



# Bi-weekly Bulletin

August 30, 2002 Volume 15 Number 17



## FLAXSEED

Canada is the world's largest producer and exporter of flaxseed, representing almost 80% of world trade. Consequently, supply conditions for flaxseed in Canada exert a major influence on the world flaxseed market. In Canada, supplies in 2002-2003 are forecast to decrease by about 11% due to very low carry-in stocks and stable production. Prices are expected to increase about 20% to \$390 per tonne (/t) due to tight supplies both in Canada and around the world. As well, decreased global supplies of oilseeds are expected to lead to higher vegetable oil and meal prices, providing further support to flaxseed prices. This issue of the *Bi-weekly Bulletin* looks at the outlook for flaxseed for 2002-2003.

Flaxseed has been part of the diet of humans for thousands of years. The Babylonians cultivated flaxseed as early as 3,000 BC. Over the centuries, the production of flaxseed spread across Europe, Africa and finally to North America where it was the first oilseed to be widely grown in western Canada. Today, the unique properties of flaxseed differentiate it from other oilseeds in the industrial,

human food and livestock feed markets.

Most countries, other than those in North America, refer to flaxseed as linseed. In Europe, flaxseed refers to the tall, long fibre varieties of the crop produced for the linen textile industry, while linseed designates the short fibre varieties used for oil and livestock meal. In Canada, the vast majority of flaxseed produced is of the

short fibre oilseed varieties and is grown principally in the Prairie provinces of Saskatchewan, Manitoba and to a lesser extent Alberta. A limited amount of long fibre flaxseed is grown in Quebec and is processed by Fibrex Canada to produce flax fibre for linen textiles.

### Agronomy

Flaxseed is best adapted to production in areas with lower growing temperatures and longer periods of daylight, where oil content and iodine values are optimized. As a result, the relatively long day length at western Canada's higher latitudes and relatively cool temperatures combine to make western Canada highly suited to the production of high quality flaxseed.

### Research in Canada

Agriculture and Agri-Food Canada's (AAFC's) flaxseed breeding program takes place at the Morden Research Center in Morden, Manitoba. Ongoing research is looking to improve the oil content and quality of flaxseed, specifically by changing the oil profile to include increased levels of linolenic acid, also referred to as the omega-3 fatty acid. At the same time, research scientists are trying to increase and sustain yields and disease resistance to PasmO, powdery mildew and sclerotinia.

### Uses

Flaxseed has numerous industrial uses. The oil, called linseed oil, is a major ingredient in linoleum flooring and is also

### WORLD: FLAXSEED SUPPLY AND DISPOSITION

local marketing year	1998	1999	2000	2001	2002
	-1999	-2000	-2001	-2002e	-2003f
Harvested Area (Mha)	3.52	3.50	3.09	2.93	3.06
Average Yield (t/ha)	0.77	0.79	0.73	0.71	0.72
.....thousand tonnes .....					
Carry-in Stocks	170	310	560	410	270
Production					
Canada *	1,081	1,022	693	715	709
China	523	404	520	420	470
US **	170	200	273	291	342
India	280	290	220	250	260
EU-15	312	565	211	138	150
Other	330	293	333	276	269
Total Production	2,696	2,774	2,250	2,090	2,200
<b>Total Supply</b>	<b>2,866</b>	<b>3,084</b>	<b>2,810</b>	<b>2,500</b>	<b>2,470</b>
Crush	2,219	2,130	2,015	1,910	1,950
Other	337	394	385	320	300
<b>Total Use</b>	<b>2,556</b>	<b>2,524</b>	<b>2,400</b>	<b>2,230</b>	<b>2,250</b>
Carry-out Stocks	310	560	410	270	220
Trade	923	710	793	774	775

e: estimate, Oil World, June 28, 2002

f: forecast, AAFC, August 2002

Source: Oil World, except \*Statistics Canada and \*\*USDA

used in paints and stains. The flax plant itself provides industrial fibre for the pulp and paper and automotive industries. For many years, the short flax fibre produced in Canada has been processed to be used in the manufacturing of fine bond papers. Recently, manufacturers have developed new technologies to use this strong, short fibre in other products such as car door panels, plant pots and retaining mats.

