

Bi-weekly Bulletin

January 21, 2000

Vol. 13 No. 2

SUNFLOWER SEED: SITUATION AND OUTLOOK

Canada accounts for about 5 percent of world confectionary sunflower seed production although it is a very small player in the world sunflower seed market. Production and value-added processing increased significantly during 1998-1999 and are expected to continue growing in 1999-2000 and the longer term, especially in the confectionary segment of the market. This is expected to continue to increase job creation in Western Canada. In addition, processing of oilseed type sunflower seeds for the bird seed industry has been expanding. Sunflower seed prices are expected to remain attractive, relative to competing crops, with the 2000-2001 average price expected to be similar to, or slightly lower than 1999-2000. Over the longer term, the increased focus on sunflowers in the US which are low in saturated fat and high in monounsaturated fat, NuSun, is expected to provide increased competition for canola oil in the US domestic vegetable oil market.

BACKGROUND

Sunflower is native to North America where it was used in dyes, food preparation and medicines. It then spread throughout the world and developed as an oilseed crop in Russia during the late 1800s. Currently, there are basically two types of sunflower seed produced, oil and confectionary. Canadian production started during World War II as a domestic alternative to imported vegetable oil.

Sunflower grows best on loam, silty loam, and silty clay loam soils with good drainage. It has a low tolerance for saline conditions, therefore soils with moderate to high levels of salinity should be avoided. Sunflower has a deep tap root that can obtain water and nutrients 1.5-1.8 metres (5-6 feet) deep in the soil. These reserves of water and nutrients are unavailable to most other annual crops, making sunflower a good rotational crop. It should be seeded as early as possible, usually in the first half of May, since it requires 115-125 days to reach maturity.

Shorter season varieties have been developed for areas where the traditional hybrids cannot be grown. They have the further advantage of being able to be sown and harvested with the same equipment as cereal grains or canola, whereas the traditional hybrids require specialized equipment. **Sunola** is a miniature, open pollinated sunflower developed at the Agriculture and Agri-Food Canada (AAFC) Research Centre at

Saskatoon. It requires 99-103 days to maturity. The oil content is equal to the best sunflower hybrids. **Sunwheat** is a dwarf hybrid sunflower and requires 100-110 days to maturity. Its oil content is slightly lower than Sunola. It is more suited to the arid areas and able to withstand periods of summer heat better than some other crops. Both Sunola and Sunwheat have lower yields than traditional hybrids. **NuSun** is a mid-oleic (monounsaturated fatty acid) sunflower, developed by USDA which has a low saturated fat profile. There are **no Genetically Modified (GM)** sunflower varieties and no plans to develop them.

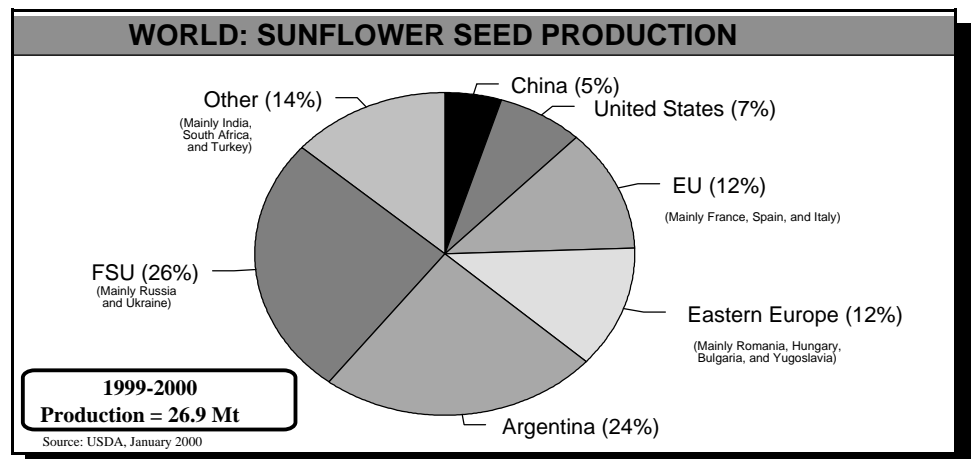
WORLD

Production

World sunflower seed production has increased from an average of 23.5 million tonnes (Mt) in the mid 1990s to 26.9 Mt estimated by the USDA for 1999-2000.

