

Bi-weekly Bulletin

March 5, 2004 Volume 17 Number 5

DRY PEAS: SITUATION AND OUTLOOK

Canada is normally the largest producer and exporter of dry peas in the world, accounting, on average, for about 20% of world production and 50% of world exports. The value of Canadian dry pea exports peaked at \$492 million (M) in 2000-2001, but declined in the following two years due to reduced production caused by drought. Canadian exports are expected to increase sharply in 2003-2004. Canadian seeded area for dry peas increased by about 550% 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 a new 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. 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, from a peak of 14.4 million tonnes (Mt) in 1994-1995 to a low of 9.6 Mt in 2002-2003, but increased to 10.8 Mt in 2003-2004. During this period, production has shifted out of Russia, Ukraine and France into Canada. In 1994-1995, Canada accounted for only 13% of world dry pea production, but in 2000-2001 Canada's share peaked at 26%.

WORLD: DRY PEA SUPPLY AND DISPOSITION							
	2000 -2001	2001 -2002	2002 -2003	2003 -2004	2004 -2005f		
Harvested Area (000 ha) Average Yields (t/ha)	5,974 1.80	6,285 1.69	6,245 1,54	6,576 1.64	6,600 1.69		
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Canada	2,864	2,023	1,365	2,124	2,360		
France	1,890	1,720	1,715	1,635	1,800		
Russia	900	1,300	1,267	1,380	1,300		
China	1,020	1,120	1,200	1,230	1,200		
India	700	700	730	730	750		
Ukraine	499	619	613	678	600		
Germany	403	560	413	393	430		
Australia	401	414	160	418	400		
United Kingdom	315	361	292	281	310		
United States	193	204	221	274	380		
Others	1,572	1,576	<u>1,630</u>	1,626	1,692		
Total Production	10,757	10,597	9,606	10,769	11,222		
Carry-in Stocks	800	500	500	500	500		
Total Supply	11,557	11,097	10,106	11,269	11,722		
Total Use	11,057	10,597	9,606	10,769	11,122		
Carry-out Stocks	500	500	500	500	600		
Stocks-to-use ratio (%)	5%	5%	5%	5%	5%		

f: forecast, Agriculture and Agri-Food Canada, March 2004

Source: FAO, UNIP, AAFC, Pulse Australia, USDA, and Statistics Canada, March 2004

Trade

World trade in dry peas has been variable during the past ten years, ranging from a low of 2.75 Mt in calendar year 1997 to a high of 3.76 Mt in 1999. In 2002, the latest year for which trade data is available, 2.86 Mt of dry peas were exported. Ten years ago, world exports were dominated by France which had about a 40% share of exports. Canada's share was only about 15%. Other major exporters were Australia, Czech republic, Hungary, Denmark, and the United States (US). During the decade, Canada's share grew until it became the largest exporter in 1997. In 2001, Canada's share of exports peaked at 56%, with France in second place at 16%. In 2001, the only other significant exporters, in addition to Canada and France, were Australia, the US and Ukraine. In 2002, Canada's share of world exports fell sharply to 28% due to drought and France became the largest exporter for the first time since 1996 with a share of 29%.

Ten years ago, 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. Since then, there was some shifting of exports from Europe to Asia. In 2002, Asia was the largest importing region, with India, Bangladesh,

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China and Pakistan being the largest importing countries. Dry pea exports to Asia are nearly all for food. Europe was the second largest importing region, with Spain, Belgium, Netherlands and Italy, the largest importing countries. European imports were nearly all for livestock feed. Latin America is also a major importing region for dry peas, especially Colombia and Cuba. Smaller volumes of dry peas are imported by countries in Africa and the Middle East. Exports to Latin America, Africa and the Middle East are largely for food. 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

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

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| WORLD: DRY PEA EXPORTS |       |       |             |       |       |
|------------------------|-------|-------|-------------|-------|-------|
|                        | 1998  | 1999  | 2000        | 2001  | 2002  |
|                        |       | tr    | nousand tor | nnes  |       |
| Canada*                | 1,303 | 1,594 | 1,857       | 1,969 | 792   |
| France                 | 1,096 | 1,176 | 766         | 565   | 836   |
| Australia              | 197   | 260   | 335         | 337   | 391   |
| Ukraine                | 132   | 74    | 25          | 108   | 181   |
| Russia                 | 10    | 1     | 2           | 19    | 131   |
| United States          | 127   | 101   | 91          | 106   | 95    |
| Other                  | 499   | 554   | 365         | 390   | 432   |
| Total                  | 3,364 | 3,760 | 3,441       | 3,494 | 2,858 |

