Bi-weekly Bulletin

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CHICK PEAS: SITUATION AND OUTLOOK

Interest in the production of chick peas has increased significantly during the last five years as producers searched for alternatives to traditional crops. The relatively strong prices for chick peas, due to steady demand, stimulated increased production. Commercial production of chick peas in Canada, which began in 1995, has increased steadily every year. Canada was the fourth largest producer in the world in 2000-2001. Canadian production is forecast to increase again in 2001-2002. Although Canada accounted for only 4.4% of world production in 2000-2001, it is expected to be the world's largest exporter, for the first time, accounting for 30-35% of world exports. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for chick peas.

BACKGROUND

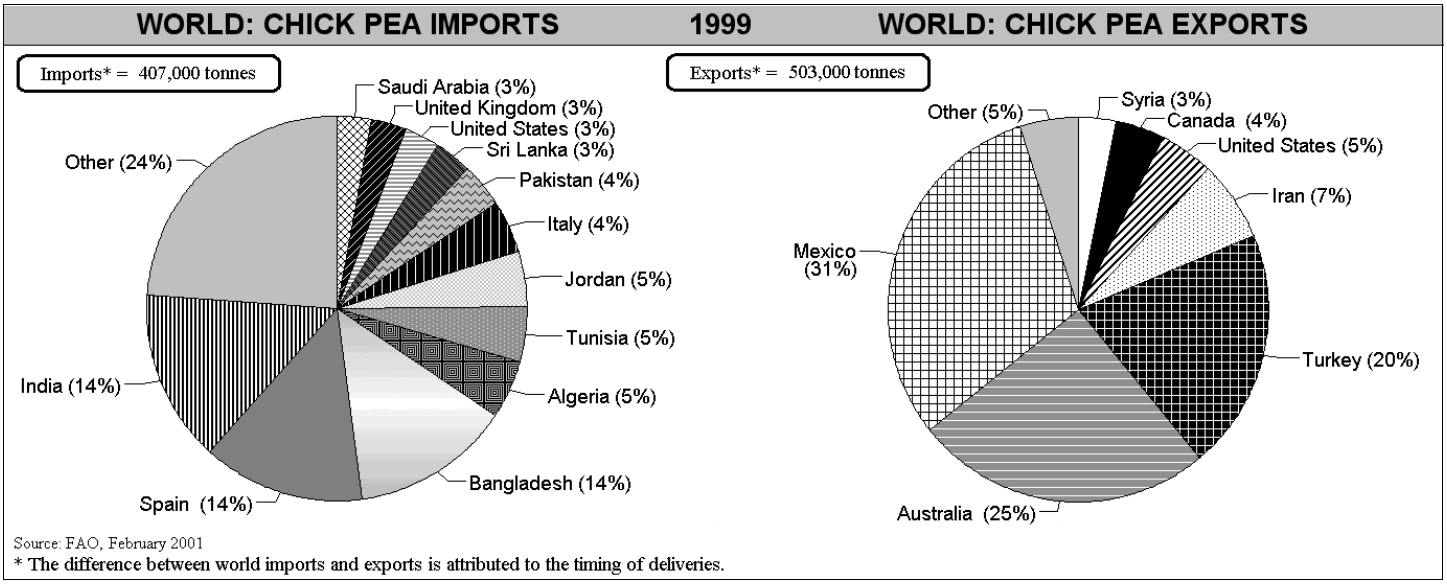
Agronomics

Chick peas were first produced in the Middle East about 7,000 years ago. The two commercial types of chick peas produced are desi and kabuli. Kabuli chick peas, 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. Chick peas thrive under good moisture conditions with daytime temperatures between 21 to 29 degrees Celsius (° C) and nighttime temperatures near 20° C. Length of maturity depends on available heat and moisture, but is in the range of 95-105 days for desi type and 100-110 days for kabuli type. Chick peas are best adapted to the Brown and Dark Brown soil zones of south-western Saskatchewan and south-eastern Alberta where production problems of seedling blight, aschochyta blight and late maturity are less common. Chick peas 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. It may be advantageous to avoid seeding chick peas in low lying areas of the field, around sloughs or in areas of high soil organic matter to prevent uneven or prolonged maturity.

Chick pea production works well in rotation with cereal grains such as spring or durum wheat. Aschochyta susceptible varieties should not be grown. In areas where aschochyta blight is a problem, chick peas should not be seeded in the same field more than one year in four. Few herbicides are acceptable in chick pea production, therefore selection of a clean field is essential. The use of seed treatment is recommended for the kabuli type of chick peas to protect the seed from soil borne diseases.