Growth in production occurred in all regions during this period, except for China and the EU. Production in China has been fairly stable. In the EU, production has been trending downward, as alternative crops became more attractive under the Common Agricultural Policy reforms. Production in Argentina increased steadily until 1998-1999, but decreased in 1999-2000. Major growth occurred in India, Russia, Ukraine, South Africa, Romania and the US. About 95 percent of world production is the oilseed type and only 5 percent the confectionary type. Carry-out stocks have been low with a stock-to-use ratio of 4 percent.

The US is the largest producer of confectionary type sunflower seeds at about 0.38 Mt or 30 percent of world production. North Dakota produces about 45 percent of total US production, with



SUNFLOWER SEED: CANADA & US PRODUCTION BY TYPE OF SEED

	1998 -1999	1999 -2000e	2000 -2001f
.... thousand tonnes....			
Oilseed			
United States	2,035	1,587	1,650
Canada	56	55	55
Confectionary			
United States	356	383	450
Canada	56	67	75

Crop year:

US: September-August,

Canada: August-July

e: estimate, US=USDA; Canada=AAFC, Jan. 2000

f: forecast, AAFC, Jan. 2000

Source: USDA and AAFC

other central and northern plains states accounting for most of the balance. In 1998-1999, about 85 percent of the US production was the oil type, but it decreased to about 80 percent in 1999-2000, as oilseed type production decreased by 22 percent and confectionary type production increased by 7 percent.

Utilization

The majority of the oil type sunflower seeds are crushed after the hull is removed. The hull represents about 15 percent of the sunflower seed weight. Dehulled seed yields 45-50 percent oil and 50-55 percent meal. World sunflower crush has increased in line with production. The oil is used for frying or to produce salad dressing, shortening and margarine. The mid and high oleic hybrids produce oil for specialized markets. The meal is used as a protein supplement in

livestock feed and usually contains about 35 percent protein. The hulls are used mostly for livestock bedding, with some use as a source of fibre for cattle feed. In addition, the use of the oilseed type seed by the bird seed industry is a growing.

Confectionary type sunflower seeds are used in the snack food industry as roasted sunflower seeds, and dehulled for use in snack food and baking. Sunflower seeds are high in protein, calcium, phosphorous, iron, potassium, and vitamin E. The sunflower snacks are usually lightly coated in salt or spices. Some confectionary sunflower seeds are also used for bird seed. Occasionally some damaged sunflower seeds are used for cattle feed.

Trade

Trade in sunflower seed oil is expected to increase slightly to about 3.8 Mt in 1999-

2000, representing about 40 percent of total world production. Argentina accounts for nearly half of the exports. The EU is the largest importer. Other major importers are Russia, India, Egypt, Iran, Algeria and Venezuela. A larger portion of the meal is used in the countries where it is produced compared to oil, with about 30 percent of the production exported. Argentina accounts for about 60 percent of the exports, with the EU being the main importer.

Sunflower seed exports have also been increasing in line with increased production and account for about 15 percent of production. The main exporting countries are Russia, Ukraine, Argentina and the US, with most of the exports going to the EU. US is the main exporter of confectionary sunflower seeds, with the EU, China and Mexico the main destinations.

CANADA

Production

Canadian sunflower seed production has been highly variable during the 1990s, reaching a high of 134,000 t in 1991-1992 and a low of 55,000 t in 1996-1997. The decrease was caused by a combination of disease and insect problems, some cool summers and low prices compared to alternative crops. Production increased sharply to 112,000 t in 1998-1999, as sunflower seed prices strengthened and prices of most alternative crops weakened. There was a further increase in production to 122,000 t in 1999-2000. Production of confectionary sunflower seeds has been increasing relative to oilseed varieties in recent years due to increased processing activity and marketing opportunities on the prairies, and a price premium over the oilseed type. Manitoba accounted for about 68 percent of the production in 1999-2000, followed by Saskatchewan at 29 percent, Alberta at 2.5 percent and Ontario at 0.5 percent. The main producing areas are south-central Manitoba, followed by south-western Manitoba and south-eastern Saskatchewan.

Marketing

Sunflower seed is sold on the open market to dealers located mostly in Manitoba. Sunflower seed is shipped bulk in trucks or rail cars. Some sunflower seed, especially the confectionary type, is grown under production contracts which guarantee a price for part of the production.

