EC-1277

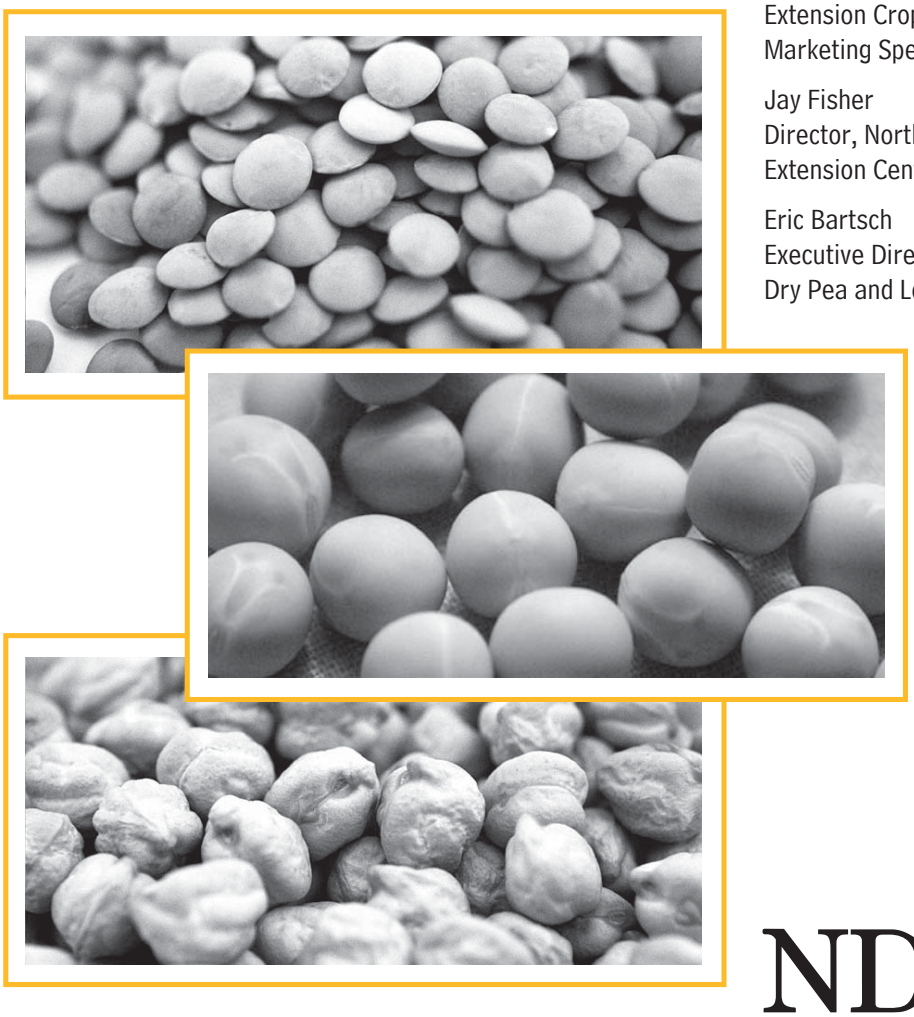
Pulse Crop Marketing Guide

Ed Janzen
Research Associate

George Flaskerud
Extension Crops Economist/
Marketing Specialist

Jay Fisher
Director, North Central Research
Extension Center

Eric Bartsch
Executive Director, North Dakota
Dry Pea and Lentil Association



NDSU
Extension Service
North Dakota State University
Fargo, North Dakota 58105

AUGUST 2006

Introduction

General

Pulses are edible seeds of annual legumes and are produced throughout the world. They include plants such as field peas, lentils, dry edible beans, chickpeas, soybeans, fenugreek, fababeans and other minor plants (1). The pulse industry in the United States generally refers only to field peas, lentils and chickpeas. This study is limited to a discussion of those three categories. While soybeans technically can be considered a pulse crop, in the United States they are classed as an oilseed and reported as such.

As with most agricultural products today, pulses definitely are a part of a global market. However, unlike wheat, corn and soybeans, in which the United States is a major player, the country is a relatively small, but growing, participant in the world pulse industry. A brief comparison of the U.S. and Canadian pulse industries is included to put the U.S. pulse industry into perspective.

Reviewing the world pulse scene is important, given the global nature of the pulse industry, to better understand the forces shaping the markets for pulses produced in the United States. Toward that end, this publication reviews the global production and trade (exports and imports) for each of the pulse crops considered here — field/dry peas, lentils and chickpeas.

Domestic Production of Pulses

Given the agronomic characteristics of pulses, production in the United States generally is limited to the Pacific Northwest and the northern Plains states. Dry pea and lentil production in the United States traditionally has been centered in the Palouse region of the Pacific Northwest (Washington, Oregon, Idaho) but in recent years has expanded significantly into the northern Plains (North Dakota and Montana). In general, agronomic conditions in North Dakota are well suited for pulses. Pulses are a growing factor in North Dakota agriculture. As producers seek ways to diversify and enhance the profitability of their farming operations, alternative crops are assuming a greater role. Pulses are one of the recent success stories, with rapid expansion in the last few years.

Pulse crop acreage and production statistics for the United States are displayed in Tables 1, 2 and 3 with accompanying charts. U.S. dry pea acreage is recovering after a decline in 1999 and 2000, with most of the increase coming in North Dakota. North Dakota leads all states, accounting for about 70 percent of dry pea production in 2005. Lentil acreage planted in North Dakota and Montana saw a strong increase during 1999-2005, while acreage in Washington

Table 1. DRY PEAS: U.S. Acreage and Production Statistics by State

	Area Planted (1,000 acres)							Area Harvested (1,000 acres)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
ID	54.0	25.0	24.0	41.0	55.0	57.0	48.0	53.0	24.0	23.0	40.0	54.0	55.0	46.0
MT	33.5	24.5	26.0	32.0	33.0	68.0	135.0	26.0	21.0	16.5	27.0	31.0	63.0	122.0
ND	64.0	66.0	90.0	155.0	160.0	310.0	540.0	58.0	62.0	86.0	138.0	155.0	296.0	515.0
WA	110.0	65.0	62.0	76.0	83.0	88.0	80.0	110.0	65.0	62.0	76.0	82.0	87.0	78.0
OS	3.6	4.0	4.8	4.7	6.5	7.0	5.0	3.6	4.0	4.8	4.5	6.5	6.8	4.9
US	265.1	184.5	206.8	308.7	337.5	530.0	808.0	250.6	176.0	192.3	285.5	328.5	507.8	765.9

	Yield (lbs/acre)							Production (1,000 cwt)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
ID	1,900	1,900	2,000	1,800	1,200	1,700	1,300	1,007	456	460	720	648	935	598
MT	1,400	990	1,510	800	1,450	2,010	1,800	364	208	249	216	450	1,266	2,196
ND	1,900	2,170	2,020	1,600	1,770	2,340	1,900	1,102	1,345	1,737	2,208	2,744	6,926	9,785
WA	2,020	2,100	2,000	2,000	1,500	2,400	1,700	2,222	1,365	1,240	1,520	1,230	2,088	1,326
OS	1,000	2,500	1,600	1,400	2,000	3,000	2,000	36	100	77	63	130	204	98
US	1,888	1,974	1,957	1,656	1,584	2,249	1,828	4,731	3,474	3,763	4,727	5,202	11,419	14,003

Source: NASS/USDA; OS refers to Other States.

Table 2. LENTILS: U.S. Acreage and Production Statistics by State

	Area Planted (1,000 acres)							Area Harvested (1,000 acres)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
ID	61.0	65.0	54.0	68.0	68.0	72.0	65.0	60.0	64.0	53.0	66.0	66.0	70.0	63.0
MT	18.0	22.0	22.0	25.0	30.0	78.0	150.0	16.0	21.0	20.0	22.0	26.0	72.0	146.0
ND	27.0	45.0	45.0	53.0	55.0	100.0	150.0	23.5	44.0	44.0	47.0	54.0	94.0	146.0
WA	75.0	85.0	80.0	80.0	93.0	95.0	85.0	75.0	85.0	80.0	80.0	91.0	93.0	84.0
US	181.0	217.0	201.0	226.0	246.0	345.0	450.0	174.5	214.0	197.0	215.0	237.0	329.0	439.0

	Yield (lbs/acre)							Production (1,000 cwt)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
ID	1,400	1,450	1,500	1,200	950	1,100	900	840	928	795	792	627	770	567
MT	1,200	1,000	1,100	750	1,050	1,400	1,280	192	210	220	165	273	1,008	1,869
ND	1,550	1,400	1,370	1,050	1,170	1,370	1,350	364	616	603	494	632	1,288	1,971
WA	1,300	1,500	1,600	1,400	1,000	1,200	900	975	1,275	1,280	1,120	910	1,116	756
US	1,359	1,415	1,471	1,196	1,030	1,271	1,176	2,371	3,029	2,898	2,571	2,442	4,182	5,163