Flaxseed is classified as a functional food because it provides not only nutritional benefits, but other health benefits as well. These benefits, as described by the Mayo Clinic, include lignans which may play a role in preventing cancers of the breast, endometrium and prostate, fibre which can help lower cholesterol, regulate blood sugar levels and aid in digestion, and omega-3 fatty acids which help lower the risk of cardiovascular disease and stroke.

Benefits from flaxseed can be introduced to the diet through flaxseed oil, milled flaxseed, or through omega-3 eggs, which are produced by hens on flaxseed-fortified rations. Products that are readily available in supermarkets and that contain flaxseed include breads, cereals, crackers, energy bars, baking mixes, snacks, soups and waffles. As well, whole or milled flaxseed is available at most grocery stores.

The benefits of flaxseed as animal feed are numerous. For poultry, flaxseed in the laying hens' rations results in eggs which are higher in omega-3 fatty acid, which health conscious consumers want in their diet. For swine, the inclusion of flaxseed in the diet not only changes the nutritional quality of the pork by making more omega-3 fatty acid available to the consumer, but studies also suggest that flaxseed in the diet of breeding sows produces larger, healthier piglets. For

horses, flaxseed in the feed improves the coat and hair appearance, improves hoof condition and decreases nervousness. There is also promise that the chemical compounds found in flaxseed can be useful in treating a host of medical conditions including cardiac arrhythmia and chronic arthritis. Flaxseed is routinely included in premium pet foods to improve the overall health and appearance of cats and dogs. Research continues on how flaxseed could be incorporated into rations for dairy cattle to create products such as omega-3 enriched milk and cheese.

In general, flaxseed is milled before it is included in animal rations, to ensure maximum absorption of the nutrients in the flaxseed. Typically, flaxseed will be included in poultry feed at 10% or 20% of the ration, depending on the desired result for the eggs. For swine, flaxseed is added at 5%.

## WORLD

### Production

World production of the 10 major oilseeds (soybeans, cottonseed, canola/rapeseed, peanuts, sunflower seed, palm kernels, copra, sesame seed, flaxseed, and castorseed) is estimated at 320.5 million tonnes (Mt) in 2001-2002, a 3% increase over 2000-2001. Flaxseed production, at 2.1 Mt, represents only 0.6% of the production of the ten major oilseeds.

World production of flaxseed has ranged between 2 and 3 Mt since at least 1935. Over the past few years, since the recent peak of 2.8 Mt in 1999-2000, there has been a marked decrease in production, due primarily to policy changes in Europe and decreased yields in Canada. Canada is the largest producer of flaxseed in the world, with a 35% production share. Other

major producers include China, the United States (US) and India, but of these, only the US has an exportable surplus of flaxseed. Argentina, once a large producer of flaxseed, is no longer a major player. Within Europe, the main producers of flaxseed are Germany, the United Kingdom and France.

### Crush

World flaxseed crush decreased by 5% to the relatively low level of 1.91 Mt in 2001-2002 due to low world production of flaxseed. The European Union (EU)-15 has the largest domestic crushing sector, followed by the US and China. The crushing process results in two products; linseed oil and linseed meal or linseed cake.

Typically, flaxseed is processed by pre-press solvent extraction, in the same way that canola is crushed. Flaxseed oil obtained through this method is used for industrial purposes. To obtain flaxseed oil suitable for human consumption, flaxseed is first cold pressed. A later hot press yields additional oil to be used for industrial purposes.

Historically the flaxseed crush in Europe was driven by the demand for linseed oil to be used in the production of linoleum, paints and other industrial products. Recently, however, the demand for non-genetically modified protein meal is driving the crush and the production of linseed oil in Western Europe is on the rise. The linseed meal is fed to livestock, primarily in Western Europe, while surplus linseed oil is sold to distant markets such as China and North Africa. In general, linseed meal is consumed in the country in which it is produced.

In 2001-2002 there were 1.21 Mt of linseed meal produced globally, but only 82,000 t were exported from the producing country. There is usually no carryover of linseed meal.

