

FLAX SECTOR

OVERVIEW OF THE FLAXSEED SECTOR IN MANITOBA



- Manitoba has been growing flax since the late 1800s but it was not until World War II that it emerged as an alternative cash crop to wheat and other cereals.
- In 2011, Manitoba reported 920 flax farms compared to 2,212 in 2006. This represents 20.1% of flax farms in Canada and approximately 16 to 18% of Canada's total flax production.
- Flax is grown mainly in Manitoba, Saskatchewan and Alberta. Canada is the top flax producer in the world, accounting for approximately 40% of global flax production.
- Manitoba flaxseed is characterized by a strong combination of oil content, iodine value, and low moisture content. The superior quality of the Manitoba flaxseed crop is strongly influenced by the moderate growing temperatures and longer photoperiod (hours of sunlight) distinctive to Manitoba.
- The primary reason for Manitoba's high quality flaxseed is the active involvement of producers and researchers in maintaining and increasing quality standards of new varieties developed and produced.
- The Canadian flax industry has a strong visual grading system designed to ensure uniform quality.
- Flaxseed is graded based on damage (broken seeds) and admixture at several different locations including both the country elevators and terminal elevators. This allows for lower quality seed to be removed, providing more uniform export product.

Flax	Manitoba	Manitoba	Canada	Canada
	2011	2006	2011	2006
Number of farms	920	2,212	4,571	9,211
Acres	167,367	383,509	1,054,360	1,996,549
Hectares	67,731	155,201	426,684	807,975

Source: Census of Agriculture 2011

PROCESSING FLAX IN MANITOBA

- Value-added opportunities for flax include food, feed, fibre, health, and industrial uses.
- Global demand for flax in food and beverages, functional foods and dietary supplements has risen dramatically due to its flavour and nutritional properties.
- Important human nutritional benefits derived from flax are due to its Omega-3 fatty acid, alpha-linolenic acid (ALA), lignan and dietary fibre content. Flax also has one of the most nutritious plant protein compositions, a number of important essential minerals and minor amounts of water and fat-soluble vitamins.
- Flax oil and meal are recognized as valuable components in animal nutrition, improving health and productivity of animals themselves and leading to healthier food products for humans such as Omega-3 eggs from flax-fed poultry.
- Flax can be incorporated in feed rations for beef, dairy, poultry, swine and commercial fish feed markets to improve growth as well as lessen disease and stress-related conditions.
- Omega-3 enriched eggs are produced by laying hens that are fed a diet containing 10 to 20% milled flax. The 3 eggs look, cook, and taste like regular eggs, and have similar total fat content and cholesterol levels. Flax is higher in the Omega-3 fatty acid, alpha-linolenic acid, and lower in saturated fatty acids than other grains. Current research findings suggest that Omega-3 fatty acids help lower blood triglyceride levels and may play a role in reducing the risk of heart disease.
- Flax straw can be transformed into advanced bio-based materials used in industrial applications. Currently, flax straw is processed primarily for application in the pulp and paper industry. Potential end uses for flax straw include animal bedding, horticultural mulch, particleboard, insulation board, loose-fill insulation, plastic composite filler and heating fuel.
- Industrial uses for linseed oil from flax include linoleum flooring, paints, sealants, coatings, plastics and resins may all contain linseed oil.
- Demand for bio-products is increasing with green consumerism trends and new environmental legislation. The biodegradable status of linoleum, along with its natural antimicrobial properties, make it a good option for health care institutions, commercial buildings, educational institutions and kitchens.
- Opportunities exist for the development of specialty oleochemical manufacturing and novel, high-value flax oil applications in fuel bio-additives and polymer resins.
- Flaxseed contains 21% to 25% protein and 43% to 45% oil, high in linolenic fatty acid (58%). Solin is a type of flax developed in the late 1980s, with a linolenic fatty acid concentration of 2%, and a linoleic fatty acid concentration of 70%. It is marketed as an edible vegetable oil. The meal remaining from the crushing of both flax and solin is used as a livestock feed.

TRADE

- Manitoba producers have a long tradition of growing flax and are recognized for the production of a top quality product and a commitment to meet customer demand domestically and internationally. Processed flax exports include linseed oil, oil-cake, flax fibre, tow and waste.
- China has replaced Europe as a key export destination for Canadian flax.
- It is estimated that Canadian flaxseed exports to China will be up to about 106,000 tonnes at the end of the 2011-12 season, while exports to Europe may only reach between 20,000 and 30,000 tonnes.
- Chinese demand for flax is difficult to determine due to a lack of transparency in the Chinese food reserve policy and since China is a price-sensitive buyer, its oilseed demand varies from year to year.
- Exports to Europe have been significantly reduced since 2009 when Canadian flax shipments to the EU were found to have trace amounts of CDC Triffid, an unapproved genetically modified (GM) type of flax. Due to its zero-tolerance policy toward genetically modified crops, the EU temporarily suspended Canadian flaxseed imports; however it has since resumed those imports under strict guidelines.
- Factors influencing the future of Canada's flax market include its ability to assure Europe its flax is completely GMO-free, overcome competition from the FSU in Europe and turn China into a reliable and consistent trading partner.
- Kazakhstan and Ukraine are forecast to deliver 510,000 tonnes of flaxseed combined by the end of July 2012, up from only 237,000 tonnes the previous year.
- Almost 50% of the linseed oil that trades internationally is imported by developing countries in Asia, Africa and Latin America. As the economies of these countries grow, they will provide long-term potential for a Canadian crusher.
- North American demand for flaxseed has tripled in the last 10 years due to the food industry's use of flaxseed in breads, bagels and other baked goods.
- The United States is a net importer of flax. In 2011, the United States imported 201,326 MT of flaxseed valued at \$134 million, almost entirely from Canada.
- U.S. flaxseed production is expected to decrease as producers switch from flax to wheat or corn due to ongoing wheat demand and strong demand for corn for ethanol production which continue to support elevated U.S. wheat and corn prices.
- The majority of flax utilized in North America still is consumed as feed; while in China and India it is mostly consumed as food.