Source: NASS/USDA

Table 3. CHICKPEAS: U.S. Acreage and Production Statistics by State

	Area Planted (1,000 acres)							Area Harvested (1,000 acres)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
CA	16.5	24.5	29.0	18.5	9.7	6.1	10.0	16.5	23.5	27.0	18.0	9.4	5.8	9.7
ID	11.8	28.6	28.8	17.0	11.0	14.5	31.0	11.7	28.0	28.0	16.6	10.6	14.3	30.5
MT	15.6	28.8	31.5	12.7	3.2	2.2	6.0	14.8	23.5	18.0	9.6	3.0	2.1	4.1
ND	10.0	15.0	19.0	8.6	5.0	3.5	6.1	8.0	11.0	16.5	6.2	4.7	2.9	5.7
OR	2.7	5.8	5.0	4.0	2.4	3.8	3.1	2.4	5.8	4.7	3.5	2.0	3.6	3.0
SD		4.0	12.1	10.3	1.8	3.8	6.4		3.9	11.3	5.8	1.5	3.8	6.4
WA	5.4	9.5	17.0	14.4	8.2	9.8	26.1	5.4	9.5	17.0	14.4	8.2	9.7	25.8
OS			6.3		2.2					6.0		2.0	1.2	1.1
US	62.0	116.2	148.7	85.5	43.5	45.0	89.8	58.8	105.2	128.5	74.1	41.4	43.4	86.3

	Yield (lbs/acre)							Production (1,000 cwt)						
State	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
CA	1,730	1,460	1,270	1,600	900	1,980	2,370	285	343	342	288	85	115	230
ID	1,260	1,460	1,470	1,280	920	1,250	1,080	147	410	412	212	97	179	329
MT	1,190	750	950	760	730	1,570	1,050	176	176	171	73	22	33	43
ND	1,100	1,320	1,400	1,470	1,570	1,450	1,810	88	145	231	91	74	42	103
OR	920	1,330	1,340	770	1,200	1,250	1,830	22	77	63	27	24	45	55
SD		1,670	1,250	430	1,130	1,340	1,100		65	141	25	17	51	70
WA	1,110	1,240	1,200	1,010	1,020	1,180	900	60	118	204	145	84	114	233
OS			800		700					48		14	14	8
US	1,323	1,268	1,254	1,162	1,007	1,366	1,241	778	1,334	1,612	861	417	593	1,071

Source: NASS/USDA; OS refers to Other States.

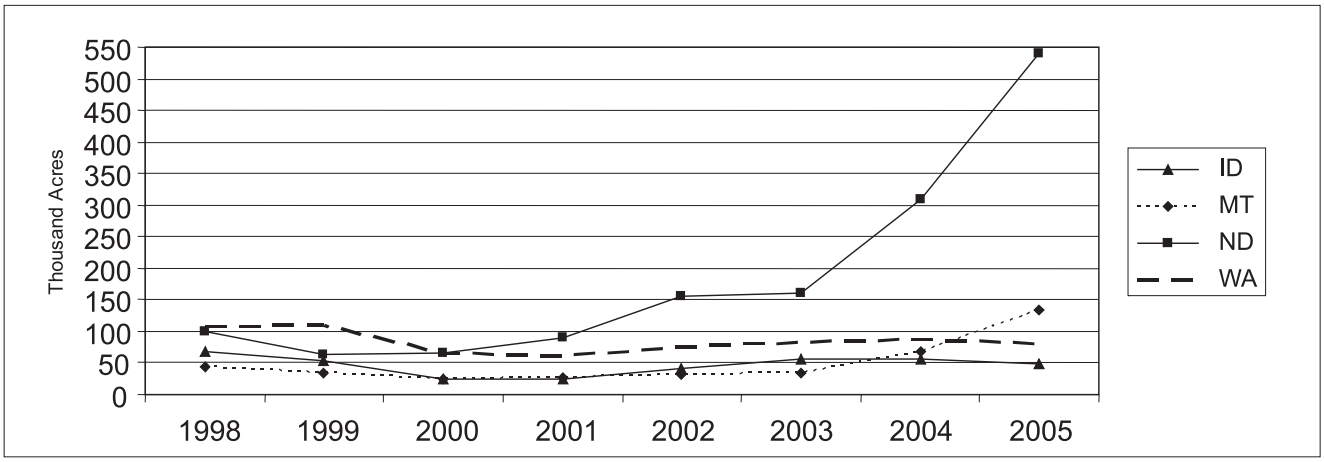


Figure 1. Dry Peas: U.S. Area Planted by State

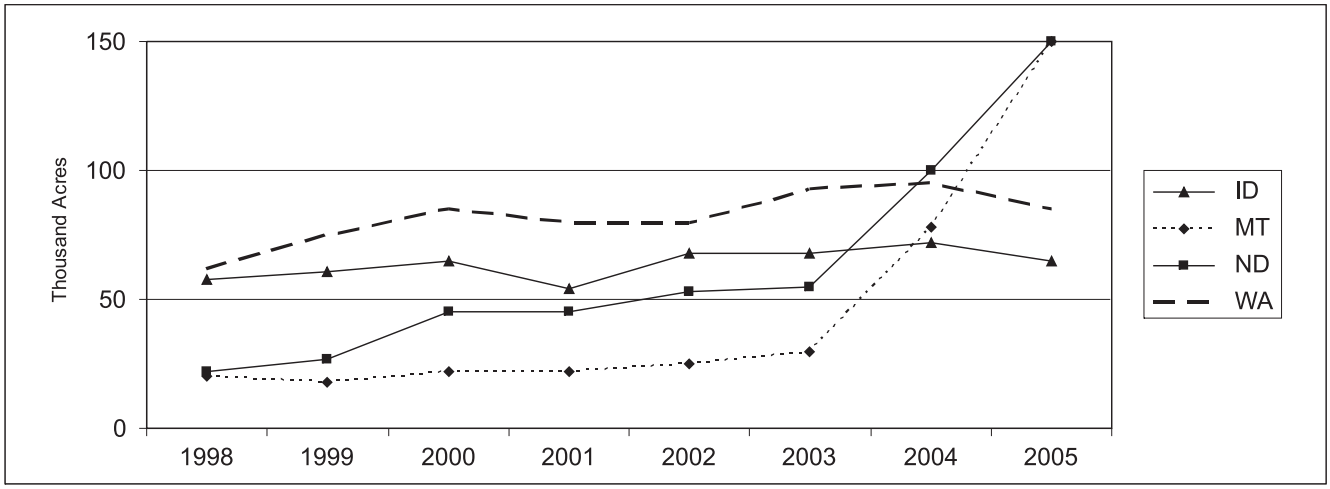


Figure 2. Lentils: U.S. Area Planted by State

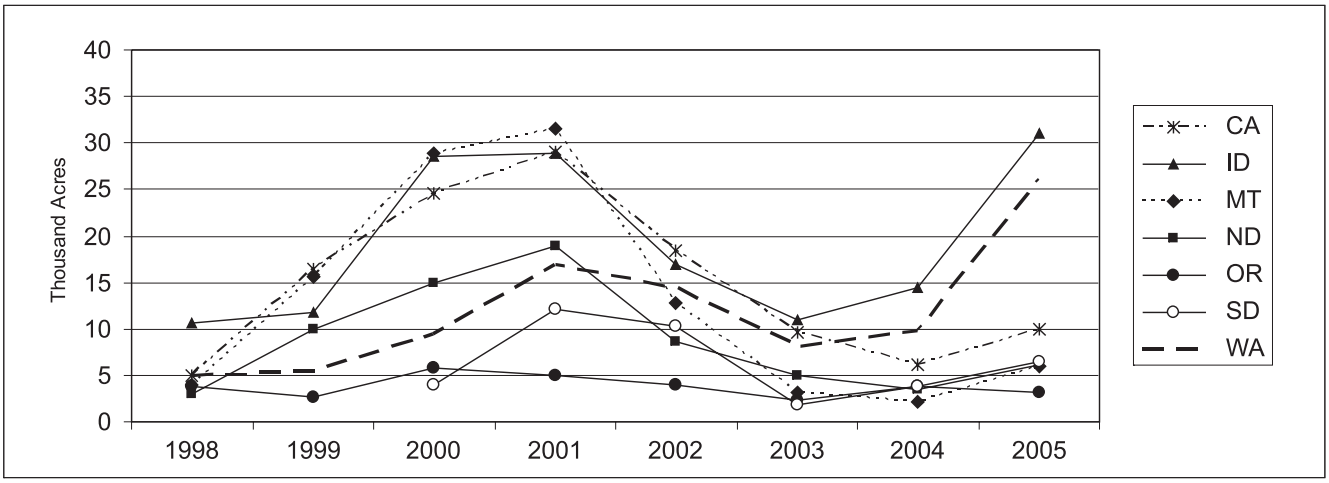


Figure 3. Chickpeas: U.S. Area Planted by State

and Idaho was relatively flat. Chickpea acreage in the United States increased from 1999 to 2001, but then declined until recovering somewhat in 2005. This was true for North Dakota as well as for several other chickpea-producing states. Idaho and Washington planted record acreage in 2005. Chickpeas are the one pulse crop produced outside the Pacific Northwest and northern Plains, with California ranking third during 2005 in chickpea production. South Dakota has been a new chickpea-producing state the past six years.

Canadian Pulse Production

Pulse production in the United States is growing but starting from a much smaller base than the industry in Canada. During the past 10 to15 years, Canada has developed a $1 billion pulse industry, starting from a few hundred thousand acres and peaking at nearly 6 million harvested acres in 2001. Canada now stands as a leading world exporter of dry peas and lentils and is among the top exporting countries of chickpeas.

Canada is highly export-dependent and most of the phenomenal growth in pea, lentil and chickpea production in Canada is destined for the export market. During 2004, Canada accounted for 51 percent of the world pea trade, 33 percent of the world lentil trade and 10 percent of the world chickpea trade.

