

Canola Socio-Economic Value Report

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Canola Council of Canada
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Study conducted by Mark Goodwin Consulting Ltd.

Canola in Canada Socio-Economic Value Report

Highlights

- *Canola adds \$13.8 billion in economic activity to the Canadian economy.*
- *Although a large portion of this wealth is generated in western Canada, Quebec and Ontario benefit as well, with canola generating \$1.3 billion in Ontario and Quebec (primarily in the processing sector).*
- *The world wants all the canola we can produce. In absolute numbers, exports of canola have quadrupled from a level of just under \$705 million in 2000 to over \$2.8 billion in 2006. Anticipated demand in bio fuels will drive this up in the future.*
- *In terms of gross farm receipts, in 2006 canola generated 17 percent of Canada's \$14.5 billion in gross receipts from sale of crops, making it the number one generator of crop receipts of all crops*
- *Canadians have recently begun to turn to unhealthy fats (lard, tallow etc) and are consuming less canola oil – likely owing to recent confusion about fatty acid profiles and human health. Tallow and lard consumption by Canadians is up 35 percent since 2000 while canola consumption is down.*
- *Canola production generates over 216,000 jobs in eastern and western Canada as a result of production of the crop, transportation to export, crushing, refining and inclusion in panoply of foods. In the eastern provinces, approximately 37,000 jobs arise directly or indirectly from canola production.*

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Value of Economic Activity in the Canola Value Chain in Canada

For the purpose of this section, three year averages using the years 2004, 2005 and 2006 were used to calculate production, prices and total sales numbers. These were then used to derive values at each stage of the chain of production for canola.

Value realized at each stage of the canola chain is broken into steps as follows;

- Value of the seed produced by growers and sold to processors or exporters
- Value added to the seed by the domestic crushers through crushing and production of oil/meal
- Value created by the refining and packaging industry
- Value created by the addition of canola as an ingredient in other foodstuffs
- Value created by handling canola seed (taking it from the producer and then shipping it to domestic customers or port terminals – realized by grain companies and rail shippers)

The crop inputs sold to canola producers for use in the crop are also calculated. The indirect economic activity arising from the creation of this technology (seed biotech, chemical research) is also assessed.

I. Economic benefits of canola nears \$14 billion

A. Domestic usage of canola - value chain estimates

Value of seed produced by growers and sold to exporters and crushers

Producers attained a total domestic crop that averaged 8.831 million tonnes per year during 2004, 2005 and 2006, with annual production being 7.728, 9.66 and 9.1 million tonnes in each of these years respectively. Prices averaged \$371, \$289 and \$305 per tonne in each of these years respectively. The weighted three year average annual value of that production for producers was \$2.812 billion.

Economic value captured by growing the crop = \$2,812,000,000/year

Value added by crushers to the seed produced

For the most recent three years, (2004, 2005, 2006) domestic crushing totals from the crops (by crop year) give a three-year-average 3.345 million tonnes/yr. This was crushed domestically at nine crushing facilities in four provinces. The plants included (a) ADM facilities at Windsor and Lloydminster, (b) Bunge facilities at Hamilton, Altona, Harrowby, Nipawin and Fort Saskatchewan, (c) a Cargill plant at Clavet (d) a Canbra Foods crush facility at Lethbridge and an Associated Proteins plant at Ste Agathe, Manitoba.

This 3.345 million tonnes resulted in oil yields of 1.406 million tonnes of oil and 2.036 million tonnes of meal. The average prices (three year average) were \$704/tonne for oil and \$178/tonne for meal.

Main costs incurred to process these tonnages were estimated by Stats Canada in 2001 and reported in 'Oilseed Sector Profile', published by the Grains and Oilseeds Division of AAFC. These figures were based on a workforce of 1,004 persons, and costs of fuel and electricity of \$56,000,000. These numbers required updating. To accomplish this, *A Review of Environmental Assessments of Biodiesel Displacing Fossil Diesel* (published by the Canola Council of Canada and Auto21 Network of Centers of Excellence) was consulted for energy data. The Canadian Oilseed Processors Association was consulted for headcount information.

Assuming that the total costs at these facilities need to be prorated for the portion of the crop that was canola (the plants crush other oilseeds), and that costs have risen in the six years since 2001, the following adjustments were made, (i) costs were prorated to 65 percent of totals (approximately 65 percent of the crush is canola), and (ii) an enlarged payroll of 1,200 workers was assumed, and (iii) electricity/fuel costs were inflated by 68 percent. Based on this, the new value-add number for canola based on the three year average would be \$52/tonne for crushing. Over the 3.345 million tonnes/year crushed, the average net value added using the three years 2004 - 2006 for the crush component (oil and meal) would be \$173,940,000/yr.

Economic value created in crushing = \$173,940,000/year

Value created by refining and processing industry

The industry capacity for refining is approximately 1 million tonnes. Assuming that the refining profile continues to match crude production, it is estimated that 1 million tonnes of refined product was produced on average for the three years 2004-2006. The Canadian Oilseed Processors Association calculates that there is a “value added” benefit of \$100/tonne in the refining process.

Economic value created in refining = \$100,000,000

Value created in packaging and selling canola as ingredients in grocery stores and restaurants

Stats Canada averages for food dollar expenditures for 2005 (the latest year for which data is available) show that of the \$87 billion spent in food by households. Within that total food budget, the domestic consumption of canola oil is approximately 400,000 tonnes (as defined by domestic disappearance of canola oil as estimated by *Oil World, World Statistics – June 22, 2007*).

There are four main entry points for canola into the food chain;

- Margarine
- Salad and cooking oil
- Baking/shortening/forms that are used by bakers and food processors to make biscuits, cookies, salad dressing etc.
- Fryer use (restaurants, etc)

For the purposes of this study, a ‘consumer canola basket’ is proposed, composed of crusher estimates on use patterns in canola in a variety of foodstuffs and uses. These are given in Table 1B. Multipliers used are based on the ‘mark up’ value of the canola that is in the product, taking into account the estimated proportion of the product that canola constitutes by weight.

Economic value created through use of canola in ‘canola basket’ foodstuffs = \$546,695,424

B. Export chain values and estimates

Value added handling of canola seed by grain companies

Annual reports of publicly traded companies involved in handling grain (SWP and Agricore United) put the ‘pipeline margin’ for grains (elevator to port) at an average of \$21.30/tonne in 2006. Assuming this figure to be stable, then at 4.192 million tonnes (the average export crop for the three latest years 2003/04, 2004/05 and 2005/06) the grain companies would generate \$89,290,000 for the grain handle within the elevator systems.

Economic value created in grain handling = \$89,290,000

Value added in crop production input distribution

Additionally, crop protection products and crop inputs sold by grain companies and independent dealers constitutes sources of revenue. Using average margins for distributors, elevator companies and dealers of 15 percent for crop protection products and seed, 10 percent margin for fertilizers and budgeted costs of \$22/acre for seed, \$30/acre for fertilizer and \$23/acre for crop protection products, total margins realized by the sales of crop inputs are \$9.75/acre. Using an average 12.8 million acre crop, the total value added realized by crop production inputs from dealer sales would be \$124,800,000

Economic value created in distribution of crop inputs = \$124,800,000

There is additional 'value-add' for the economy in terms of seed and crop protection technology. Numerous biotech companies and public agencies breed for input or output traits for canola. This work is done primarily in Canada. In the 1990's this was accomplished by small firms. The trend has been towards the task evolving towards fewer, larger companies.

Crop protection chemicals are researched outside of Canada with respect to primary synthesis but field research is conducted in the country by five multi-national companies, with approximately 70 researchers/technical services personnel.

The crop protection industry produces products which are estimated to add up to \$23/acre – this composed of seed treatments, herbicides and insecticides/fungicides. An assumption of a 30 percent gross margin was used to generate a figure of \$6.90 of added value per acre for crop protection. The seed breeding and biotech community add value through the development of propriety traits to canola. Using a price to dealer of \$140/25 kg bag for open-pollinated varieties and \$240/25 kg bag for hybrids, and a price of production of \$1.20/kg for open-pollinated varieties and \$3.60/kg for hybrids, the gross value emerging from the point where raw seed is bagged to sale of the seed to retailers is \$10.52/acre – assuming that acres are split evenly between OP and hybrids and a 5 kg/ha seeding rate. The incremental 'value add' of the intellectual property is \$29,253,000 for seed and \$89,700,000 for chemicals (using a thirteen million acre crop) as a base case).

Economic value created in seed/crop protection development = \$118,953,000

Value added handling of canola seed by grain companies

The two main railways in Canada are CN and CP. CN generated \$2.087 billion in total net income in 2006. Of all freight, agricultural freight was 17 percent of their business. Of this, grains (other than wheat) were 24 percent. It is impossible to get a breakdown on how "grains other than wheat" breaks down to the various other crops so that canola can be pulled and analyzed from this total. Thus, it is best to arrive at this figure using (a) a broad average freight rate (multi car spot) for each of the three prairie provinces/Peace District (b) a three year average production for each of these basins (years 2004, 2005 and 2006), (c) a calculation of value generated by using a 17 percent gross margin for the rails. The latter figure is constructed from CP's financial statement because this company is more oriented to east west shipping within Canada than is CN.

Economic value created in rail sector = \$48,017,000

Value added handling of canola seed at terminals

Ninety percent of canola is exported through the Ports of Vancouver and Prince Rupert, with the bulk of exports going through Vancouver. The other 10 percent is exported through Thunder Bay. A small amount is cleared through Prairie Elevators.

According to data summarized by InterVistas Consulting for the Port of Vancouver, total volume of grain at Vancouver represents about 15 percent of the ports business. This grain handle generates \$441,000,000 in GDP. Of all the grain tonnage going through the Port of Vancouver, 22 percent is canola (Canada Grains Council Stats). Thus canola shipments can be calculated to add \$97 million to value due to Port activities in Vancouver.

Of all tonnage going through Thunder Bay and other ports (Prince Rupert, Bay/Lake/St Lawrence, 10 and 1 percent are canola (Canada Grains Council Stats). These ports handle a fraction of the grain that is handled in Vancouver.

Economic value created by canola at port = \$97,070,000

II. Western provinces benefit most from canola, but all of Canada derives value from processing

Although canola production might be assumed to be beneficial primarily in the Prairies where the crop is grown, there are direct economic benefits of both a direct and indirect nature in both Ontario and British Columbia, with some also in Quebec and the Maritimes in the Food Processing sector and at head office levels in the rail system. Ontario is the location for the Port of Thunder Bay, where a portion of the crop is sent for export, and the province is also the location of two crushers. In B. C., the Port of Vancouver is the chief point of export for overseas shipments.