As the amount of flaxseed crushed has decreased, so has the production of linseed oil. Linseed oil production fell 5% to the relatively low level of 634,000 t in 2001-2002. An increase in production by the EU-15 was more than offset by decreased production in the US and China. Exports, on the other hand, increased to 121,000 t due to a large increase in exports by the EU-15 which more than offset decreased exports by the US.

### Food and Feed Uses

Flaxseed is also used in whole or milled form, as human food or animal feed. There are no statistics available for this

## WORLD: LINSEED OIL SUPPLY AND DISPOSITION

October-September marketing year	1998 -1999	1999 -2000	2000 -2001	2001 -2002e	2002 -2003f
.....thousand tonnes.....					
Carry-in Stocks	88	109	101	89	78
Production					
EU-15	220	220	179	190	200
US	108	125	115	106	130
China	24	118	135	125	125
Other	381	247	241	213	220
Total Production	733	710	670	634	675
<b>Total Supply</b>	<b>821</b>	<b>819</b>	<b>771</b>	<b>723</b>	<b>753</b>
Disappearance	712	718	682	645	673
Carry-out Stocks	109	101	89	78	80
Trade	130	148	109	121	130

e: estimate, Oil World, June 28, 2002

f: forecast, AAFC, August 2002

Source: Oil World

breakdown at either the domestic level in Canada or at the world level. Since reaching 394,000 t in 1999-2000, feed and food uses have declined to about 320,000 t in 2001-2002. Most of the decline was caused by reduced supplies. In general, flaxseed is consumed as food in China and India, while in Europe and North America more flaxseed is consumed as feed than as food.

While scientists have talked about the health benefits of flaxseed for years, awareness of flaxseed as a food and feed has been building steadily among the general North American population in the last five years. The Flax Council of Canada estimates food and feed uses for Canadian flaxseed in the US have tripled since 1996, increasing from about 45,000 t in 1996-1997. The Flax Council of Canada began promoting flaxseed use in the US in the early 1990s, first with support from the federal department of Western Diversification and since 1996 with support from AAFC's Agri-Food Industry Market Strategies program. Promotion efforts include regularly attending key trade shows such as the American Dieticians' Association (ADA) trade show and Bakers Expo.

In addition, the Flax Council has provided the media with flax nutrition information and the media has responded eagerly. During an 11-month period from July 1999 to May 2000, flaxseed was mentioned 2,000 times in various US media, as tracked by a media-clipping service. The benefits of flaxseed are reported in many health, fitness and lifestyle magazines.

### Trade

World trade in flaxseed is estimated at 774,000 t in 2001-2002, about 2% lower than in 2000-2001. Canada is the dominant exporter, with about 80% of the world's exports. The main import markets are Belgium-Luxembourg, Germany, the Netherlands, and to a lesser extent the US and Japan. In the EU, policy changes have led to a decrease in the local production of flaxseed, and as a result, the EU relies on imports from Canada and the US.

### CANADA

#### Production

Almost all of the flaxseed grown in Canada is produced in western Canada. Until 1987, Manitoba was the dominant producer of flaxseed, but since 1993, Saskatchewan has been the main producer. In between those years, Manitoba and Saskatchewan each grew roughly half of Canada's flaxseed crop. For 2001-2002, production increased 3% to 715,000 t, as decreased yields were more than offset by a 14% increase in harvested area. That year, Saskatchewan harvested 471,500 hectares (ha) of flax (71% of Canada's flax), Manitoba harvested 176,000 ha (27%), and Alberta harvested 14,200 ha (2%).

#### Domestic Use

In Canada, domestic uses include limited crushing for oil, grinding for the inclusion of flax in baked goods, and feeding to livestock, especially poultry.

about \$388/t in August 2002. Flaxseed futures contracts trade at the Winnipeg Commodity Exchange and track the cash value of flaxseed.