The health of the U.S. pulse industry is very much tied to the Canadian pulse industry. Without a doubt, Canada remains the major competitive force for an expanding U.S. pulse industry (2). The magnitude of the pulse industry in Canada dwarfs that of the United States, as is pointed out in the acres-harvested summary in Table 4.

Table 4. Acres Harvested by Pulse Type, Canada and U.S.

Canada (Aug-July Crop Yr)	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
U.S.	1999	2000	2001	2002	2003	2004	2005
				(1,000 acres)			
Dry Peas							
Canada	2,063	3,015	3,175	2,595	3,141	3,324	3,259
U.S.	251	176	192	286	329	508	766
Lentils							
Canada	1,228	1,700	1,641	956	1,325	1,853	2,130
U.S.	175	214	197	215	237	329	439
Chickpeas							
Canada	344	699	1,154	381	156	96	180
U.S.	59	105	129	74	41	43	86

Source: Canada – Agriculture and Agri-Food Canada; U.S. – NASS/USDA

General Pulse Production

Adaptation

Pulses (field peas, lentils and chickpeas) are cool-season legumes generally well adapted to the climate and soils of the northern Plains states and the Canadian Prairie Provinces. Agronomic and cultural practices (seeding; fertilization; weed, disease and insect control; harvesting practices, etc.) related to successful pulse production are discussed in Extension and industry association publications mentioned in the Sources of Information for each of the pulse categories. Several Extension and industry association Web sites also carry production guide information.

Economic Considerations

North Dakota producers increasingly are considering pulses in an effort to diversify their farm operations and enhance economic viability. Producers can realize significant economic benefits from including pulses in the crop rotation.

Rotational Benefits

Pulse production provides a number of agronomic advantages to the agricultural producer. Benefits of putting pulses in the crop rotation include an increased supply of soil nitrogen, resulting in a decreased need to add nitrogen for the following crop, and disruption of cereal disease and insect cycles. Additional agronomic benefits may include a better-quality crop grown the year after pulses (e.g., protein premium in wheat), increased yields from the following crop, and lower costs for herbicides and fungicides for the following crop.

When considering whether to include pulses in the farm enterprise plan, producers should take the rotational benefits to the following crops into consideration. A comprehensive enterprise analysis will include a multiyear planning horizon.

Costs of Production

Before including any crop in the enterprise plan, producers should have a good idea of their costs of production. Projected crop budgets for North Dakota, published annually by the North Dakota State University Extension Service, provide a good starting point. Costs vary from farm to farm; figures from the farm operation in question should be used to calculate costs of production. The production costs estimate and average yields in the region can be used to calculate a break-even price. This will help determine when and at what price to market the crop or indeed if including pulses in the enterprise plan makes economic sense. Projected crop budgets for 2006 for field peas, lentils and chickpeas in North Dakota are included in Appendix A.

Contracts

Risks of producing any crop include both production and pricing risks. Given the uncertainty in developing specialty markets such as pulses, producers should have a contract for at least part of the quantities they plan to grow. A contract provides for a market outlet and helps assure that producers receive an acceptable price. While most pulses continue to be sold on the spot market, use of contracts is increasing. As with all legal documents, producers need safeguards to help reduce their financial risk. Producers should ensure that the dealer/processor is a reputable business partner and that they both understand and agree to the terms and conditions of the contract.

Pulse Processors

Pulse processing in the pulse-producing areas of the United States and Canada generally is limited to cleaning, grading, bagging and/or loading. However, a small number of processors are adding value through color sorting, splitting and/or packaging pulses.

To keep abreast of the increase in pulse production, the pulse-processing industry has been somewhat dynamic (particularly in Canada), with numerous processors entering or exiting the industry. Several of the industry associations, such as the North Dakota Dry Pea and Lentil Association (NDDPLA), USA Dry Pea and Lentil Council, Saskatchewan Pulse Growers and Manitoba Pulse Growers Association, maintain lists of local marketing and processing companies and display those lists on their Web sites. These Web sites are listed in the Sources of Information.

Field Peas

General

Field peas frequently are referred to as dry peas. Pea varieties fall into two main types: yellow cotyledon or green cotyledon. Field peas also include specialty types such as marrowfat, maple and Austrian winter peas grown for specialty confection, birdseed and forage markets. The United States produced mainly green peas until 2005, when yellow peas were produced in the greatest quantity (3).

The food and feed pea markets have different requirements. Premium prices can be associated with the human food and seed markets. Selling peas in the food markets is a greater challenge than marketing a traditional small-grain crop. Premium pea markets normally are limited and require the grower to take a more aggressive approach. Growers should identify pea markets before they produce peas to optimize their ability to harvest a crop that will meet market standards.

Market Overview

Primary field pea market opportunities are for human consumption, seed and livestock feed. Edible peas for human consumption and seed are the premium markets and require high and consistent quality standards. However, only a small part of the U.S. and Canadian dry pea crop is used domestically for human consumption because pulses traditionally are not part of the North American diet. Research is being conducted to develop a process for milling dry pea seeds into hulls, flour, pea protein concentrate and pea starch, but developing markets for these value-added pea products will take some time and effort.

The balance of field pea production is exported or used for seed or livestock feed. Because of the high seeding rate required to produce a satisfactory stand of this large-seeded crop, a relatively high proportion of the pea crop (10 percent to 12 percent) is required for seed.

Feed peas, with their high energy and protein levels, can be an attractive alternative in livestock rations, particularly hog and poultry feeds. They also have been shown to be economically viable alternatives in other livestock rations, provided they are competitively priced with other feed ingredients. Protein levels in field peas range from 21 percent to 25 percent. They contain high levels of carbohydrates and 86 percent to 87 percent total digestible nutrients. As good sources of energy and protein, peas can be used to replace both grain (corn) and protein (soybean meal), offering flexibility to the feed manufacturer. Feed manufacturers need a dependable supply and consistent quality to be interested in feed peas.

Europe is the largest feed market; however, feed markets are being established slowly in Asia and Latin America. The opening of the European feed pea market in 1985 and the resulting high prices for peas were the real impetus for the increase of pea production in Canada (4). The incredible size of the feed industry in China makes it a high-priority target for Pulse Canada market development.

The feed market for dry peas is undeveloped in the United States and only limited U.S. feed-grade pea price data is published (5). However, a growing number of feedlots are starting to use feed pea because of favorable gains (6). In addition, pea-fed beef may result in improved tenderness and increased juiciness with no difference in flavor, according to a study at North Dakota State University (7). The results were achieved in feed trials without altering performance. Constraints limiting the use of pulses in feed rations include the availability of supply with a source to ensure a consistent supply of feed ingredients, and the lack of a feed pea futures market, as the feed industry would like to price six months in advance to secure supply and maintain consistent feed formula costs.

World Production and Trade

World production and trade data for field/dry peas are displayed in the charts in Figure 4, with the data summarized in Table 5.

Production

World dry pea production has varied from 9.8 million to 12.3 million metric tons since 1995. On the global scene, the major producing countries of field peas, based on the most recent (2005) production statistics, are Canada, followed by France, Russia and China, with India, the United States, Ukraine, Germany and Australia at the next level. Production in Canada has increased significantly. France used to be the top producing country, but its production peaked in 1998 and then produced more than Canada only in 1999 and 2002.

Canadian field pea production primarily is in the Prairie Provinces (Alberta, Saskatchewan, Manitoba). Field pea production in the United States has been concentrated in the Palouse region of Washington, Oregon and Idaho. In recent years, however, acreage has expanded in the northern Plains states - particularly North Dakota and Montana. In 1991, North Dakota had fewer than 2,000 acres of field peas, while in 2005 it had 540,000 acres, making North Dakota the leading pea producing state. The field pea is considered by many to be a practical alternative crop in which acreage could be expanded considerably, given appropriate market opportunities and price conditions. During the past five years, Canadian production has ranged from 14 percent to 27 percent of total world production, while the United States has contributed less than 6 percent to total world production.

Exporters

Canadian exports of dry peas have increased dramatically since the early 1990s, and Canada has emerged as the largest exporter of dry peas in the world. Canada accounted for more than 50 percent of dry pea exports in 2000, 2001 and 2005, but achieved only 25 percent in 2002 because of a significant weather-related decrease in production. France exported similar quantities as Canada in the 1990s, but has since dropped to a distant second. Australia, the United States and Ukraine are the next ranking exporters, with U.S. exports accounting for 6 percent of total world exports in 2005.

U.S. exports during July-June 2000-01 through 2004-05 varied from 47 percent to 59 percent of production. They have accelerated since 2003. Regional destinations for the exports are presented in Figure 5, and the top 20 country destinations, based on total U.S. exports to countries during 2001-05, are shown in Table 6.

Sub-Saharan Africa was the fastest growing and the largest destination during 2003-05. During 2001-05, Kenya ranked first in the region and sixth in the world. Sudan ranked second in the region and seventh in the world, Ethiopia ranked third in the region and eighth in the world, Angola ranked fourth in the region and ninth in the world, and Uganda ranked fifth in the region and No.12 in the world.

North America, in effect, Canada and Mexico, has been a steadily rising market for dry peas. Many of the dry peas grown along the Canadian border apparently are delivered to Canadian dealers and re-exported. Based on 2001-05 totals, Mexico ranked No. 10.

Spain purchased a much larger than normal amount of dry peas from the United States in 2005. Spain's production was down, as it was for the European Union in general. Because of the large amount purchased in 2005, Spain ranked second in the world as a destination for U.S. exports, based on 2001-05 totals.

