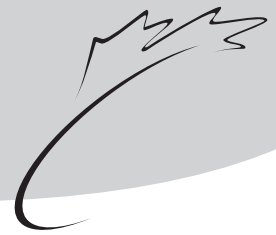




# Bi-weekly Bulletin

May 2, 2003 Volume 16 Number 10



## CANARY SEED: SITUATION AND OUTLOOK

Canada accounts for about 75% of world production and also has a 75% share of world exports of canary seed. The value of Canadian canary seed exports in 2002-2003 is expected to exceed the \$97 million reached in 2001-2002. Canary seed prices have remained historically high in 2002-2003, but for 2003-2004 Canadian canary seed production is forecast to increase and the average price is forecast to fall significantly. In the longer term, Canario, which was developed in Canada, offers opportunities for food and industrial uses, and is expected to result in increased demand and production. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for canary seed.

### WORLD

#### Production and Trade

During the past 10 years, world canary seed production ranged from a low of 167,000 tonnes (t) in 1997-1998 to a high of 300,000 t in 1994-1995. Annual production is extremely variable, but the variability is mainly in Canada which accounts for about 75% of world production. Hungary and Argentina are the only other significant canary seed producers, each accounting for about 10% of world production.

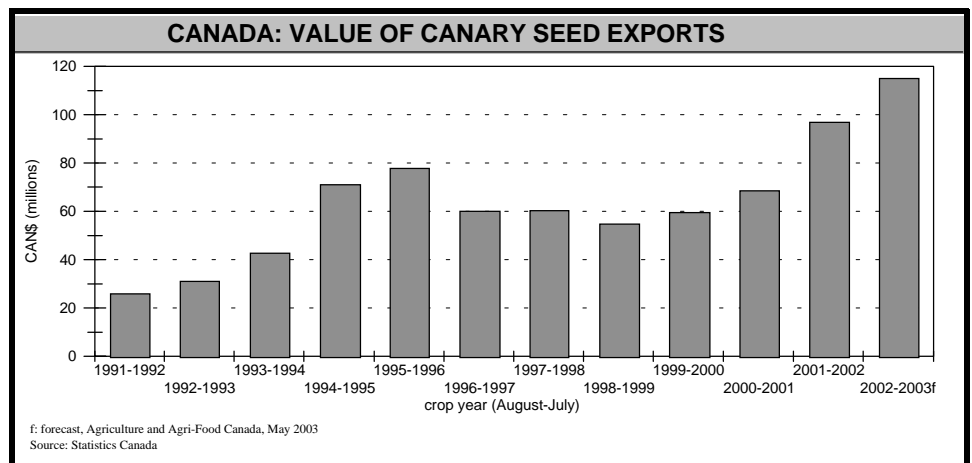
Most of the world's canary seed production is exported. Canary seed exports increased rapidly during the early 1990s, but subsequently exports have stabilized at about 220,000 t. Although normally there is little substitution of other birdseed for canary seed, substitution occurs in years when the canary seed price is high compared to alternatives, such as millet. The substitution occurs mainly in wild bird seed mixtures. In 2001, the latest year for which statistics are available, world exports were 225,000 t and imports

234,000 t. However, about 15% of the exports were re-exported to third countries. Canada dominates world exports with about 75% of the exports in 2001, if re-exports are excluded. Argentina and Hungary are the only other significant exporters of canary seed, excluding re-exporters such as the United States (US), Belgium and Netherlands. Imports are much more widely distributed than exports, with the top seven importing countries (Mexico, Brazil, Belgium, the US, Spain, Germany and Italy) accounting for about 75% of imports.

### CANADA

#### Production

Canary seed is a cool season crop which prefers long warm days and cool nights. It is well suited to the Canadian prairies and matures in approximately 100 days. Canary seed is shallow rooted and is more sensitive to heat and less drought tolerant and salt tolerant than wheat. It does best on heavy clay or clay loam, moisture retentive soils. Canary seed should be planted as early in May as possible. Late seeding can lead to delayed maturation of the straw during harvest. Canary seed is shatter



resistant, which allows it to be straight combined. If the crop is swathed, it should not be cut until it has reached full maturity and should be combined soon after swathing. Caution should be taken to keep dehulling to a minimum, since dehulled seed is classified as dockage and must be cleaned out. Canary seed with the hull intact is shiny and golden yellow. Dehulled canary seed is dark brown in colour. Canary seed can be stored for long periods of time without losing quality, provided it is put into storage in good condition. Canadian canary seed is normally harvested in September and early October.

