



Bi-weekly Bulletin

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CHICKPEAS: SITUATION AND OUTLOOK

In Canada, commercial chickpea production started in the mid-1990s and grew rapidly until reaching its peak of 455,000 tonnes (t) in 2001-2002. For the next three years production declined, but started recovering in 2005-2006. Canadian exports followed production trends and Canada became a major exporter of chickpeas, placing among the top five in the world. The value of Canadian chickpea exports declined from a high of \$83 million (M) in 2001 to \$37M in 2005. For 2006-2007, production and exports are expected to increase from 2005-2006, and prices are forecast to decrease for the kabuli type and increase for the desi type. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for chickpeas.

WORLD

Production

During the past 10 years, although world production has been variable, ranging from a low of 6.76 million tonnes (Mt) in 2000-2001 to a high of 9.56 Mt in 1998-1999, there has not been a downward or an upward trend. India accounted for 60-70% of world production during this period.

The two commercial types of chickpeas produced are desi and kabuli. Countries in the Indian sub-continent and Australia produced mainly the desi type, Canada produces both the kabuli and desi types, and the remaining countries produced mainly the kabuli type. On average, world production consisted of about 75% desi type and 25% kabuli type. Production of the kabuli type is more dispersed and therefore less variable than for the desi type.

Trade

World exports during the past 10 years were variable, but with no downward or upward trend. Exports ranged from a low of 514,000 t in calendar year 1999 to a high of 998,000 t in 2001, depending mainly on domestic

production volumes in India and other countries which both produce and import chickpeas. In 2004, the latest year for which complete world trade statistics are

available, exports were 682,000 t. During the past 10 years, India was the largest importer of chickpeas, but imports were extremely variable, depending on the

volume of production in India and price. India and surrounding countries import mainly the desi type, while countries in North and South America, Europe, the Middle East and Africa import mainly the kabuli type.

CANADA

Production

Chickpea production at the commercial level in Canada started in 1995-1996 at about 1,000 t, but increased rapidly during the next six years to 455,000 t in 2001-2002. Production fell sharply in 2002-2003 due to lower seeded area and wet harvest conditions. Seeded area and production fell further in 2003-2004 and 2004-2005. The decreases in seeded area were due to the difficulty and high cost of controlling ascochyta blight, yield and quality losses during wet harvests, and price decreases. Production recovered in 2005-2006 as higher prices for the kabuli type encouraged additional seeding.

WORLD: CHICKPEA SUPPLY AND DISPOSITION					
	2002	2003	2004	2005	2006
	-2003	-2004	-2005	-2006p	-2007f
Harvested Area (kha)	9,900	10,925	10,545	10,710	10,800
Average Yields (t/ha)	0.72	0.80	0.79	0.82	0.80
thousand tonnes.....				
Carry-in Stocks (e)	400	100	400	300	500
Production:					
India	4,240	5,720	5,470	5,650	5,700
Turkey	650	600	620	610	610
Pakistan	362	675	611	868	400
Australia	139	186	123	138	304
Iran	300	310	310	310	280
Mexico	235	240	240	240	240
Myanmar	212	228	230	230	230
Canada	156	68	51	104	163
Ethiopia	187	114	136	135	135
Iraq	97	104	100	95	100
United States	38	20	27	49	67
Syria	89	87	45	55	55
Spain	70	51	57	18	40
Morocco	51	43	42	42	40
Other	259	275	271	288	286
Total Production	7,085	8,721	8,333	8,832	8,650
Total Production - Kabuli (e)	2,103	1,885	1,871	1,914	2,005
Total Production - Desi (e)	4,982	6,866	6,462	6,918	6,645
Total Supply	7,485	8,821	8,733	9,132	9,150
Total Use (e)	7,385	8,421	8,433	8,632	8,650
Carry-out Stocks (e)	100	400	300	500	500
Stocks-to-use ratio	1%	5%	4%	6%	6%

e: estimate, AAFC, September 2006; p: preliminary
f: forecast: AAFC and Pulse Australia, September 2006
Source: FAO, India Department of Agriculture, ABARE, Pulse Australia, USDA and Statistics Canada

Saskatchewan accounted for at least 80% of Canadian production and Alberta for the balance. Chickpeas have contributed to the diversification of crop production in these provinces and are valuable in crop rotations which improve soil tilth and fertility. The production of chickpeas has also contributed to the expansion of the pulse crops handling, marketing and processing industry, which increased employment opportunities in rural areas.