| WORLD |      | PEA IMPOR | (10  |
|-------|------|-----------|------|
| 4000  | 4000 | 2000      | 2004 |

|             | 1998            | 1999  | 2000  | 2001  | 2002  |  |
|-------------|-----------------|-------|-------|-------|-------|--|
|             | thousand tonnes |       |       |       |       |  |
| India       | 257             | 146   | 137   | 849   | 870   |  |
| Belgium     | 579             | 569   | 544   | 415   | 415   |  |
| Bangladesh  | 70              | 118   | 110   | 260   | 277   |  |
| Spain       | 561             | 527   | 625   | 523   | 215   |  |
| China       | 101             | 68    | 111   | 177   | 130   |  |
| Netherlands | 512             | 522   | 271   | 165   | 114   |  |
| Italy       | 99              | 108   | 141   | 104   | 100   |  |
| Pakistan    | 30              | 44    | 85    | 110   | 91    |  |
| Colombia    | 50              | 37    | 56    | 86    | 56    |  |
| Cuba        | 150             | 147   | 49    | 85    | 43    |  |
| Germany     | 131             | 164   | 79    | 57    | 38    |  |
| Philippines | 18              | 24    | 19    | 48    | 17    |  |
| Other       | 466             | 490   | 586   | 575   | 316   |  |
| Total       | 3,024           | 2,964 | 2,813 | 3,454 | 2,682 |  |

The difference between imports and exports is attributed to the timing of delivery and because of less complete reporting for imports.

Source: FAO, except \* which is Statistics Canada, March 2004

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.

Canadian dry pea seeded area increased by 550% since 1991-1992, with 1.3 million hectares seeded in 2003-2004. There has also been an upward trend in average yields until 2001-2002, when average yields fell sharply due to drought. The growth in dry pea production has been largely in Saskatchewan. In 2003-2004, Saskatchewan accounted for 70% of Canadian production, Alberta for 24%, Manitoba for 5.5%, with 0.5% produced in British Columbia. Only a small volume of dry peas are produced in eastern Canada. Canada produces several types of peas, with the large and medium yellow types accounting for 61% of 2003-2004 production. Green peas accounted for 37% 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 mainly to specialized cleaning and handling facilities. Dry peas are also sold directly to processing plants, feed mills and hog 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 35% of the dry peas produced in Canada are consumed domestically, with the largest use being livestock feed, followed by seed and food. Most of the increase in domestic use is due to greater use for livestock feed in the Prairie provinces, especially for feeding hogs.

#### Exports

On average, about 65% of Canadian dry peas are exported. In 2000-2001, about 45% of the exports went into the feed market, mainly in Europe, and 55% into the food market mainly in Asia and Latin America. However, in the following two crop years, feed exports dropped sharply due to lower production in Canada and strong demand in the food markets. For 2003-2004 feed exports are expected to recover to about 50% of total exports. 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. In Europe, the largest importing countries are Spain and Belgium. Other significant European importers are Italy, Ireland, France and the United Kingdom. In Asia, the largest importer is India, followed by Bangladesh and China. Other significant importers in Asia are Pakistan, Japan, South Korea, Philippines and Taiwan. In the western hemisphere, Cuba and Colombia are the

largest importers. Other significant importers are Brazil, US, Venezuela, Mexico, Ecuador, and Peru. In Africa, the most significant importers are South Africa, Algeria and Morocco. Canadian exports were the lowest in 11 years in 2002-2003, due to low supply, but are forecast to recover in 2003-2004.

#### **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, however, 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. 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 decrease in 2003-2004 due to higher supply.

