago	29	120	159	2 059	789
United Kingdom	71	125	66	47	28
United States	364	811	855	703	1 468
Other Countries	8	37	88	167	73
TOTAL	944	6 974	1 413	3 512	7 220
TOTAL VALUE ($'000)	512	1 914	918	1 915	5 530

SOURCE: Statistics Canada, Catalogue No. 65-004.

CHAPTER 10

SPECIFIED FATS AND OILS

According to Statistics Canada, Canadian margarine production recovered in 1979 to 128 000 tonnes, while butter output declined to 103 000 tonnes.

Data is no longer published by Statistics Canada on lard and tallow production; therefore, the table on Canadian production of specified fats and oils products no longer includes the production of lard, edible tallow and inedible tallow.

Table 50

CANADIAN PRODUCTION OF SPECIFIED FATS AND OILS PRODUCTS

(Thousands of Tonnes)

	1975	1976	1977	1978	1979
Margarine[1/]	119	126	136	111	128
Butter[2/]	131	117	94	132	103
Shortening					
Packaged[3/]	23	90	90	94	99
Bulk[4/]	148	81	81	85	n.a.
Refined Oils					
Salad[5/]	81	95	101	99	61

1/ Includes retail and commercial packages. Commercial sales (21-450 pound) packages account for about 5% of total output.

2/ Includes creamery and whey butter.

3/ Retail packages up to 20 pounds only.

4/ Covers commercial (21-450 pound) packages, bulk and other than packaged retail sales of manufacturers of shortening and deodorized shortening oil. Includes baking and frying fats and oils.

5/ Covers packaged sales only.

SOURCE: Statistics Canada, Catalogue No. 32-006.

Table 51

CANADIAN IMPORTS OF LARD AND SHORTENING

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
France	--	--	3	1	9
Germany, West	1	4	3	9	16
Greece	--	15	--	23	11
St. Pierre-Miquelon	--	22	--	--	--
Sweden	50	55	45	33	--
United States	27 814	35 451	31 880	31 241	13 938
Other Countries	--	3	--	10	--
TOTAL	27 865	35 559	31 931	31 317	17 437
TOTAL VALUE ($'000)	19 675	16 967	18 972	22 128	10 492

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 52

CANADIAN EXPORTS OF MARGARINE, SHORTENING AND LARD

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Bahamas	1	--	--	--	--
Bahrain	--	17	--	6	6
Bermuda	14	16	15	27	20
Emirates, UA	--	48	64	41	72
Germany, West	1	--	2	1	1
Hong Kong	--	--	--	--	11
Jamaica	22	35	4	--	--
Japan	--	--	--	3	--
Jordan	--	18	16	--	43
Kuwait	--	67	46	95	108
Lebanon	--	--	190	203	92
Leeward-Windward Is.	3	--	19	45	88
Libya	--	7	--	--	--
Netherlands-Antilles	--	--	32	40	92
Puerto Rico	--	--	--	72	--
Qatar	--	15	11	12	--
Saudi Arabia	--	405	64	665	280
St. Pierre-Miquelon	42	25	41	37	34
Trinidad-Tobago	1/	--	1	--	18
United Kingdom	--	--	--	--	2
United States	182	49	122	311	88
TOTAL	268	706	634	1 559	955
TOTAL VALUE ($'000)	248	543	770	1 914	1 316

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 53

CANADIAN IMPORTS OF VEGETABLE COOKING FATS

AND PACKAGED SALAD OILS

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
France	12	--	1	1	3
Greece	15	--	12	18	--
Sweden	14	5	1	4	5
United Kingdom	57	3	4	10	5
United States	594	135	404	127	10
TOTAL	692	144	423	163	23
TOTAL VALUE ($'000)	389	109	342	213	26

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 54

CANADIAN IMPORTS OF TALLOW, ANIMAL OILS, GREASES AND FATS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Australia	11	5	--	12	1 181
Germany, West	44	47	41	51	1
United Kingdom	5	17	--	11	5
United States	6 563	2 654	2 900	7 418	4 924
Other Countries	--	11	7	14	--
TOTAL	6 734	2 889	2 948	7 506	6 111
TOTAL VALUE ($'000)	1 757	1 292	1 521	2 138	3 463

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 55

CANADIAN EXPORTS OF TALLOW, ANIMAL OILS AND FATS (NES)