In 2004 and 2005, Cuba bought significant amounts of dry peas from the United States making Cuba the fourth most important U.S. export destination in the world during 2001-05. Other countries in the Caribbean bought much smaller amounts.

India bought a large quantity of dry peas from the United States in 2005. Consequently, India ranked fifth in the world as a U.S. export destination.

The Philippines is by far the most important destination in Southeast Asia. It ranked third in the world as a U.S. export destination during 2001-05.

East Asia had three countries that were among the top 20 destinations during 2001-05. They were Korea, Taiwan and Japan. Other top 20 destination countries from various regions included Peru, Burundi, Belgium-Luxembourg, Tanzania, Russia and South Africa.

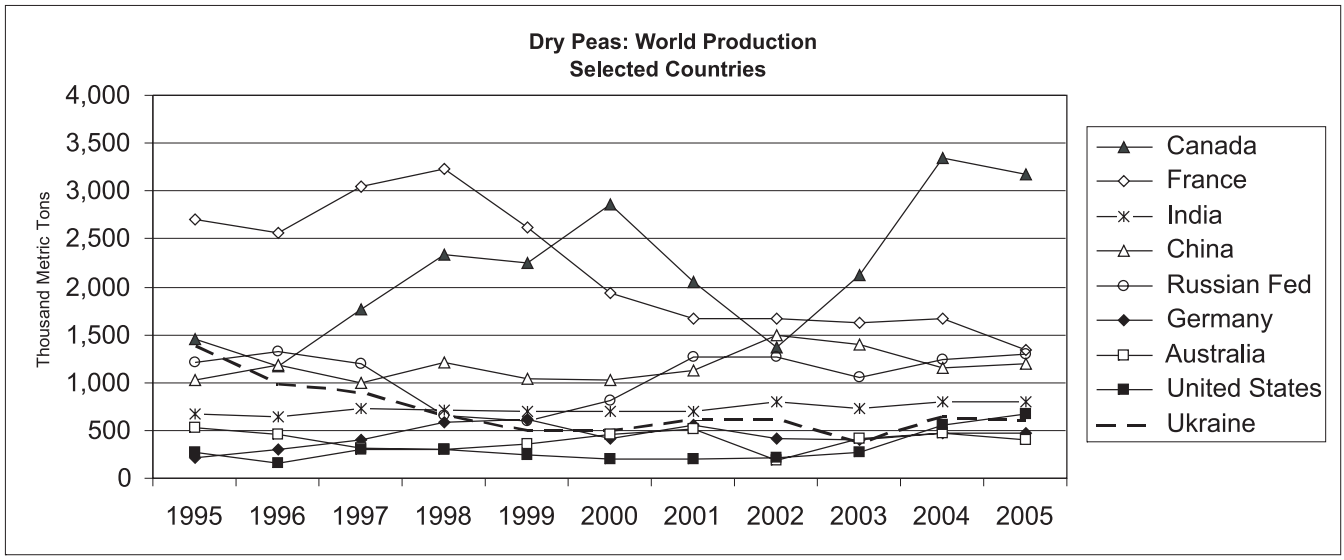
Importers

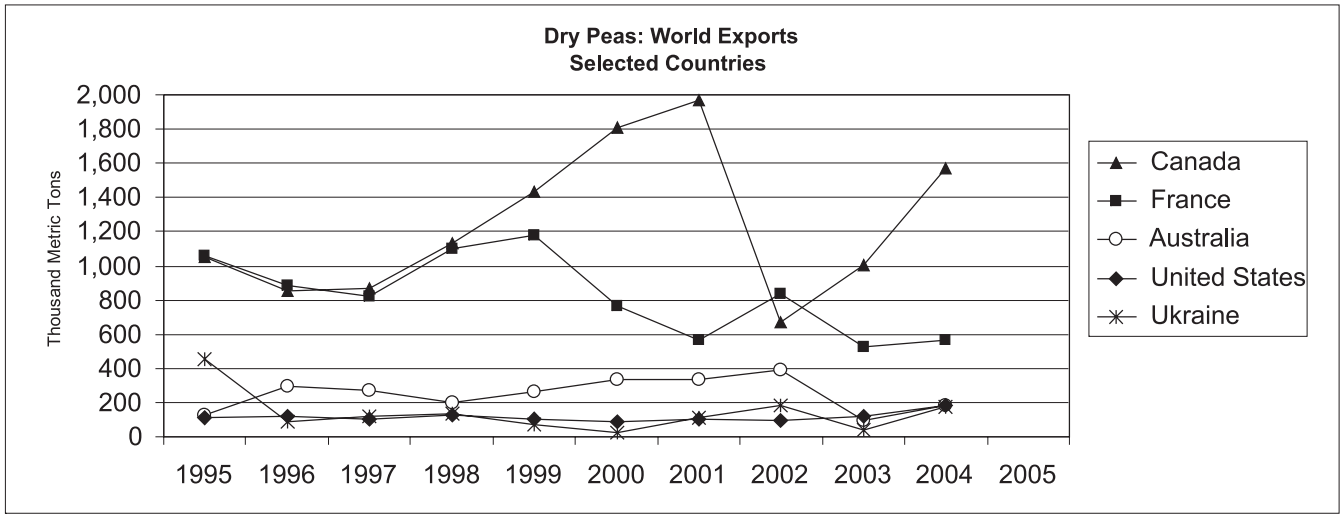
India is the major importer of dry peas for human consumption. Imports in 2001 jumped dramatically because bad weather affected the country's production. Bangladesh is a significant importer of dry peas for food use. China and Pakistan also are importers of dry peas for food use. Other importers of dry peas primarily for food include Colombia and Peru in Latin America.

Western Europe (primarily France) is both a major producer and importer of feed peas. European Union countries that import significant quantities of peas, primarily for feed, are Belgium, the Netherlands and Spain, which ranked as the No. 1 importer in 2004. Germany has been a significant importer but its imports have fallen significantly in the past five years. Italy also is a significant importer of dry peas. In addition, Cuba remains one of the largest importing countries of dry peas in the Western Hemisphere.

Field peas have been used for feed in several Asian countries — most notably Korea, Taiwan and the Philippines. The volumes to date have been relatively small, however. Australia, with a significant freight advantage to the Asian markets, is the most active supplier.

U.S. imports during 2001-05 were about one-fourth as large as its exports. Canada was the predominate source followed by India, New Zealand, Peru, Australia and Ecuador.





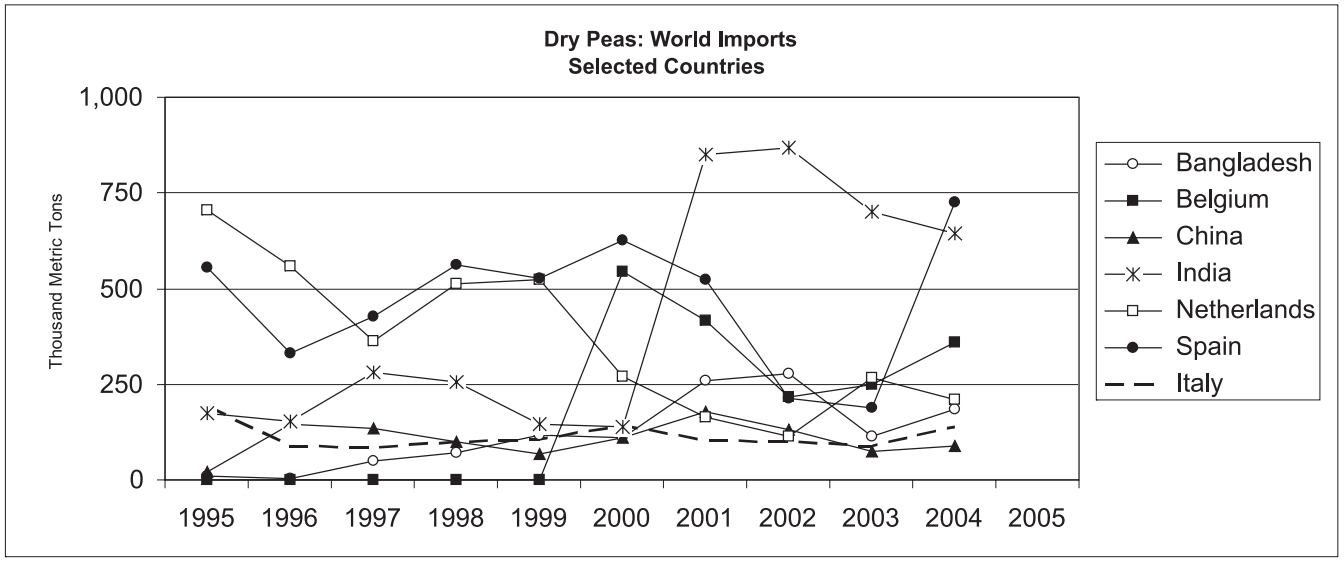


Figure 4: Dry Peas: Production and Trade Statistics
(Source: FAO STAT Database)