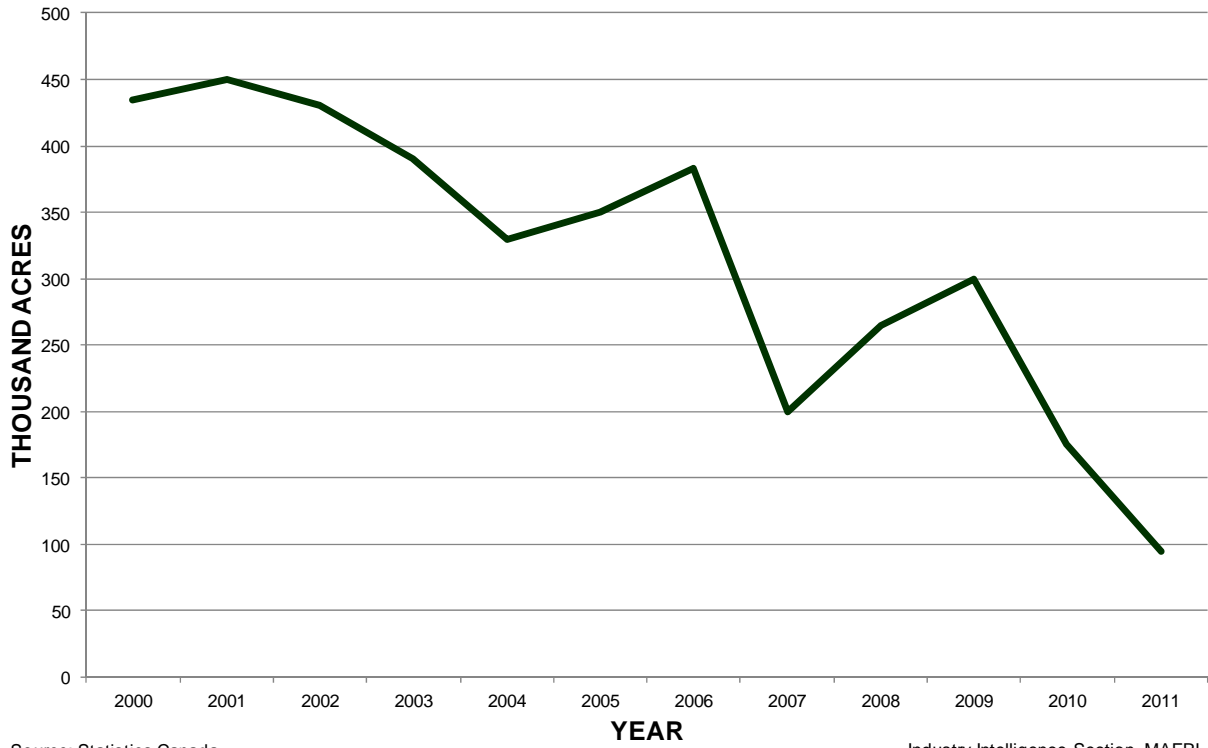
Flax Outlook for Canada 2012-2013

- For 2012-13, seeded and harvested areas are expected to increase by 50% and 47%, respectively, mostly in Saskatchewan.
- Production is forecast to rise by 36%, to 0.5 Mt.
- Supply is forecast to increase by 7% on sharply lower carry-in stocks.
- Exports are forecast to rise slightly on steady world demand for vegetable oils.
- Total domestic use is forecast to ease by 10%, on reduced domestic capacity.
- Carry-out stocks are forecast to remain unchanged while prices ease slightly on higher world-wide oilseed and vegetable oil production and stable consumption.
- Prices are expected to rise marginally as increased Chinese demand partly offsets reduced buying by the EU-27.
- Prices are expected to ease slightly due to the rise in world oilseed and vegetable oil production combined with steady demand.