| CANADA: DRY PEA SUPPLY AND DISPOSITION                                              |                           |               |                 |                |                |  |
|-------------------------------------------------------------------------------------|---------------------------|---------------|-----------------|----------------|----------------|--|
| August-July<br>crop year                                                            | 2000<br>-2001             | 2001<br>-2002 | 2002<br>-2003   | 2003<br>-2004f | 2004<br>-2005f |  |
| Seeded Area (000 ha)                                                                | 1,240                     | 1,344         | 1,297           | 1,303          | 1,238          |  |
| Harvested Area (000 ha)                                                             | 1,220                     | 1,285         | 1,050           | 1,271          | 1,210          |  |
| Yield (t/ha)                                                                        | 2.35                      | 1.57          | 1.30            | 1.67           | 1.95           |  |
|                                                                                     |                           |               | thousand tonnes |                |                |  |
| Carry-in stocks                                                                     | 400                       | 195           | 275             | 310            | 250            |  |
| Production:                                                                         |                           |               |                 |                |                |  |
| Yellow                                                                              | 1,820                     | 1,325         | 870             | 1,290          | 1,410          |  |
| Green                                                                               | 910                       | 640           | 470             | 785            | 900            |  |
| Other*                                                                              | <u>134</u>                | <u>58</u>     | 25              | <u> </u>       | 50             |  |
| Total Production                                                                    | 2,864                     | 2,023         | 1,365           | 2,124          | 2,360          |  |
| Imports                                                                             | 12                        | 27            | 41              | 25             | 25             |  |
| Total Supply                                                                        | 3,276                     | 2,245         | 1,681           | 2,459          | 2,635          |  |
| Exports                                                                             |                           |               |                 |                |                |  |
| Asia                                                                                | 944                       | 778           | 413             | 430            | 580            |  |
| Europe                                                                              | 945                       | 316           | 17              | 650            | 560            |  |
| South America                                                                       | 145                       | 116           | 68<br>47        | 90<br>70       | 110            |  |
| Central America and Antilles                                                        |                           | 95<br>25      | 47              | 70             | 85             |  |
| Africa<br>United States                                                             | 27<br>22                  | 35<br>26      | 33<br>26        | 40<br>30       | 45<br>25       |  |
| Middle East                                                                         | 13                        | 20<br>15      | 20<br>19        | 35             | 25<br>40       |  |
| Oceania                                                                             | 14                        | 0             | <u> </u>        | <u>5</u>       | 5              |  |
| Total Exports                                                                       | 2,196                     | <u> </u>      | <u> </u>        | <u> </u>       | <u> </u>       |  |
| Total Domestic Use                                                                  | 885                       | 589           | 743             | 859            | 885            |  |
| Total Use                                                                           | 3,081                     | 1,970         | 1,371           | 2,209          | 2,335          |  |
| Carry-out Stocks                                                                    | 195                       | 275           | 310             | 250            | 300            |  |
| Stocks-to-use ratio (%)                                                             | 6%                        | 14%           | 23%             | 11%            | 13%            |  |
| Harvested Area (000 ac)                                                             | 3,015                     | 3,175         | 2,595           | 3,141          | 2,990          |  |
| Yield (bu/ac)                                                                       | 35                        | 23            | 19              | 25             | 29             |  |
| Production (Mbu)                                                                    | 105                       | 74            | 50              | 78             | 87             |  |
| Average producer price                                                              |                           |               |                 |                |                |  |
| Food - Yellow** \$/t                                                                | 151                       | 209           | 220             | 175            | 165            |  |
| \$/bu                                                                               | 4.10                      | 5.70          | 6.00            | 4.75           | 4.50           |  |
| Food - Green** \$/t                                                                 | 147                       | 220           | 290             | 208            | 180            |  |
| \$/bu                                                                               | 4.00                      | 6.00          | 7.90            | 5.65           | 4.90           |  |
| Feed*** \$/t                                                                        | 121                       | 151           | 158             | 149            | 138            |  |
| \$/bu                                                                               | 3.30                      | 4.10          | 4.30            | 4.05           | 3.75           |  |
| * small yellow, maple, Austriar<br>** Saskatchewan, No. 1 Canao<br>*** Saskatchewan |                           | wfat          |                 |                |                |  |
| f: Agriculture and Agri-Food Canad                                                  | da forecast March 2004    |               |                 |                |                |  |
|                                                                                     | aa 101000000, 111011 2001 |               |                 |                |                |  |

f: Agriculture and Agri-Food Canada forecast, March 2004 Source: Statistics Canada and AAFC

#### OUTLOOK: 2004-2005

#### World

World dry pea production is forecast to increase by 4%, from 2003-2004, to 11.22 Mt, due mainly to higher expected production in the European Union (EU) and Canada. World supply is forecast to increase by 4% to 11.72 Mt. Total use and carry-out stocks are expected to increase.