Market development activities are led by the Canadian Special Crops Association, an industry organization representing

SUNFLOWER: WORLD SUPPLY & DISPOSITION

	1997 -1998	1998 -1999	1999 -2000	2000 -2000f
.....million tonnes.....				
SUNFLOWER SEED				
Carry-in stocks	1.21	0.98	1.18	0.97
Production	<u>23.29</u>	<u>25.88</u>	<u>26.86</u>	<u>26.50</u>
Total supply	24.50	26.86	28.04	27.47
Crush	20.92	22.83	24.43	24.00
Other use (food, feed, waste and dockage)	<u>2.60</u>	<u>2.85</u>	<u>2.64</u>	<u>2.67</u>
Total Use	23.52	25.68	27.07	26.67
Carry-out stocks	0.98	1.18	0.97	0.80
Trade *	3.87	4.46	4.51	4.50
SUNFLOWER MEAL				
Carry-in stocks	0.31	0.28	0.26	0.27
Production	<u>9.56</u>	<u>10.41</u>	<u>11.11</u>	<u>10.85</u>
Total supply	9.87	10.71	11.37	11.12
Use **	9.52	10.39	10.97	10.90
Carry-out stocks	0.28	0.26	0.27	0.22
Trade	3.12	3.37	3.51	3.40
SUNFLOWER OIL				
Carry-in stocks	0.76	0.59	0.60	0.64
Production	<u>8.33</u>	<u>9.11</u>	<u>9.68</u>	<u>9.45</u>
Total supply	9.09	9.70	10.28	10.09
Use **	8.36	9.03	9.55	9.50
Carry-out stocks	0.59	0.60	0.64	0.59
Trade	3.57	3.79	3.80	3.80

* Major exporters: Russia, Ukraine, France, Argentina and US. Major importers: Belgium, France, Germany, Italy, Spain, Netherlands, Portugal, and Turkey.

** Totals may not add due to rounding

f: forecast, AAFC, January 2000

Source: USDA, January 2000

NuSun

Area seeded to NuSun hybrids in the US has increased from 40,000 hectares in 1998 to 180,000 hectares in 1999, about 15 percent of the total oilseed sunflower seeded area of 1.1 million hectares (mln ha). Yields are comparable to traditional hybrids. There are no confectionary type NuSun hybrids.

The oleic acid content of NuSun oil is in the 65 percent range compared to traditional sunflower oil at 16 percent, canola oil at 61 percent and soybean oil at 23 percent. Oil produced from

NuSun hybrids has less saturated fatty acids than traditional hybrids. The 72 percent linoleic acid content of traditional hybrids has been reduced to 26 percent, which means that hydrogenation, bubbling hydrogen into the oil, is not necessary for NuSun hybrids. Since there is no hydrogenation, there is no formation of trans fatty acids, which some nutritionists consider unhealthy. The high oleic acid and low saturated fat profile is believed to lower cholesterol and the risk of coronary heart disease.

USDA scientists have also developed plants with low levels of palmitic acid and others with low stearic acid levels. By crossing these plants with established breeding lines, they have produced oil with a palmitic-stearic range of 6-9 percent compared to 11-12 percent in traditional hybrids.

There are several advantages to NuSun oil. First, the costs of hydrogenation are avoided since it holds up longer in frying vats without flavour deterioration. Second, processing costs are lower since it is not necessary to replace the oil as frequently during frying as with other vegetable oils. Finally, at frying temperatures, NuSun oil produces more flavour-stable snack food.

The producers of NuSun receive a US\$11/t (Cdn\$16/t) premium over traditional oilseed hybrids.

For 2000-2001, area to NuSun in the US is expected to nearly triple to about 500,000 hectares, and represent about 45 percent of US oilseed type production. For Canada, three NuSun hybrids are expected to be registered in time for seeding in 2000. The area seeded is expected to be small for the first year as seed supply is expected to be limited and the Canadian oilseed type sunflowers are used mainly for bird seed, for which NuSun does not have an advantage. The expected premium of \$16/t is not high enough to attract additional seeded area for the oilseed type. Therefore the NuSun seeded area is expected to expand at the expense of traditional hybrids area.