It is relatively straightforward to assign economic numbers regarding primary production (and through most of the chain) on the proportion of the crop grown by province. This figure can be derived from provincial acreage and production figures.

This is the also best approach to the economic benefits of the crush for the crop as well, since canola is freight sensitive. Two key crushers are located on provincial borders (Lloydminster and Harrowby) and these locations provide economic and social benefits to both provinces. Additionally, crush plants have located receiving stations in more remote locations and thus the crush from this area enjoys employment and value added aspects even though they are remote from a crush plant. On the advice of canola specialists, crush benefits and value added numbers are evenly distributed according to the regional proportion of the national production numbers.

Table 1(a). Direct economic benefits, value added and multipliers to the Canadian economy from Canola production

Factor	Thousands of C\$						
	Ontario	Manitoba	Saskatchewan	Alberta	BC	Quebec/Mar	Total Canada
Gross earnings by producers as a result of sales to crushers/exporters (thousands of \$C 3 yr avg) ¹	9,303	527,147	1,207,915	1,045,496	14,298	0	2,804,158
Gross value of oil produced (thousands of \$C 3yr avg) ²	3,599	220,729	520,633	446,257	5,998	0	1,199,616
Gross value of meal produced (thousands of \$C 3 yr avg) ³	1,087	66,683	157,285	134,816	1,812	0	362,408
Value added from crushers ⁴	2,757	162,197	383,283	328,100	4,483	0	880,820
Value added from refining ^{5A}	2,148	81,791	134,121	109,046	1,974	0	330,000
Value in food stores/restaurants of 'canola basket' (Includes margarine, salad and cooking oils and canola as an ingredient in other foods. See Assumptions Table(follows) prorated to population ^{5B}	236,984	24,306	18,230	60,765	78,995	176,219	546,695
Value added by grain companies in processing/moving canola to rail or crush ⁶	587	34,548	81,639	69,885	955		187,615
Value realized by rail companies in moving canola to terminal or port ⁷	1,000	9,000	14,000	13,000	2,000	10,000	48,000
Value realized by loading to ship at port ⁸	500	0	0	0	96500		97,070
Estimated multiplier effect of value added components ⁹	497,324	1,198,508	2,618,382	2,323,738	385,434	372,438	7,304,448
Economic impact of canola for the Canadian economy	752,364	2,297,928	5,093,520	4,492,134	326,875	528,681	13,760,830

¹ Three year average production of 8.831 million tonnes X average annual calendar price (weighted) from Canola Council of Canada website 2004, 2005 and 2006

² Three year average production, with all producing provinces assumed as having proportion of crush, as follows (i) Manitoba 18%, (ii) Saskatchewan 43%, (iii) Alberta 37% and BC/Ontario 0.6% for years 2004, 2005 and 2006 and crush being 1.406 million tonnes at an average weighted price of \$705/tonne

³ Three year average production with all provinces assumed as having equal proportion of crush benefit, tonnage at 2.036 thousand tonnes/yr and price of \$178

⁴ Three yr average based on added value of crush of \$51.88/tonne and values prorated across producing provinces

^{5A} Based on COPA 2004 estimate of value added on a 1 million tonne per year refining/packaging crush.

^{5B} Based on estimates for breakdown of domestic use patterns (margarine / salad oil / goods that contain canola)

⁶ Based on annual reports of grain companies (AU and SWP) assessment that average profit on grain handle in 2006 was \$21.30/tonne

⁷ Based on annual reports of CN and CP rail, assessing \$28 million in net for CN and \$7.74 million in net from CP for canola portion of ag shipments

⁸ Based on figures on net profits presented in Port of Vancouver Authority data on economic impact and Port of Thunder Bay website, with 95%/5% assignment to BC and Ont respectively

⁹ Multiplier was set at 2.0 as per Oilseed Sector analyst recommendation – AAFC

Note = Due to rounding, cells will not add precisely to totals

Table 1(b). Assumptions for Value in food stores of “canola basket’ (Includes margarine, salad and cooking oils and canola as an ingredient in other foods. Consumption based on domestic disappearance of 400,000 tonnes (Domestic disappearance – 2006/07)

Use	MT of Oil	% of Total	Price	VA	Total
Seafood	560	0.14%	\$704	2	\$788,480
Confectionery	3,880	0.97%	\$704	3	\$8,194,560
Frozen Cakes, Pies & Pastries	3,960	0.99%	\$704	3	\$8,363,520
Margarine	11,040	2.76%	\$704	2	\$15,544,320
Other Food Products	11,640	2.91%	\$704	2	\$16,389,120
Commercial Bakeries	19,320	4.83%	\$704	2	\$27,202,560
Fruit & Vegetable Canning	20,720	5.18%	\$704	2	\$29,173,760
Cookie & Cracker	23,040	5.76%	\$704	3	\$48,660,480
Snack Foods	24,840	6.21%	\$704	3	\$52,462,080
Mayo, Dressing, & Sauce	29,200	7.30%	\$704	2	\$41,113,600
Canola oil on shelf	56,800	14.20%	\$704	2	\$79,974,400
Animal Food	60,920	15.23%	\$704	1.8	\$77,197,824
Deep frying/restaurants	134,120	33.53%	\$704	1.5	\$141,630,720

Total \$546,695,424

III. Canola contribution to GDP – farm gate receipts and ripple effects

The Canadian Gross Domestic Product was \$1.16 trillion as reported by Stats Canada in May, 2007. Of this total, 2.21 percent was generated by the ag industry. The direct and induced wealth generated by canola averages at \$13.8 billion. Thus economic activities related to canola are responsible for 1.18 percent of the national GDP. With respect to total farm gate receipts, farm receipts ranged from \$1.8 to \$2.5 billion from canola sales (Table 2a).

Table 2(a) Farm gate receipts in ThouC\$ from all sources (Source – CANSIM Stats Canada)

Type of cash receipts and crop	2004	2005	2006
Total farm cash receipts	\$ 36,458,435.00	\$ 36,798,628.00	\$ 37,014,256.00
Wheat, excluding durum	\$ 1,783,873.00	\$ 1,396,018.00	\$ 1,779,734.00
Wheat, excluding durum, Canada Wheat Board payments(4)	\$ 657,022.00	\$ 533,817.00	\$ 463,488.00
Durum wheat	\$ 367,622.00	\$ 359,754.00	\$ 391,225.00
Durum wheat, Canada Wheat Board payments(4)	\$ 219,517.00	\$ 200,395.00	\$ 178,291.00
Oats	\$ 232,487.00	\$ 254,931.00	\$ 331,970.00
Oats, Canada Wheat Board payments			
Barley	\$ 434,556.00	\$ 346,792.00	\$ 329,791.00
Barley, Canada Wheat Board payments(4)	\$ 131,006.00	\$ 108,363.00	\$ 87,372.00
Deferred grain receipts	-690,925.00	-409,194.00	-516,946.00
Rye	\$ 28,857.00	\$ 13,050.00	\$ 16,358.00
Flaxseed	\$ 198,714.00	\$ 170,117.00	\$ 154,294.00
Canola (rapeseed)	\$ 2,149,436.00	\$ 1,855,278.00	\$ 2,501,609.00
Soybeans	\$ 630,898.00	\$ 761,031.00	\$ 680,063.00
Corn	\$ 794,416.00	\$ 625,675.00	\$ 753,497.00
Sugar beets	\$ 30,921.00	\$ 32,140.00	\$ 38,180.00
Potatoes	\$ 820,292.00	\$ 779,593.00	\$ 899,242.00
Greenhouse vegetables	\$ 716,726.00	\$ 722,312.00	\$ 758,243.00
Other vegetables	\$ 907,683.00	\$ 889,923.00	\$ 925,278.00
Vegetables			
Apples	\$ 141,700.00	\$ 132,922.00	\$ 134,132.00
Other tree fruits	\$ 81,214.00	\$ 74,134.00	\$ 76,742.00
Strawberries	\$ 56,891.00	\$ 58,691.00	\$ 52,326.00
Other berries and grapes	\$ 318,192.00	\$ 285,629.00	\$ 329,257.00
Floriculture and nursery	\$ 1,925,250.00	\$ 1,887,211.00	\$ 1,950,488.00
Tobacco	\$ 231,181.00	\$ 194,942.00	\$ 178,521.00
Mustard seed	\$ 82,021.00	\$ 65,307.00	\$ 48,690.00
Sunflower seed	\$ 31,775.00	\$ 21,408.00	\$ 32,333.00
Lentils	\$ 219,839.00	\$ 223,122.00	\$ 208,220.00
Canary seed	\$ 55,045.00	\$ 40,113.00	\$ 43,956.00
Dry beans	\$ 139,716.00	\$ 152,999.00	\$ 143,188.00
Dry peas	\$ 342,672.00	\$ 306,562.00	\$ 326,925.00
Chick peas	\$ 25,103.00	\$ 17,650.00	\$ 51,245.00
Forage and grass seed	\$ 68,793.00	\$ 80,089.00	\$ 72,910.00
Hay and clover	\$ 138,759.00	\$ 139,988.00	\$ 138,631.00
Maple products	\$ 147,709.00	\$ 189,312.00	\$ 175,275.00
Miscellaneous crops	\$ 91,767.00	\$ 83,761.00	\$ 89,828.00
Ginseng	\$ 52,870.00	\$ 69,956.00	\$ 64,364.00
Christmas trees	\$ 72,850.00	\$ 73,499.00	\$ 73,254.00
Total crops receipts	\$ 14,434,436.00	\$ 13,481,153.00	\$ 14,482,106.00
Total receipts from direct payments	\$ 4,862,265.00	\$ 4,923,422.00	\$ 4,572,159.00
Total receipts from livestock and livestock products	\$ 17,161,734.00	\$ 18,394,053.00	\$ 17,959,991.00

Canadians will already know that our economy is enormously intertwined. But they may be surprised at how much impact canola has on the rest of our economy. To demonstrate this, economists at Stats Canada were asked to model a \$100,000,000 ‘demand shock’ using canola for the purposes of this study. In other words, they tracked what the impact of *losing* \$100,000,000 worth of canola would be to the rest of our economy if it happened in 2007. (This kind of crop loss often makes urban news in the form of a frost story, or news of heat stress in a canola growing area).