Seeding depth of chick peas should be 3.5-6.0 centimetres, or 1.5-2.5 inches. Seeding rates depend on seed size and percentage germination. Optimum seeding rates are 90-105 kilograms/hectare (kg/ha), or 80-95 pound per acre (lb/ac) for the desi type and 135-155 kg/ha (120-140 lb/ac) for the kabuli type. The minimum soil temperature at seeding depth recommended for desi type is 7° C, but germination will occur at 5° C. The desi type should be seeded as early as the soil temperature is acceptable, since seedlings are frost tolerant and the crop requires a long season to mature. For the kabuli type, the minimum soil temperature should be near 10° C. The kabuli type are easily infected by soil borne fungi, therefore warmer soil is required for rapid germination and emergence of seedlings to reduce the time exposure to soil borne diseases. Nitrogen fertilizer is usually not required since chick peas 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, chick pea seed or the soil surrounding the seed, should be inoculated with the chick pea strain of nitrogen-fixing inoculant. Other fertilizer should be applied based on soil test.

Harvesting of chick peas can take place when the seed moisture is 18%. Initial combine settings should be similar to those for dry peas, however an increased cylinder or rotor speed, compared to combining lentils or dry peas, may be required to remove the seed from the pod. Care must be taken not to damage the seed, especially the kabuli type. Chick peas can be stored at 14% or less moisture. Chick peas may test dry after harvest, but it takes some time for the moisture in the large seed to equalize across the entire seed. Producers should break open a number of seeds to determine if the interior is as dry as the exterior. The center of the seed must snap before it is really dry. Aeration is needed to prevent the development of mould. The use of conveyors instead of augers when handling chick peas, will reduce mechanical damage. Kabuli chick pea colour is important because buyers prefer a yellowish-cream colour. The stage of crop development should be closely monitored as weathered seed and dark seed discolouration (green, brown, black) makes the seed less desirable to most processors and consumers. Slight bleaching can occur in the swath. Early fall frost can result in green discolouration of immature kabuli chick pea seed, which will reduce the value of the crop. Other important factors affecting visual quality



are levels of admixture, seed size and seed uniformity.

Uses and Nutrition

Chick peas are used almost exclusively for human consumption. The desi type seed must be dehulled and is used whole or split or milled. In India and surrounding countries, the desi chick peas are used whole, shelled and split to produce dhal, or ground into a 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. Chick peas are also used as a vegetable. In the Middle East, consumption is based on a popular dish known as "hommus" which is produced from mashed chick peas mixed with oil and spices.

The kabuli type are used mainly in salad bars and vegetable mixes. They are also used in preparing a wide variety of snack foods, soups, sweets, and condiments. Smaller size kabuli chick peas are also milled for flour. The demand for large size kabuli chick peas in North America is growing.

Chick peas are an excellent source of protein, fibre, complex carbohydrates, vitamins, and minerals. They are low in sodium and fat, and can be used in gluten-free, diabetic, low salt, low calorie, low cholesterol, and high fibre diets.

WORLD

Production

World production ranged from 6.65 million tonnes (Mt) in 1992-1993 to 8.94 Mt in 1999-2000. India accounted for 69% of world production while Pakistan, Turkey, Canada, Mexico, Iran, and Australia accounted for an additional 23% in 2000-2001. Production among individual countries has been variable, but during the past 10 years there has been a downward trend in Australia, Turkey and Iran. Canada was the only country with a major upward trend in chick pea production. Countries in the Indian sub-continent and Australia produce mainly the desi type, Canada produces both the kabuli and desi types, and the remaining countries produce mainly the kabuli type. World production consists of about 85% desi type and 15% kabuli type.

Consumption and Trade

More than 90% of the chick peas are consumed in the countries where they are produced. World exports during the 1990s were variable, ranging from 313,000 tonnes (t) to 878,000 t per calendar year. In 1999, the latest year for which world trade statistics are available, exports were 503,000 t and imports were 407,000 t. The timing of delivery accounts for the large difference between exports and imports. The top three exporting countries (Mexico, Australia, and Turkey) accounted for 76% of exports. Imports were distributed much more widely than exports, with the top 12 countries accounting for 76% of imports. The top 12 importing countries were India, Spain, Bangladesh, Algeria, Tunisia, Jordan, Italy, Pakistan, Sri Lanka, United Kingdom, United States, and Saudi Arabia. During the 1990s, India was the largest importer of chick peas, but imports were extremely variable, depending largely on the volume of production in India. Because of the variability in India's imports, there was large variability in total world imports. Without including India, world imports were more stable. India and surrounding countries import mainly the desi type, while countries in the western hemisphere, Europe, the Middle East and northern Africa import mainly the kabuli type.