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Barbados	27	21	--	--	--
Belgium-Luxembourg	996	2 022	798	2 203	988
Brazil	--	--	--	6	18
Chile	--	--	249	--	280
Colombia	52	32	22	28	--
Cuba	13 587	10 702	5 600	3 026	3 001
Dominican Republic	--	--	--	--	320
France	5	10	2 362	3 682	3 524
Germany, West	300	3 857	2 112	898	5 071
Guatemala	21	--	517	17	22
Iran	--	1 300	--	1 079	--
Ireland	300	--	--	--	220
Italy	548	1 413	--	--	--
Ivory Coast	--	--	496	1 178	--
Jamaica	299	474	338	--	--
Japan	10 400	18 058	25 111	23 719	28 176
Kenya	--	50	110	1 550	200
Korea, South	15 700	13 190	26 269	22 996	25 801
Leeward-Windward Is.	--	4	1	--	20
Malaysia	73	56	146	118	72
Mexico	25	20	44	11	--
Morocco	574	--	--	600	325
Netherlands	16 697	29 077	38 105	47 483	54 991
Nigeria	924	1 319	--	--	--
People's Republic of China	5 589	2 033	8 630	4 065	4 065
Portugal	52	157	145	211	210
Senegal	708	--	--	--	--
Singapore	158	18	51	18	46
Spain	9 656	7 390	9 343	6 997	2 018
Switzerland	209	272	169	236	232
Taiwan	--	1 680	2 900	1 950	600

DESTINATION	1975	1976	1977	1978	1979
Trinidad-Tobago	294	503	486	504	1 364
United Kingdom	5 541	9 778	18 064	25 234	13 598
United States	11 044	9 651	4 456	4 889	8 374
U.S.S.R.	3 774	--	--	--	--
Venezuela	69	66	1 132	208	228
Zaire	747	--	--	200	--
Other Countries	956	5	104	5	1 018
TOTAL	99 335	113 166	140 829	140 115	154 578
TOTAL VALUE ($'000)	32 218	38 589	54 856	68 256	97 500

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 56

PRODUCTION OF SPECIFIED DAIRY PRODUCTS

	1978	1979
Creamery Butter (tonnes)	102 539	98 916
Cheddar Cheese (tonnes)	80 535	94 785
Variety Cheese (tonnes)	59 299	63 367
Process Cheese (tonnes)	67 992	69 381
Evaporated Whole Milk (kilolitres)	132 527	136 401
Condensed Whole Milk (kilolitres)	8 815	9 065
Skim Milk Powder (tonnes)	130 368	114 993
Partly Skimmed Evaporated Milk (kilolitres)	346	5 389

SOURCE: Statistics Canada, Dairy Review 23-001

CHAPTER 11

FISH AND MARINE OILS AND MEALS

Canadian Trade of Fish and Marine Oils

Exports of these oils increased in volume terms in 1979, although the value decreased slightly to $4.4 million. Imports of these oils in 1979 fell to less than one-half of the 1978 volume.

Canadian Trade of Fish Meal

Exports of fish meal and condensed solubles decreased in 1979 to 26 138 tonnes, valued at $12.5 million. Imports were insignificant at 308 tonnes, valued at $111,000.

Canadian Production of Fish Oils and Meal

The statistical tables to show the Canadian production of fish oils and meal were of necessity not included in this publication. The reason for their deletion is the fact that Pacific Coast production data cannot be released because in some product areas less than three companies are involved.

Table 57

CANADIAN IMPORTS OF FISH, MARINE AND ANIMAL OILS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Japan	--	9	9	10	--
Netherlands	--	6	--	16	--
Norway	629	150	3	155	135
United Kingdom	49	28	5	182	66
United States	199	99	393	288	107
Other Countries	1	4	--	3	--
TOTAL	878	299	410	654	308
TOTAL VALUE ($'000)	500	233	263	699	381

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 58

CANADIAN EXPORTS OF MARINE OILS BY TYPES

(Tonnes)

TYPE	1975	1976	1977	1978	1979
Cod Liver Oil, Sun Rotted	868	1 381	915	1 546	1 162
Herring Oil	2 277	5 315	4 124	3 679	6 274
Whale Oil	--	5	14	11	--
Fish and Marine Animal Oil NES	1 746	3 408	10 987	4 161	4 004
TOTAL	4 891	10 110	16 040	9 397	11 440
TOTAL VALUE ($'000)	1 837	2 968	3 950	4 633	4 407

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 59

CANADIAN IMPORTS OF FISH MEAL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Cuba	--	163	--	--	--
France	59	--	--	--	12
Germany, West	--	229	--	--	--
Japan	2	--	--	--	--
Puerto Rico	41	40	--	--	--
Taiwan	--	--	13	--	--
United Kingdom	--	7	--	2	21
United States	209	521	451	340	275
TOTAL	311	962	464	342	308
TOTAL VALUE ($'000)	87	309	153	91	111

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 60

CANADIAN EXPORTS OF FISH MEAL AND CONDENSED SOLUBLES

(Tonnes)

TYPE	1975	1976	1977	1978	1979
Herring Meal and Pilchard Meal	14 733	14 972	11 181	11 484	7 054
Fish Meal NES	9 515	17 000	16 445	23 546	19 084
Fish Condensed Homogenized Solubles	43	941	307	517	--
TOTAL (Meal Only)	24 291	32 913	27 933	35 547	26 138
TOTAL VALUE (Meal Only) ($'000)	6 071	9 422	11 367	16 520	12 461

SOURCE: Statistics Canada, Catalogue No. 65-004.