The results are sobering. Losses in canola income for producers reach far and wide beyond the usual crop inputs and fuel sectors. Sectors as diverse as architecture to accounting are impacted– whether they realize it or not – with a multi-million dollar wallop that adds up to \$178,000,000.

Table 2(b) Impact through the economy of a \$100 million ‘demand shock’ loss in canola production as the loss progresses through the economy

Sector	Economic loss Thousands \$C
Wholesaling margins	\$ 11,987
Chemical fertilizers	\$ 10,207
Insecticides and herbicides	\$ 4,106
Diesel oil	\$ 2,950
Truck transportation	\$ 2,818
Natural gas, excluding liquefied	\$ 2,805
Animal and vegetable fertilizers, imputed	\$ 2,763
Services incidental to crop production	\$ 2,411
Repair construction	\$ 2,266
Electric power	\$ 2,009
Accounting and legal services	\$ 1,976
Other administrative and support services	\$ 1,930
Crude mineral oils	\$ 1,920
Motor gasoline	\$ 1,685
Implicit charges, loans, banking and other deposit credit intermediation	\$ 1,350
Non-life insurance	\$ 1,276
Telephone and other telecommunication services	\$ 1,235
Ammonia	\$ 1,199
Automotive repair and maintenance service	\$ 1,199
Non-residential rent	\$ 1,124
Retailing margins	\$ 1,119
Liquid petroleum gases	\$ 1,086
Rental, other machinery and equipment including construction	\$ 818
Other professional, scientific and technical services	\$ 812
Management fees of companies and enterprises	\$ 784
Other repair and maintenance	\$ 774
Complete feeds	\$ 611
Rail transportation, freight	\$ 539
Hay and straw, imputed feed	\$ 502
Other securities, funds, and related services	\$ 456
Computer systems design and related services	\$ 441
Commissions, investment banking and securities dealing	\$ 411
Implicit charges, deposits, banking and other deposit credit intermediation	\$ 397
Potash	\$ 389

Insurance commissions	\$	385
Other agricultural machinery	\$	357
Implicit charge, non-depository credit intermediation	\$	307
Advertising services	\$	299
Other services incidental to transportation	\$	298
Architect, engineering, and scientific services	\$	290
Pipeline transportation of natural gas	\$	282
Other grains and fodder, imputed feed	\$	277
Services incidental to mining	\$	277
Sales of other government services	\$	269
Cattle and calves	\$	266
Gas distribution	\$	265
Rental of automobiles and trucks	\$	236
Lime	\$	233
Advertising in print media	\$	227
Lubricating oils and greases	\$	227
Crude oil and other pipeline transportation	\$	224
Implicit charges, loans, local credit unions	\$	208
Air transportation, passenger	\$	205
Paid charges, banks and other deposit account intermediation	\$	205
Courier service	\$	204
Air transportation, specialty	\$	203
Other custom work	\$	200
Services incidental to animal production	\$	200
All others	\$	397

Income Levels of Canola Producers

Income levels are assessed on the basis of (a) gross farm income and (b) net farm income + salaries paid. The latter is a good measure of farm income for canola since the enterprise remains a family oriented business and thus salaries paid are commonly paid within the farming family.

I. Gross incomes by farm – wide variations from year to year and from region to region (probably weather/soil edaphic based)

Gross incomes were retrieved from Stats Canada data, with data extracted from Gross Farm income from CRA data during the 2002 to 2005 federal fiscal years. On farms that produced canola, gross farm income varied somewhat from year to year and from province to province. Note that incomes are not presented for years when smaller acreage may pose confidentiality issues and so these values are suppressed. Gross farm incomes for canola were \$98 to 136 thousand for Saskatchewan, \$143 to 189 thousand in Manitoba, \$107 to 155 thousand in Alberta and \$30 to 75 thousand in Ontario. Note that these numbers are gross figures and they do not take into account the significant outlays of expenses for production. Note that canola production generates less gross income than capital intensive enterprises, or enterprises that are influenced by marketing boards (e. g. potato and dairy respectively).

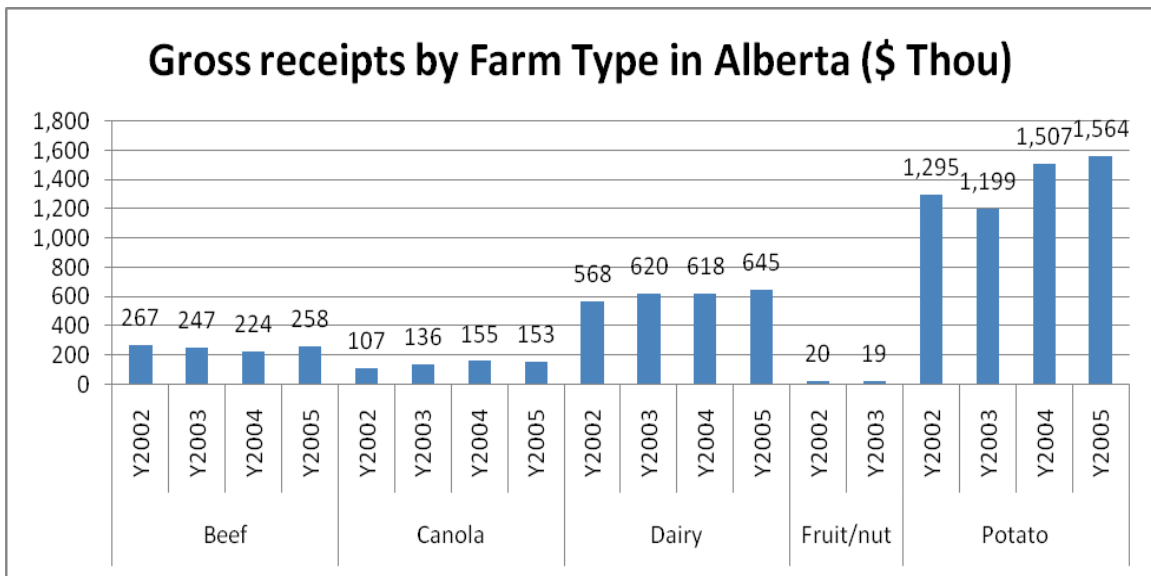


Chart 1 (a). Gross farm income by farm type for selected farm enterprises in Alberta

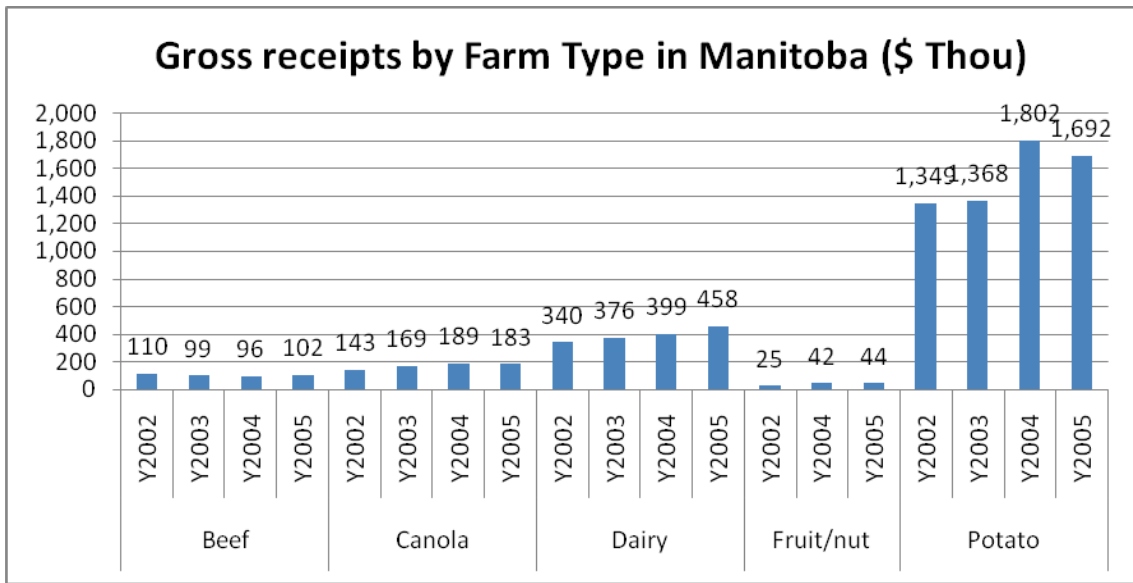


Chart 1 (b). Gross farm income by farm type for selected farm enterprises in Manitoba

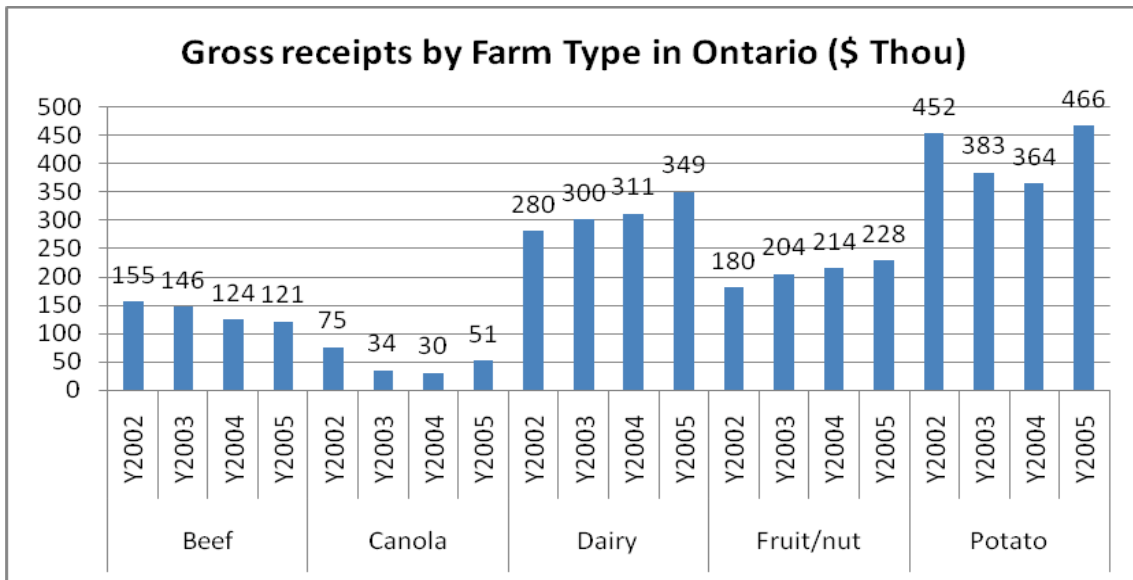


Chart 1 (c). Gross farm income by farm type for selected farm enterprises in Ontario