Outlook for Flax	2010-2011	2011-2012p	2012-2013f
Area Seeded (kha)	374	281	421
Area Harvested (kha)	353	273	400
Yield (t/ha)	1.20	1.35	1.25
Production (kt)	423	368	500
Imports (kt)	8	7	5
Total Supply (kt)	720	569	605
Exports (kt)	404	350	400
Food & Industrial Use (kt)	n/a	n/a	n/a
Feed, Waste & Dockage (kt)	n/a	n/a	n/a
Total Domestic Use (kt)	123	119	105
Carry-out Stocks (kt)	194	100	100
Average Price (\$/t)	530	520 to 550	520 to 550

Source: Statistics Canada and Agriculture and Agri-Food Canada, June 2012

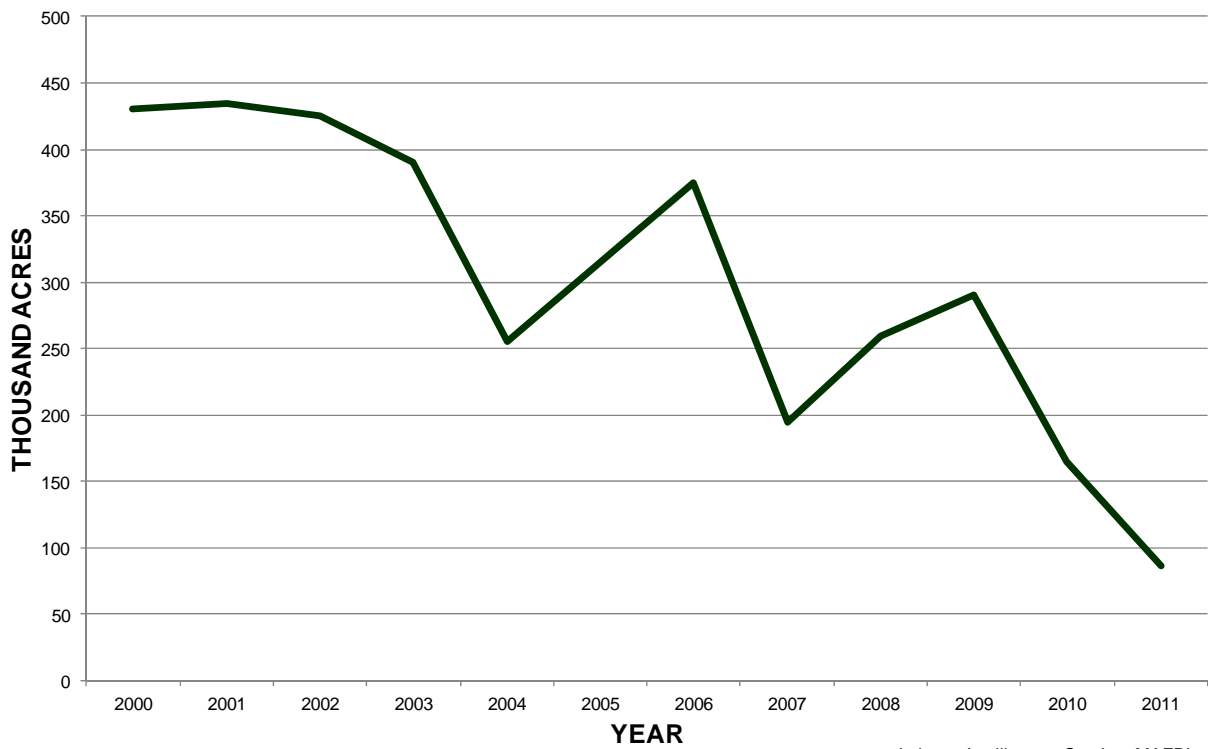
Flaxseed - Seeded Acres in Manitoba 2000 - 2011



Source: Statistics Canada

Industry Intelligence Section, MAFRI

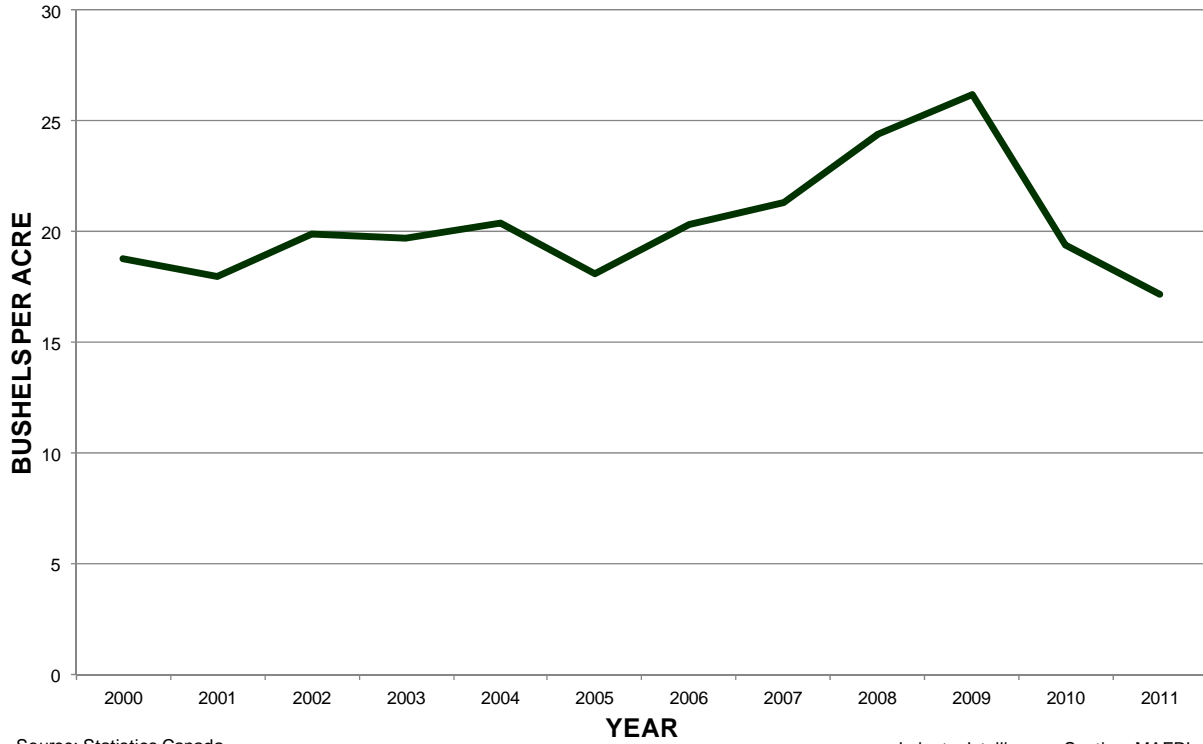
Flaxseed - Harvested Acres in Manitoba 2000 - 2011



