



Bi-weekly Bulletin

February 22, 2008 Volume 21 Number 2

DRY PEAS: SITUATION AND OUTLOOK

Canada is the largest producer and exporter of dry peas in the world, accounting, on average, for about 25% of world production and 50% of world exports. The value of Canadian dry pea exports was about \$500 million (M) in each of the past two years. Canadian seeded area for dry peas increased by 642% since 1991-1992. The expansion of dry pea production in western Canada has provided producers with an alternative cash crop to use in their rotations and livestock feeders with an additional feed ingredient. In addition, the increased production has resulted in increased employment opportunities in western Canada through the expansion of handling, marketing and processing facilities. For 2008-2009, Canadian production is forecast to increase moderately from 2007-2008 due to higher seeded area and higher yields, resulting in higher exports which were limited by supply in 2007-2008. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for dry peas.

WORLD

Production

World dry pea production has been trending downwards during the past ten years. During this period, the concentration of production has shifted out of France and other European countries into Canada and the United States (US).

Production in Canada increased as producers diversified out of traditional grains because of low returns. In 1998-1999, Canada accounted for 18% of world dry pea production, but in 2007-2008 Canada's share reached 30%.

Production in the US increased as a result of incentives provided by government programs, as dry peas were included under the loan program starting in 2002.

Trade

World trade in dry peas has been variable during the past ten years, ranging from a low of 2.3 Mt in calendar year 2003 to a high of 4.2 Mt in 2006, but with an upward trend. The

upward trend was due mainly to increasing exports from Canada and to a lesser extent the US. In contrast, exports from France have been trending downwards. Canada became the largest exporter in 1997. Canada's share of world exports was 59% for 2005 and 55% for 2006, the latest year for which complete export data is available.

Ten years ago, the main importing countries were in western Europe and the only large non-European importer was India. Since then, the largest growth in imports was by countries in Asia, with India the largest importer, followed by China, Bangladesh and Pakistan. In Europe, Spain, Belgium, Netherlands and Italy were the main importers. Latin

America is also a major importing region for dry peas, especially Cuba and Colombia. Smaller volumes of dry peas are imported by countries in Africa and the Middle East.

Imports to Latin America, Africa and the Middle East were generally for food, while imports to Europe were generally for livestock feed. India has become the largest importer in the world, with about 60% of the imports coming from Canada and the balance mainly from the US, Australia, France and Ukraine. Spain's imports were about 80% from Canada and the remainder mainly from Ukraine and the US. Belgium's imports were about 70% from France and the balance mainly

WORLD: DRY PEA SUPPLY AND DISPOSITION					
	2004	2005	2006	2007	2008
	-2005	-2006	-2007	-2008f	-2009f
Harvested Area (kha)	6,847	6,690	6,760	6,800	6,900
Average Yields (t/ha)	1.73	1.64	1.45	1.42	1.47
.....thousand tonnes.....					
Canada	3,097	2,994	2,520	2,935	3,300
China	1,060	1,103	1,140	1,100	1,100
Russia	1,243	1,127	1,158	1,000	1,000
France	1,675	1,300	1,040	678	750
India	900	780	800	820	750
United States	572	679	637	752	696
Ukraine	636	616	485	500	500
Australia	321	478	149	268	350
Germany	464	346	288	180	200
United Kingdom	215	161	145	105	140
Others	1,662	1,409	1,456	1,308	1,269
Total Production	11,845	10,993	9,818	9,646	10,055
Carry-in Stocks	600	1,100	800	400	300
Total Supply	12,445	12,093	10,618	10,046	10,355
Total Use	11,345	11,293	10,218	9,746	9,955
Carry-out Stocks	1,100	800	400	300	400
Stocks-to-use ratio (%)	10%	7%	4%	3%	4%

f: forecast AAFC and USDA forecast, February 2008

Source: FAO, UNIP, USDA, ABARE and Statistics Canada - February 2008

from Canada. Imports to China were more than 90% from Canada and the remainder mainly from the US. China imports yellow peas which are mostly used to manufacture vermicelli noodles.