Kabuli chickpeas, also known as garbanzo beans, have a larger, cream-coloured seed with a thin seed coat. The desi type has a smaller, darker coloured seed with a thick seed coat. Included in kabuli chickpea production are the large kabuli type with the seed size mostly 8-9 millimetres (mm) and a seed weight of about 410-490 grams/1000 seed, and the small kabuli type, which have a more uniform seed size of about 7 mm and a seed weight of about 265 grams/1000 seed. Yields of the desi and small kabuli types are about 20% higher than of the large kabuli type.

There are two serious limitations for chickpea production in Canada, the long growing season requirement for current varieties and the high risk of the extremely aggressive disease, ascochyta blight. Chickpeas have an indeterminate growth habit and will continue to flower while growing conditions remain favourable for vegetative growth. Thus, moisture or nitrogen stress is required to encourage seed set and hasten maturity. The ideal growing conditions are moderate precipitation and normal to above normal temperatures from seeding to late July and then drought for the maturing and harvest periods. Because of the growth habit, kabuli chickpeas are best adapted to the Brown soil zone and desi chickpeas to the Dark Brown and Brown soil zones. Both soil zones are located in south-western Saskatchewan and south-eastern Alberta. Chickpeas are relatively drought tolerant due to the long tap root. They are not well adapted to high moisture areas, saline soils, soils which are slow to warm in the spring and wet or waterlogged soils. Chickpea production works well in rotation with cereal grains such as spring or

durum wheat. Nitrogen fertilizer is usually not required since chickpeas possess the ability to fix nitrogen from the air in nodules on the roots where it is used for plant growth. To maximize the nitrogen fixation ability, chickpea seed should be inoculated with the chickpea strain of nitrogen-fixing inoculants.

The stage of crop development should be closely monitored nearing harvest, as weathered seed and dark seed discolouration (green, brown, black) makes the seed less desirable to processors and consumers. Kabuli chickpea colour is especially important because buyers prefer

a yellowish-cream colour. Early fall frost can result in green discolouration of immature kabuli chickpea seed, which will reduce the value of the crop. Other important factors affecting visual quality are levels of admixture, seed size and seed uniformity. The use of conveyors instead of augers when handling chickpeas will reduce mechanical damage. The Canadian chickpea harvest generally occurs during the period from late-August to early October.

Marketing

All of the chickpeas produced in Canada are sold on the open market to dealers, mainly in Saskatchewan, who buy, clean and ship chickpeas to domestic and export consumers. There is also some dehulling and splitting of desi chickpeas in Saskatchewan. Some chickpeas are grown, under production contracts, which guarantee a price for part of the production, but most are sold on the spot market. Chickpeas are shipped mainly bagged in containers, although some are also shipped bulk in containers or bulk inside the hold of ships.

Domestic Use

Domestic use consists of food, feed, seed, dockage and waste. Only small volumes of low quality chickpeas are used for livestock feed, however nutritional analysis indicates that they make an excellent feed for hogs, cattle and poultry.

Exports

Canadian chickpea exports had been increasing, in line with the increase in production, and Canada became the world's third largest exporter in 2002. For the next three years, exports decreased as production fell, and Canada became the fourth or fifth largest exporter in the world, but with the recovery in production, Canada could once again become the third largest exporter. The main markets by region, with the leading countries in brackets, are: Asia (India, Pakistan and Bangladesh), Europe (Spain, Italy, Portugal, United Kingdom and Belgium), the Middle East (United Arab Emirates, Jordan and Egypt), Africa (Algeria), South America (Colombia and Brazil), Central America and the Caribbean (Trinidad and Tobago),