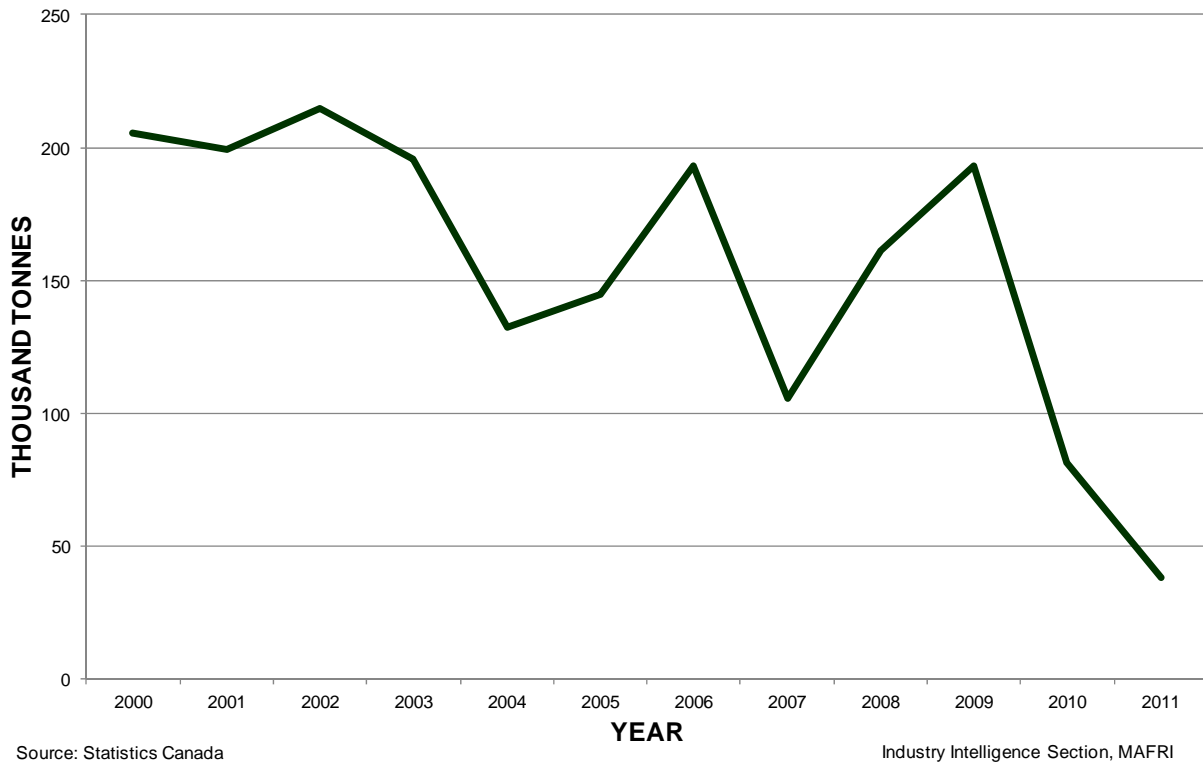
Source: Statistics Canada

Industry Intelligence Section, MAFRI

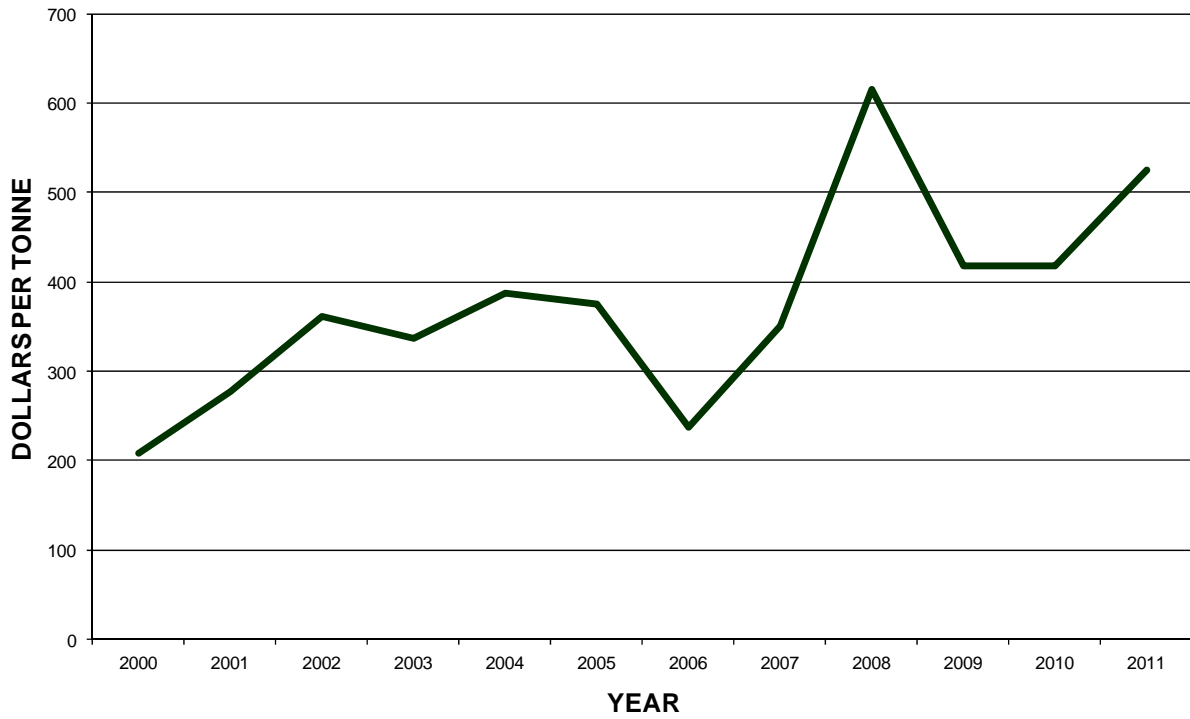
Flaxseed - Yield per Acre in Manitoba 2000 - 2011



