



Bi-weekly Bulletin

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CANARY SEED: SITUATION AND OUTLOOK

(with an overview of Canadian spice crops production)

Canada accounts for about 85% of world production and about 90% of world exports of canary seed. The value of Canadian canary seed exports averaged about \$100 million during the past five years. For 2005-2006, Canadian canary seed production is forecast to decrease, but supply is expected to be similar to 2004-2005. Therefore, the average price is forecast to be the same as in 2004-2005. 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. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for canary seed. It also includes an overview of Canadian spice crops production.

WORLD

Production and Trade

During the past 10 years, world canary seed production ranged from a low of 149,000 tonnes (t) in 2001-2002 to a high of 347,000 t in 1996-1997. Annual production was variable, but the variability was mainly in Canada.

Most of the world's canary seed production is exported. Canary seed exports have been relatively stable during the past ten years, averaging about 210,000 t per year. 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 2003, the latest year for which statistics are available, world exports were 204,000 t and imports 221,000 t. However, about 10% of the exports were re-exported to third countries. Canada dominates world exports, accounting for about 90% of the exports in 2003, 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 five importing countries (Mexico, Brazil, Belgium, US and Spain) accounting for about 65% 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

WORLD: CANARY SEED SUPPLY AND DISPOSITION

	2001-2002	2002-2003	2003-2004	2004-2005f	2005-2006f
Harvested Area (000 ha)	197	261	290	355	280
Average Yields (t/ha)	0.76	0.81	0.91	0.96	0.96
thousand tonnes.....				
Canada*	114	176	226	300	230
Hungary	5	8	10	11	11
Argentina	19	17	18	17	18
Australia	6	6	6	6	6
Uruguay	3	3	3	3	3
Mexico, Turkey, Spain	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
Total Production	149	212	265	339	270
Carry-in Stocks (e)	<u>70</u>	<u>30</u>	<u>20</u>	<u>67</u>	<u>140</u>
Total Supply (e)	219	242	285	406	410
Total Use (e)	189	222	218	266	275
Carry-out Stocks (e)	30	20	67	140	135
Stocks-to-use ratio (%)	16	9	31	53	49

Source: FAO, except *Statistics Canada - March 2005

f: AAFC forecast, March 2005

e: AAFC estimate, March 2005

harvested in September and early October.

Canadian canary seed production during the past ten years has been variable, ranging from 114,000 t in 2001-2002 to 300,000 t in 2004-2005. Canada's share of world production increased during this period as production in Argentina and Hungary decreased. On average, Saskatchewan accounted for 90% of Canadian production, with the remainder produced in Manitoba and Alberta.

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 (CGC) 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 (CSCA) (www.specialcrops.mb.ca) establishes trade rules for domestic trade 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. The website includes a section where buyers can submit a request for prices.

Canary seed does not fall under the Canada Grain Act and Regulations. Therefore, the CGC (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.

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 20,000 t to 50,000 t per year during the past ten 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.

Canada: Canary Seed Supply and Disposition

	2001- 2002	2002- 2003	2003- 2004	2004- 2005f	2005- 2006f
Aug - July crop year					
Seeded Area (000 ha)	170	287	251	356	249
Harvested Area (000 ha)	163	227	243	318	242
Yield (t/ha)	0.70	0.78	0.93	0.94	0.95
thousand tonnes.....				
Carry-in stocks	70	30	20	67	140
Production	114	176	226	300	230
Total Supply	184	206	246	367	370
Exports					
Europe	49	49	51	53	54
Central America	35	38	35	39	41
South America	29	41	53	55	55
United States	15	26	20	22	24
Middle East & Africa	3	6	6	6	6
Asia & Oceania	3	4	5	5	5
Total Exports	134	164	170	180	185
Total Domestic Use	20	22	*9	47	50
Total Use	154	186	179	227	235
Carry-out Stocks	30	20	67	140	135
Stocks-to-use ratio (%)	19	11	37	62	57
Seeded Area (000 ac)	420	709	620	880	615
Yield (lbs/ac)	624	692	830	842	848
Average producer price					
\$/t	660	575	345	215-245	215-245
\$/lb	0.30	0.26	0.156	0.10-0.11	0.10-0.11

Source: Statistics Canada and AAFC

f: Agriculture and Agri-Food Canada forecast, March 2005

Note*: Domestic use is calculated residually. For 2003-04, based on export and carry-out stocks data, it appears that Statistics Canada's production estimate may be low or carry-out stocks high resulting in a very low residual.

Exports

Canadian exports of canary seed are mainly in the bulk, unprocessed form, although packaged seed mixtures are also exported. Exports have been variable, ranging from 122,000 t to 170,000 t per year, but with a slight upward trend during the past ten years. The western hemisphere and Europe are the main destinations for Canadian canary seed, although it is exported throughout the world. The main importing countries are Mexico, US, Brazil, Venezuela, Colombia, Belgium, Italy and Spain. Although Canada is the dominant exporter, it has competition from Argentina in Brazil and from Hungary in Europe.

Prices

Canadian prices are determined on an export basis because Canada exports about 85% 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. The average price has been volatile, depending on supply, ranging from \$240 to \$660 per tonne (/t) during the past ten years.

OUTLOOK

World: 2005-2006

Production is forecast to decrease by 20%, from 2004-2005, to 270,000 t, because of lower production in Canada. Total supply is forecast to increase marginally to 410,000 t, due to sharply higher carry-in stocks. Total use is expected to increase slightly due to higher demand and carry-out stocks are expected to decrease slightly.