#### Canada

Canadian production is forecast to increase by 11% to 2.36 Mt, as a 5% decrease in seeded area is more than offset by higher yields. It is assumed that precipitation will be normal for the spring and summer. However, most parts of Saskatchewan and Alberta have lower than normal soil moisture reserves. Therefore, yields are forecast to be below trend, but higher than in 2003-2004. Production is expected to increase for all types of dry peas. Total supply is expected to increase by 7% to 2.64 Mt. The higher supply and lower prices are expected to stimulate demand. Therefore, exports are forecast to increase by 7% to 1.45 Mt, and domestic use is expected to increase by 3% to 0.89 Mt. Carry-out stocks are forecast to increase, with a stocks-to-use ratio of 13%. Prices are forecast to decrease for all types of dry peas due to the higher 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 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 November 2003, the first commercial shipment of feed peas was made to China. On January 1, 2004, South Korea reduced the import tariffs for feed peas to 2% from 30% based on a tariff rate quota (TRQ) of 450,000 tonnes (t). The tariff for above TRQ imports was reduced to 27%.

These events increase the potential of developing long term feed pea markets in these countries. 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.

There are two main challenges facing the Canadian dry pea industry. One is to maintain 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 much lower since 1998-1999. To encourage additional seeding, financial returns need to be as good or better than for alternative crops.

The second challenge is the US Farm Security and Rural Investment Act of 2002 (FSRIA). For the first time, US dry pea producers are eligible for the loan program. Changes made to the loan program for 2003-2004, resulted in high loan deficiency payments (LDP). The high LDPs are expected to sharply increase US dry pea production.

Another factor to watch is EU Common Agricultural Policy reforms, under which a single direct payment will replace most payments currently offered. The payment will be independent of current production levels or prices, which might result in some shift in production from dry peas and fababeans into cereal grains, because yields for cereal grains in the EU are significantly higher than for dry peas and fababeans. If the change in policy decreases dry pea and fababean production in the EU, it will provide an opportunity for Canadian exporters to increase feed pea sales to the EU. However, there could be competition for the EU market from the US and Ukraine, if production in these countries increases significantly. The

direct payments are scheduled to start in 2005, but individual member countries have the option of delaying implementation, under certain conditions, until 2007.

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

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#### **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.

#### **Feeding Hogs**

Dry peas are a good source of energy and protein for hogs. When protein quality and amino acids, such as lysine, are considered in diet formulation for hogs, peas are very price competitive. 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. Dry peas are a very economical feed ingredient and can substitute for imported corn and soybean meal in western Canada. The poorest opportunity for dry pea use is in eastern Manitoba, because of the lower transportation cost from the US mid-west corn and soybean producing areas.

#### Nutrition

Dry peas have a 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 22.5%. 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.

#### **Innovative Uses**

An innovative use of dry peas in livestock feed is a mixture of two-thirds ground peas and one-third 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 cystine. 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 more recent development is an extruded blend of ground dry peas and flaxseed which contains essential omega-3 fatty acid obtained from the flaxseed oil. A potential use of dry peas is to manufacture protein concentrate for feeding to

| С                                                                                                                                                                                                   | CANADA: COST SAVINGS OF USING<br>DRY PEAS IN A HOG RATION <sup>1/</sup>                                   |      |    |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------|----|--|--|--|--|
|                                                                                                                                                                                                     | Opportunity Actual Feed<br>Price of Price of Cost<br>Dry Peas <sup>2/</sup> Dry Peas Saving <sup>3/</sup> |      |    |  |  |  |  |
|                                                                                                                                                                                                     |                                                                                                           | \$/t |    |  |  |  |  |
| Winnipeg                                                                                                                                                                                            | 214                                                                                                       | 166  | 12 |  |  |  |  |
| Saskatoon                                                                                                                                                                                           | 240                                                                                                       | 170  | 17 |  |  |  |  |
| Calgary                                                                                                                                                                                             | 244                                                                                                       | 178  | 16 |  |  |  |  |
| <ul> <li><sup>1/</sup> February 2004</li> <li><sup>2/</sup> Based on one-third soybean meal and two-thirds corn</li> <li><sup>3/</sup> Based on 25% inclusion rate</li> <li>Source: AAFC</li> </ul> |                                                                                                           |      |    |  |  |  |  |

farmed fish. It would be combined with flaxseed oil to replace fish meal and fish oil.

| ENERGY VALUES IN<br>DIGESTIBLE ENERGY (DE),<br>METABOLIZABLE ENERGY (ME) AND<br>NET ENERGY (NE) SYSTEMS |                    |          |       |  |  |  |
|---------------------------------------------------------------------------------------------------------|--------------------|----------|-------|--|--|--|
| Ingredient                                                                                              | ngredient 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                                                                               |                    |          |       |  |  |  |

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#### Feeding Other Livestock and Birds

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. 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. Some small yellow seed is sold for seeding in silage mixtures.

