

Bi-weekly Bulletin

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DRY PEAS: SITUATION AND OUTLOOK

Canada has become the largest exporter of dry peas starting in 1997. In 1999, Canada accounted for about 40% of world exports. The value of Canadian dry pea exports was \$415 million in 1998-1999. Canada was the world's second largest producer of dry peas in 1999-2000, with 19% of total world production. In 2000-2001, Canada is expected to become the world's largest producer, with its share of world production increasing to 23%. Canadian seeded area for dry peas has increased by about 400% during the 1990s. 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 a new source of feed ingredient. In addition, the expansion has resulted in increased employment opportunities in Western Canada through the expansion of the handling, marketing and processing facilities. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for dry peas.

AGRONOMICS

Dry peas were one of the first cultivated crops and were first domesticated in the Middle East. They were an important crop in Eastern Canada during the period 1850-1950, with as much as 300,000 hectares seeded annually. The crop was gradually replaced by soybeans and had largely disappeared in Eastern Canada by the 1970s. In Western Canada, production started during the 1930s in Manitoba, but grew slowly until the 1990s when most of the production shifted to Saskatchewan.

Dry peas are a cool season crop with a restricted root system. They cannot tolerate hot weather or drought stress during flowering. 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, 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. Peas should not be grown on salt affected soils and should not be grown on the same field more than once in every 4 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 pea 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. Care must be taken in harvesting the crop. Dry peas which have been harvested in a careless manner and contain excessive amounts of foreign material, cracked seed coats, and broken and damaged seed will have heavy losses in the cleaning process.

UTILIZATION

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. A small, but important user, is the bird seed industry.

Dry peas are a good source of energy for hogs and contain amounts of digestible energy similar to wheat. When protein quality and amino acids, such as lysine, are considered in diet formulation for hogs, peas are very price competitive. Moreover, feed peas do not have to be heat treated to deactivate anti-nutritional factors. Protein testing of peas for on-farm feeding is recommended since feed pea protein will vary between individual lots.

Dry peas are known for having high quality protein, with a protein content of about 22.5%. The digestibility of protein from peas is good with digestibility values of 81-84% for hogs and 84-88% for poultry, which is almost as high as soymeal protein. Dry pea protein fed to cattle is readily digested. Pea protein, protein from cereals, and canola meal are nutritionally complementary, enhancing each one's value when used in rations.

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 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.

Food

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 are an excellent source of protein, fibre, and complex carbohydrates well suited to the demands of health conscious consumers. In addition, dry peas are a good source of potassium and B vitamins.

WORLD

Production

World dry pea production has been in the range of 11-13 million tonnes (Mt) during the 1990s except for two unusually high production years, 1993-1994 and 1994-1995, when it approached 15 Mt.

However, production has shifted out of Russia and Ukraine into Canada. In 1991-1992, Canada accounted for only 3% of world dry pea production, but by 1999-2000 Canada's share increased to 19%. Production in the European Union (EU) has been fairly stable. In China, India, Australia, and the United States (US), production varied from year to year, but there was not a significant change from the beginning of the decade to the end.

Trade

World trade in dry peas has been variable during the 1990s, ranging from a low of 2.37 Mt in calendar year 1992 to 3.67 Mt in 1995. In 1998, the latest year for which trade data is available, 3.16 Mt of dry peas were exported. At the beginning of the decade world exports were dominated by France which had about 40% share of exports. Canada's share was only about 10%. Other major exporters were Australia, Czechoslovakia, Hungary, Denmark, the United Kingdom, and the US. During the decade, Canada's share grew until it became the largest exporter in 1997. In 1998, Canada's share of exports increased to 36%, with France in second

place at 34%. Although complete data for 1999 is not available, Canada's share increased further to about 40%. In 1998, the only other significant exporters, in addition to Canada and France, were Australia, the US, and Ukraine.

At the beginning of the 1990s, the main importing countries were in western Europe; with the Netherlands being the largest, followed by Germany, Belgium and Spain. The only large non-European importer was India. By the end of the decade, there was some shifting of exports from Europe to Asia. Western Europe was still the largest importing region, with Belgium the largest importing country, followed by Spain, the Netherlands, Germany and Italy. However, India's imports tripled and China became a significant importing country. The shift in exports from Europe to Asia, implies that a larger share of the exports are now going for food use, rather than for feed.