WORLD: CHICK PEA TRADE

	1991	1992	1993	1994	1995	1996	1997	1998	1999
	.....thousand tonnes.....								
Imports:									
India	99	77	150	58	13	122	381	110	59
Other	357	376	481	396	282	432	378	343	348
World	**456**	**453**	**631**	**454**	**295**	**554**	**759**	**453**	**407**
Exports:									
World	**587**	**427**	**542**	**452**	**313**	**586**	**878**	**594**	**503**

Source: FAO, February 2001

WORLD: CHICK PEA PRODUCTION

	1997 -1998	1998 -1999	1999 -2000	2000 -2001	2001 -2002f
	.....thousand tonnes.....				
India	5,566	6,127	6,700	6,200	6,000
Pakistan	594	767	698	565	550
Turkey*	720	625	565	540	550
Canada**	**15**	**51**	**197**	**387**	**450**
Iran	267	249	171	200	200
Mexico	244	98	211	210	180
Australia***	200	160	187	146	160
Ethiopia	118	137	139	135	135
Myanmar	89	89	68	86	80
United States*	18	19	34	60	80
Other	441	506	374	411	425
World	**8,272**	**8,828**	**9,344**	**8,940**	**8,810**

f: forecast, AAFC, February 2001
Source: FAO, except *USDA, **Statistics Canada, and ***ABARE February 2001

CANADA

Production

Commercial chick pea production in Canada started in 1995-1996 at about 1,000 t, but increased rapidly during the next 6 years to 387,000 t in 2000-2001, when about 50% of the production was the kabuli type and 50% the desi type. Included in the kabuli chick pea production are the small kabuli chick peas, which have a more uniform seed size of about 7 millimetres (mm). Yields of the desi type are about 15% higher than of the kabuli type. Saskatchewan accounted for about 96% of Canadian production in 2000-2001, and 4% was produced in Alberta.

Marketing

All of the chick peas produced in Canada are sold on the open market to dealers. There are about 25 dealers, mainly in Saskatchewan, who buy, clean and ship chick peas to domestic and export consumers. Chick peas are shipped mainly in containers. The dealers are mainly small, family owned businesses, although larger companies and co-operatives are also involved in buying chick peas. There are several processing plants in Saskatchewan which dehull and split desi chick peas. Some chick peas are grown, under production contracts, which guarantee a price for part of the production, and others are sold on the spot market. Market development activities are conducted under the leadership of Pulse Canada, a national organization of producers, processors, and exporters of Canadian pulses.

Prices

The average price over both types and all sizes and grades for 2000-2001 is forecast at $375-395/t, with the midpoint decreasing slightly from $390/t in 1999-2000. Although prices of the kabuli type are higher than of the desi type, they are also more volatile. Prices of the kabuli type increase as the size of the seed increases. The producer receives a weighted average price for kabuli chick peas based on the percentage of various sized seed. There are also small kabuli chick peas, the price of which is generally higher than for the 7 mm, but lower than the 8 mm size. Since there is no futures market for chick peas, prices are negotiated directly between the dealers and customers based on supply and demand factors for each type of chick pea. The prices negotiated could be for immediate delivery or for delivery at some future date.

Domestic Use and Exports

Domestic use which includes food, feed, seed, dockage and waste has been increasing in line with increasing production. Since production of chick peas has been growing rapidly, a significant portion of the production has been used for seed. Only small volumes of low quality chick peas are used for livestock feed, however nutritional analysis indicates that they make an excellent feed.

Canadian chick pea exports have increased sharply, in line with the increase in production. For 2000-2001, exports are expected to more than triple from 1999-2000 to 210,000 t, with Canada becoming the largest exporter, accounting for 30-35% of world exports. Asia (mainly India, Bangladesh and Pakistan), Europe, the Middle East, South America, northern Africa, and the United States are the main markets.

OUTLOOK

World: 2001-2002

World production is forecast to be marginally lower at about 8.81 Mt. Total supply is also expected to decrease marginally to 9.21 Mt.