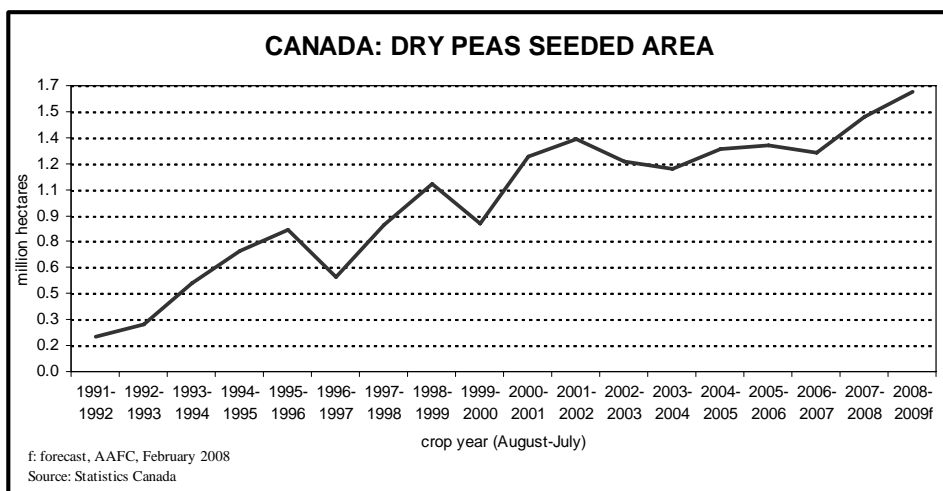
CANADA

Production

Dry peas are a cool season crop with a relatively shallow root system. They are, generally, as drought tolerant as cereal grains, but cannot tolerate heat stress during flowering. Dry peas take about 90-105 days to reach maturity, depending on the variety grown. The crop is best suited to the black soil zone, with well drained, clay loam soils being ideal for dry pea production. However, dry peas have performed well in all areas of the Prairies, especially in summers with cool and moist conditions. Poorly drained, cold soils can favour the development of seedling diseases and root rots. Dry peas should not be grown on saline soils and should not be grown on the same field more than once in every four years to avoid the rapid increase of soil-borne and foliar diseases.

Dry pea production provides an agronomically sound way of extending and improving crop rotations. They are capable of fixing part of their nitrogen requirements if properly inoculated with the pea strain of Rhizobium. Thus, acceptable yields can be produced in some years with little nitrogen fertilizer. However, a soil test should be used to determine required nutrients. The crop following dry peas in the rotation generally yields more than the same crop grown after cereals or oilseeds.

Canadian dry pea seeded area increased by 642% since 1991-1992, with a record 1.47 million hectares seeded in 2007-2008. Production reached a record 3.1 million tonnes (Mt) in 2004-2005, but dropped for the next three years due to lower yields. The growth in dry pea production has been largely in Saskatchewan, with that province accounting for 79% of



Canadian production in 2007-2008, followed by Alberta at 18%, and Manitoba at 3%. Small amounts of dry peas were also produced in British Columbia and in eastern Canada. Canada produces several types of peas, with the large and medium yellow types accounting for 80% of 2007-2008 production. Green peas accounted for 18% of the production and

the remaining 2% consisted of maple, Austrian winter, green marrowfat and small yellow.

Marketing

Dry peas are sold on the open market to dealers located throughout the Prairie Provinces. Feed peas are sold mainly to large grain elevators, whereas food peas are sold to specialized cleaning and handling facilities and to large grain elevators. Dry peas are also sold directly to processing plants, feed mills and livestock producers.

Feed peas are generally shipped bulk by rail, from the elevators to ports and other markets. Food peas are also generally shipped by rail, either bulk, in bags or in containers.