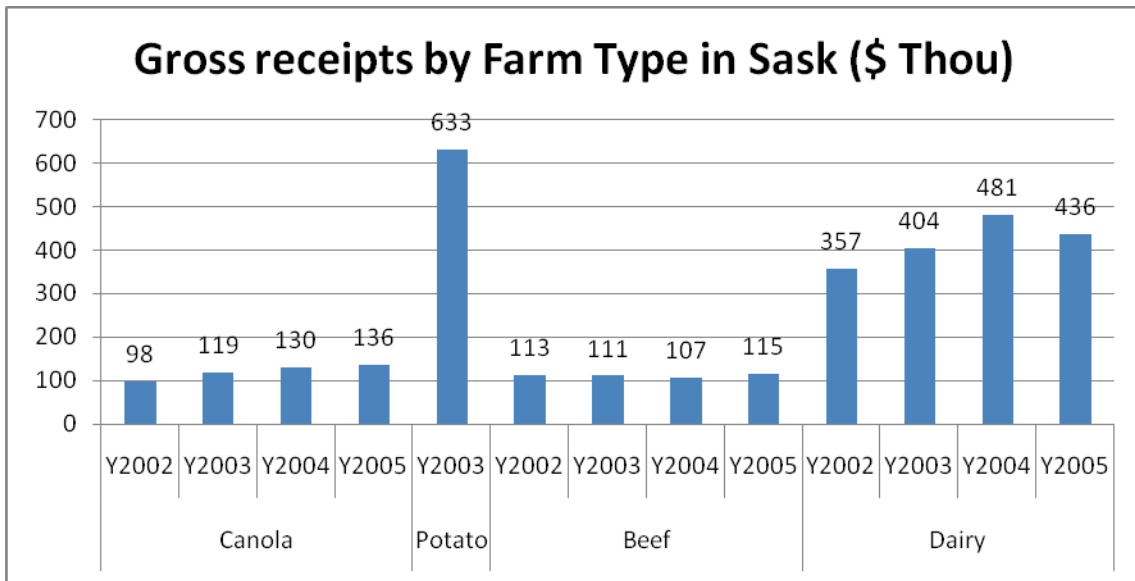


Chart 1 (d). Gross farm income by farm type for selected farm enterprises in Saskatchewan

II. Net income on canola farms

A better measure of the health of the income received on farms that grow canola is the sum of (a) net operating income plus (b) salaries. This number takes account of fixed and operating costs and removes them from income excepting for salary line items. This data too is from Stats Canada.

When calculating net operating income in combination with salaries paid, the average Canadian canola producer was challenged to keep the farm on a stable financial footing. By this measure, canola producing farms ranked higher than beef farms with regards to income, but lower than dairy, fruit/nut production and potato production. Canola producers derived a small portion of their income from off-farm sources. But the trend in off-farm income growth appears to be increasing over the period examined (see Table 4)

Table 3 Salaries plus net operating income for various farm types over a four year period by province (2002 through 2005)

Farm type	Ont	Mb	Sask	Alta
Farms that grew canola	-\$ 4,871	\$ 21,293	\$ 12,860	\$ 19,590
Farms that grew potato	\$ 60,694	\$ 253,246	\$ 89,791	\$ 233,264
Fruit/nut farms	\$ 42,370	\$ 3,997		\$ 1,169
Beef farms	\$ 4,130	\$ 6,540	\$ 6,429	\$ 12,328
Dairy farms	\$ 49,411	\$ 61,307	\$ 59,663	\$ 92,217

Table 4 Off- farm income for various farm types over a four year period (2002 through 2005)

Farm type	2002	2003	2004	2005
Farms that grew canola	\$ 2,131	\$ 2,748	\$ 3,377	\$ 5,017
Farms that grew potatoes	\$ 41,957	\$ 46,816	\$ 40,690	\$ 41,668
Fruit/nut farms				\$ 2,186
Beef farms	\$ 1,361	\$ 3,803	\$ 6,395	\$ 6,581
Dairy farms	\$ 6,210	\$ 7,005	\$ 9,089	\$ 8,156

III. Input costs

Over the four year period between 2002 and 2005 (Tables 5 through 8), producers faced increases in input expenditures in certain areas. Fertilizer and seed costs were up 20 percent. Chemical costs were generally flat to down over the period.

Table 5 Fertilizer expenditures for various farm types over a four year period (2002 through 2005)

Row Labels	2002	2003	2004	2005	% increase in 4 yrs
Farms that grew canola	\$ 17,478	\$ 18,963	\$ 20,283	\$ 20,992	20%
Farms that grew potatoes	\$ 87,581	\$ 67,738	\$ 108,344	\$ 110,792	27%
Fruit/nut farms	\$ 2,573	\$ 4,182	\$ 4,390	\$ 5,533	115%
Beef farms	\$ 3,908	\$ 4,333	\$ 3,919	\$ 4,099	5%
Dairy farms	\$ 9,022	\$ 12,245	\$ 13,789	\$ 12,973	44%

Table 6 Seed expenditures for various farm types over a four year period (2002 through 2005)

Row Labels	2002	2003	2004	2005	% increase in 4 yrs
Farms that grew canola	\$ 6,358	\$ 6,519	\$ 7,523	\$ 7,483	18%
Farms that grew potatoes	\$ 91,078	\$ 79,565	\$ 102,017	\$ 93,238	2%
Fruit/nut farms	\$ 3,098	\$ 1,183	\$ 2,131	\$ 2,666	-14%
Beef farms	\$ 1,987	\$ 1,873	\$ 1,600	\$ 1,719	-14%
Dairy farms	\$ 5,605	\$ 5,890	\$ 7,021	\$ 6,960	24%

Table 7 Chemical expenditures for various farm types over a four year period (2002 through 2005)

Farm type	2002	2003	2004	2005	% increase in 4 yrs
Farms that grew canola	\$ 16,983	\$ 11,276	\$ 12,866	\$ 12,640	-26%
Farms that grew potatoes	\$ 88,390	\$ 70,659	\$ 103,212	\$ 89,070	1%
Fruit/nut farms	\$ 3,640	\$ 6,281	\$ 6,814	\$ 6,782	86%
Beef farms	\$ 1,898	\$ 2,369	\$ 2,082	\$ 2,308	22%
Dairy farms	\$ 4,698	\$ 5,741	\$ 6,812	\$ 6,505	38%

Table 8 Fertilizer/seed/chemical combined expenditures for various farm types over a four year period (2002 through 2005)

Farm type	Input	2002	2003	2004	2005
Farms that grew canola	Chem/fert and seed	\$ 40,819	\$ 36,757	\$ 40,671	\$ 41,114
Farms that grew potatoes	Chem/fert and seed	\$ 267,048	\$ 217,963	\$ 313,573	\$ 293,100
Fruit/nut farms	Chem/fert and seed	\$ 9,311	\$ 11,646	\$ 13,335	\$ 14,981
Beef farms	Chem/fert and seed	\$ 7,793	\$ 8,575	\$ 7,601	\$ 8,126
Dairy farms	Chem/fert and seed	\$ 19,325	\$ 23,876	\$ 27,622	\$ 26,437

IV. Canola - the highest generator of farm cash receipts of all crops

Canola production is a vital generator of cash for producers who grow the crop. In two of three years running, canola generated about 6 percent of all farm cash receipts. This ranked the crop at the very top of income sources for Canadian growers.

Table 9 Canola as a contributor to farm families' crop receipts – canola as a percentage of all crop receipts across Canada

Type of cash receipts and crop	2004	2005	2006
Total crops receipts	\$ 14,434,436	\$ 13,481,153	\$ 14,482,106
<u>Canola</u>	<u>15%</u>	<u>14%</u>	<u>17%</u>
Floriculture and nursery	13%	14%	13%
Wheat, excluding durum	12%	10%	12%
Wheat, excluding durum, CWB paymts	5%	4%	3%
Other vegetables	6%	7%	6%
Potatoes	6%	6%	6%
Greenhouse vegetables	5%	5%	5%
Corn	6%	5%	5%
Soybeans	4%	6%	5%
Durum wheat	3%	3%	3%
Oats	2%	2%	2%
Barley	3%	3%	2%
Other berries and grapes	2%	2%	2%
Dry peas	2%	2%	2%
Lentils	2%	2%	1%
Tobacco	2%	1%	1%
Durum wheat, CWB payments	2%	1%	1%
Maple products	1%	1%	1%
Flaxseed	1%	1%	1%
Dry beans	1%	1%	1%
Hay and clover	1%	1%	1%
Apples	1%	1%	1%
Miscellaneous crops	1%	1%	1%
Barley, CWB payments	1%	1%	1%
Other tree fruits	1%	1%	1%
Christmas trees	1%	1%	1%
Forage and grass seed	0%	1%	1%
Ginseng	0%	1%	0%
Strawberries	0%	0%	0%
Chick peas	0%	0%	0%
Mustard seed	1%	0%	0%
Canary seed	0%	0%	0%
Sugar beets	0%	0%	0%
Sunflower seed	0%	0%	0%
Rye	0%	0%	0%
Deferred grain receipts	-5%	-3%	-4%

Table 10 Canola as a contributor to farm families' crop receipts – canola as a percentage of all crop receipts across Canada