Flaxseed - Tonnes Produced in Manitoba 2000 - 2011



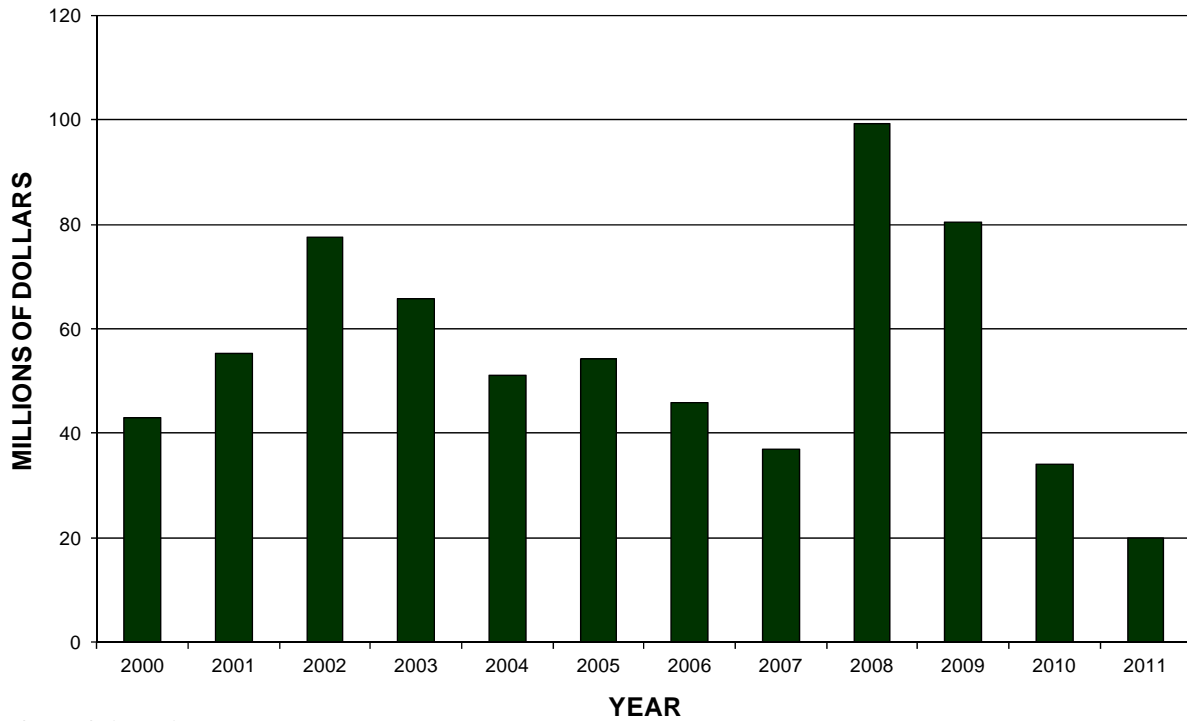
Flaxseed Prices in Manitoba 2000 – 2011



Sources: STC, AAFC, MAFRI

Industry Intelligence Section, MAFRI

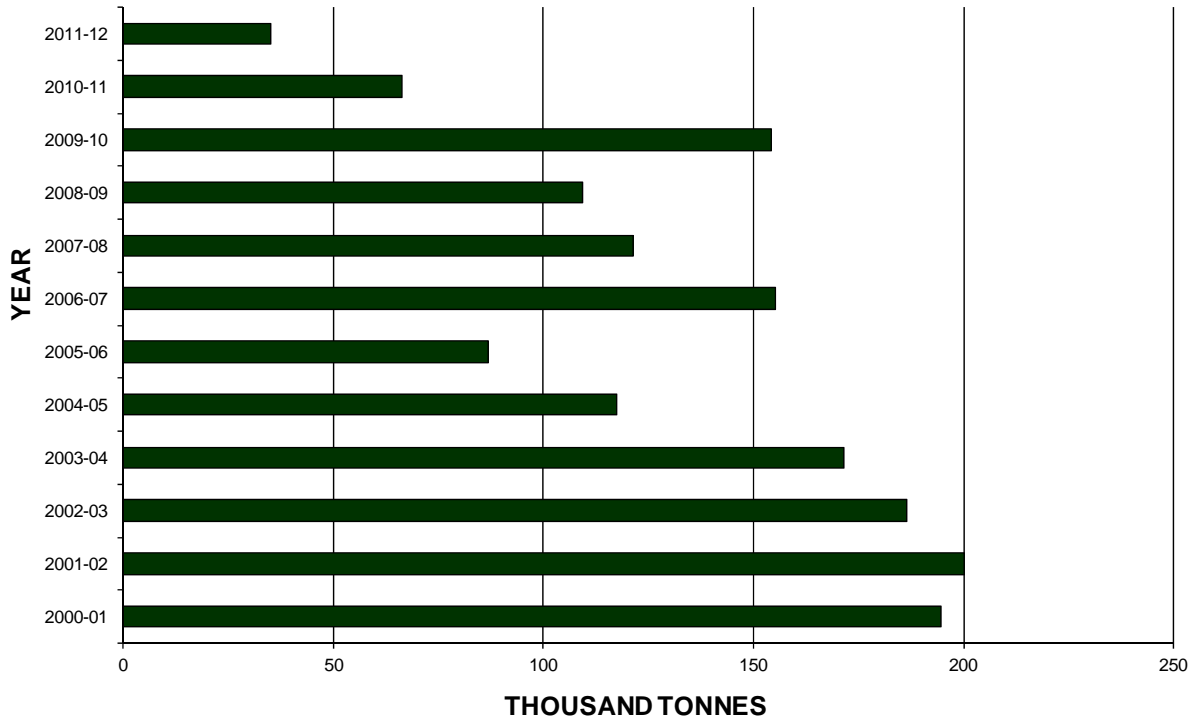