Table 5. DRY PEAS: World Production and Trade

Production (1,000 Mt)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	529.9	454.2	315.7	298.0	357.3	456.0	512.0	178.0	407.0	466.0	401.0
Belarus	112.0	181.0	273.0	181.0	124.0	123.0	103.0	91.0	94.0	110.0	100.0
Canada	1,454.7	1,173.0	1,762.3	2,336.8	2,251.9	2,864.3	2,044.8	1,365.5	2,124.4	3,338.2	3,169.9
China	1,025.0	1,176.0	1,000.0	1,207.0	1,040.0	1,020.0	1,120.0	1,500.0	1,400.0	1,160.0	1,200.0
Denmark	282.2	256.8	384.3	385.8	191.0	137.0	111.0	139.4	105.6	83.3	53.6
Ethiopia	148.5	133.0	142.5	97.3	103.1	117.6	146.6	199.9	139.8	170.4	172.0
France	2,701.0	2,562.0	3,052.0	3,224.7	2,617.3	1,936.5	1,660.0	1,662.6	1,616.7	1,671.5	1,332.0
Germany	216.0	301.0	400.4	589.4	610.0	408.9	559.6	413.2	401.0	464.0	464.0
Hungary	142.9	101.4	110.9	130.9	107.9	47.6	64.1	49.4	30.2	35.0	18.5
India	666.5	639.2	722.1	712.4	700.0	700.0	700.0	800.0	730.0	800.0	800.0
Pakistan	74.0	78.3	78.5	81.8	93.2	78.1	61.2	56.9	53.9	57.5	49.3
Russian Fed	1,212.1	1,322.9	1,195.8	660.1	598.1	815.2	1,272.4	1,267.5	1,052.1	1,242.5	1,290.0
Spain	55.4	84.1	58.4	63.2	47.8	58.2	51.6	100.2	148.2	195.2	119.7
Ukraine	1,375.8	985.0	903.0	652.0	498.0	499.4	619.0	613.2	371.2	636.3	600.0
United Kingdom	286.0	240.0	371.0	324.0	355.0	309.0	361.0	292.0	288.0	242.0	200.0
United States	269.1	150.7	300.0	304.5	249.1	192.9	199.7	219.6	266.5	558.7	666.6
Other Countries	930.6	1,007.9	967.1	1,071.3	893.9	804.5	881.2	911.5	873.5	1,019.4	928.4
WORLD	11,481.7	10,846.5	12,037.0	12,320.3	10,837.6	10,568.2	10,467.3	9,859.9	10,102.1	12,250.0	11,565.0
US as % of World	2.3%	1.4%	2.5%	2.5%	2.3%	1.8%	1.9%	2.2%	2.6%	4.6%	5.8%
Canada as % of World	12.7%	10.8%	14.6%	19.0%	20.8%	27.1%	19.5%	13.8%	21.0%	27.3%	27.4%

Exports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	128.1	291.9	274.2	197.2	260.3	335.1	336.8	391.0	91.8	184.9	
Belgium	0.0	0.0	0.0	0.0	0.0	86.1	112.3	32.6	22.6	25.6	
Canada	1,051.0	853.0	870.3	1,135.2	1,433.3	1,811.6	1,969.7	672.7	1,002.1	1,569.3	
China	23.7	3.5	2.6	3.9	6.4	3.9	3.8	4.2	7.2	6.4	
Denmark	64.0	46.2	130.8	80.0	85.6	46.7	41.6	76.8	33.0	40.3	
France	1,056.9	883.1	821.3	1,096.2	1,175.6	765.8	565.0	835.9	528.2	566.2	
Ukraine	455.7	87.3	115.9	132.4	74.3	25.1	108.3	180.7	43.2	174.2	
United Kingdom	47.5	40.3	53.6	51.9	31.4	32.1	35.0	69.1	61.6	39.5	
United States	102.9	117.2	99.7	127.3	101.5	91.3	105.8	94.6	119.0	179.8	
Other Countries	694.3	459.2	387.0	372.2	430.9	187.0	235.6	389.5	281.9	316.3	
WORLD	3,633.5	2,781.7	2,755.4	3,196.2	3,599.4	3,384.7	3,514.0	2,747.1	2,190.6	3,102.6	
US as % of World	3.1%	4.2%	3.6%	4.0%	2.8%	2.7%	3.0%	3.4%	5.4%	5.8%	
Canada as % of World	28.9%	30.7%	31.6%	35.5%	39.8%	53.5%	56.1%	24.5%	45.7%	50.6%	

Imports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bangladesh	11.1	2.3	49.1	69.7	118.5	110.0	260.0	277.2	115.1	186.5	
Belgium	0.0	0.0	0.0	0.0	0.0	543.7	414.8	215.5	248.9	361.0	
Brazil	24.4	27.1	27.2	26.5	29.7	30.5	24.1	21.7	21.7	22.4	
China	21.8	144.6	133.5	100.9	68.3	111.5	176.6	130.3	76.3	89.3	
Colombia	38.4	38.3	39.0	50.4	36.6	55.8	85.7	56.3	37.7	37.6	
Denmark	6.4	3.7	8.1	18.0	16.4	19.8	19.5	9.9	9.9	3.2	
France	120.3	57.6	13.6	8.1	8.6	55.0	41.3	17.9	9.1	11.8	
Germany	425.0	222.7	141.0	130.6	163.9	78.6	57.4	37.8	37.2	91.2	
India	173.0	154.5	281.6	257.5	145.9	137.4	849.0	869.8	700.0	643.2	
Italy	192.6	88.5	85.8	98.6	108.0	140.6	103.8	99.6	87.7	139.0	
Japan	23.6	23.9	26.0	20.2	20.6	20.6	19.0	18.8	16.1	16.4	
Netherlands	705.7	558.4	364.7	512.5	522.1	271.1	164.9	114.2	267.5	210.2	
Pakistan	89.2	87.9	2.9	29.5	43.5	85.0	109.5	91.2	64.4	40.7	
Peru	17.5	20.6	25.3	43.0	27.7	25.9	24.9	16.6	16.6	17.9	
Philippines	19.0	15.2	21.6	18.4	24.4	19.3	47.8	16.8	20.5	27.4	
Spain	555.9	332.0	425.3	560.6	527.2	625.3	523.1	214.5	190.3	724.4	
United States	37.1	34.4	39.3	35.2	31.5	28.3	30.4	34.5	39.6	48.5	
Other Countries	942.5	949.2	863.7	895.8	1,092.4	455.9	517.4	468.8	542.4	603.2	
WORLD	3,403.7	2,760.9	2,547.8	2,875.1	2,985.6	2,814.5	3,469.4	2,711.3	2,501.1	3,273.9	

SOURCE: FAO STATS Database

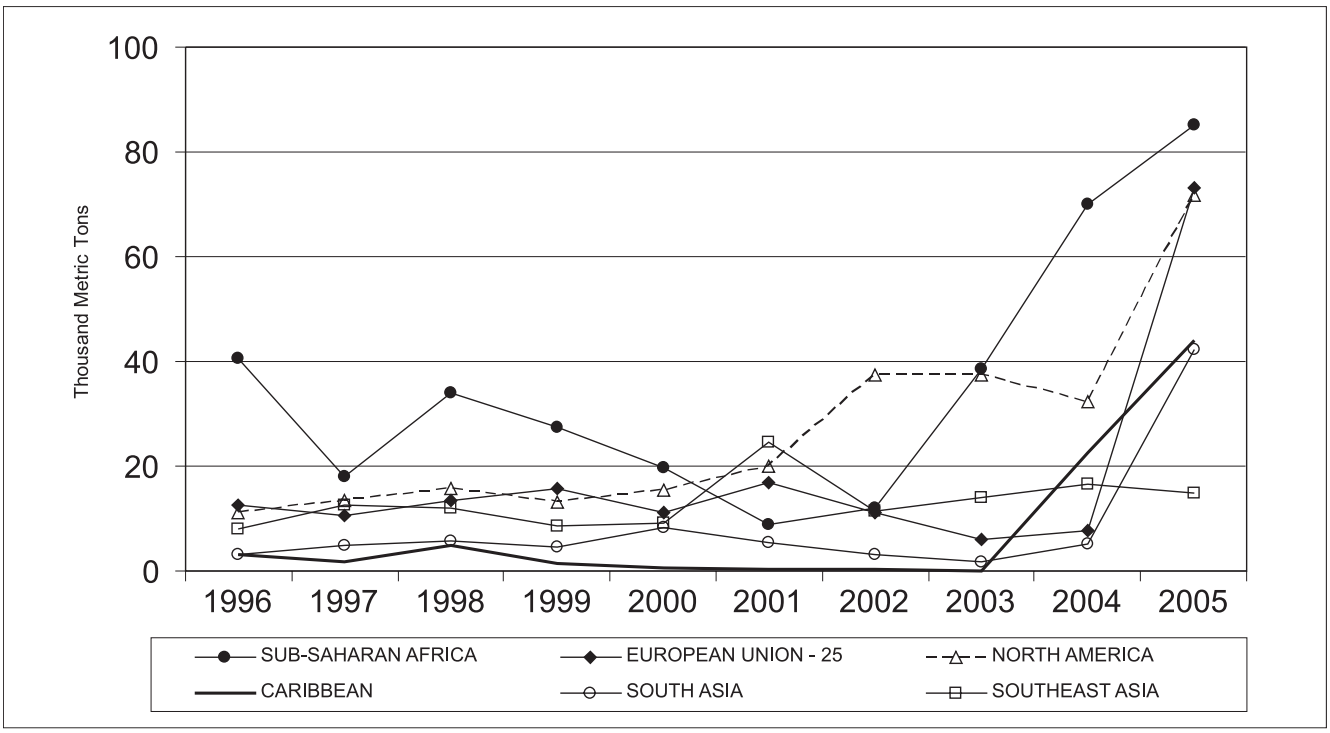


Figure 5: Dry Peas: U.S. Exports
(Source: U.S. Trade Internet System)