Type of cash receipts and crop	2004	2005	2006
Total farm cash receipts	\$ 36,458,435	\$ 36,798,628	\$ 37,014,256
Canola	5.9%	5.0%	6.8%
Floriculture and nursery	5.3%	5.1%	5.3%
Wheat, excluding durum	4.9%	3.8%	4.8%
Wheat, excluding durum, Canada Wheat Board payments(4)	1.8%	1.5%	1.3%
Other vegetables	2.5%	2.4%	2.5%
Potatoes	2.2%	2.1%	2.4%
Greenhouse vegetables	2.0%	2.0%	2.0%
Corn	2.2%	1.7%	2.0%
Soybeans	1.7%	2.1%	1.8%
Durum wheat	1.0%	1.0%	1.1%
Durum wheat, Canada Wheat Board payments(4)	0.6%	0.5%	0.5%
Oats	0.6%	0.7%	0.9%
Barley	1.2%	0.9%	0.9%
Other berries and grapes	0.9%	0.8%	0.9%
Dry peas	0.9%	0.8%	0.9%
Lentils	0.6%	0.6%	0.6%
Tobacco	0.6%	0.5%	0.5%
Maple products	0.4%	0.5%	0.5%
Flaxseed	0.5%	0.5%	0.4%
Dry beans	0.4%	0.4%	0.4%
Hay and clover	0.4%	0.4%	0.4%
Apples	0.4%	0.4%	0.4%
Miscellaneous crops	0.3%	0.2%	0.2%
Barley, Canada Wheat Board payments(4)	0.4%	0.3%	0.2%
Other tree fruits	0.2%	0.2%	0.2%
Christmas trees	0.2%	0.2%	0.2%
Forage and grass seed	0.2%	0.2%	0.2%
Ginseng	0.1%	0.2%	0.2%
Strawberries	0.2%	0.2%	0.1%
Chick peas	0.1%	0.0%	0.1%
Mustard seed	0.2%	0.2%	0.1%
Canary seed	0.2%	0.1%	0.1%
Sugar beets	0.1%	0.1%	0.1%
Sunflower seed	0.1%	0.1%	0.1%
Rye	0.1%	0.0%	0.0%
Oats, Canada Wheat Board payments	0.0%	0.0%	0.0%
Vegetables	0.0%	0.0%	0.0%
Deferred grain receipts	-1.9%	-1.1%	-1.4%
Total crops receipts	40%	37%	39%
Total receipts from direct payments	13%	13%	12%
Total receipts from livestock and livestock products	47%	50%	49%

Canola and Canada's Trade Balances

Trade balances and export patterns were assessed using data from the *Strategis* database, which was originally sourced from Statistics Canada and the U.S. Census Bureau (U.S. Department of Commerce).

During the three years between 2004 and 2006, Canada exported an average of \$429.6 billion annually of all goods and services (all sectors – not just agricultural). Our trade balance was positive in all three years and averaged \$51.8 billion (Table 11).

Canola seed, oil and meal exports also rose in terms of the absolute and proportional contribution made to the agricultural trade picture. This data is presented in bar charts (Chart 2) and in table form in Tables 11 and 12.

In 2002, our exports of agricultural products (crops, livestock and their byproducts) was \$13.9 billion and in that year canola made up 10.4 percent of the total (Table 12). By 2006, our exports of these products were \$15.6 billion and canola accounted for 18.2 percent of that total.

In absolute numbers, exports of canola have *quadrupled* from a level of just under \$705 million in 2000 to over \$2.8 billion in 2006.

The crop is an essential component of our trade patterns with our key trade partners in NAFTA and in Asia– the U. S., China, Japan and Mexico (Tables 12 and 13). Within NAFTA, sales of the crop to the U. S. rose 72 percent from 2002 to 2006 and by 95 percent to Mexico. By 2006, canola made up 15.6 percent of our agricultural exports to the U. S. and 41.2 percent of our agricultural exports to Mexico.

In Asia, canola makes up a significant portion of agricultural exports, with the crop making up 30 percent of our agricultural exports to Japan, 49.6 percent of our agricultural trade with China, and 79 percent of our agricultural trade with Pakistan. South Korean-bound canola made up 5 percent of the total agricultural exports to that country.

In Asia, where our trade deficits with China and Japan are \$17 and \$4 billion respectively, canola is an export that contributes to the balance for Canada. Canola constituted a reliable source of income in trade with Japan, with 14.6 percent of the total trade balance being made up of the crop. In China, where our trade balances \$17.4 billion in deficit, canola exports grew tenfold in the four years between 2000 and 2004. The crop represented 31 percent of the agricultural trade balance Canada had with China in 2004.

In terms of trade partnerships with other countries, canola sales to Pakistan made up 23.6 percent of the total trade balance with the country.

Raw seed is only one component of the trading relationships pertaining to canola. Processed oil and meal exports add value to canola so that a higher price can be extracted from the international market (Table 13). Exports of oil to our top trading partners went from \$341,000,000 in 2002 to \$602,000,000 in 2006. In the same period, meal sales to the U. S. went from \$154,000,000 to \$203,000,000. In fact, our meal and oil combined sales are up 88 percent considering the years 2002 through 2006.

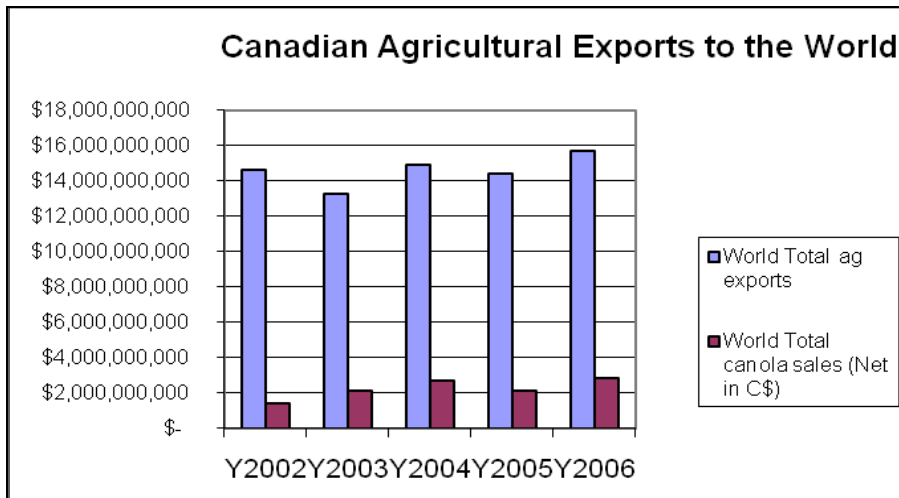


Chart 2(a) Canadian agricultural exports to the world expressed in C\$ (from Table 12)

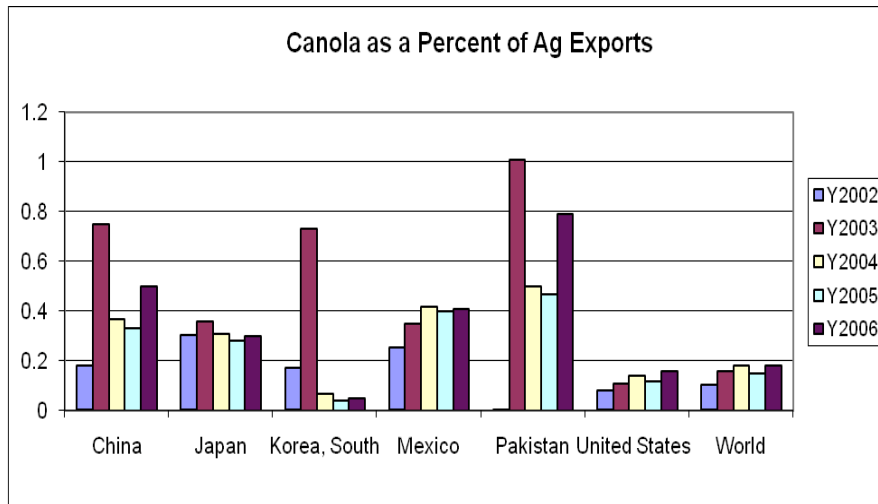


Chart 2(b) Canadian canola exports to key markets expressed in percentage of total agricultural trade (from Table 12)

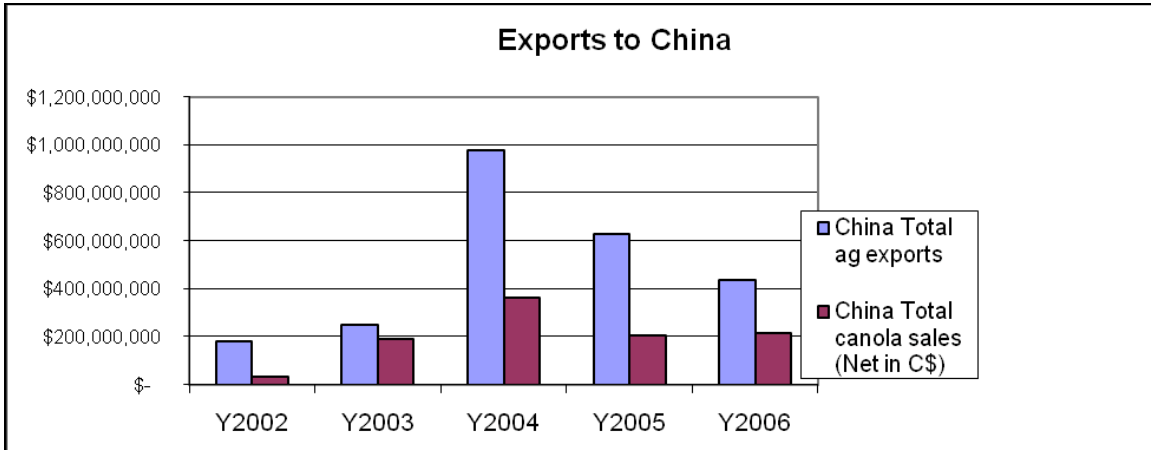


Chart 2(c) Canadian canola exports and agricultural exports to China expressed in \$C (from Table 12)

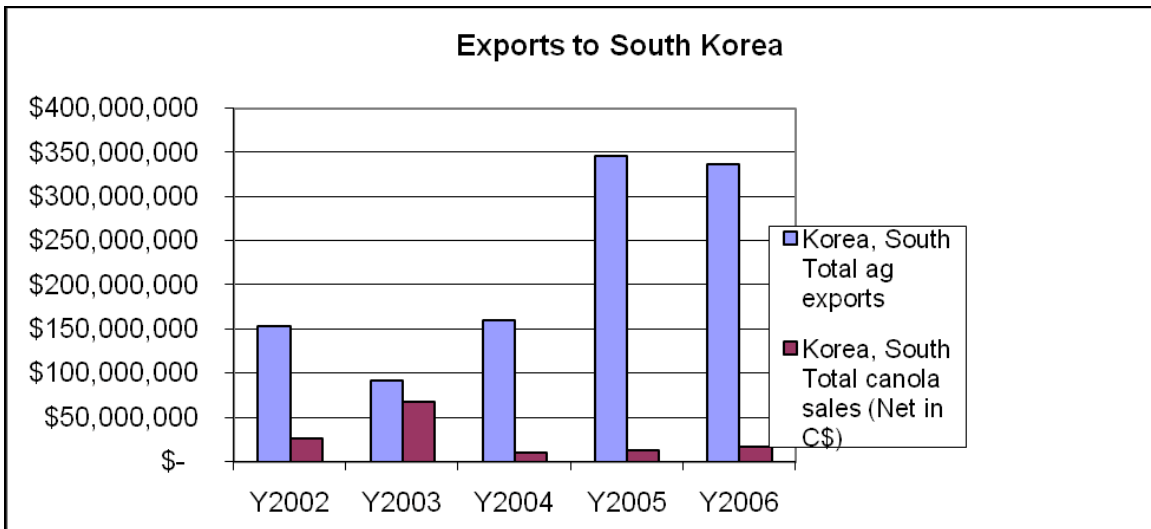


Chart 2(d) Canadian canola exports and agricultural exports to South Korea expressed in \$C (from Table 12)