Domestic Use

About 25% of the dry peas produced in Canada are consumed domestically, with the largest use being livestock feed, followed by seed and food. However, the quantity used for food and feed is only a rough estimate as domestic use is calculated residually, i.e. total supply minus exports and carry out-stocks equals domestic use. Seed use can be calculated by using the average seeding rate per hectare times the seeded area in the following year. The domestic use is generally in the Prairie Provinces, with most of the

WORLD: DRY PEA EXPORTS					
	2003	2004	2005	2006	2007
thousand tonnes.....				
Canada	1,000	1,546	2,349	2,310	2,188
France	529	566	488	437	350
United States	118	179	368	432	469
Ukraine	43	174	174	269	n/a
Australia	92	185	121	237	134
Russia	44	88	89	92	n/a
Other	<u>503</u>	<u>401</u>	<u>417</u>	<u>410</u>	<u>n/a</u>
Total	2,329	3,139	4,006	4,187	n/a
WORLD: DRY PEA IMPORTS					
	2003	2004	2005	2006	2007
thousand tonnes.....				
India	700	644	810	1,146	n/a
Spain	190	724	1,031	663	n/a
Belgium	249	361	389	334	n/a
China	77	90	262	330	263
Netherlands	268	210	203	169	n/a
Bangladesh	113	188	97	n/a	n/a
Italy	88	139	174	174	n/a
Canada	34	28	84	77	43
Pakistan	64	42	99	n/a	n/a
Cuba	53	101	67	n/a	n/a
United States	40	49	54	58	47
Germany	37	91	26	38	n/a
Colombia	38	37	41	34	n/a
Other	<u>658</u>	<u>608</u>	<u>724</u>	<u>n/a</u>	<u>n/a</u>
Total	2,609	3,312	4,061	n/a	n/a
n/a: not available					
Source: FAO, Statistics Canada, USDA, Global Trade Atlas - February 2008					

feed use going into the hog sector.

Exports and Imports

On average, about 75% of Canadian dry peas are exported. Exports into the feed market are mainly to Europe, and into the food market mainly to Asia and Latin America. The feed market consumes both yellow and green types. Although both yellow and green peas are sold into the food markets all over the world, the main market for green peas is Latin America

and for yellow peas, Asia. Spain usually accounts for most of Canadian dry pea exports to Europe, followed by Belgium. However, for 2007-2008 Denmark and Norway have become significant destinations. In Asia, the largest importer is India, followed by China, Bangladesh and Pakistan. In the western hemisphere, Cuba, Colombia, US, Venezuela and Peru are the largest importers. United Arab Emirates is the largest importer in the Middle East, with most of the imports re-

exported to other countries in the region. Canadian exports are forecast to increase in 2007-2008 because of higher supply and strong demand in the food markets in Asia, especially India.

Canadian imports are nearly all from the US as some producers near the Canadian border deliver to Canadian dealers.

Prices

Since there is no futures market for dry peas, prices are negotiated directly between the dealers and customers, based on supply and demand factors for each type, for immediate delivery or for delivery at some future date. Some dry peas are grown under production contracts which guarantee a price for part of the production.

The price of feed peas is related to prices of alternate feed grain and protein meal ingredients. There are regional price differences within the Prairie Provinces based on local supply and demand factors. Food pea prices are normally at a premium to feed pea prices, however the quality standards are higher. For 2006-2007 and 2007-2008, a large majority of the dry peas have been sold into the food market because prices in that market were at a large premium compared to the feed market. The premiums for yellow food peas and green food peas are usually different, depending on the supply and demand factors for each type. Prices for maple, Austrian winter, green marrowfat and small yellow peas also vary depending on the supply and demand factors for each type.

Average prices are forecast to increase for 2007-2008 from 2006-2007 due to lower world supply and higher prices for alternative crops

USES OF DRY PEAS

There are two uses for dry peas, livestock feed and human food. Use for livestock feed is mainly in Europe and Canada, whereas use for food is mainly in Latin America and Asia.