Canada: 2005-2006

Area seeded is forecast to decrease by 30% from 2004-2005, due to lower potential returns compared to many alternative crops. However, the harvested area is expected to decrease by 24%, assuming a return to normal abandonment. The abandonment in 2004-2005 was higher than normal due to frost damage and a late harvest. Assuming trend yields, production is forecast to decrease by 23% to 230,000 t. Total

supply is forecast to increase marginally to 370,000 t due to higher carry-in stocks. Exports are forecast to increase slightly because of higher demand and carry-out stocks are expected to decrease slightly. The average price is forecast to be the same as in 2004-2005 because of the relatively stable supply. The main factor to watch is precipitation during the growing and harvest periods.

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 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 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.

World: Canary Seed Exports					
Calendar Year	1999	2000	2001	2002	2003
.....thousands of tonnes.....					
Canada*	145	158	166	146	170
Argentina	21	22	22	12	9
US	20	14	8	11	8
Belgium	11	9	13	9	6
Netherlands	5	5	5	5	3
Hungary	27	5	5	8	4
Australia	2	3	1	1	0
Other	2	3	5	4	4
Total	233	219	225	196	204

Source: FAO, except *Statistics Canada
- March 2005

World: Canary Seed Imports					
Calendar Year	1999	2000	2001	2002	2003
.....thousands of tonnes.....					
Mexico	42	51	49	54	53
Brazil	39	42	38	33	33
Belgium	30	34	36	24	22
US	15	19	17	14	16
Spain	17	17	16	14	15
Italy	15	10	9	10	9
Colombia	3	4	6	5	9
Venezuela	4	4	5	6	7
UK	12	4	7	7	4
Netherlands	9	9	10	5	4
Portugal	5	5	5	5	4
Chile	4	4	4	4	4
Germany	7	5	10	3	3
France	4	5	4	3	3
Peru	1	1	1	2	3
Algeria	2	2	1	2	2
China	1	2	2	1	2
Greece	2	2	1	1	2
Japan	2	2	2	1	2
Guatemala	1	1	1	1	1
Indonesia	1	1	1	2	2
Other	22	16	16	22	21
Total	238	240	241	219	221

Source: FAO - March 2005

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

US: United States
UK: United Kingdom

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. 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.

SPICE CROPS

Saskatchewan: Caraway Seed Area, Production and Prices								
Aug - July crop year	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005f
Seeded Area (000 ha)	5.0	4.8	4.0	8.1	6.1	8.1	8.1	4.0
Harvested Area (000 ha)	4.4	3.5	4.0	7.3	4.1	6.1	6.1	4.0
Yield (t/ha)	0.59	0.60	0.85	0.75	0.32	0.39	0.52	0.63
Production (000 t)	2.6	2.1	3.4	5.5	1.3	2.4	3.2	2.5
Average Price (\$/t)	770	680	730	1,030	1,450	1,450	880	790
Canadian Exports (000t)	1.6	2.8	3.8	2.5	2.5	2.0	2.0	2.5

Saskatchewan: Coriander Seed Area, Production and Prices								
Aug - July crop year	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005f
Seeded Area (000 ha)	8.8	10.1	8.1	6.1	6.1	8.1	8.1	12.1
Harvested Area (000 ha)	8.5	10.1	8.1	6.1	6.1	7.3	8.1	10.1
Yield (t/ha)	0.62	0.93	0.88	0.66	0.66	0.71	0.59	0.78
Production (000 t)	5.3	9.4	7.1	4.0	4.0	5.2	4.8	7.9
Average Price (\$/t)	790	460	370	370	550	570	570	440
Canadian Exports (000t)	3.8	4.2	4.5	4.8	3.8	3.1	5.6	4.0

Source: Statistics Canada, Saskatchewan Agriculture, Food and Rural Revitalization, and AAFC
f: Agriculture and Agri-Food Canada forecast, March 2005

Canadian spice crops production is concentrated in Saskatchewan, with smaller volumes produced in Manitoba and Alberta. The main spice crops produced in Canada are caraway seed and coriander seed, but a small amounts of fenugreek seed and dill seed are also produced.

Seed from spice crops is used to add flavour to food. Caraway seed is used to flavour such foods as bread, cheese and sauerkraut. Coriander seed is used to flavour products such as curries, gin and prepared meats.

Caraway seed produced in Canada is usually from biennial varieties which require a second growing season to produce seed. Although annual varieties are available, they are lower yielding and late maturing, which increases the risk of frost damage. Coriander seed is an annual crop.

World production data for caraway seed and coriander seed is not available. Caraway seed is produced mainly in northern Europe, India, US and Canada. Coriander seed is produced mainly in countries along the Mediterranean and Black seas, Argentina, India and Canada.

Canadian production data for caraway seed and coriander seed is only available for the main producing province, Saskatchewan. Production of both crops in Saskatchewan has been variable, in line with variable seeded area, crop abandonment and yields. Spice crops are sometimes grown under production contracts. Average prices have also varied due to production variability in Canada and other producing countries and lack of world production data.

Most of Canadian caraway seed and coriander seed exports are to the US. Other significant destinations for caraway seed are Netherlands, Belgium and Germany, and for coriander seed United Kingdom, Trinidad and Tobago, Sri Lanka, Mexico, Japan and Brazil.

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