CANADA: CHICKPEA SUPPLY AND DISPOSITION						
<i>crop year</i>	2002	2003	2004	2005	2006	
<i>August-July</i>	-2003	-2004	-2005	-2006p	-2007f	
Seeded Area (kha)	221	63	47	79	144	
Harvested Area (kha)	154	63	39	73	142	
Yield (t/ha)	1.01	1.08	1.31	1.42	1.15	
thousand tonnes.....					
Carry-in stocks	180	80	25	5	10	
Production:						
Large Kabuli	55	22	23	47	69	
Small Kabuli	31	15	17	45	73	
Desi	<u>70</u>	<u>31</u>	<u>11</u>	<u>12</u>	<u>21</u>	
Total Production	156	68	51	104	163	
Imports	9	2	4	8	5	
Total Supply	345	150	80	117	178	
Exports:						
Asia	71	34	16	31	55	
Europe	10	15	12	14	16	
Middle East	10	3	2	9	14	
South America	6	7	8	7	9	
Africa	3	5	3	3	8	
United States	4	5	5	3	3	
Central America and the Caribbean	<u>1</u>	<u>5</u>	<u>1</u>	<u>3</u>	<u>5</u>	
Total Exports	105	74	47	70	110	
Total Domestic Use	160	51	28	37	43	
Total Use	265	125	75	107	153	
Carry-out Stocks	80	25	5	10	25	
Stocks-to-use ratio	30%	20%	7%	9%	16%	
Seeded Area (kac)	546	156	116	195	356	
Harvested Area (kac)	381	156	96	180	351	
Yield (lb./ac.)	904	963	1,167	1,271	1,026	
Average producer price*						
Large Kabuli	\$/t	518	507	650	661	573
	¢/lb	23.50	23.00	29.50	30.00	26.00
Small Kabuli	\$/t	353	309	364	452	419
	¢/lb	16.00	14.00	16.50	20.50	19.00
Desi	\$/t	342	231	231	265	353
	¢/lb	15.50	10.50	10.50	12.00	16.00
* Saskatchewan, No.1 CW grade						
p: preliminary						
f: forecast, Agriculture and Agri-Food Canada, September 2006						
Source: Statistics Canada and AAFC						

and the United States. Exports of the desi type are mainly to Asia, while exports of the kabuli type are to all regions of the world.

Prices

Canadian prices are largely determined in the international market because Canada exports most of its production. Although prices of the large kabuli type are higher than for the desi type, they are also more volatile. Prices of the large kabuli type increase as the size of the seed increases from 7 mm, to 8 mm, to 9 mm and to 10 mm. The producer receives a weighted average price for kabuli chickpeas based on the percentage of various sized seed. The price of the small kabuli type is generally higher than for the desi type, but lower than the weighted average large kabuli type price. Since there is no futures market for chickpeas, prices are negotiated directly between producers and dealers based on supply and demand factors for each type of chickpea.

Organizations

The **Canadian Grain Commission (CGC)** administers quality standards for chickpeas. The grades are No.1, 2 and 3 Canada Western (CW) Kabuli, and No.1, 2 and 3 CW Desi. Chickpeas which do not meet the listed grade standards are graded Sample.

The major quality concerns in chickpea grading are damage due to heating and peeling, split or broken seed, seed discolouration, as well as foreign material. For further information, or to access the Official Grain Grading Guide, please visit the CGC website: (www.grainscanada.gc.ca)

The **Canadian Special Crops Association (CSCA - 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 chickpeas. The website includes a section where buyers can submit a request for prices.

Pulse Canada (www.pulsecanada.com) is an industry organization, with the CSCA and provincial pulse growers' organizations as members. It is involved in market development, market access, policy issues and coordination of scientific research. The website contains information on pulse crops, markets, and health and nutrition.