### Exports

Canada exports about 75% of its production and accounts for up to 80% of world trade. Canadian exports have been fairly stable since 1998-1999 and totalled 632,022 t (including solin), or \$182.8M in 2000-2001. For 2001-2002, exports are expected to decrease slightly to 605,000 t (including solin) due to tighter supplies. By value, exports will increase to about \$200M due to improved prices. Most of Canada's flaxseed is exported to the EU, specifically to Belgium, the Netherlands, and to a lesser extent, Germany. Significant amounts of flaxseed are also sold to the US, Japan and Egypt.

Canada also exports linseed oil, linseed meal, and flax fibre. Linseed oil exports totalled 5,390 t or \$12.3M in 2000-2001. Almost all linseed oil is exported to the US, but in the past China and South Korea were also major trading partners. For 2000-2001, 11,454 t, or \$1.8M, of linseed meal was also exported to the main markets of Belgium and the US. Flax fibre exports in 2000-2001 totalled 56,331 t or \$26.5M and the US was the only market.

### OUTLOOK: 2002-2003

#### World

World production is forecast to be higher than in 2001-2002, due primarily to increased production in the US. While total production is expected to increase by 5% to 2.20 Mt, total supply will actually decrease marginally to 2.47 Mt due to relatively low carry-in stocks. Total world use is expected to increase, resulting in very tight carry-out stocks. Prices should increase to rationalize use.

#### United States

National loan rates for minor oilseeds in 2002, as outlined in the Farm Security and Rural Investment Act (FSRIA) are differentiated by different oilseed types. These include oil-type sunflower seed, confectionary sunflower seed, flaxseed, canola, rapeseed, safflower and mustard seed. Previously, a single national average loan rate for all minor oilseeds was used, although there were differences in the posted county prices. Differences at the county level will now be much greater. The loan rate for flaxseed decreased about 25% from US\$5.21 per bushel (/bu) in 2001 to US\$3.91/bu in 2002. With the exception of oil-type sunflower seed, loan rates for all other minor oilseeds increased.

### Prices

Flaxseed prices generally follow the major oilseed crops, but because of different end uses, are not well correlated with other oilseeds. Canadian flaxseed prices (cash, in-store Thunder Bay) peaked at almost \$475/t in May of 1998, before falling to under \$215/t in August of 2000. Since that time there has been a strong and steady recovery in prices to

### CANADA: FLAXSEED SUPPLY AND DISPOSITION

<i>August-July crop year</i>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
	<b>-1999</b>	<b>-2000</b>	<b>-2001</b>	<b>-2002e</b>	<b>-2003f</b>
Harvested Area (000 ha)	874	777	591	662	674
Average Yield (t/ha)	1.24	1.32	1.17	1.08	1.05
.....thousand tonnes .....					
Carry-in Stocks	41	151	386	259	160
Production*	1,081	1,022	693	715	709
Imports	5	2	11	25	25
<b>Total Supply</b>	<b>1,127</b>	<b>1,175</b>	<b>1,090</b>	<b>999</b>	<b>894</b>
Exports*	727	568	613	605	600
Total Domestic Use	249	221	218	234	219
<b>Total Use</b>	<b>976</b>	<b>789</b>	<b>831</b>	<b>839</b>	<b>819</b>
Carry-out Stocks	151	386	259	160	75
Stocks-to-Use Ratio	15%	49%	31%	19%	9%
Average Producer Price (CAN\$/t)	313	237	261	320	375
					-405

e: estimate, AAFC, August 2002

\* excluding solin

f: forecast, AAFC, August 2002

Source: Statistics Canada and AAFC

Despite the fact that flaxseed is agronomically adapted to most eastern and Midwestern States, almost all flaxseed produced in the US is grown in North Dakota. In recent years, the area seeded has grown dramatically from about 32,000 ha in 1996 to 320,000 ha in 2002. The increase in area seeded in 2002 can be best explained by the timing of the announcement of the FSRIA. By the time the Act was passed and the new loan rates were announced, many farmers had committed to seeding flaxseed. In the future, however, production will decrease, reflecting the new loan rate that is much lower than that for other crops.