CANADA: CHICK PEA SUPPLY AND DISPOSITION

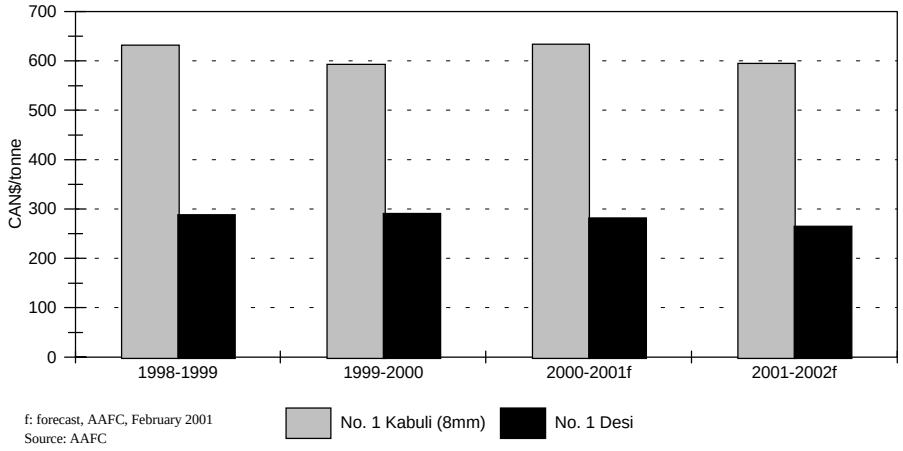
August-July crop year	1997 -1998	1998 -1999	1999 -2000	2000 -2001f	2001 -2002f
Harvested Area (thousand ha)	11	38	139	283	339
Yield (t/ha)	1.36	1.34	1.42	1.37	1.33
			.....thousand tonnes.....		
Carry-in Stocks	0	1	5	15	40
Production	15	51	197	387	450
Imports	3	2	5	2	2
Total Supply	**18**	**54**	**207**	**404**	**492**
Exports	3	14	65	210	250
Total Domestic Use	14	35	127	154	172
Total Use	**17**	**49**	**192**	**364**	**422**
Carry-out stocks	**1**	**5**	**15**	**40**	**70**
Stocks-to-Use Ratio (%)	6%	10%	8%	11%	17%
Average producer price ($/t)	400	493	390	375-395	380-410
Harvested Area (thousand ac.)	27	94	343	699	838
Yield (lb/ac.)	1,213	1,196	1,267	1,222	1,187
Production (Mlb)	33	112	434	853	992
Average producer price ($/lb)	0.181	0.224	0.177	0.170	0.172
				-0.179	-0.186

f: forecast, AAFC, February 2001
Source: Statistics Canada and AAFC

Canada: 2001-2002

Area seeded area in Canada is forecast to increase by about 20% due to relatively good price prospects for chick peas compared to most other crops and improved producer expertise. Assuming trend yields, and a normal abandonment rate, production is forecast to increase by 16% to 450,000 t, with Canada's share of world production increasing from 4.4% in 2000-2001, to about 5%. Production of the kabuli type is expected to increase, with the largest increase being for small kabulis. Meanwhile, production of the desi type is expected to decrease. Assuming normal growing conditions, the average quality of the crop should improve. The production is expected to be about 95% in Saskatchewan, with the remainder in Alberta. About 60% of the production is expected to be kabuli type and 40% desi type. Total supply is expected to increase by 22% to 492,000 t because of increased production and carry-in stocks. Canada's share of total world supply is expected to increase from about 4.4% in 2000-2001 to about 5.3%. Exports and carry-out stocks are expected to increase because of the higher supply. The stocks-to-use ratio is forecast to increase to 17%. The average price, over both types and all grades and sizes, is forecast to increase slightly, as pressure on prices from the higher Canadian supply is more than offset by higher expected crop quality and a shift to the production of the higher priced kabuli type.

CHICK PEAS : AVERAGE PRODUCER PRICE (SASKATCHEWAN)



f: forecast, AAFC, February 2001
Source: AAFC

CANADA: CHICK PEA PRODUCTION BY TYPE

	1998 -1999	1999 -2000	2000 -2001f	2001 -2002f
	.....thousand tonnes.....			
Desi	21	99	194	180
Kabuli *	30	98	193	270
Total	**51**	**197**	**387**	**450**

* large and small

f: forecast, AAFC, February 2001

Source: AAFC estimates based on Statistics Canada and industry reports

Canada: Longer-Term

Canadian seeded area for chick peas is expected to continue trending upwards throughout the decade, especially as new varieties, more suitable for Canadian growing conditions, are developed. Canada's share of total world production is also expected to increase. Saskatchewan is expected to continue dominating chick pea production in Canada because it has the largest land base suitable for producing chick peas and producers are becoming experienced growers of chick peas.

CANADA: CHICK PEA EXPORTS

August-July crop year	1998 -1999	1999 -2000	2000 -2001f	2001 -2002f
	.....thousand tonnes.....			
Asia	7.0	34.0	150.0	170.0
Middle East	2.0	12.0	25.0	30.0
Europe	2.0	11.0	20.0	25.0
Africa	0.5	2.0	5.0	10.0
South America	1.0	2.0	4.0	7.0
United States	1.0	3.0	5.0	6.0
Central America and Caribbean	0.5	1.0	1.0	2.0
Total	**14.0**	**65.0**	**210.0**	**250.0**

f: forecast, AAFC, February 2001
Source: Statistics Canada

For periodic updates on the situation and outlook for chick peas, visit the Market Analysis Division Website for "Canada: Special Crops Situation and Outlook".

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