Table 6. DRY PEAS: U.S. Exports

(1,000 Mt)

	Region	2001	2002	2003	2004	2005	Total	Rank
Canada	North America	17.2	35.0	32.5	25.3	65.5	175.5	1
Spain	EU-25	11.2	3.7	0.3	0.2	64.8	80.3	2
Philippines	Southeast Asia	23.9	11.2	13.2	16.2	13.0	77.6	3
Cuba	Caribbean	0.0	0.0	0.0	22.2	43.7	65.9	4
India	South Asia	4.6	2.1	1.8	3.3	39.8	51.6	5
Kenya	Sub-Saharan Africa	1.9	1.3	8.7	10.0	14.7	36.5	6
Sudan	Sub-Saharan Africa	0.0	0.0	4.1	14.2	12.8	31.1	7
Ethiopia	Sub-Saharan Africa	0.3	0.0	0.7	15.8	8.7	25.4	8
Angola	Sub-Saharan Africa	0.0	2.4	4.5	5.9	10.8	23.6	9
Mexico	North America	2.9	2.3	4.8	6.9	6.2	23.2	10
Korea, Republic of	East Asia	2.6	4.5	4.1	5.5	3.2	19.9	11
Uganda	Sub-Saharan Africa	1.1	2.0	3.4	3.6	8.8	18.8	12
Peru	South America	4.2	1.8	3.4	2.3	3.7	15.3	13
Burundi	Sub-Saharan Africa	0.0	0.0	2.3	4.2	6.7	13.2	14
Taiwan	East Asia	2.3	1.2	2.1	2.3	3.0	10.8	15
Belgium-Luxembourg	EU-25	0.1	0.6	0.6	4.3	3.7	9.4	16
Tanzania, United Rep	Sub-Saharan Africa	0.0	0.3	1.5	4.2	2.4	8.5	17
Russian Federation	FSU	7.1	0.0	0.0	0.0	0.4	7.5	18
South Africa, Rep	Sub-Saharan Africa	0.1	3.0	0.6	0.2	3.4	7.3	19
Japan	East Asia	2.3	1.8	1.0	1.0	1.1	7.2	20

Source: USDA US Trade Internet System

Lentils

General

Lentils are classified into two groups by seed size: Chilean or large-seeded and Persian or small-seeded. Cotyledon color varies: yellow, red or green. The two main market classes identified by seed coat color are green and red lentils. Green lentils tend to be marketed whole while red lentils are marketed as whole seed or in split form. The medium green type dominates U.S. production (8).

Lentils are used almost exclusively for human consumption as a protein source in soups, stews and vegetarian dishes. Lentils are high in protein, ranging from 22 percent to 35 percent. Lentils are used extensively in Indian and Middle Eastern cuisine.

Lentils also can be used for livestock feed; however, only small amounts of low-quality lentils or large volumes of low-quality lentils resulting from occasional weather-related production problems are used in livestock rations. Normally, lentils, unlike field peas, are neither grown for nor used to feed livestock.

Historically, lentils were used widely in India, Southwest Asia and the Mediterranean areas in the form of split lentils, and they still are an important source of dietary protein in these areas.

Market Overview

Lentils should be grown for a specific market, which producers should identify before buying seed. Most international markets prefer the large Laird, a Chilean-type lentil. Eston, a Persian type, makes up about 10 percent to 15 percent of Canadian lentil production and fits into markets where a firm cooked seed is important. Niche markets include red-split lentil, zero-tannin lentil, small black used primarily for plow-down, Spanish brown, French green and seed production.

Chilean-type lentils are preferred in northern Europe, South America and North Africa, while the Persian types are preferred in Italy, Greece and Mexico (9).

World Production and Trade

World production and trade data for lentils are displayed in the charts in Figure 6 and the data is summarized in Table 7.

Production

Approximately 65 percent to 70 percent of current world lentil production is in India, Turkey and Canada. Canada was the largest producer of lentils in the world in 2005, surpassing India for the first time. Canadian production of lentils has ranged from 12 percent to 30 percent of total world lentil production during the past 10 years, while U.S. lentil production has ranged from 2 percent in 1996 to 6 percent in 2005. Australian lentil production surpassed U.S. production in 2000, 2001 and 2003, but then declined while U.S. production continued to increase. India was the leading lentil-producing nation, except for 2005, and most of the country's production is consumed domestically.

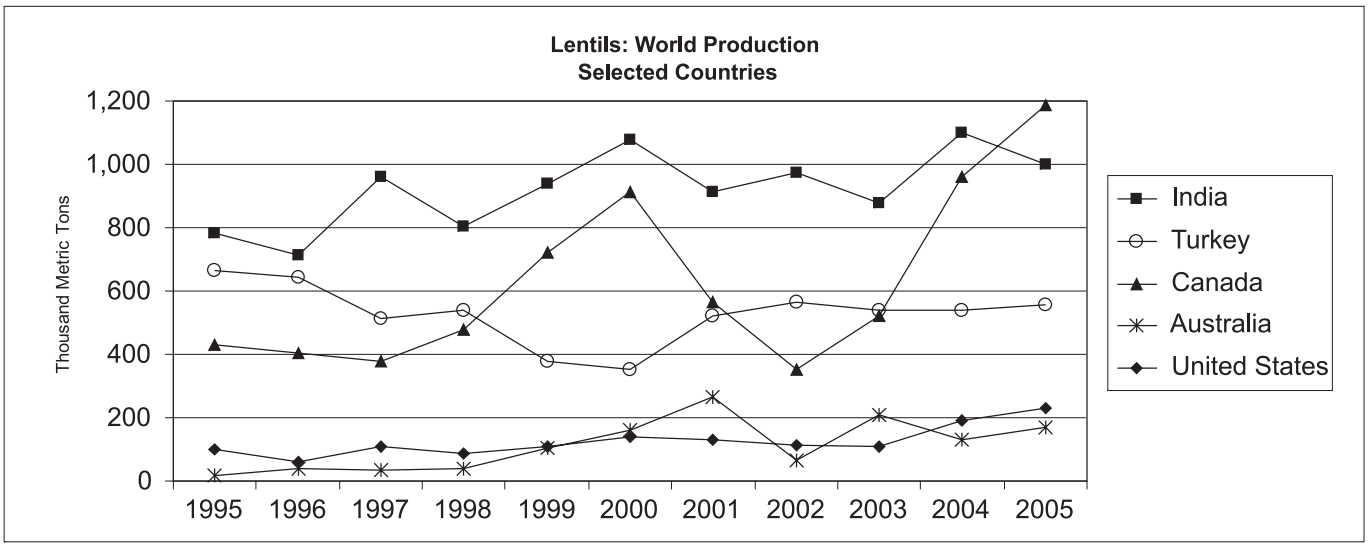
Exporters

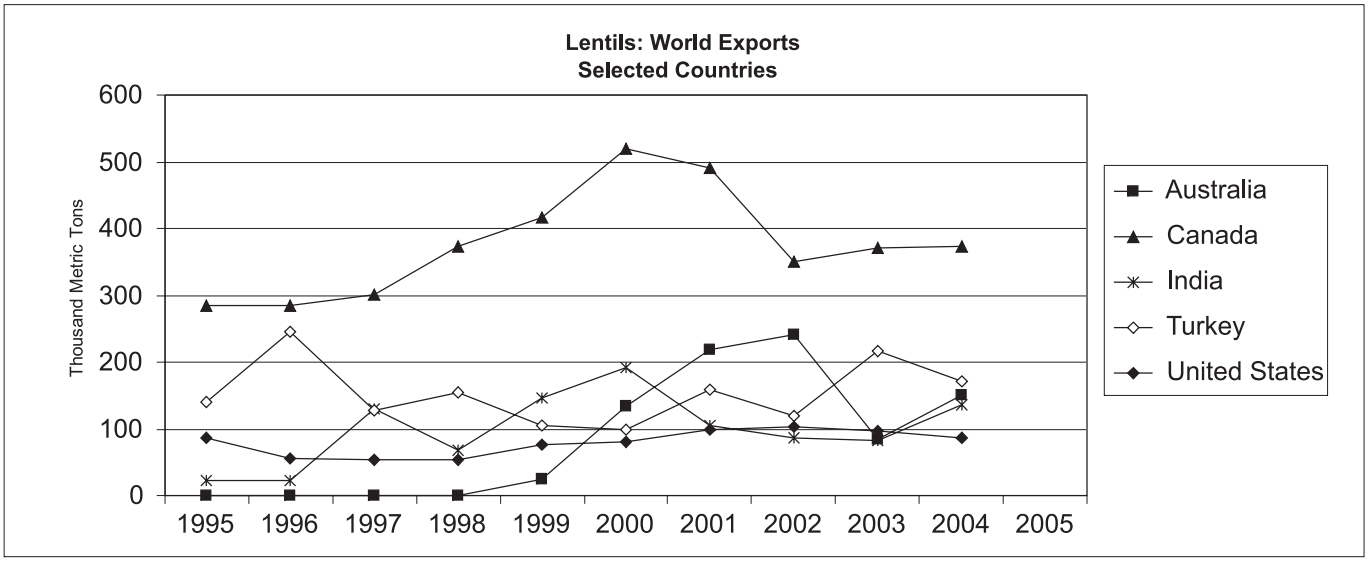
Canada is by far the world's largest exporter of lentils, accounting for about one-third of the world's exports in 2004. During the past five years, Australia or Turkey generally has been the second or third largest exporter. India and the United States also are key exporters of lentils. Syria was a key exporter of lentils in 1996 and 1997; however, their exports of the crop have fallen significantly since then.