Value of Flaxseed Production in Manitoba 2000 - 2011



Source: STC, AAFC, MAFRI

Industry Intelligence Section, MAFRI

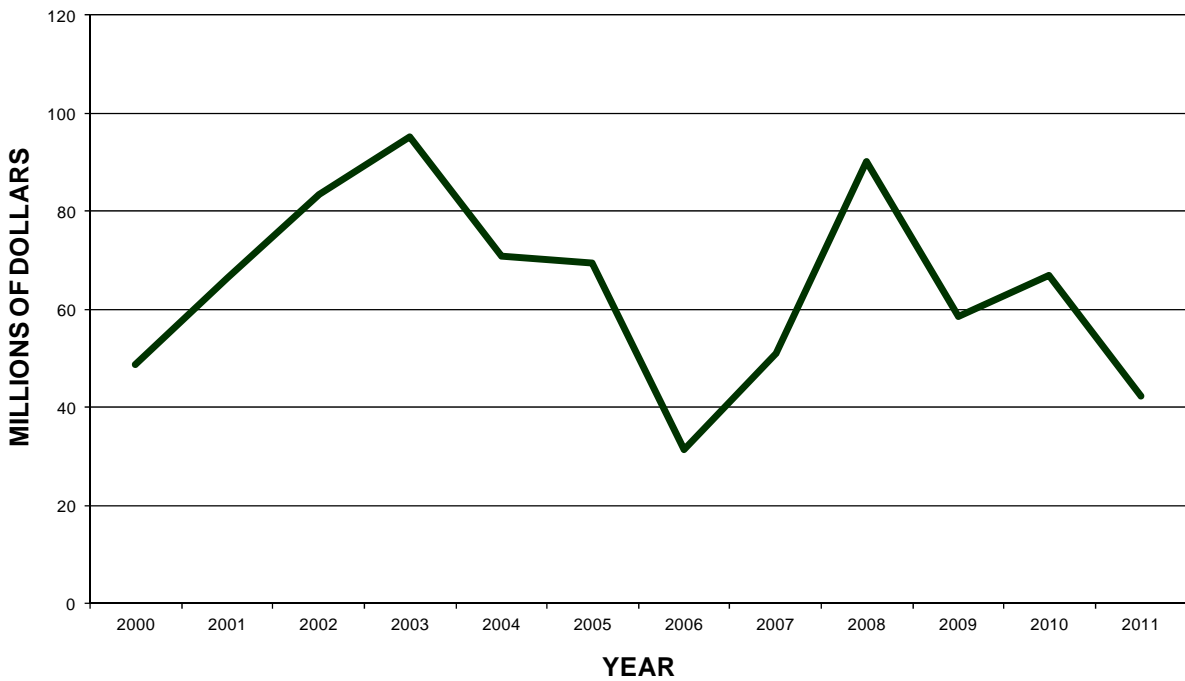
Marketings of Manitoba Flaxseed 2000 - 2011