FEED

The hog production industry is the most important user of feed peas, although poultry, cattle and other livestock also consume them. The main challenge in developing feed markets for dry peas is the unreliability of supply. The supply is often limited by lower production, caused

CANADA: DRY PEA SUPPLY AND DISPOSITION

<i>August-July crop year</i>	2004	2005	2006	2007	2008	
	-2005	-2006	-2007	-2008f	-2009f	
Seeded Area (kha)	1,283	1,303	1,261	1,469	1,615	
Harvested Area (kha)	1,244	1,267	1,231	1,443	1,580	
Yield (t/ha)	2.49	2.36	2.05	2.03	2.09	
.....thousand tonnes.....						
Carry-in stocks	205	595	440	205	150	
<i>Production:</i>						
<i>Yellow</i>	2,190	2,050	1,940	2,355	2,590	
<i>Green</i>	825	890	535	535	660	
<i>Other*</i>	83	54	45	45	50	
Total Production	3,098	2,994	2,520	2,935	3,300	
Imports	57	76	60	50	50	
Total Supply	3,360	3,665	3,020	3,190	3,500	
<i>Exports</i>						
<i>Asia</i>	974	1,349	1,373	1,580	1,650	
<i>Europe</i>	567	887	289	270	310	
<i>South America</i>	110	71	86	110	120	
<i>Middle East</i>	59	84	82	100	110	
<i>Central America and Antilles</i>	59	72	46	80	90	
<i>Africa</i>	41	60	57	70	80	
<i>United States</i>	39	42	34	38	38	
<i>Oceania</i>	4	2	2	2	2	
Total Exports	1,853	2,567	1,969	2,250	2,400	
Total Domestic Use	912	658	846	790	800	
Total Use	2,765	3,225	2,815	3,040	3,200	
Carry-out Stocks	595	440	205	150	300	
Stocks-to-use ratio (%)	22%	14%	7%	5%	9%	
Seeded Area (kac)	3,170	3,220	3,116	3,630	3,991	
Harvested Area (kac)	3,074	3,131	3,042	3,566	3,904	
Yield (bu/ac)	37	35	30	30	31	
<i>Average producer price</i>						
Food - Yellow**	\$/t	143	129	198	303	276
	\$/bu	3.90	3.50	5.40	8.25	7.50
Food - Green**	\$/t	171	130	195	322	285
	\$/bu	4.65	3.55	5.30	8.75	7.75
Feed***	\$/t	114	147	140	193	184
	\$/bu	3.10	4.00	3.80	5.25	5.00
* small yellow, Maple, green marrowfat, Austrian winter						
** Saskatchewan, No. 1 Canada grade						
*** Saskatchewan						
f: forecast, Agriculture and Agri-Food Canada, February 2008						
Source: Statistics Canada and Agriculture and Agri-Food Canada – February 2008						

mainly by weather-related problems, or by high price premiums in the food market which make dry peas less competitive in the feed market.

Feeding Hogs

Dry peas are a good source of energy and protein for hogs. The protein from dry peas has the highest lysine content of any plant protein source used by the feed industry. Moreover, dry peas do not have to be heat treated to deactivate anti-nutritional factors.

Usually dry peas displace soybean meal and high energy grains, such as wheat or corn, in a hog ration in a one-third to two-thirds ratio. Therefore, a formula of one-third soybean meal and two-thirds wheat or corn, whichever has the lower price, gives an approximation of the opportunity price of dry peas.

Nutrition

Dry peas have high energy content. North American hog rations are normally formulated on the basis of digestible or metabolizable energy. However, in Europe, hog rations are normally formulated on the basis of net energy. Using net energy for feed formulation increases the value of dry peas in hog rations by about 10% because the net energy content of dry peas is about 37% higher than for soybean meal.

Dry peas are known for having high quality protein, with a protein content of about 22%. The digestibility of protein from dry peas is good, with digestibility values of 83-86% for hogs and 84-88% for poultry. Dry pea protein fed to cattle is readily digested. Dry pea protein, protein from cereals, and canola meal are nutritionally complementary, enhancing each one's value when used in rations.