A large majority of world lentil production is consumed in the region of production. Notable exceptions are Turkey, Australia, Canada and the United States. Thirty-nine percent to 99 percent of Canadian and U.S. lentil production has been exported during the past five years.

U.S. exports during July-June 2000-01 through 2004-05 varied from 48 percent to 85 percent of production. Exports increased sharply to a record high in 2005. Regional export destinations are presented in Figure 7. Table 8 shows the top 20 country destinations based on total U.S. exports to countries during 2001-05.

Sub-Saharan Africa was the fastest growing destination during 2003-05 and the largest during 2004 and 2005. During 2001-05, Ethiopia ranked first in the region and was the second largest importer of U.S. lentils in the world. Sudan ranked second in the region (as for dry peas) and fourth in the world, Eritrea ranked third in the region and seventh in the world, Sierra Leone ranked fourth in the region and No. 10 in the world, and Kenya ranked fifth in the region and No. 13 in the world.





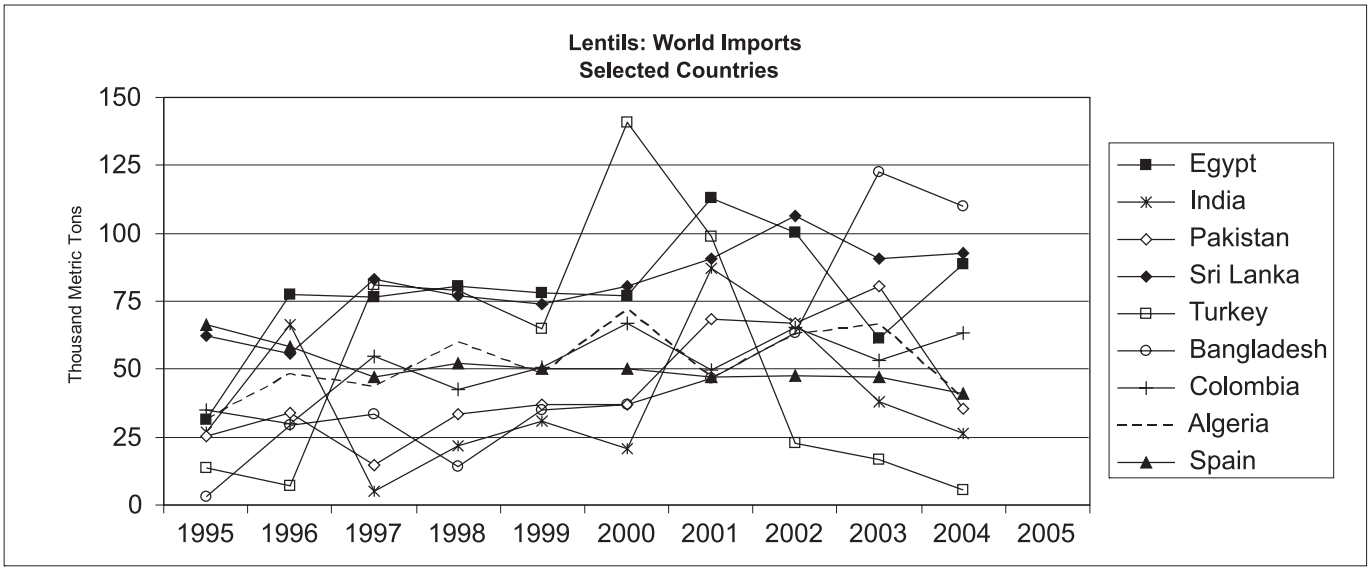


Figure 6: Lentils: Production and Trade Statistics
(Source: FAO STAT Database)

Table 7. LENTILS: World Production and Trade

Production (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	17.0	38.0	36.0	39.0	103.0	163.0	266.0	67.0	207.0	132.0	169.0
Bangladesh	167.9	169.9	170.5	162.7	131.0	128.0	126.0	115.0	116.0	122.0	122.0
Canada	432.0	402.5	378.8	479.8	723.8	914.1	566.3	353.8	519.9	962.0	1,187.6
China	120.0	120.0	100.5	128.0	100.0	116.0	120.0	125.0	132.0	150.0	160.0
India	783.8	713.7	962.0	804.5	937.8	1,078.9	915.2	974.4	880.0	1,100.0	1,000.0
Iran	129.0	120.0	82.9	95.0	62.7	78.3	104.4	117.0	120.0	125.0	125.0
Nepal	99.8	117.7	124.4	113.5	132.3	137.3	143.1	148.4	150.0	158.7	160.7
Pakistan	31.0	34.1	35.0	37.0	37.7	35.5	26.9	26.2	29.2	31.1	25.8
Spain	5.9	27.2	16.9	15.9	8.9	22.0	19.1	22.5	20.7	27.6	5.5
Syria	147.5	151.7	87.5	154.1	43.5	73.0	177.5	132.8	168.4	125.3	153.7
Turkey	665.0	645.0	515.0	540.0	380.0	353.0	520.0	565.0	540.0	540.0	555.0
United States	100.9	60.5	108.5	87.9	108.3	137.4	131.5	113.8	110.8	189.7	231.4
Other Countries	152.8	163.9	130.9	127.0	118.1	132.8	131.2	146.2	136.8	136.0	136.2
WORLD	2,852.6	2,764.2	2,748.9	2,784.5	2,886.9	3,369.3	3,247.1	2,907.0	3,130.7	3,799.4	4,031.8
US as Pct of World	3.5%	2.2%	3.9%	3.2%	3.8%	4.1%	4.0%	3.9%	3.5%	5.0%	5.7%
Canada as % of World	15.1%	14.6%	13.8%	17.2%	25.1%	27.1%	17.4%	12.2%	16.6%	25.3%	29.5%

Exports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	0.5	0.0	0.0	0.6	25.0	134.1	217.7	242.0	84.6	150.3	
Canada	285.4	284.8	300.8	374.1	417.2	518.9	490.7	351.1	370.9	373.5	
China	47.9	11.5	17.9	26.3	21.9	17.8	14.5	21.4	32.9	37.4	
France	3.7	6.5	2.9	1.7	6.7	5.1	3.3	3.2	2.5	2.3	
India	22.7	23.5	130.7	67.3	147.3	191.1	106.1	86.4	83.1	136.9	
Nepal	2.1	10.9	15.4	30.6	37.0	2.4	15.1	27.8	30.4	15.3	
Syria	28.0	160.7	133.6	55.6	39.6	16.5	12.4	10.6	69.7	71.0	
Turkey	140.4	246.1	127.2	154.0	105.2	99.7	158.6	119.2	216.9	171.2	
United States	87.6	54.6	52.6	53.2	76.1	80.1	98.9	103.1	97.2	87.6	
Other Countries	31.6	25.3	25.2	23.8	28.2	32.5	59.7	54.1	52.3	81.1	
WORLD	650.0	824.1	806.3	787.3	904.1	1,098.2	1,177.0	1,018.9	1040.5	1126.6	
US as % of World	13.5%	6.6%	6.5%	6.8%	8.4%	7.3%	8.4%	10.1%	9.3%	7.8%	
Canada as % of World	43.9%	34.6%	37.3%	47.5%	46.1%	47.3%	41.7%	34.5%	35.6%	33.2%	

Imports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Algeria	31.7	48.0	43.6	59.9	48.3	72.1	46.7	63.0	66.5	38.9	
Bangladesh	2.8	29.3	33.2	14.4	35.0	37.0	46.6	63.3	122.8	109.8	
Colombia	34.7	30.1	55.0	42.4	50.4	67.1	49.8	65.3	53.0	63.4	
Ecuador	8.6	9.6	13.4	13.8	13.6	14.6	17.3	16.5	13.0	14.5	
Egypt	31.6	77.7	76.6	80.5	78.0	77.2	113.0	100.3	61.2	88.7	
France	43.4	33.9	26.3	28.6	34.2	35.6	32.0	31.3	31.8	26.6	
Germany	19.6	22.1	22.3	23.8	24.6	37.4	26.3	21.1	21.2	23.5	
India	26.7	66.5	5.1	22.0	31.0	21.0	87.0	67.0	37.9	26.6	
Italy	24.0	23.7	24.1	25.9	23.7	27.5	28.4	26.8	30.9	27.3	
Mexico	11.0	23.3	25.1	25.8	24.5	25.5	31.1	29.4	29.2	30.9	
Morocco	22.5	9.1	5.2	9.9	19.9	40.8	29.3	14.1	5.0	7.9	
Pakistan	25.5	33.7	14.8	33.6	36.9	37.1	68.4	67.1	80.8	35.5	
Peru	17.6	28.7	19.2	27.4	18.0	25.4	28.0	27.0	20.2	25.1	
Saudi Arabia	18.5	18.6	19.1	18.1	17.2	15.1	24.6	21.0	24.1	26.1	
Spain	66.5	58.4	46.9	52.0	50.4	50.0	46.9	47.5	47.0	41.2	
Sri Lanka	62.5	56.0	83.2	76.8	73.9	80.4	90.7	106.5	90.9	92.6	
Sudan	10.0	11.3	8.4	12.0	12.8	22.0	13.6	19.5	14.4	31.9	
Turkey	13.6	6.9	81.3	78.8	64.8	140.9	98.7	22.7	16.9	5.6	
United Kingdom	8.5	14.7	13.6	13.5	14.8	13.2	15.1	16.8	14.7	18.1	
United States	5.0	8.0	14.9	14.0	8.6	7.8	9.6	10.8	13.2	16.1	
Venezuela	11.0	9.0	14.3	14.0	13.9	14.8	16.5	15.2	8.0	9.3	
Other Countries	146.1	167.6	191.2	162.4	186.0	212.1	218.8	232.7	306.2	264.3	
WORLD	641.5	786.1	837.0	849.5	880.6	1,074.6	1,138.5	1,084.8	1108.9	1,024.1	

SOURCE: FAO STATS Database

Spain was the largest importer of lentils from the United States during 2001-05 both in the world and in the European Union. Spain consistently has purchased large quantities through the years. Italy and Greece also were good customers of the United States, ranking eighth and No. 17, respectively. The European Union ranked as the No. 1 importer from the United States during 1996-2003.