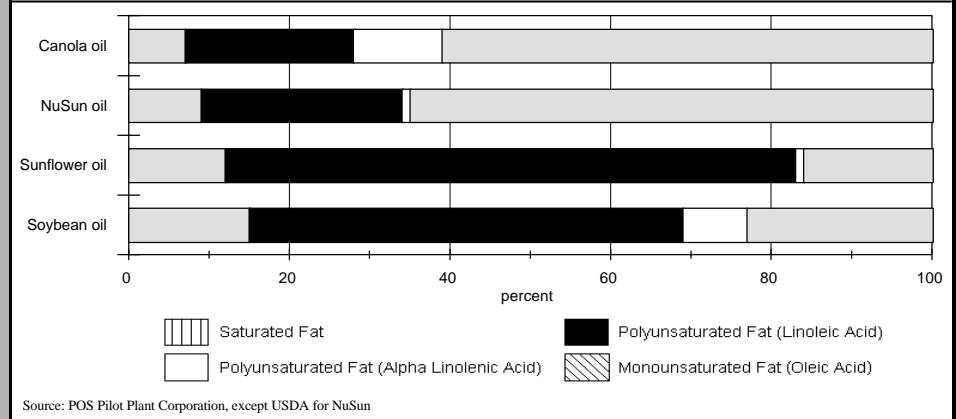
Over the longer term, in the US, the snack food market, the fast food industry, and the salad/home use market can absorb NuSun production from about 1.6 mln ha each. To supply all three markets, the seeded area would have to more than quadruple. However, a doubling of the seeded area over the longer term is more realistic, with NuSun gradually replacing the traditional oilseed hybrids.

The oil from NuSun is currently replacing mainly cotton seed oil, but as production increases, it will start replacing oil from traditional sunflower hybrids, soybeans, canola and other vegetable oils. The US Food and Drug Administration has proposed labelling regulations that would require food manufacturers to list the amount of trans fatty acids. The labelling regulation will probably be in place sometime between 2002 and 2004. This would give NuSun oil an advantage in the vegetable oil markets. Currently most sunflower oil produced in the US is exported, mainly to Europe, whereas the NuSun oil is expected to be used largely in the US. To satisfy the demand for NuSun hybrids, seed companies have switched their research focus from traditional hybrids to NuSun hybrids.

Canadian NuSun production should also increase in the future, although at a slower pace, due mainly to a limited area suitable for producing NuSun hybrids and the lack of a crushing plant. However over the longer term, the area seeded to oilseed sunflowers could double or even triple with the expansion of the NuSun area, and the crushing of sunflower seeds could resume in Canada.

Growth in NuSun production is expected to be limited to the US and, to a lesser extent, Canada, over the medium-term, due mainly to limited seed supply. However, the hybrids are being developed mainly by multinational seed companies and, over the longer term, NuSun production is expected to spread to other countries. Some of the countries in the EU have the most potential for expansion in production of NuSun varieties. In the EU, sunflower oil is already used extensively and any oil which is regarded as 'healthy' has an advantage in the market place. An additional advantage for NuSun in the EU is that there are no GM varieties.

COMPARISON OF DIETARY FATS



traders, exporters and processors. The Canadian Grain Commission administers quality standards for sunflower seed. The National Sunflower Association of Canada represents the industry in Canada for producers, processors and exporters.

Domestic Use

Canadian domestic use, which includes food, feed, seed, dockage and waste accounts for about 60 percent of production. Since 1995, sunflower seeds have not been crushed in Canada, but the lower crush use has been replaced by increased processing of confectionary sunflowers and increased use for bird seed. The markets for in-shell snack food, dehulled snack food, baking and bird seed have increased significantly. About 75 percent of the oilseed type sunflower seeds are used by the bird seed industry, as are about 20 percent of the confectionary type.

Exports

About 60 percent of Canadian sunflower seed exports are to the US, with the balance going mostly to Europe and Latin America. Most of the exports to the US are going to oilseed crushing plants. Exports to other parts of the world are for confectionary and bird seed use. In addition to the seed, prepackaged snack food, dehulled sunflower seeds and bird seed are also exported.