Pulse Innovation Project (PIP)

PIP is managed by Pulse Canada and funded mainly by a \$3.2M, over three years

starting in 2005, contribution from Agriculture and Agri-Food Canada (AAFC) under the Science and Innovation pillar of the Agricultural Policy Framework. The goal of the PIP is to stimulate innovation in product development by understanding industry needs and targeting research that will boost the incorporation of pulses, including chickpeas, into food and industrial products. It will support the development and commercialization of products by working with food processors and ingredient manufacturers to ensure that the end results are foods that will be found on grocery store shelves, targeting products that are economic, convenient and enhance nutrition and health. In addition, PIP will explore and support industrial avenues for pulses to ensure the maximum value added opportunities for producers.

In August 2006, it was announced that Pulse Canada was allocated an additional \$525,800 from AAFC in support of their international strategy until March 2008. Pulse Canada will focus its strategy on increasing demand for pulses in new or emerging markets within the more than 160 countries that have purchased Canadian pulses in the last four years. It will also seek to increase demand by promoting the health benefits of pulses in international markets.

USE

More than 90% of chickpeas are consumed in the countries where they are produced. Chickpeas are used almost exclusively for human consumption. The desi type seed must be dehulled and is used whole or split or milled. In the Indian sub-continent, the desi chickpeas are used whole, dehulled and split to produce dhal, or ground into fine flour called *besan*. *Besan* is used in many ways for cooking, including mixed with wheat flour to make roti or chapatti, and for making sweets and snacks. Kabuli chickpeas are substituted for desi chickpeas if the price is competitive. In addition, yellow peas are used as a substitute for chickpeas for the lowest income consumers if the price of yellow peas is lower. In the Middle East, consumption is based on a popular dish known as "hummus" which is produced from mashed chickpeas mixed with oil and spices. The large kabuli type is used mainly in salad bars and vegetable mixes. Chickpeas are also used as a vegetable and in preparing a wide variety of snack foods, soups, sweets, and condiments. Smaller size kabuli chickpeas are also milled for flour.

Healthy Diet

Pulses, including chickpeas are increasingly being used in health-conscious diets to promote general well-being and reduce the risk of illness. They are low in fat, low in sodium, cholesterol free, high in protein, and are an excellent source of both soluble and insoluble fibre, complex carbohydrates, and vitamins and minerals, especially B vitamins, potassium and phosphorus.

Since chickpeas are low in fat, low in sodium and are cholesterol free, they are an excellent heart healthy food that may be beneficial to the prevention of cardiovascular disease. Chickpeas are an inexpensive, high quality source of protein. Studies have shown that whole pulses (including chickpeas) have demonstrated cholesterol and lipid lowering effects in humans.

Studies have reported the beneficial effects of soluble dietary fibre on cardiovascular disease in humans, especially in lowering both total serum and LDL-cholesterol levels. In addition, clinical research has shown soluble fibre to be beneficial in the management of type-2 diabetes. Insoluble dietary fibre consumption can be beneficial to a healthy colon and has been associated with reducing the risk of colon cancer. Diets high in fibre have demonstrated beneficial effects on weight loss because they deliver more bulk and less energy.

Chickpeas are an excellent source of the B vitamin *folate* which is an essential nutrient. In addition, folate consumption during pregnancy has been shown to reduce the risk of neural tube defects.

Flour made from chickpeas is gluten free and is a very nutritious option for people with celiac disease.

OUTLOOK

World: 2006-2007

World production is forecast to decrease by 2% from 2005-2006 to 8.65 Mt, as an increase in production for the kabuli type is more than offset by a decrease for the desi type. Total supply is expected to remain relatively stable at 9.15 Mt because of higher carry-in stocks. The world production forecast for 2006-2007 is preliminary as seeding in India does not occur until October and November, the Australian harvest occurs in November and December and information about production in the Middle East and Mexico is limited.

India: 2006-2007

Chickpeas in India are grown as a winter crop in the central and northern parts of the country. Nearly all of the chickpeas produced in India are the desi type. Chickpeas are generally seeded in October and November and harvested mainly in March and April. Most of the rainfall in the chickpea growing areas occurs during the summer monsoon season, which normally lasts from early June to early October in the

central parts of the country and mid-June to late September in the north-western parts. The monsoon rainfall provides moisture for the summer crops and a moisture reserve for winter crops, such as chickpeas. Chickpeas are generally grown without irrigation. In 2006, the monsoon rainfall to date has been normal in most chickpea growing areas. The chickpea crop also needs winter rains, but winter rainfall is much lower and less reliable than during the

summer. Although there is a great deal of uncertainty about the 2006-2007 chickpea crop in India, production is expected to increase because high prices are expected to encourage additional seeding.