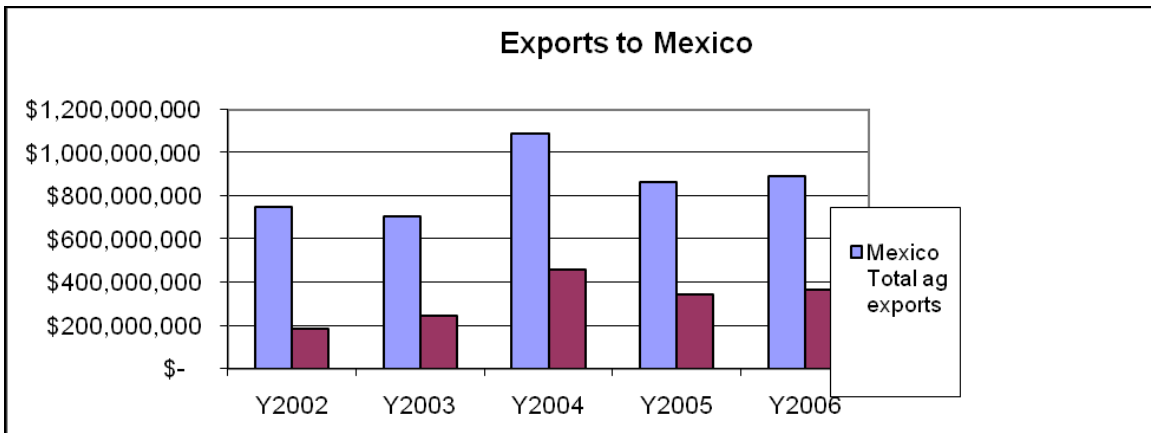


Chart 2(e) Canadian canola exports and agricultural exports to Mexico expressed in \$C (from Table 12)

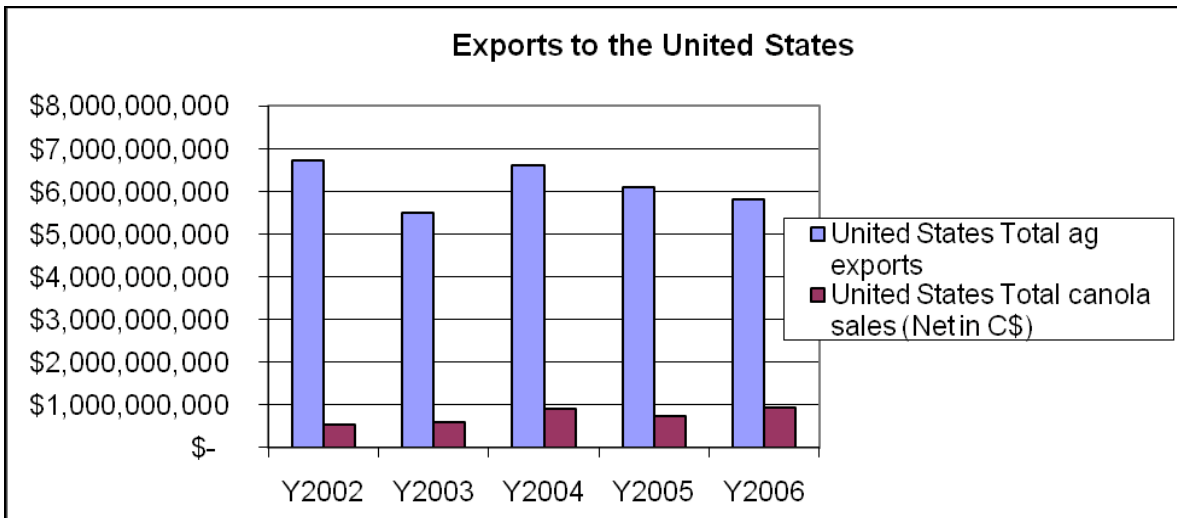


Chart 2(e) Canadian canola exports and agricultural exports to the U. S. expressed in \$C (from Table 12)

Table 11. Contribution of canola to total exports and trade balances (*all goods*) with selected trading partners (Green figures represent the percentage that canola contributes to the trade balance where the trade balance is negative for Canada)

Country	Measurement	2002	2003	2004	2005	2006
United States	Total canola sales (Net in C\$)	\$ 538,462,267	\$ 605,878,144	\$ 924,555,757	\$ 732,622,837	\$ 927,963,310
United States	Canola as % of Ttl T Bal	0.42%	0.49%	0.66%	0.49%	0.66%
United States	Canola as % of Ttl exports	0.16%	0.19%	0.27%	0.20%	0.26%
Japan	Total canola sales (Net in C\$)	\$ 636,491,216	\$ 746,851,153	\$ 695,195,713	\$ 675,243,313	\$ 652,616,407
Japan	Canola as % of Ttl T Bal	9.00%	13.27%	14.04%	11.99%	11.04%
Japan	Canola as % of Ttl exports	7.61%	9.12%	8.12%	7.36%	6.93%
Mexico	Total canola sales (Net in C\$)	\$ 187,276,606	\$ 247,110,057	\$ 458,024,376	\$ 346,160,896	\$ 366,720,035
Mexico	Canola as % of Ttl T Bal	1.81%	2.48%	4.43%	3.08%	3.15%
Mexico	Canola as % of Ttl exports	7.74%	11.17%	14.79%	10.29%	8.36%
China	Total canola sales (Net in C\$)	\$ 32,937,973	\$ 189,936,114	\$ 362,049,447	\$ 207,779,754	\$ 218,674,915
China	Canola as % of Ttl T Bal	0.28%	1.38%	2.09%	0.93%	0.82%
China	Canola as % of Ttl exports	0.80%	3.95%	5.35%	2.92%	2.85%
Korea, South	Total canola sales (Net in C\$)	\$ 26,116,436	\$ 67,638,917	\$ 11,227,968	\$ 13,852,727	\$ 16,828,556
Korea, South	Canola as % of Ttl T Bal	0.92%	2.17%	0.32%	0.54%	0.67%
Korea, South	Canola as % of Ttl exports	1.29%	3.38%	0.49%	0.49%	0.52%
Pakistan	Total canola sales (Net in C\$)	\$ 18,000	\$ 179,299,690	\$ 20,163,774	\$ 50,908,780	\$ 198,390,582
Pakistan	Canola as % of Ttl T Bal	0.01%	660.36%	23.89%	73.41%	170.51%
Pakistan	Canola as % of Ttl exports	0.02%	59.33%	6.12%	16.06%	49.89%
World	Total canola sales (Net in C\$)	\$1,462,789,268	\$ 2,120,622,091	\$ 2,683,783,404	\$ 2,169,156,720	\$ 2,834,780,860
World	Canola as % of Ttl T Bal	3.08%	4.72%	4.75%	3.91%	6.51%
World	Canola as % of Ttl exports	0.37%	0.56%	0.65%	0.50%	0.64%

Table 12. Contribution of canola to total exports and trade balances (agricultural goods) with selected trading partners

Country	Measurement	2002	2003	2004	2005	2006
United States	Total canola sales (Net in C\$)	\$ 538,462,267	\$ 605,878,144	\$ 924,555,757	\$ 732,622,837	\$ 927,963,310
United States	Canola as % of Ag T Bal	49%	100%	57%	56%	109%
United States	Canola as % of ag exports	8%	11%	14%	12%	16%
Japan	Total canola sales (Net in C\$)	\$ 636,491,216	\$ 746,851,153	\$ 695,195,713	\$ 675,243,313	\$ 652,616,407
Japan	Canola as % of Ag T Bal	30%	36%	31%	29%	30%
Japan	Canola as % of ag exports	30%	36%	31%	28%	30%
Mexico	Total canola sales (Net in C\$)	\$ 187,276,606	\$ 247,110,057	\$ 458,024,376	\$ 346,160,896	\$ 366,720,035
Mexico	Canola as % of Ag T Bal	40%	67%	60%	72%	79%
Mexico	Canola as % of ag exports	25%	35%	42%	40%	41%
China	Total canola sales (Net in C\$)	\$ 32,937,973	\$ 189,936,114	\$ 362,049,447	\$ 207,779,754	\$ 218,674,915
China	Canola as % of Ag T Bal	58%	186%	46%	51%	114%
China	Canola as % of ag exports	18%	75%	37%	33%	50%
Korea, South	Total canola sales (Net in C\$)	\$ 26,116,436	\$ 67,638,917	\$ 11,227,968	\$ 13,852,727	\$ 16,828,556
Korea, South	Canola as % of Ag T Bal	18%	83%	8%	4%	6%
Korea, South	Canola as % of ag exports	17%	73%	7%	4%	5%
Pakistan	Total canola sales (Net in C\$)	\$ 18,000	\$ 179,299,690	\$ 20,163,774	\$ 50,908,780	\$ 198,390,582
Pakistan	Canola as % of Ag T Bal	0.7%	109%	69%	52%	82%
Pakistan	Canola as % of ag exports	0.1%	101%	50%	47%	79%
World	Total canola sales (Net in C\$)	\$ 1,462,789,268	\$ 2,120,622,091	\$ 2,683,783,404	\$ 2,169,156,720	\$ 2,834,780,860
World	Canola as % of Ag T Bal	25%	39%	34%	31%	37%
World	Canola as % of ag exports	10%	16%	18%	15%	18%