Source: STC, AAFC, MAFRI

Industry Intelligence Section, MAFRI

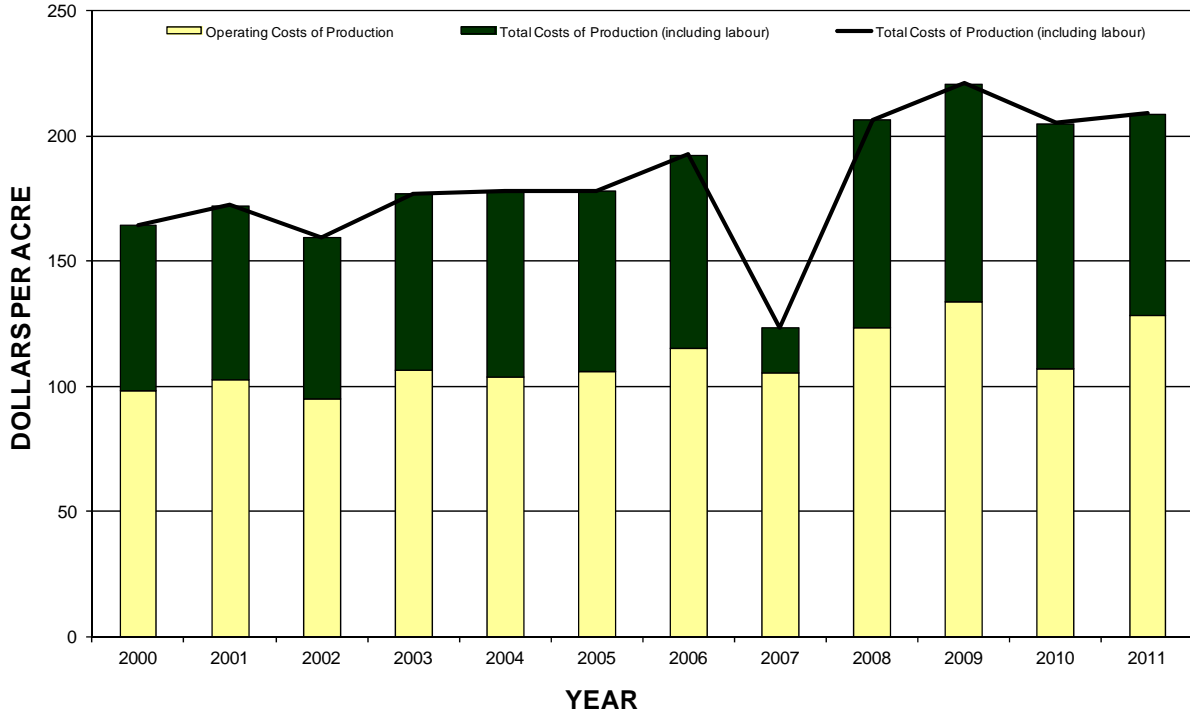
Manitoba Flaxseed Exports 2000 - 2011



Source: Statistics Canada

Industry Intelligence Section, MAFRI

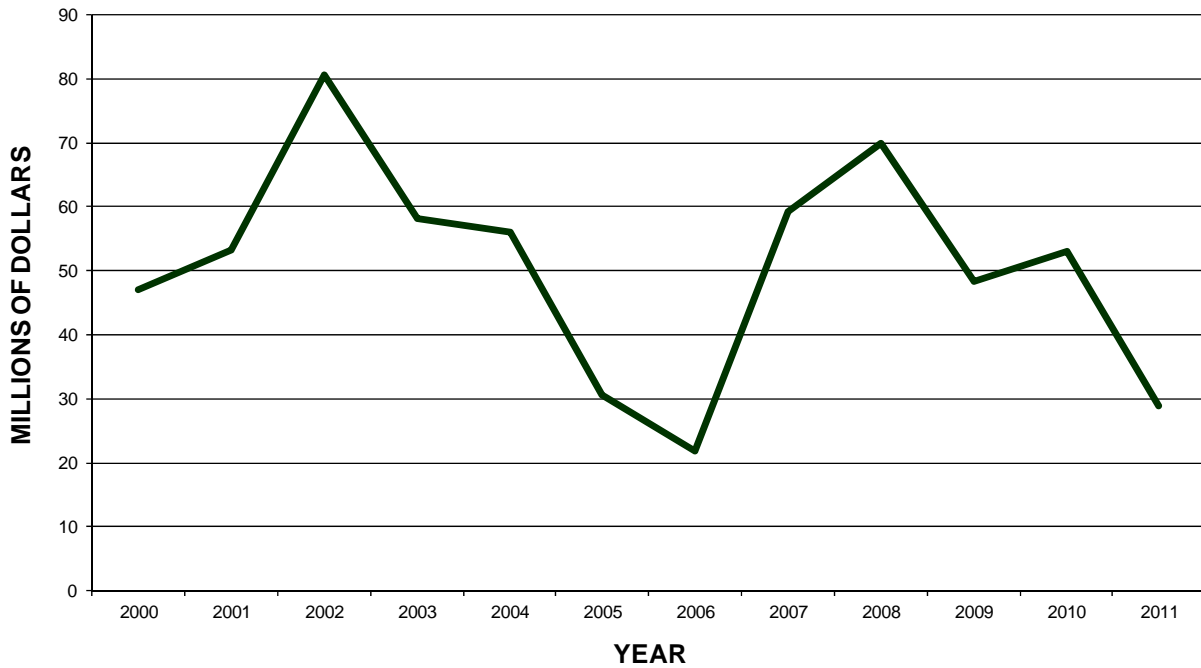
Cost of Flaxseed Production in Manitoba 2000 – 2011