India is expected to be a strong importer of chickpeas at least until the size and condition of the 2006-2007 crop is known.

Adding to the demand is the elimination of import tariffs by the government of India until March 31, 2007. The government of India also banned exports until March 31, 2006 which provides Canadian exporters additional market opportunities in other countries.

chickpeas and decrease for large and small kabuli chickpeas in response to the respective supply situations.

Canada: longer term

Work is underway to (1) develop varieties which are more resistant to ascochyta blight and mature earlier, making them more suitable for Canadian growing conditions, (2) provide additional weed control options for chickpeas, (3) develop larger kabuli chickpeas and desi chickpeas with light tan or tan seed colour, which is expected to increase market opportunities for Canadian chickpeas, and (4) increase demand for Canadian chickpeas through the Pulse Innovation Project. With the improvements in varieties, weed control and increased market demand, and with a growing core of producers who are experienced in growing chickpeas, the seeded area is expected to increase significantly. However, any expansion will also depend on the prices which producers will be able to obtain.

For more information please contact:

Stan Skrypetz,

Pulse and Special Crops Analyst

Phone: (204) 983-8972

E-mail: skrypetzs@agr.gc.ca

WORLD: CHICKPEA EXPORTS

calendar year	2001	2002	2003	2004	2005
.....thousand tonnes.....					
Australia	267	94	144	149	187
Turkey	154	105	190	133	124
Iran	124	140	87	85	n/a
Mexico	207	143	141	83	79
Canada	149	125	88	68	59
Syria	1	1	8	29	n/a
Tanzania	9	21	27	25	n/a
Pakistan	5	3	8	18	n/a
Morocco	2	3	12	13	n/a
United States	29	23	15	12	21
India	2	2	3	12	29
Russia	6	10	15	9	14
Other	43	51	43	46	n/a
Total	998	721	781	682	n/a

WORLD: CHICKPEA IMPORTS

calendar year	2001	2002	2003	2004	2005
.....thousand tonnes.....					
India	517	218	259	133	258
Bangladesh	38	57	84	105	n/a
Pakistan	106	182	123	69	n/a
Spain	69	58	54	58	56
Algeria	70	34	51	49	47
Italy	23	22	21	28	22
Jordan	22	21	23	24	n/a
Sri Lanka	13	17	20	23	n/a
United Arab Emirates	32	44	31	21	n/a
Tunisia	20	19	19	20	n/a
United Kingdom	16	18	18	20	24
Saudi Arabia	25	23	23	17	n/a
United States	11	12	10	14	10
Iraq	1	1	63	12	n/a
Portugal	12	12	12	11	12
France	13	11	11	9	9
Lebanon	17	10	9	9	n/a
Colombia	10	10	12	9	10
Other	103	91	79	101	n/a
Total	1,118	860	922	732	n/a

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

n/a: not available

Source: FAO, Statistics Canada, USDA, Global Trade Atlas – September 2006

Canada: 2006-2007

Area seeded in Canada increased by 82% because of attractive prices for the kabuli type, high yields in 2005-2006 and good movement to markets. Production is expected to increase by 57% to 163,000 t, with increases for all types, large and small kabuli and desi. Average yields are expected to be slightly below trend, and sharply lower than in 2005-2006. Crop development and harvest progress have been ahead of normal and quality is expected to be normal. Supply is expected to increase by 52% to 178,000 t. Exports are forecast to increase due to the higher supply and strong demand.

Carry-out stocks are forecast to increase, with a stocks-to-use ratio of 16%. Prices are forecast to increase for desi

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**Market Analysis Division,
Marketing Policy and
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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: Joe Wang

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