Number of codes selected: 2810 - Cereals 0101 - LIVE HORSES, ASSES, MULES AND HINNIES 0102 - LIVE BOVINE ANIMALS 0103 - LIVE SWINE 0104 - LIVE SHEEP AND GOATS
0105 - LIVE POULTRY AND TURKEYS 11 - Products of the Milling Industry; Malt, Starches, Inulin and Wheat Gluten 12 - Oil Seeds, Oleaginous Fruits, Industrial or Medicinal Plants, Straw and Fodder 13 - Lac, Gums, Resins and Other Vegetable Extracts 14 - Vegetable Plating Material and Other Similar Vegetable Products 15 - Fats, Oils, Their Cleavage Products
and Waxes 1601 - SAUSAGES AND SIMILAR PRODUCTS OF MEAT, MEAT OFFAL OR BLOOD; FOOD PREPARATIONS 602 - PREPARED/PRESERVED MEAT, MEAT
OFFAL OR BLOOD (OTHER THAN SAUSAGES) 1603 - EXTRACTS AND JUICES OF MEAT, 17 - Sugars and Sugar Confectionery 18 - Cocos and Cocos Preparations
19 - Preparations of Cereals, Flour, Starch or Milk (Including Bread and Pastry) 02 - Meat and Edible Meat Offal 02 - Preparations of Vegetables, Fruit, Nuts or Other Parts of Plants
21 - Miscellaneous Edible Preparations 22 - Beverages, Spirits and Vinegar 23 - Residues and Waste from the Food Industries, and Prepared Animal Fodder 24 - Tobacco and Manufactured Tobacco Substitutes 04 - Dairy Produce, Eggs, Honey and Other Similar Edible Products of Animal Origin 06 - Live Trees and Other Plants (Incl. Cut Flowers and Ornamental Foliage) 07 - Edible Vegetables and
Certain Roots and Tubers 08 - Edible Fruits and Nuts 09 - Coffee, Tea, Maté and Spices

Table 13. Canola oil and meal sales 2002 to 2006 by market

Country	Component	2002	2003	2004	2005	2006
China	Oil	\$ 12,184,850	\$ 75,139,886	\$ 259,415,176	\$ 105,201,700	\$ 62,717,662
Japan	Oil	\$ 3,231,297	\$ 3,831,190	\$ 14,918,781	\$ 24,652,669	\$ 5,094,160
Korea, South	Oil	\$ 26,116,436	\$ 67,624,988	\$ 11,227,968	\$ 13,670,891	\$ 16,216,694
Mexico	Oil	\$ 1,003,026	\$ 978,229	\$ 24,549,723	\$ 14,503,914	\$ 19,747,485
Pakistan	Oil	\$ 18,000	\$ 14,505,313	\$ 743,890	\$ 39,250	\$ -
US	Oil	\$ 298,725,800	\$ 340,085,830	\$ 427,460,707	\$ 371,346,421	\$ 499,151,580
Japan	Meal	\$ 928,961	\$ -	\$ -	\$ 866,751	\$ 59,136
US	Meal	\$ 154,005,331	\$ 215,631,818	\$ 323,603,975	\$ 219,170,836	\$ 203,032,842
Subtotal (6 mkts abv)	Meal + Oil	\$ 496,213,701	\$ 717,797,254	\$ 1,061,920,220	\$ 749,452,432	\$ 806,019,559
Total (world)	Meal + Oil	\$ 524,485,836	\$ 767,324,458	\$ 1,257,159,847	\$ 853,197,157	\$ 986,164,353

Harm codes queried:

- HS 151411 - RAPE (CANOLA) OR COLZA OIL - LOW ERUCIC ACID - CRUDE
- HS 151419 - RAPE (CANOLA) OR COLZA OIL - LOW ERUCIC ACID - NOT CRUDE
- HS 151490 - RAPE (CANOLA), COLZA OR MUSTARD OIL AND THEIR FRACTIONS - REFINED BUT NOT CHEMICALLY MODIFIED
- HS 151491 - RAPE (CANOLA), COLZA OR MUSTARD OIL NES - CRUDE
- HS 230640 - OIL-CAKE AND OTHER SOLID RESIDUES - OF RAPE (CANOLA) OR COLZA SEEDS
- HS 230641 - OIL-CAKE AND OTHER SOLID RESIDUES - OF LOW ERUCIC ACID RAPE (CANOLA) OR COLZA SEEDS
- HS 230649 - OIL-CAKE AND OTHER SOLID RESIDUES - OF OTHER RAPE SEEDS

Domestic Use of Canola Oil and Meal

Data was accumulated on a year by year basis from Oil World statistics in order to calculate domestic disappearance of various oil classes within the country on a year by year basis. Domestic disappearance was calculated using the residual of balances considering production, imports, and exports, opening balances and ending stocks. Numbers are presented on the basis of an October through September year – the cycle for which consistent reporting was available through the years of interest.

Figures show a recent dramatic increase in the amount of tallow, lard and butterfat consumed domestically. Forecasts for the year ending 2007 indicate that Canadians will consume an additional 106 thousand tonnes of lard, tallow and butterfat (Table 14). The last three years have also seen a revival in palm oil use, with its consumption domestically *tripling* in the past 36 months. This is likely due to the substitution of canola for palm in response to the elimination of trans-fat in food products.

The domestic oil market is essentially flat, with consumption constant over the years examined. This is likely due to canola oil moving ‘up market’ as a health ingredient around the world and the oil being substituted for cheaper vegetable oils in simpler applications (e. g. bottled oils). Consumption of canola oil domestically in 2007 will be 395,000 tonnes versus 600,000 in 2000 (Table 14).

Charts 3 and 4 give overall oil consumption by category both in tonnage and in market share. Of interest is the decline in margarine consumption per person (Table 16). The consumption in terms of kg consumed per person per year is declining.

Meal consumption in Canada rose approximately 5 percent between 2000 and 2007. Canola meal has held a steady market share of about one-fifth of the market (Chart 4).

Table 14 Consumption in thousands of tonnes (Canada) –Source ‘Oil World’

Oil	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007 F
Soybean	282	323	382	417	341	355	348	340
Cotton	43	30	32	39	29	20	13	10
Peanut			0	2	2	0	2	2
Sunflower	55	55	55	40	49	60	45	52
Canola	600	551	465	398	450	421	378	395
Sesame			1	1	1	1	2	2
Corn	46	49	35	34	45	45	46	50
Olive	23	25	24	25	27	30	30	31
Palm			6	8	12	17	15	35
Palm kern			9	10	9	12	22	15
Coconut	15	13	13	15	14	14	18	12
Butter fat	66	70	75	74	81	81	74	76
Lard	113	115	120	121	126	131	131	128
Fish	23	48	41	35	34	37	34	31
Linseed	38	30	29	25	23	15	32	37
Castor			1	2	2	2	2	3
Tallow	95	88	92	136	155	168	146	154
Other	15	16	15	15	14	13	13	14
Total	1414	1413	1380	1382	1400	1409	1351	1387

Domestic Disappearance in Thousands of Tonnes of Various Fats and Oils

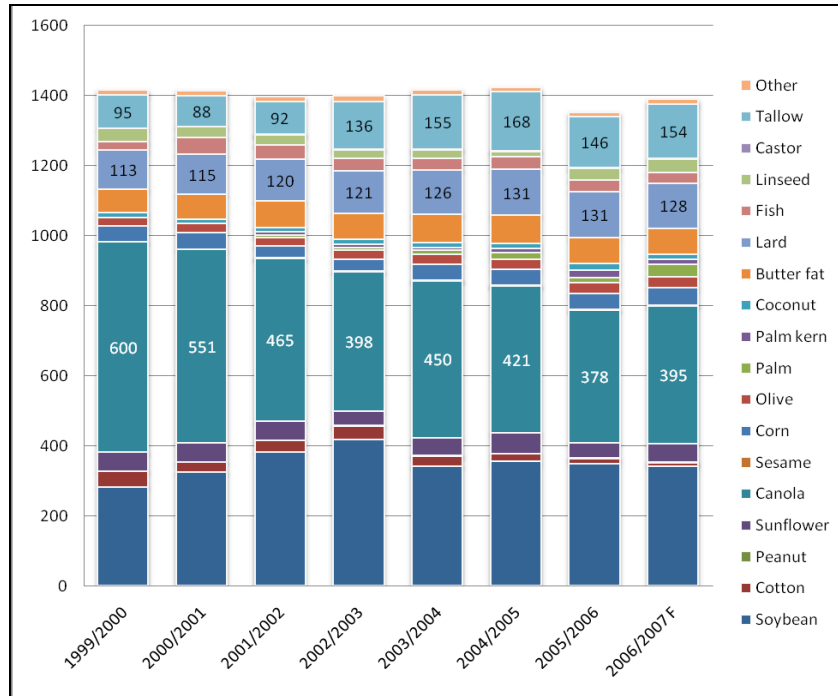


Chart 3 (a) Domestic disappearance of oils and fats by Canadians (from data in Table 14). NOTE – Canola consumption enumerated on the chart in white. Lard and tallow in black.

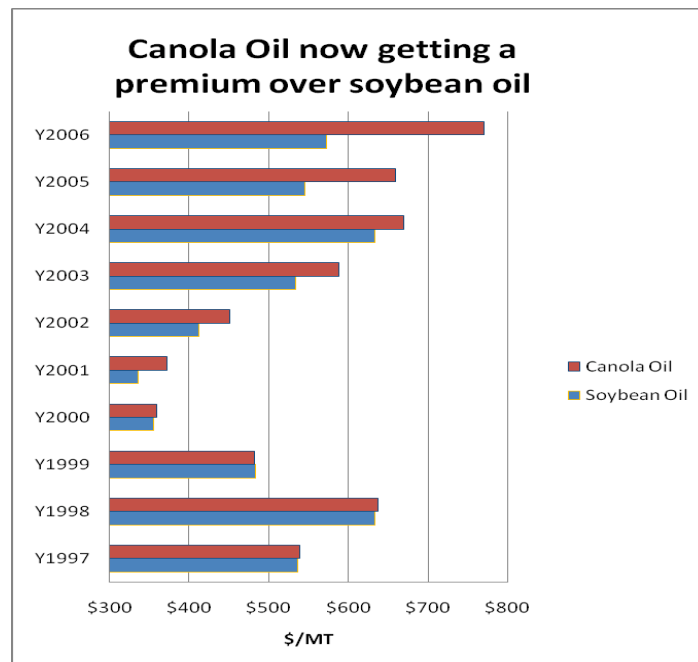


Chart 3 (b) Canola and soybean oil price.