**Europe**

This year, 2002, completes the 3 years of Agenda 2000, which sought to align aid payments for the various crop groups to the cereals rate in a staggered approach. Thus the aid on cereals rose from €320 per hectare (/ha) (€1.00 = CAN\$1.57 on July 22, 2002) in 2000 by 7-8% annually to where it is currently at €371/ha. Set aside payments were aligned to the cereals rate in 2000, while oilseeds and linseed (flaxseed) growers only saw alignment reached in 2002, with payments cut 15% and 17% respectively from 2001. This policy has resulted in decreased production of flaxseed for the short-term. Proposed changes to farm policy, which look to decouple subsidies from production, will likely result in further decreased production in the long-term.

**Canada**

Canadian seeded area, at 692,000 ha in 2002-2003 increased slightly, from 2001-2002. Erratic weather throughout the

growing season resulted in a second year of low yields. As such, production is estimated to fall slightly to 709,000 t.

Due to a combination of depressed yields and low carry-in stocks, total supply is expected to decrease by 11%. Exports are expected to fall slightly, primarily due to lower supply. Exports to the EU will fall slightly due to increased competition from the US. Exports to the US will fall due to their increased domestic production. The average producer price is expected to increase significantly from \$320/t in 2001-2002 to \$390/t in 2002-2003, due to tight supplies of flaxseed at both the national and world levels, and the improved outlook for oilseeds in general. Prices could rise even higher if this summer's erratic weather results in crop losses in both western Canada and the state of North Dakota.

and in the long-term, there will be relatively static world demand for flaxseed.

*This bulletin was written by Deanna Gower, Market Analyst*

**For more information, please contact:**

**Fred Oleson, Chief**  
**Phone: (204) 983-0807**  
**E-mail: olesonf@agr.gc.ca**

<b>CANADA: FLAXSEED EXPORTS* BY COUNTRY</b>					
<i>August-July crop year</i>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
	<b>-1999</b>	<b>-2000</b>	<b>-2001</b>	<b>-2002e</b>	<b>-2003f</b>
.....thousand tonnes.....					
<b>EU-15</b>					
Belgium	300	251	382	375	385
Netherlands	132	89	87	80	75
Germany	36	38	1	12	10
Other	40	1	21	23	35
<b>Total EU-15</b>	<b>508</b>	<b>379</b>	<b>491</b>	<b>490</b>	<b>505</b>
<b>US</b>	166	149	60	50	25
Japan	64	39	43	45	50
Egypt	21	22	25	4	10
Other	11	10	13	16	10
<b>World</b>	<b>770</b>	<b>599</b>	<b>632</b>	<b>605</b>	<b>600</b>

e: estimate, AAFC, August 2002      \* including solin  
f: forecast, AAFC, August 2002  
Source: Statistics Canada

For the longer term outlook, the area seeded to flaxseed in Canada is expected to remain fairly static at about 700,000 to 800,000 ha over the next 5 years. A return to trend yields would result in production of about 1.0 Mt per year. Increased demand for flaxseed as human food and animal feed will likely result in increased prices over the medium-term. As well, there are good prospects for linoleum production in North America in the next few years. Increased prices, however, will moderate the use of flaxseed for industrial purposes, such as paint and solvent manufacturing,

© Her Majesty the Queen in Right of Canada, 2002

**Electronic version available at  
[www.agr.gc.ca/mad-dam/](http://www.agr.gc.ca/mad-dam/)**

ISSN 1207-621X  
AAFC No. 2081/E

Bi-weekly Bulletin is published by the:  
**Market Analysis Division,  
Marketing Policy Directorate,  
Strategic Policy Branch,  
Agriculture and Agri-Food Canada,  
500-303 Main Street  
Winnipeg, Manitoba, Canada R3C 3G7  
Telephone: (204) 983-8473  
Fax: (204) 983-5524**

Director: Maggie Liu  
Chief: Fred Oleson

Editor: Gordon MacMichael

*To receive a free e-mail subscription to  
Bi-weekly Bulletin, please send your request to  
bulletin@agr.gc.ca.*

Issued also in French under title:  
*Le Bulletin bimensuel*  
ISSN 1207-6228  
AAFC No. 2081/F

© Printed on recycled paper