Feed Products

A common feed product is a mixture of ground peas and canola meal. In this mixture, dry peas complement canola meal. Although canola meal is an excellent source of protein, it is low in digestible energy. Dry peas have high energy digestibility, and their amino acid profile, which is high in lysine, complements the amino acid profile of canola meal, which is high in methionine and cysteine. Another feed product is an extruded blend of ground dry peas and canola seed. In addition to the two ingredients complementing each other, the

high oil content is a readily available source of energy and can be used as a replacement for such products as corn oil or rendered fat. A third feed product is an extruded blend of ground dry peas and flaxseed which contains essential omega-3 fatty acid obtained from the flaxseed oil.

Feeding Other Livestock, Fish and Pets

Although dry peas are most widely used in feeding hogs, they are also used for feeding all classes of poultry. In feeding poultry, they are a good source of protein and a moderate source of energy. The nutrient profile makes dry peas a very economical ingredient for layers, but they can also be used for broilers. Dry peas are also a good source of supplementary protein for cattle, as well as a good source of energy. The relatively slow degradation rate of starch in peas may be beneficial in animals fed diets containing a high concentration of grain. An emerging use of dry peas is to manufacture protein concentrate for feeding to farmed fish. It can be combined with flaxseed oil to replace fish meal and fish oil. A small, but important user, is the bird seed industry, for which some specialty peas, such as the maple and Austrian winter types, are used. Dry peas are also used as an ingredient in the manufacture of pet food. Some small yellow seed is sold for seeding in silage mixtures.

FOOD

Use

Food use of dry peas includes canning, split and whole dry markets, as well as constituent products such as protein, flour, starch, and fibre. These products are then used in baked goods, baking mixes, soup mixes, breakfast cereals, processed meats, health foods, pastas and purees. Dry peas can also be cooked and eaten as a vegetable.

Processing

The domestic food market is smaller than the feed market, but is important for producers and dealers. The domestic processing industry includes splitting, canning, packaging of whole or split seed, the production of dry soup mixes, milling for flour, or fractionating into fibre, protein concentrates or isolates, and starch. The marrowfat type, as well as some others, is used in the confectionery markets and to make a spread called pea butter.

Nutrition

Pulses, including dry peas are increasingly being used in health-conscious diets because they are low in fat, low in sodium, cholesterol free, high in protein, and are an excellent source of dietary fibre, especially insoluble fibre, and other complex carbohydrates, B vitamins, and minerals like potassium and phosphorus. Dry peas are high quality source of protein. Flour made from dry peas is gluten free.

Potential Uses

In addition to current uses, research is ongoing to develop edible food coatings from dry peas. These would be used to extend the shelf life of perishable food. Starch from dry peas can be used in bio-industrial products, such as ethanol and paper production, and new applications are being investigated, such as using starch to make biodegradable plastics.

ORGANISATIONS

The Canadian Grain Commission administers quality control standards for dry peas. There are three grades for green peas and four grades for peas other than green. However, normally 1 and 2 Canada grade peas are used for the food market. For the feed market, there is a Canada Feed Peas grade. In addition, dry peas can be graded "Sample" if they do not meet the specifications under the grades. 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 dry peas. The website includes a section where buyers can submit a request for prices.

ENERGY VALUES IN DIGESTIBLE ENERGY (DE), METABOLIZABLE ENERGY (ME) AND NET ENERGY (NE) SYSTEMS

Ingredient	DE	ME	NE
KCAL/KG.....		
Corn	3,780	3,650	2,970
Wheat	3,870	3,780	2,900
Dry Peas	3,880	3,750	2,640
Soybean Meal	3,910	3,650	1,930

Source: Noble et al. 1994

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

On February 21, 2008, the Government of Canada announced a \$600,000 contribution to Pulse Canada's transportation strategy, through Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-Food Program to improve the efficiency and reliability of domestic transportation of pulses and special crops.