Table 15. Consumption patterns of oils and fats/market share (Canada) from Oil World

Oil	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007 F
Soybean	19.9%	22.9%	27.7%	30.2%	24.4%	25.2%	25.8%	24.5%
Cotton	3.0%	2.1%	2.3%	2.8%	2.1%	1.4%	1.0%	0.7%
Peanut	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Sunflower	3.9%	3.9%	4.0%	2.9%	3.5%	4.3%	3.3%	3.7%
Canola	42.4%	39.0%	33.7%	28.8%	32.1%	29.9%	28.0%	28.5%
Sesame	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Corn	3.3%	3.5%	2.5%	2.5%	3.2%	3.2%	3.4%	3.6%
Olive	1.6%	1.8%	1.7%	1.8%	1.9%	2.1%	2.2%	2.2%
Palm	0.0%	0.0%	0.4%	0.6%	0.9%	1.2%	1.1%	2.5%
Palm kern	0.0%	0.0%	0.7%	0.7%	0.6%	0.9%	1.6%	1.1%
Coconut	1.1%	0.9%	0.9%	1.1%	1.0%	1.0%	1.3%	0.9%
Butter fat	4.7%	5.0%	5.4%	5.4%	5.8%	5.7%	5.5%	5.5%
Lard	8.0%	8.1%	8.7%	8.8%	9.0%	9.3%	9.7%	9.2%
Fish	1.6%	3.4%	3.0%	2.5%	2.4%	2.6%	2.5%	2.2%
Linseed	2.7%	2.1%	2.1%	1.8%	1.6%	1.1%	2.4%	2.7%
Castor	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Tallow	6.7%	6.2%	6.7%	9.8%	11.1%	11.9%	10.8%	11.1%
Other	1.1%	1.1%	1.1%	1.1%	1.0%	0.9%	1.0%	1.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Domestic Disappearance of Various Fats and Oils (% Market Share)

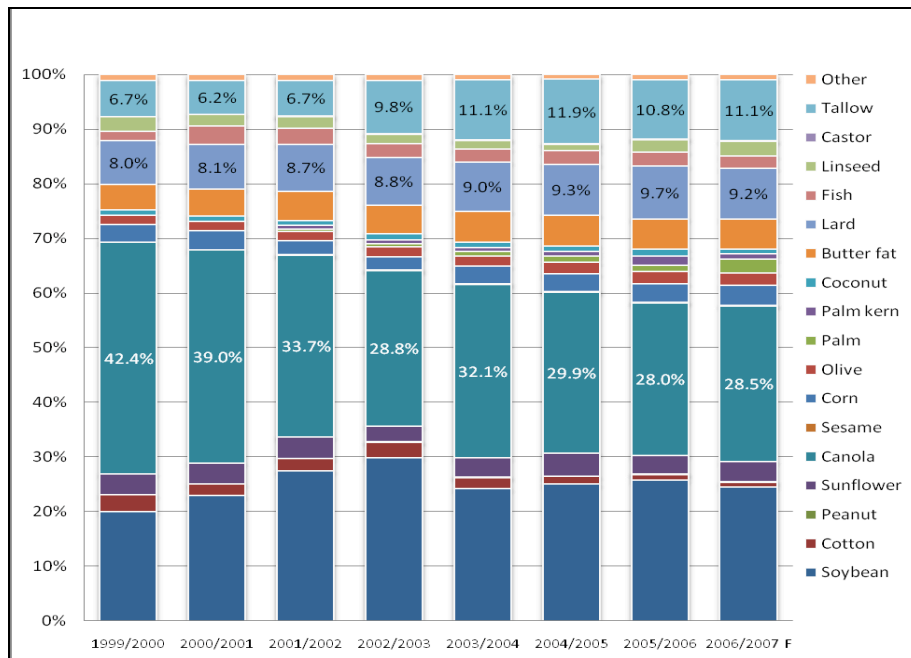


Chart 4(a). Domestic consumption of oils and fats by Canadians – market share (from data in Table 15)

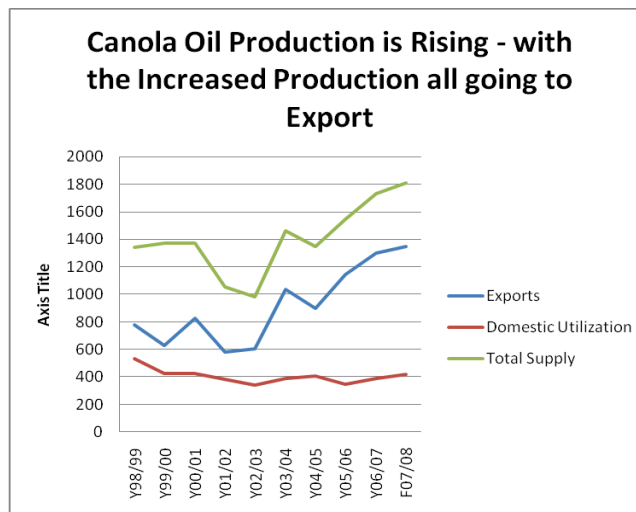


Chart 4(b). Domestic consumption of oils and fats vs. exports.

Table 16. Consumption patterns of margarine, butter, shortening and salad oil (2002 to 2006) in kg/person/year (from Cansim)

Oil type	2002	2003	2004	2005	2006
Margarine	4.72	4.5	4.3	4.12	3.95
Salad oils	12.55	12.43	12.54	12.47	12.34
Shortening and shortening oils	9.88	9.68	8.75	8.86	8.21
Butter	2.89	2.89	3.03	2.79	2.74
Annual Total	27.15	26.61	25.59	25.45	24.5

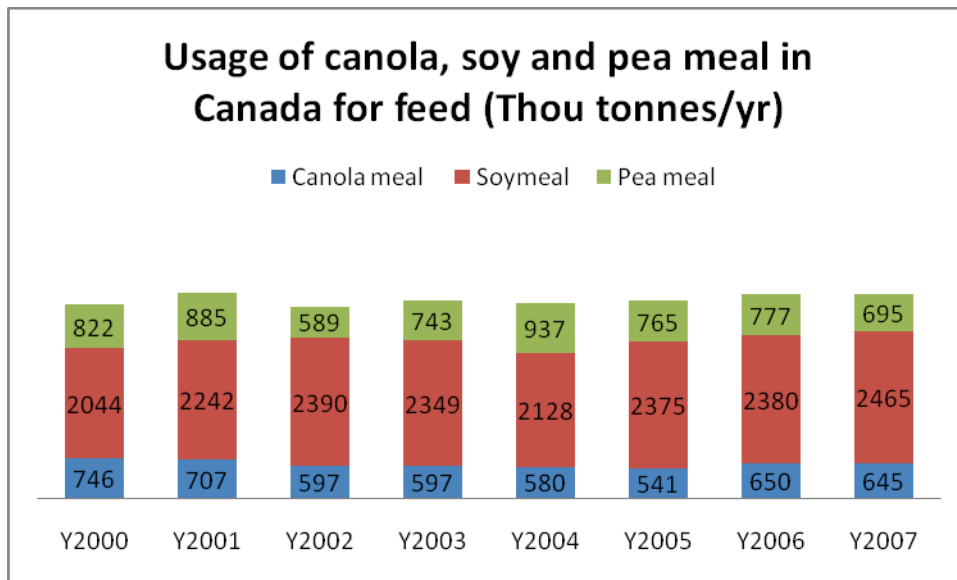


Chart 5. Domestic consumption of major feed meal categories in Canada

Canola and Jobs

Canola generates jobs in four chief areas; (a) direct jobs for producers, (b) jobs in handling the raw seed in both the export chain and in the early crush chain, (c) in the food processing/restaurant portion of the chain where the product is presented to the final consumer and (d) in the ripple effect realized when all of the people in the first four components of the chain purchase goods and services with the dollars they have earned through the canola production of the chain

There are 52,700 primary producers of canola.

The grain companies, independent farm dealers, agronomist and life sciences researchers who handle the product from these producers all owe portions of or all of their jobs to the canola produced on the farm.

The portion of grain handling/front line support agronomists/workers that can be attributed to canola make up the 600 positions. Life sciences innovations from large companies (six major corporations) and a number of small firms constitute 1280 positions. These positions include higher salaried individuals who live and/or work in both rural and urban centres (e. g. Saskatoon, Guelph, Winnipeg, Lethbridge, Calgary, Regina and Edmonton).

Rail companies employ 44,902 in North America. A little over 1 percent of their total freight is canola. Thus jobs assignable to this category total 502.

There are 1200 persons working at oil crushers in Canada. Sixty five percent of their work is related to canola. Job total from this source is 780.

Export terminals located in Vancouver and Thunder Bay employ 21,000 people. Sixteen percent of their work is related to grains and oilseed and of that, 22 percent is canola seed. Thus 739 people are employed in these positions, largely well-paying unionized jobs.

There are 254,000 Canadians working in different components of the food processing sector and another 1,023,000 in the restaurant and catering business. Specific allocation of canola streams within this complex is nearly impossible. However it is reasonable to conduct an accounting of the national consumption rate of all foodstuffs (880 kg/person/yr) by Canadians, allocate consumption of canola consumed per person (9.1 kg/person/yr as oil and 0.5 kg/person/yr as meat derived from meal) and then use this figure to 'credit' canola within the grocery and restaurant businesses. Assuming this, then the food processing/grocery and restaurant sectors can thank canola for 3,048 and 12,389 jobs. These positions vary from minimum wage fast food positions to higher paid positions in management or owner operated businesses.

The multiplier effect of agricultural industries has been put at 1.9 to 2.4 for a number of different industries. If we accept a conservative multiplier for canola as being 2.0, then the calculated effect generates 144 thousand jobs. Note as well that the use of canola in many foodstuffs means that there is a broad set of geographies where jobs are resulting from canola's use in the final ingredients or meals.

Table 10. Job impacts of canola on the Canadian economy

Jobs	Quebec and Maritimes	Ontario	Manitoba	Saskatchewan	Alberta	BC	Total
Producers/farm families		200	10,000	30,000	12,300	200	52,700
Scientists, breeders, geneticists and agronomists		80	200	700	300	n/a	1280
Grain companies/farm services		2	114	342	140	2	600
Rail companies	2	2	98	273	118	12	502
Crushers/refining		3	148	444	182	3	780
Terminals		37	0	0	0	702	739
Food processors/grocery retailing	1,478	1,479	91	91	305	305	3,048
Restaurant trade/catering	4,583	4,584	372	372	1,239	1,239	12,389
Multiplier (Set at 2.0)	12,126	12,774	22,046	64,444	29,168	4,926	144,076
Total jobs	18,189	19,161	33,069	96,666	43,752	7,389	216,114