Prices

In general, Canadian sunflower seed prices follow US prices adjusted by exchange rates. Oilseed sunflower prices are affected by the supply and demand factors for vegetable oil and protein meal. The prices received by the producer are generally related to the percentage of oil in the seed. Confectionary sunflower seed prices are generally priced at a premium, to oilseed sunflower prices, which depends on supply and demand conditions in the confectionary market. The premium averaged \$95 per tonne (t) in 1997-1998, \$200/t in 1998-1999 and has averaged \$160/t to-date for 1999-2000.

The average price, weighted by a 50/50 split for oilseed/confectionary varieties, peaked at \$388/t in 1998-1999 and is forecast to decrease by about 15 percent in 1999-2000. Prices of oilseed sunflowers can be hedged indirectly against soybean or canola futures prices, but confectionary prices are negotiated directly between the producer, dealer and customer. The prices negotiated could be for immediate or future delivery. Bird seed sunflower prices follow the prices of the oilseed or confectionary sunflower seed, depending on which ones are bought.

OUTLOOK: 2000-2001

World

Total world sunflower seed production is expected to decline marginally to about 26.5 Mt mainly due to decreased production

in the Ukraine, where some shifting out of sunflower seeds into canola is expected. However world confectionary seed production is expected to increase slightly due to increasing demand for snack food. US oilseed production is forecast to increase slightly, and confectionary seed production is expected to increase by about 15 percent. In the EU, additional shifting out of sunflower seed production is expected as a result of the Agenda 2000 reforms. Production in Argentina is expected to remain stable. The decreased production, combined with decreased carry-in stocks, is expected to decrease use and carry-out stocks. Decreased crush will result in a decreased supply of oil and meal, with lower use and carry-out stocks of these products.

Canada

Canadian sunflower production is forecast to increase by about 5 percent to 130,000 t due to a 10 percent higher seeded area, which is expected to be partly offset by lower trend yields. Oilseed type production is forecast to remain stable at about 55,000 t while confectionary type production increases by about 10 percent to 75,000 t. Total supply is forecast to grow by about 5 percent to 175,000 t. Exports are expected to remain stable and domestic use is expected to increase by 10 percent to 80,000 t. Therefore carry-out stocks are forecast to remain stable at about 35,000 t, but with a slightly lower stocks-to-use ratio of 25 percent. The average price, over both types, is forecast to be similar to, or slightly lower than 1999-2000.

For more information, please contact:

Stan Skrypetz
Special Crops Analyst
Phone: (204) 983-8972
E-mail: skrypetzs@em.agr.ca

Market Analysis Division Website:

<http://www.agr.ca/policy/winn/biweekly/index.htm>

The Bi-weekly Bulletin is published by the:

Market Analysis Division,
Policy Branch,
Adaptation and Grain Policy Directorate,
Agriculture and Agri-Food Canada,
500-303 Main Street
Winnipeg, Manitoba R3C 3G7
Telephone: (204) 983-8473
Fax: (204) 983-5524

Director: Maggie Liu
 Chief: Fred Oleson

Information and articles in this newsletter may be reproduced with credit.

Aussi disponible en français.

CANADA: SUNFLOWER SEED SUPPLY AND DISPOSITION

<i>August-July crop year</i>	1996 -1997	1997 -1998	1998 -1999	1999 -2000f	2000 -2001f
Harvested Area (000 ha)	35	51	69	79	90
Yield (t/ha)	1.57	1.29	1.62	1.54	1.44
 thousand tonnes.....				
Carry-in stocks	24	24	10	35	35
Production	55	65	112	122	130
Imports	<u>12</u>	<u>12</u>	<u>17</u>	<u>10</u>	<u>10</u>
Total Supply	91	101	139	167	175
Exports	24	45	43	60	60
Total Domestic Use	43	46	61	72	80
Carry-out Stocks	24	10	35	35	35
Stocks-to-Use-Ratio (%)	36	11	34	27	25
Average producer price (\$/t)	345	344	388	310-340	300-340
Harvested Area (000 ac)	86	126	170	195	222
Yield (lbs/ac)	1,401	1,151	1,445	1,374	1,285
Production (million lbs)	121	143	247	269	287
Average producer price (\$/lb)	0.16	0.16	0.18	0.140	0.135
				-0.155	-0.155

f: Agriculture and Agri-Food Canada forecast, January 2000

Source: Statistics Canada and Agriculture and Agri-Food Canada