CANADA

Production

Canadian dry pea production increased sharply during the early 1990s and stabilized at 1.45 Mt during the mid 1990s. Production decreased in 1996-1997, the year following good grain prices. The following year, production increased sharply and reached a record of 2.34 Mt in 1998-1999, due mainly to a record harvested area. In 1999-2000, harvested area decreased by 22%, however production decreased by only 4% because of record yields. The growth in dry pea production

has been largely in Saskatchewan. In 1991-1992, Saskatchewan accounted for 39% of Canadian production, Alberta for 40% and Manitoba for 20%. The remaining 1% was produced in British Columbia, Ontario and Quebec. In 1999-2000 Saskatchewan's share of production increased to 72%, Alberta's dropped to 23.5% and Manitoba's decreased to 4%, with 0.5% produced in British Columbia, Ontario and Quebec. Canadian production increased by 450% during the period of 1991-1992 to 1999-2000. Most of the increase was due to increased area, but there has also been an upward trend in average yields. During the same period, Saskatchewan production increased by about 900%, Alberta by 220% and Manitoba by only 10%.

Canada produces several types of peas, with the yellow type accounting for 64% of 1999-2000 production. Green peas accounted for about 32% of the production and the remaining 4% consisted of maple, green marrowfat, small yellow, and Austrian winter peas.

Marketing

Dry peas are sold on the open market to dealers located throughout the Prairie provinces. Feed peas are sold mainly to large grain companies, whereas food peas are sold to specialized cleaning facilities, some of which are owned by large grain companies, but most are smaller or medium-sized companies. Some dry peas are also sold directly to processing plants and feed mills. Some dry peas are grown under production contracts which guarantee a price for part of the production.

WORLD: DRY PEA PRODUCTION

	1996	1997	1998	1999	2000
	-1997	-1998	-1999	-2000	-2001f
.....thousand tonnes.....					
France	2,562	3,052	3,223	2,612	2,550
Canada *	1,169	1,747	2,337	2,252	2,700
China	1,176	1,000	1,276	1,300	1,300
Russia	1,323	1,419	660	680	660
Germany	301	399	589	609	590
India	670	740	550	600	600
Ukraine	985	903	652	509	480
Denmark	256	384	385	386	380
United Kingdom	240	371	324	355	350
Australia ***	454	303	298	348	350
United States **	151	300	304	261	250
Other	1,622	1,653	1,585	1,798	1,790
World	10,909	12,271	12,183	11,710	12,000
Carry-in Stocks	700	300	600	700	500
World Supply	11,609	12,571	12,783	12,410	12,500

f: AAFC forecast, April 2000

Source: FAO April 2000; except *Statistics Canada, **USDA, ***ABARE

CANADA: DRY PEAS EXPORTS

	1997	1998	1999
August-July	-1998	-1999	-2000f
.....thousand tonnes.....			
Europe	439	589	550
Asia	395	700	500
Central America *	151	215	205
South America	77	90	90
Oceania	0	42	40
United States	31	23	25
Middle East	15	21	20
Africa	8	25	20
Total	1,116	1,705	1,450

* Includes the Caribbean region

f: AAFC forecast, April 2000

Source: Statistics Canada

The Winnipeg Commodity Exchange launched a new field (feed) pea futures contract on April 5, 1999. Pricing for the new contract is free on board in the Par region (locations in Manitoba, Saskatchewan, and Alberta, excluding the Peace River region). The contract is traded in Canadian dollars and the trading months are February, April, June, August, October, and December.

Feed peas are generally shipped, from the dealers plants to ports and other markets, bulk in rail cars, whereas food peas are shipped mainly by rail in containers, either bulk or in bags.

Market development activities are led by Pulse Canada, an industry organization representing producers, traders, exporters and processors. The Canadian Grain commission administers quality standards for dry peas.

Domestic Use

About 35% of the dry peas produced in Canada are consumed in Canada. The main user is the livestock feed industry in the Prairie provinces, especially for feeding hogs.

Dry peas are a very economical feed ingredient and can substitute for imported corn and soymeal in Western Canada. Usually peas displace soymeal and corn in a hog ration in a one-third to two-thirds ratio. Therefore, a formula of one-third soymeal and two-thirds corn gives an approximation of the opportunity price of peas. The lowest price spread is in eastern Manitoba because of the lowest transportation cost from the US mid-west corn and soybean producing areas. The price advantage of using peas gradually increases in a westerly direction. Savings from using peas will likely be

less if canola meal, wheat, and barley are used, instead of soymeal and corn, in the ration.