#### 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 can also be cooked and eaten as a vegetable.

#### **Domestic Use**

The domestic food market is much 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 mixtures, or milling for flour, hulls, protein concentrate and starch. The marrowfat type, as well as some others, are used in the confectionary markets and to make a spread called pea butter.

#### **Healthy Diet**

Pulses, including dry peas are increasingly being used in health-conscious diets to promote general well-being and reduce the risk of illness. They are low in fat, 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 dry peas are low in fat and are cholesterol free, they are an excellent heart healthy food that may be beneficial to the prevention of cardiovascular disease. Dry peas are an inexpensive, high quality source of protein. Studies have shown that the high protein content in dry peas exerts major cholesterol lowering effects.

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.

Dry peas 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.

Dry peas contain non-nutritional components called phytochemicals which have demonstrated favourable effects in the prevention and treatment of numerous chronic conditions including cancer, diabetes, cardiovascular disease and hypertension.

#### **Potential Use**

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.

#### **US GOVERNMENT PROGRAMS ENGOURAGE HIGHER DRY PEA PRODUCTION**

#### US FARM SECURITY AND RURAL INVESTMENT ACT OF 2002 (FSRIA)

Under FSRIA, for the first time, dry peas are included under the loan program. For 2002-2003, the loan rate was US\$6.33 per hundred pounds (/cwt) based on No. 1 grade, with discounts for lower grades. No Loan Deficiency Payments (LDPs) were made because the posted county prices were higher than the loan rate. The loan rate provides a floor return because if the price is lower than the loan rate, the producer is eligible for a LDP.

Dry peas are not eligible for **direct payments** and **counter-cyclical** support. However, these are based on historical seeded area and yields and are theoretically decoupled from the area seeded during the year of the payout.

For 2003-2004, two regions for loan rates were established. For the West Region (Arizona, California, Idaho, Nevada, New Mexico, Oregon, Utah and Washington) the loan rate was set at US\$6.68/cwt. For the East Region (all other states, including Montana and North Dakota), the loan rate was set at US\$5.89/cwt. In addition the base grade was lowered to feed, which made it easier for dry peas to qualify for LDPs. For crop years 2004-2007, the loan rate is expected to fall slightly.

#### **Loan Deficiency Payment**

From July 11, 2003 until January 2, 2004, the weekly posted county price for the West Region was US\$4.00/cwt and for the East Region US\$3.21/cwt. Therefore, the LDP was US\$2.68/cwt. Since then the weekly posted county price has been higher and more variable. On February 27, 2004, the posted county price for the West Region was US\$4.50/cwt and US\$3.71/cwt for the East Region. Therefore, the LDP was US\$2.18/cwt. Although the LDP is based on the price for feed peas, it has been paid to all grades of dry peas.

Loans made under the loan program from July 1, 2003 to February 27, 2004 were US\$0.61M compared to US\$1.1M during the same period in 2002-2003. However, there has been a sharp increase in LDPs to US\$13.82M for the July 1, 2003 to February 27, 2004 period of 2003-2004, from nil during the same period in 2002-2003. In fact, 2003-2004 LDPs for dry peas were the third highest, after wheat and corn, even though dry pea production is very small compared to wheat and corn.

#### Prices

The high level of LDPs for dry peas is due partly to lower prices in 2003-2004, but mainly to the lowering of the base grade to calculate posted county prices. The low posted county price reflects the undeveloped feed market for dry peas in the US. For example, on March 4, 2004 the North Dakota posted county price was US\$3.71/cwt. In comparison prices in

the neighbouring Canadian province of Saskatchewan, converted to US\$, were about US\$5.70/cwt. The LDP has been paid for all grades of dry peas. Since only a small portion of US dry peas are used for livestock feed, prices received by US farmers are significantly higher. For example, on March 4, 2004 the North Dakota price of green peas in the food market was US\$8.33-8.50/cwt. However, by including the US\$2.18/cwt LDP, the producer would have received US\$10.51-10.68/cwt. In contrast a producer in Saskatchewan received, converted to US dollars, about US\$7.20/cwt. For yellow peas in the food market, the North Dakota price was US\$7.50-8.00/cwt. After adding the LDP, the North Dakota producer would have received US\$9.68-10.18/cwt. In contrast the Saskatchewan producer received about US\$6.70/cwt. US prices in the food market, before LDPs, were higher than