PULSE INNOVATION PROJECT

The Pulse Innovation Project is managed by Pulse Canada and funded mainly by a M\$3.2, over three years starting in 2005, contribution from Agriculture and Agri-Food Canada. The goal of the Pulse Innovation Project is to stimulate innovation in product development by understanding industry needs and targeting research that will boost the incorporation of pulses, including dry peas, into food and industrial products. It supports 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, the project is exploring and supporting industrial avenues for pulses to ensure the maximum value added opportunities for producers.

About M\$1.5 of the money was spent on clinical trials designed to identify the impact that pulses have on health issues faced by Canadians including obesity, cardiovascular diseases and diabetes.

OUTLOOK: 2008-2009

World

World dry pea production is forecast to increase by 4%, from 2007-2008, to 10.06 Mt, due mainly to higher expected production in Canada. Although European Union seeded area is forecast to remain

stable, average yields are expected to recover from the weather related low levels in 2007-2008, resulting in higher production. In the US, production is forecast to decrease because of a lower seeded area. In Australia, production is expected to recover from the drought reduced level in 2007-2008. World supply is forecast to increase by 3% to 10.36 Mt. Use is expected to increase from the supply limiting level in 2007-2008, while carry-out stocks increase but remain at a low level.

Canada

In Canada, the seeded area is forecast to increase by 10% because of good prices, low carry-in stocks and higher prices for nitrogen fertilizer. The higher nitrogen fertilizer prices increase the cost of production for cereal grains and oilseeds more than for dry peas because dry peas can fix part of their nitrogen requirements. Canadian production is forecast to increase by 12% to 3.3 Mt, as higher yields compound the increase in seeded area. The yield forecast is based on trend and assumes that precipitation will be normal for the growing and harvest periods. Soil moisture reserves to date range from good to dry.

Supply is expected to increase by 10% to 3.5 Mt. Exports are expected to increase by 7% to 2.4 Mt due to the higher supply and continued strong demand. Although the carry-out stocks are forecast to increase, they would continue to be low with a stocks-to-use ratio of 9%. Prices are forecast to decrease because of the higher world and Canadian supply.

OUTLOOK: LONGER-TERM

Canada

Research is continuing to develop improved varieties to make Canada more competitive in world dry pea markets. Work is also continuing on market development to increase the demand for Canadian dry peas in domestic and export markets. In the feed market, programs are underway to develop markets for feed peas in several eastern Asian and Latin American countries, as well as to increase the use of dry peas for livestock feed in Canada. In the food market, programs are

underway to promote pulses, including dry peas, in a healthy diet. These programs are expected to increase the demand for Canadian dry peas, increase their value and increase domestic processing.

One of the major challenges facing the Canadian dry pea industry is the maintenance of a level of production which is adequate to meet market needs. This is difficult to do because of the variable weather conditions from year to year, especially for moisture, in the dry pea growing areas. Due to the variable weather conditions, average yields since 1991-1992 ranged from 1.3 tonnes per hectare (t/ha) to 2.7 t/ha and abandonment ranged from 1% to 19%. Although the seeded area increased sharply during the early and mid 1990s, the increase in seeded area has been slower since 1998-1999. To encourage additional seeding, financial returns need to be as good as, or better than, for alternative crops.

For more information, please contact:

Stan Skrypetz

Pulses and Special Crops Analyst

Phone: (204) 983-8972

E-mail: skrypetzs@agr.gc.ca

© Her Majesty the Queen in Right of Canada, 2008

**Electronic version available at
www.agr.gc.ca/mad-dam/**

ISSN 1207-621X
AAFC No. 2081/E

Bi-weekly Bulletin is published by the:

**Market Analysis Division,
Research & Analysis Directorate
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**

A/ Executive Director: Patti Miller
Chief: Fred Oleson

*To receive a free e-mail subscription to
Bi-weekly Bulletin, please send your request to
bulletin@agr.gc.ca.*

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

*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 and Food; Canadian International Grains Institute;
Pulse Canada; Saskatchewan Ministry of Agriculture; Market and Industry Services Branch (AAFC)