An innovative use of dry peas in livestock feed is a mixture of two-thirds ground peas and one-third canola meal. In a mixture of peas and canola meal, peas complement canola meal. Although canola meal is an excellent source of protein, it is low in digestible energy. Peas have high energy digestibility, and the amino acid profile of peas, which is high in lysine, complements the amino acid profile of canola meal, which is high in methionine and cystine.

The domestic food market is much smaller than the feed market, but is important for the producers and dealers. The domestic processing industry includes splitting, canning, packaging of whole or split seed, dry soup mixtures, or milled for flour, hulls, protein concentrate and starch. The marrowfat type, as well as some others, are used in the confectionary markets. An additional domestic market for dry peas is seed for planting. Some small yellow seed is sold

for seeding silage mixtures. The maple and Austrian winter types are used mainly by the bird seed industry.

Canadian domestic use has been increasing with increasing Canadian supply. Most of the increase is due to greater use for livestock feed.

Exports

About 65% of Canadian dry peas are exported, with about 40% expected to go into the feed market in 1999-2000, mainly in Europe, and 60% into the food market mainly in Latin America and Asia. The feed market consumes both the yellow and green types. Although both yellow and green peas are sold into the food

COST SAVINGS USING PEAS IN A HOG RATION *

	Opportunity Price of Peas ^{1/}	Actual Price of Peas	Feed Cost Saving ^{2/}
\$/t.....		
Winnipeg	174.00	140.00	8.50
Saskatoon	182.00	135.00	11.75
Calgary	196.00	140.00	14.00

*April 2000

^{1/} Based on one-third soymeal and two-thirds corn.

^{2/} Based on a 25% inclusion level.

Source: AAFC

CANADA: DRY PEAS SUPPLY AND DISPOSITION

<i>August -July crop year</i>	1996 -1997	1997 -1998	1998 -1999	1999 -2000f	2000 -2001f
Harvested Area (000 ha)	520	848	1,078	835	1,201
Yield (t/ha)	2.25	2.06	2.17	2.70	2.25
thousand tonnes.....				
Carry-in Stocks	220	80	170	160	170
Production	1,169	1,747	2,337	2,252	2,700
Imports	8	12	10	10	10
Total Supply	1,397	1,839	2,517	2,422	2,880
Exports	856	1,116	1,705	1,450	1,550
Domestic Use	461	553	652	802	850
Carry-out Stocks	80	170	160	170	480
Stocks-to-use ratio	6%	10%	7%	8%	20%
Average producer price (\$/t)	209	177	132	120-140	115-145
Harvested Area (000 ac.)	1,285	2,095	2,664	2,063	2,968
Yield (bu/ac.)	33	31	32	40	33
Production (million bu)	43	64	86	83	99
Average producer price (\$/bu)	5.69	4.82	3.59	3.26-3.81	3.13-3.95

f: AAFC forecast, April 2000

Source: Statistics Canada and AAFC

CANADA: TYPES OF DRY PEAS PRODUCED

<i>crop year</i>	1998 -1999	1999 -2000	2000 -2001f
thousand tonnes.....		
Yellow	1,400	1,450	1,800
Green	820	710	800
Other *	117	92	100
Total	2,337	2,252	2,700