| FINANCIAL RETURNS COMPARISON:<br>NORTH-WESTERN NORTH DAKOTA, MARCH 4, 2004              |               |                |                 |                |  |  |
|-----------------------------------------------------------------------------------------|---------------|----------------|-----------------|----------------|--|--|
|                                                                                         | Green<br>Peas | Yellow<br>Peas | Spring<br>Wheat | Durum<br>Wheat |  |  |
| Yield (bu/acre)*                                                                        | 24.00         | 25.00          | 27.00           | 27.00          |  |  |
|                                                                                         |               | US\$           | /bu             |                |  |  |
| Price - food market                                                                     | 5.05          | 4.65           | 3.63            | 3.83           |  |  |
| LDP                                                                                     | 1.31          | 1.31           | 0.00            | 0.00           |  |  |
| Total Returns                                                                           | 6.36          | 5.96           | 3.63            | 3.83           |  |  |
|                                                                                         |               | US\$/a         | acre            |                |  |  |
| Market Returns                                                                          | 121.20        | 116.25         | 98.01           | 103.41         |  |  |
| LDP Returns                                                                             | 31.44         | 32.75          | 0.00            | 0.00           |  |  |
| Total Returns                                                                           | 152.64        | 149.00         | 98.01           | 103.41         |  |  |
| Cost of Production**                                                                    | <u>110.31</u> | <u>110.31</u>  | <u>98.12</u>    | <u>101.24</u>  |  |  |
| Net Returns                                                                             | 42.33         | 38.69          | -0.11           | 2.17           |  |  |
| *stubble, ** fixed and variable<br>Source: North Dakota State University, USDA and AAFC |               |                |                 |                |  |  |

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Canadian prices because of strong demand for US government food aid programs where only US produced peas can be used.

#### 2004-2005 Production

The high LDPs are expected to support a sharp increase in the US seeded area for dry peas for 2004-2005. However, the support from high LDPs for an increased seeded area is expected to be partly offset by (1) inexperience with producing dry peas and (2) the fact that dry peas are not eligible for direct payments and counter-cyclical support, since some producers may be concerned about the impact of seeding dry peas on future farm program entitlements.

In 2003-2004, nearly half of US dry peas were seeded in North Dakota, with the balance seeded in Washington, Idaho, Montana and Oregon. For 2004-2005, US seeded area is expected to increase by about 35%, with most of the increase in North Dakota. Assuming normal yields, production is forecast to increase by about 40%.

#### Impact of the Loan Program on Production

A study by the US Congressional Budget Office forecast a 152% increase in the US seeded area, to 321,000 ha (794,000 ac), for dry peas from 2002-2003 to 2007-2008 due to the inclusion of dry peas under the loan program. Assuming normal yields, production would increase to 600,000 t from the 221,000 t produced in 2002-2003 and the 274,000 t produced in 2003-2004. Most of the increase in production is expected to occur in North Dakota, which has the most land suitable for dry pea production, especially the central and western regions of the state. The increased dry pea seeded area is expected to come out of wheat and durum area. However, the increased dry pea area would reduce the wheat and durum area in North Dakota by only about 5%.

#### Impact on Canada

At the present time, US dry peas are sold largely into the food market, with a significant portion going for government food aid programs. The US feed market for dry peas is undeveloped. If the US feed market develops in line with the increase in production, so that most of the dry peas go into the US feed market, the impact on Canadian prices might be relatively small, as dry peas would replace other feed ingredients. However, if the extra US production is exported, it would significantly pressure Canadian prices, especially in the food markets. Since food market prices are more volatile, higher US production would tend to lower the high points in the price cycle. The US produces mainly green peas and assuming that most of the increase in production would be for green peas, the pressure on Canadian prices in the food markets would be higher for green peas than for yellow peas. If the US exported dry peas into the feed markets, it would pressure prices for Canadian feed peas, but to a lesser extent than in the food markets because, at the world level, feed market prices are also affected by prices of alternative feed ingredients.

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#### CANADA

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.

**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 pulse crops, markets, and health and nutrition.

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