CHAPTER 12

OTHER INEDIBLE FATS AND OILS

The products grouped in this chapter are castor, tung and tall oils, tall oil pitch, tall oil fatty acids, chemically modified oils, fats and waxes, and mixtures and derivatives of oils, fats and waxes.

Imports of castor oil increased slightly in 1979 to 1 721 tonnes. Tung oil imports fell slightly in volume terms, and by a large amount in value terms. Imports of tall oil, tall oil pitch and tall oil fatty acids increased marginally in volume terms.

Imports of chemically modified oils, fats and waxes dropped sharply to 3 791 tonnes versus 7 865 tonnes in 1978.

Imports of mixtures and derivatives of oils, fats and waxes increased in 1979 compared to the previous year.

Canadian exports of chemically modified oils, fats and waxes declined by about 25 per cent in volume terms, although the dollar value increased in 1979 over 1978.

Table 61

CANADIAN IMPORTS OF CASTOR OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Brazil	1 697	968	257	843	970
Ecuador	--	--	29	250	--
United States	211	345	1 025	591	751
TOTAL	1 908	1 313	1 311	1 684	1 721
TOTAL VALUE ($'000)	1 169	822	1 343	1 719	1 729

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 62

CANADIAN IMPORTS OF CHINAWOOD OIL OR TUNG OIL

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Argentina	141	70	29	160	115
Paraguay	56	381	223	85	14
People's Republic of China	70	20	--	--	--
United States	423	247	433	380	448
Other Countries	--	16	14	55	63
TOTAL	690	734	699	680	640
TOTAL VALUE ($'000)	441	663	1 371	1 662	982

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 63

CANADIAN IMPORTS OF TALL OIL, TALL OIL PITCH AND TALL OIL FATTY ACIDS

(Tonnes)

TALL OIL AND TALL OIL PITCH	1975	1976	1977	1978	1979
United States	2 378	2 849	757	1 167	1 394
TALL OIL FATTY ACIDS					
United States	5 503	4 806	5 159	4 577	4 753
Other Countries	2	15	--	--	--
TOTAL	7 883	7 670	5 916	5 744	6 147
TOTAL VALUE ($'000)	3 447	2 906	3 252	3 322	3 306

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 64

CANADIAN EXPORTS OF CHEMICALLY MODIFIED OILS, FATS AND WAXES

(Tonnes)

DESTINATION	1975	1976	1977	1978	1979
Australia	--	--	--	91	61
Bahamas	--	--	--	--	2
Barbados	27	--	--	--	3
Bermuda	--	--	--	1	1
Chile	--	--	--	--	5
France	14	--	--	--	--
Germany, West	1/	2	--	--	--
Guyana	1/	--	--	--	--
Israel	4	--	--	--	--
Japan	20	--	--	--	--
Leeward-Windward Is.	--	--	1/	--	2
Netherlands-Antilles	--	--	--	1	--
United Kingdom	18	--	150	--	2
United States	3 212	3 008	3 100	4 004	2 877
U.S.S.R.	--	--	508	--	--
Venezuela	9	1	86	48	1
TOTAL	3 306	3 012	3 846	4 191	2 954
TOTAL VALUE ($'000)	578	663	2 803	1 249	1 265

1/ Less than one tonne.

SOURCE: Statistics Canada, Catalogue No. 65-004.

Table 65

CANADIAN IMPORTS OF MIXTURES AND DERIVATIVES

OF OILS, FATS AND WAXES

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Brazil	20	--	--	45	43
Germany, West	98	116	116	43	76
Netherlands	--	--	--	28	6
Norway	--	118	237	257	180
United Kingdom	153	316	604	3	948
United States	10 886	12 031	10 555	9 833	13 598
Other Countries	6	1	2	2	2
TOTAL	11 163	12 585	11 516	11 271	14 853
TOTAL VALUE ($'000)	8 415	9 195	10 969	13 746	19 589

SOURCE: Statistics Canada, Catalogue No. 65-007.

Table 66

CANADIAN IMPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

COUNTRY OF ORIGIN	1975	1976	1977	1978	1979
Brazil	69	--	40	40	260
France	--	--	--	1	2
Germany, West	8	72	69	79	65
Netherlands	442	214	116	281	270
United Kingdom	1 125	1 219	53	99	10
United States	4 176	4 606	5 848	7 363	3 184
Other Countries	30	1	3	1	--
TOTAL	5 850	6 112	6 132	7 865	3 791
TOTAL VALUE ($000)	6 925	6 084	5 405	8 581	4 810

SOURCE: Statistics Canada, Catalogue No. 65-007.