Source: MAFRI

Industry Intelligence Section, MAFRI

Farm Cash Receipts for Flaxseed in Manitoba 2000 – 2011



Source: Statistics Canada

Industry Intelligence Section, MAFRI

Farm Supply and Disposition of Manitoba Flaxseed Crop, 2000/01 to 2011/12

<i>000 tonnes</i>	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Opening Stocks Aug1	0	30	35	0	30	45	15
Production	145	193	105	161	193	81	38
Total Supply	145	223	140	161	223	126	53
Marketings	87	155	121	109	154	66	35
Seed	4	2	3	3	2	1	0
Carry-over	30	35	0	30	45	15	8
Feed/Waste/Dockage	24	31	16	19	22	44	10
Total Disposition	145	223	140	161	223	126	53

<i>000 bushels</i>	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Opening Stocks Aug1	0	1,181	1,378	0	1,181	1,772	591
Production	5,700	7,598	4,149	6,350	7,598	3,201	1,500
Total Supply	5,700	8,779	5,527	6,350	8,779	4,972	2,090
Marketings	3,416	6,107	4,776	4,298	6,066	2,614	1,378
Seed	170	89	118	133	78	38	0
Carry-over	1,181	1,378	0	1,181	1,771	591	319
Feed/Waste/Dockage	933	1,206	633	738	864	1,730	394
Total Disposition	5,700	8,779	5,527	6,350	8,779	4,972	2,090

- **FLAX - Common Conversions**

1 metric tonne flax = 39.368 bushels.

There are 56 pounds in 1 bushel of flax.

Production and Value of Manitoba Flaxseed

Year	Seeded Area (hectares)	Harvested Area (hectares)	Average Yield (kg per ha)	Production (tonnes)	Price per Tonne (\$/tonne)	Total Value (\$000)
1990	295,400	295,400	1,300	381,000	208	79,248
1991	250,083	250,083	1,300	330,200	157	51,841
1992	149,700	133,500	1,600	208,300	213	44,368
1993	232,700	218,500	1,100	243,900	226	55,121
1994	279,200	275,200	1,400	381,000	268	102,108
1995	313,600	313,600	1,300	403,900	297	119,958
1996	230,700	228,600	1,600	358,200	335	119,997
1997	267,100	267,100	1,300	355,600	330	117,348
1998	283,300	275,200	1,300	360,700	305	110,014
1999	210,400	202,300	1,300	271,800	204	55,450
2000	176,000	174,000	1,200	205,700	209	42,952
2001	182,100	176,000	1,100	199,400	277	55,206
2002	174,000	172,000	1,200	214,600	362	77,629
2003	157,800	157,800	1,200	195,600	336	65,751
2004	133,500	103,200	1,300	132,100	387	51,129
2005	141,600	127,500	1,100	144,800	375	54,316
2006	155,200	151,800	1,300	193,000	238	45,903
2007	80,900	78,900	1,300	105,400	351	37,019
2008	107,200	105,200	1,500	161,300	615	99,217
2009	121,400	117,400	1,600	193,000	417	80,533
2010	70,800	66,800	1,200	81,300	418	34,005
2011	38,400	35,200	1,100	38,100	525	20,017

Year	Seeded Area (acres)	Harvested Area (acres)	Average Yield (bu per acre)	Production (000 bushels)	Price per Bushel (\$/bushel)	Total Value (\$000)
1990	730,000	730,000	20.5	15,000	5.28	79,248
1991	617,968	617,968	21.0	13,000	3.99	51,841
1992	370,000	330,000	24.8	8,200	5.41	44,368
1993	575,000	540,000	17.8	9,600	5.74	55,121
1994	690,000	680,000	22.1	15,000	6.81	102,108
1995	775,000	775,000	20.5	15,900	7.54	119,958
1996	570,000	565,000	25.0	14,100	8.51	119,997
1997	660,000	660,000	21.2	14,000	8.38	117,348
1998	700,000	680,000	20.9	14,200	7.75	110,014
1999	520,000	500,000	21.4	10,700	5.18	55,450
2000	435,000	430,000	18.8	8,100	5.30	42,952
2001	450,000	435,000	18.0	7,850	7.03	55,206
2002	430,000	425,000	19.9	8,450	9.19	77,629
2003	390,000	390,000	19.7	7,700	8.54	65,751
2004	330,000	255,000	20.4	5,200	9.83	51,129
2005	350,000	315,000	18.1	5,700	9.53	54,316
2006	383,509	375,000	20.3	7,600	6.04	45,903
2007	200,000	195,000	21.3	4,150	8.92	37,019
2008	265,000	260,000	24.4	6,350	15.62	99,217
2009	300,000	290,000	26.2	7,600	10.60	80,533
2010	175,000	165,000	19.4	3,200	10.63	34,005
2011	95,000	87,000	17.2	1,500	13.34	20,017

SOURCE: Statistics Canada; Agriculture and Agri-Food Canada; Manitoba Agriculture, Food and Rural Initiatives.