Canadian canary seed production increased during the early 1990s, but has been variable since then. The peak in production was in 1996-1997 with 285,000 t. In 2001-2002 and 2002-2003, production was reduced by drought. On average, Saskatchewan accounted for 85% of Canadian production, followed by Manitoba at 10% and Alberta at 5%.

### Canario

Canario is a glabrous or hairless type of canary seed developed in Canada, with

first commercial production starting in 1997. Canary seed has tiny hairs at the base of the seed that break off and cause severe itching to producers, processors, and packagers. Canario eliminates that problem. Canario also helps the industry through reduced shipping costs due to 12% greater seed packing per container and the elimination of the oiling and polishing steps in processing.

The Canadian Special Crops Association (CSCA) has obtained registration for the trademark Canario in Canada, European Union and Mexico. Registration in the US and Brazil is pending. Canario varieties must be 97% glabrous in order to bear the Canario trademark. The Canadian Grain Commission has developed a Canario Seed Analysis Certificate to be used for shipments of canary seed which meet the Canario standard.

### Uses

Canary seed has only one market at the present time, as a major component in seed mixtures for pet and wild birds. Typically it is mixed with seeds such as

millet, sunflower seed, safflower seed, niger seed, buckwheat, cereal grains, flaxseed, and canola.

### Marketing

All of the canary seed produced in Canada is sold on the open market to dealers. Canary seed going to customers in Canada and the US is shipped bulk in trucks or in containers which are carried by trucks or trains. Canary seed going to northern Europe is usually shipped bulk, whereas canary seed going to customers in southern Europe and other parts of the world is usually shipped in containers. Some canary seed is grown under production contracts, which guarantee a price for part of the production, but most is sold on the spot market.

The Canadian Special Crops Association ([www.specialcrops.mb.ca](http://www.specialcrops.mb.ca)) establishes trade rules and serves as a forum for exporters, dealers and brokers involved in the industry of trading Canada's pulse and special crops, including canary seed.

Preliminary work is underway to establish a canary seed growers organization in Saskatchewan.

Canary seed does not fall under the Canada Grain Act and Regulations (CGAR). Therefore, the Canadian Grain Commission (CGC - [www.grainscanada.gc.ca](http://www.grainscanada.gc.ca)) has not established grades for the crop and canary seed producers do not qualify for compensation should companies licensed by the CGC default on their payments. The CGC is gathering input from producers and other sectors of the canary seed industry until May 30, 2003 on whether canary seed should be designated a grain and regulated under the CGAR. The CGC does perform dockage analysis on canary seed samples submitted.

## WORLD: CANARY SEED SUPPLY AND DISPOSITION

	1999 -2000	2000 -2001	2001 -2002	2002 -2003f	2003 -2004f
Harvested Area (000 ha)	208	226	222	268	305
Average Yields (t/ha)	1.11	1.00	0.77	0.80	0.95
.....thousand tonnes.....					
Carry-in Stocks (e)	115	95	75	30	25
Production:					
<i>Canada*</i>	166	171	114	164	235
<i>Hungary</i>	30	21	25	23	23
<i>Argentina</i>	24	22	19	17	21
<i>Australia</i>	5	5	6	5	5
<i>Uruguay</i>	3	3	3	3	3
<i>Thailand</i>	2	2	2	2	2
<i>Mexico/Spain/Turkey</i>	1	1	1	1	1
Total Production	231	225	170	215	290
<b>Total Supply</b>	<b>346</b>	<b>320</b>	<b>245</b>	<b>245</b>	<b>315</b>
<b>Total Use (e)</b>	<b>251</b>	<b>245</b>	<b>215</b>	<b>220</b>	<b>255</b>
Carry-out Stocks (e)	95	75	30	25	60

e: estimate, Agriculture and Agri-Food Canada, May 2003

f: forecast, Agriculture and Agri-Food Canada, May 2003

Source: FAO, except \* which is Statistics Canada, May 2003

Export specifications for canary seed are usually minimum 99% pure seed, with a maximum of 4% dehulled seed.