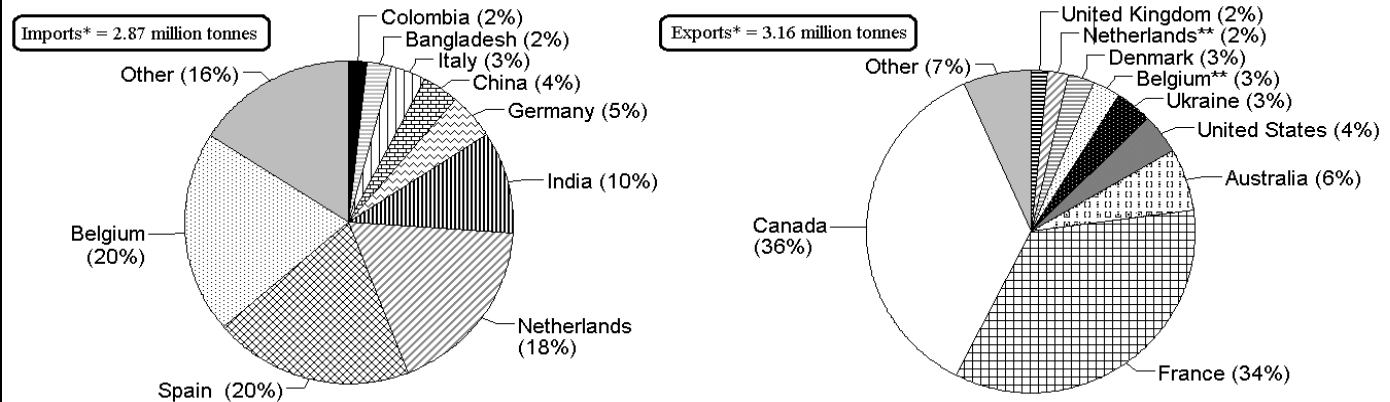
* Includes maple, green marrowfat, small yellow, and Austrian winter peas.

f: AAFC forecast, April 2000

Source: SAF, AAFC

WORLD: DRY PEA IMPORTS

1998

WORLD: DRY PEA EXPORTS

Source: FAO, April 2000

* The difference between world imports and exports may be attributed to delivery timing. In addition, Cuba also imports dry peas but complete data is unavailable.

** transshipments

markets all over the world, the main market for green peas is Latin America and for yellow peas, Asia. In Europe, the largest importing country is Spain, followed by Belgium, the Netherlands, and Ireland. In Asia, the largest importer is India, followed by Bangladesh and Pakistan. In Latin America, the largest market is Cuba, followed by Colombia, Peru, and Venezuela.

Canadian exports increased sharply in 1998-1999 to a record 1.7 Mt, because of increased supply. For 1999-2000, exports are forecast to decrease by about 15% to 1.45 Mt due mainly to lower expected sales to Asia. The expected decreased exports to Asia are partly due to lower demand and partly to increased competition from France and Australia.

Prices

The price of feed peas is related to prices of alternate feed grain and protein meal ingredients. There are, however, regional price differences within the Prairie provinces based on local supply and demand factors. Food pea prices are at a premium to feed pea prices, however the quality standards are higher. The premiums for yellow food peas and green food peas are usually different, depending on the supply and demand factors for each type of peas. For example, in 1997-1998 the average price for green peas was higher than for yellow peas, but in 1998-1999 the average price of yellow peas was higher. For 1999-2000, the average price of yellow peas is also expected to be higher. The market for green food peas is smaller than for yellow food peas. Therefore, it is easier to oversupply the market, as happened in

1998-1999. The price for maple and small yellow peas also varies depending on the supply and demand factors for each type. Green marrowfat peas are mostly produced under contract, which guarantee a price for the production.

The average price over all types, grades and markets dropped sharply in 1998-1999 in response to higher supply and lower prices for feed grains and protein meal. The average price for 1999-2000 is forecast to be similar to 1998-1999

OUTLOOK: 2000-2001**World**

World dry pea production is forecast to increase slightly to 12 Mt, due to higher expected production in Canada which more than offsets lower production forecasts for the EU, Russia, Ukraine, and the US. The impact of the Agenda 2000 Common Agricultural Policy reform in the EU is expected to be neutral for dry peas. The decreased production in the EU is based on slightly lower expected yields, and the decrease in the US, Russia, and Ukraine is based on lower expected seeded area. Production in the rest of the world is expected to be similar to 1999-2000. World total supply is forecast to remain stable at about 12.5 Mt, because of lower carry-in stocks.

Canada

Canadian production is forecast to increase by 20% to 2.70 Mt, as a 44% increase in the seeded area is partly offset by trend yields which are considerably lower than 1999-2000 actual yields. The increase in seeded area is largely due to a shift out of canola, because of higher expected net return and

lower variable cost for dry peas compared to canola. Total supply is expected to increase by 19% to 2.88 Mt. Exports and domestic use are expected to increase to 1.55 Mt and 0.83 Mt respectively as Canadian supply increases and total world supply remains stable. Carry-out stocks are forecast to increase to 0.48 Mt, with a stocks-to-use ratio of 20%. The average price over all types, grades, and markets is forecast to be similar to 1999-2000 at \$115-145 per tonne, in line with stable world supply.

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