### Domestic Use

Canadian domestic use, which includes bird seed, seed and dockage, has ranged from about 20,000 t to 29,000 t during the past three years. Canary seed is mixed with other seed for bird seed by processors located in western and central Canada, and sold under their own brands or under customized store brands. No standards exist for mixes or packaging. A company in Saskatchewan is using organic canary seed in organic bird seed mixtures.

### Exports

Canadian exports of canary seed are mainly in the bulk, unprocessed form, although packaged seed mixtures are also exported. Exports peaked at 170,000 t in 2000-2001, but fell sharply in 2001-2002 to 134,000 t, due to lower production, and are forecast at 145,000 t for 2002-2003. The western hemisphere and Europe are the main destinations for Canadian canary seed, although it is exported throughout the world. The main importing countries, in order of importance, are Mexico, Belgium, the US, Brazil, Spain, Venezuela, Italy, Colombia, Chile and Portugal. Although Canada is the dominant exporter, it has competition from Argentina in South America and from Hungary in Europe.

### Prices

Canadian prices are determined on an export basis because Canada exports about 75% of its canary seed production. They are, therefore, highly sensitive to the value of the Canadian dollar in foreign markets. Since there are no futures markets for canary seed, prices are negotiated between the producer, dealer and customer based on supply and demand factors. The prices negotiated could be for immediate or future delivery. Average producer prices rose steadily during the early 1990s until 1995-1996. Since then, the average price has been more volatile, depending

on the total supply, and reached a low of \$240 per tonne (/t) in 1999-2000. The average price increased sharply in 2001-2002 to \$660/t due to sharply lower supply, but is forecast to decrease for 2002-2003.

### OUTLOOK

#### World: 2003-2004

Production is forecast to increase by 35% to 290,000 t, mainly because of higher production in Canada. Total supply is forecast to increase by 28% to 315,000 t. Total use is expected to increase because of the higher supply and lower prices, but carry-out stocks are also expected to increase.

#### Canada: 2003-2004

Area seeded is forecast to decrease by 6% from 2002-2003, due to expected lower prices and competition from alternate crops. However, the harvested area is expected to increase by 17%, assuming normal abandonment. Due to dry soil conditions in some canary seed growing areas of western Canada, average yields are forecast to be slightly below trend, but significantly higher than in 2002-2003. Assuming normal precipitation during the growing season, production is forecast to increase by 43% to 235,000 t. Total supply is forecast to increase by 31% to 255,000 t. Exports are forecast to increase because of the larger supply and lower prices. Carry-out stocks are expected to increase, with a stocks-to-use ratio of 27%. The average price is forecast to decrease by about 40% because of the larger supply. However, due to low carry-in stocks, prices are expected to be very sensitive to any production problems. The main factors to watch are precipitation during the growing season and the exchange rate of the Canadian dollar against the

US dollar and other currencies.

### Canada: Longer Term

The development of Canario offers opportunities for food and industrial uses. Researchers have established that Canario groats (dehulled seed) have a protein content of about 19%, which is significantly higher than for wheat and other cereal grains and is close to pulse crops. Canario's oil content is about 9%, about four times as high as for wheat. The oil is made up of 32% oleic and 54% linoleic fatty acids, a desirable composition for human consumption. Prolamin and glutelin are the main

### WORLD: CANARY SEED EXPORTS

<i>calendar year</i>	1997	1998	1999	2000	2001
	.....thousand tonnes.....				
Canada*	136	127	145	158	166
Argentina	9	15	21	21	22
Belgium	8	9	11	9	13
United States	20	21	20	14	8
Netherlands	7	6	5	5	5
Hungary	21	33	27	5	5
Australia	1	2	2	3	1
Other	<u>10</u>	<u>10</u>	<u>2</u>	<u>3</u>	<u>5</u>
<b>Total</b>	<b>212</b>	<b>223</b>	<b>233</b>	<b>218</b>	<b>225</b>

### WORLD: CANARY SEED IMPORTS

<i>calendar year</i>	1997	1998	1999	2000	2001
	.....thousand tonnes.....				
Mexico	42	51	49	54	53
Brazil	39	42	39	42	38
Belgium	31	27	30	34	36
United States	15	19	17	14	16
Spain	17	17	16	14	15
Germany	7	5	7	5	10
Italy	11	13	15	10	9
Venezuela	4	4	5	6	7
Colombia	2	3	4	4	6
United Kingdom	12	4	7	7	4
Netherlands	9	9	10	5	4
Portugal	5	5	5	5	4
Chile	3	3	4	4	4
France	4	5	4	5	4
Peru	1	1	1	2	3
Other	<u>22</u>	<u>16</u>	<u>16</u>	<u>22</u>	<u>21</u>
<b>Total</b>	<b>224</b>	<b>224</b>	<b>229</b>	<b>233</b>	<b>234</b>

The difference between imports and exports is attributed to the timing of delivery.

Source: FAO, except \* which is Statistics Canada, May 2003

storage proteins in canary seed, constituting 78% of total proteins. Canary seed protein is high in cystine, tryptophan and phenylalanine, but low in lysine and threonine. It would be a good supplemental protein source for dairy proteins, such as casein and whey proteins. Its starch content is similar to wheat, at about 61%. Canario has a high lipid content, which could be valuable by-product. The presence of antioxidant activity in Canario lipid could be a delaying factor in rancidity of Canario products during storage. Canario starch comprises small polygonal granules, smaller than commercially available starches. It was

found to form a rigid gel which was stable under cooling and freezing conditions.

Canario seed could be roasted and used as a low fat substitute for sesame seed in bread and snack food. It has the potential for use as a fat substitute because the oil is high in unsaturated fat. Canario's starch properties could make it suitable for use in the cosmetics industry or as an industrial dusting starch. Canario can be separated into starch, protein, oil and fibre by wet milling. The flour can be used in baking wheat-Canario and multi-grain bread and cookies.

The use of Canario for food and industrial products is expected to encourage premium pricing for Canario compared to traditional canary seed. It would also increase demand for Canadian canary seed significantly and increase production. This in turn would result in increased economic diversification through the replacement of traditional crops and through the development of new processing opportunities for food and industrial uses.

*For periodic updates on the situation and outlook for canary seed, visit the Market Analysis Division Website for "Canada: Pulse and Special Crops Outlook."*

### CANADA: CANARY SEED SUPPLY AND DISPOSITION

<i>August-July crop year</i>	<b>1999 -2000</b>	<b>2000 -2001</b>	<b>2001 -2002</b>	<b>2002 -2003f</b>	<b>2003 -2004f</b>
Seeded Area (000 ha)	150	166	170	275	259
Harvested Area (000 ha)	146	164	163	214	250
Yield (t/ha)	1.14	1.04	0.70	0.77	0.94
..... thousand tonnes.....					
Carry-in Stocks	110	90	70	30	20
Production	<u>166</u>	<u>171</u>	<u>114</u>	<u>164</u>	<u>235</u>
<b>Total Supply</b>	<b>276</b>	<b>261</b>	<b>184</b>	<b>194</b>	<b>255</b>
Exports:					
<i>Europe</i>	66	54	49	47	53
<i>Central America</i>	42	53	35	37	42
<i>South America</i>	28	42	29	35	38
<i>United States</i>	15	15	15	19	20
<i>Middle East &amp; Africa</i>	4	4	3	4	4
<i>Asia &amp; Oceania</i>	<u>2</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>
Total Exports	157	170	134	145	160
Total Domestic Use	<u>29</u>	<u>21</u>	<u>20</u>	<u>29</u>	<u>40</u>
<b>Total Use</b>	<b>186</b>	<b>191</b>	<b>154</b>	<b>174</b>	<b>200</b>
<b>Carry-out Stocks</b>	<b>90</b>	<b>70</b>	<b>30</b>	<b>20</b>	<b>55</b>
Stocks-to-use ratio (%)	48	37	19	11	27
Harvested Area (000 ac.)	361	405	403	529	618
Yield (lb/ac.)	1,014	930	624	684	839
Production (Mlb)	366	377	251	362	518
Average producer price					
\$/t	240	265	660	600	340
\$/lb	0.11	0.12	0.30	0.27	0.15
				-0.29	-0.17

f: forecast, Agriculture and Agri-Food Canada, May 2003

Source: Statistics Canada and Agriculture and Agri-Food Canada

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

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*While the Market Analysis Division assumes responsibility for all information contained in this bulletin,  
we wish to gratefully acknowledge input from the following:*

Alberta Agriculture, Food and Rural Development, Canadian Special Crops Association,  
Saskatchewan Agriculture, Food and Rural Revitalization, Market and Industry Services Branch (AAFC)