South America usually was the second or third most important destination during 1996-05. Two important destinations were Peru and Venezuela, which ranked third and No. 20, respectively, in the world during 2001-05.

Haiti ranked sixth in the world during 2001-05 and has been a consistent importer from the United States since 1998. Cuba purchased a significant amount in 2005. No other country in the Caribbean purchased significant amounts during the 10-year period ending in 2005.

Canada was the No. 9 destination for U.S. exports and Mexico was No. 11. Both countries were fairly consistent importers of U.S. lentils during 1996-2005.

Importers

Lentils are exported to and consumed throughout most of the world: Europe, mostly Spain, France, Italy, Germany and the United Kingdom; South America, with most countries being buyers; Central and North America, with Mexico and the United States being the major buyers; and Arab and African counties, with the highest-volume customers being Algeria, Egypt and Morocco.

The major importing countries of lentils are Sri Lanka, Egypt, Bangladesh, Colombia, Pakistan, Algeria, Turkey, India and Spain. Bangladesh was the No. 1 importer in 2003 and 2004.

U.S. imports during 2001-05 were 12 percent of exports. The biggest supplier was Canada, followed by India and Turkey. Considerably smaller quantities were purchased from the next five: Australia, Netherlands, Italy, France and Mexico.

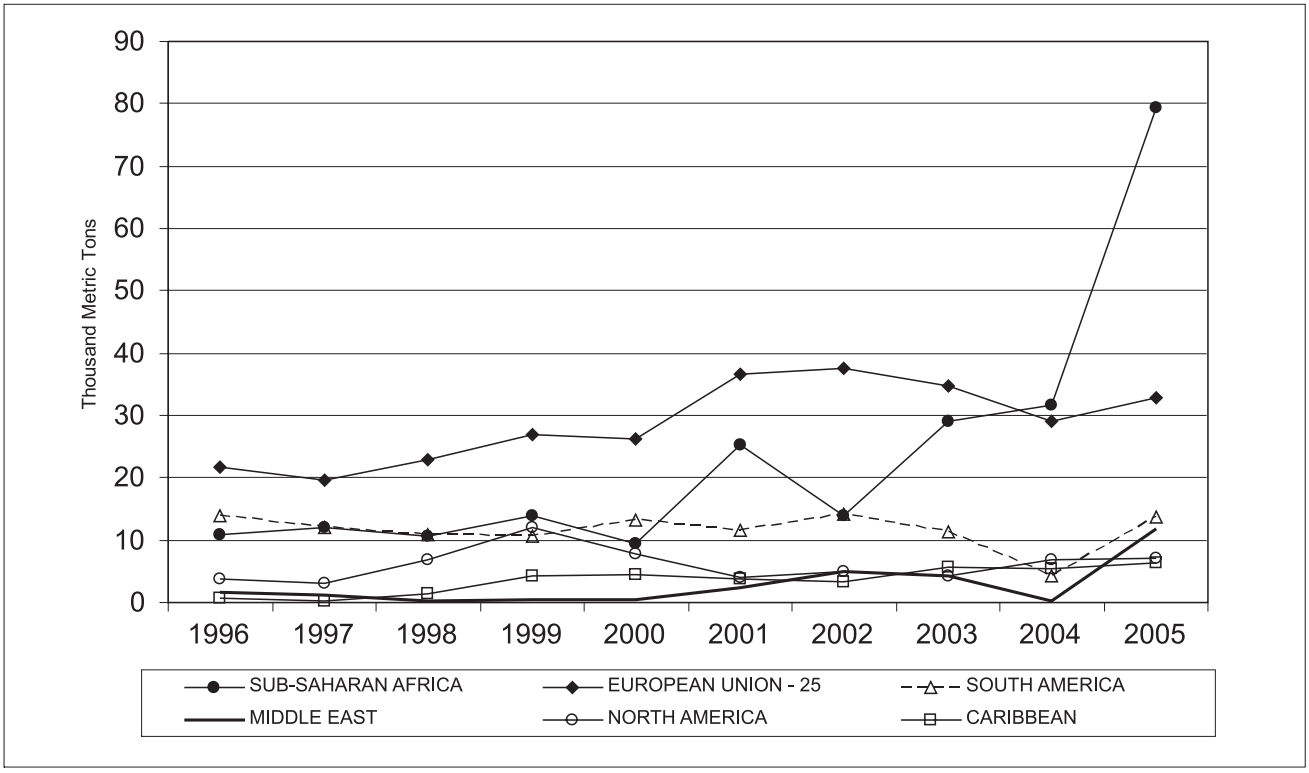


Figure 7: Lentils: U.S. Exports
(Source: U.S. Trade Internet System)

Table 8. LENTILS: U.S. Exports

(1,000 Mt)

	Region	2001	2002	2003	2004	2005	Total	Rank
Spain	EU-25	29.1	29.0	26.4	23.4	27.7	135.6	1
Ethiopia	Sub-Saharan Africa	2.6	0.4	10.0	4.4	48.3	65.8	2
Peru	South America	11.2	12.5	9.9	3.4	7.1	44.3	3
Sudan	Sub-Saharan Africa	3.9	3.8	3.3	10.4	13.4	34.9	4
Pakistan	South Asia	2.4	20.7	0.6	0.0	0.1	23.8	5
Haiti	Caribbean	2.8	2.8	5.2	5.2	3.6	19.6	6
Eritrea	Sub-Saharan Africa	0.6	0.0	6.7	6.4	5.7	19.5	7
Italy	EU-25	3.4	3.9	2.9	2.8	2.7	15.7	8
Canada	North America	1.2	2.6	2.0	4.0	4.3	14.1	9
Sierra Leone	Sub-Saharan Africa	7.5	3.4	0.9	0.9	0.7	13.4	10
Mexico	North America	2.8	2.3	2.3	2.8	2.8	13.0	11
United Arab Emirates	Middle East	0.0	0.0	0.0	0.0	11.1	11.1	12
Kenya	Sub-Saharan Africa	9.1	1.1	0.0	0.1	0.0	10.3	13
Somalia	Sub-Saharan Africa	1.2	1.5	0.0	2.6	3.7	9.0	14
Iran	Middle East	2.2	4.7	0.0	0.0	0.0	7.0	15
Burkina	Sub-Saharan Africa	0.0	2.3	0.5	1.6	2.5	6.8	16
Greece	EU-25	1.6	1.7	1.1	1.3	1.1	6.8	17
Russian Federation	FSU	5.5	0.0	0.0	0.0	0.0	5.5	18
Angola	Sub-Saharan Africa	0.0	0.0	4.6	0.7	0.0	5.3	19
Venezuela	South America	0.1	0.2	0.0	0.0	4.9	5.2	20

Source: USDA US Trade Internet System

Chickpeas

General

Two commercial types of chickpeas are produced: kabuli and desi. The kabuli or garbanzo type, which is large-seeded with a thin, delicate and colorless or white seed coat, often is made into snacks (in South Asia), ground into hummus (in the Middle East) or canned whole for the salad bar trade (in North America). The desi type, which is small-seeded with a thick, hard and colored seed coat, often is exported whole to the Indian subcontinent. The desi type usually is prepared for consumption either by dehulling and splitting or by dehulling and grinding into flour (10).

Chickpeas are grown almost exclusively for human consumption, with seed type and ethnic culture determining their use. Chickpeas are an excellent source of protein, fiber, complex carbohydrates, vitamins and minerals. Small volumes of low-quality chickpeas are being used for livestock feed.

Chickpeas (garbanzo beans) are included in dry edible bean statistics in USDA reports.

Market Overview

The two distinct types of chickpeas really are two different crops, each with a separate use and market.

The demand for high-quality kabuli chickpeas is small but growing in North America, where they mainly are used in salad bars and vegetables mixes. They also are used in producing a wide variety of snack foods, soups, sweets and condiments.

About 85 percent to 90 percent of the world chickpea production is the smaller, lower-priced desi, while the remainder is the larger, higher-priced kabuli or garbanzo bean (11).

World Production and Trade

World production and trade data for chickpeas are displayed in Figure 8 and the data is summarized in Table 9.

Production

A large portion of chickpeas are consumed in the countries where they are produced. India alone accounted for 56 percent to 67 percent of world production each of the past five years. Turkey, Pakistan, Iran, Mexico, Canada and Australia are much smaller producers but are key players in the chickpea trade. Canada has risen rapidly to become a key player in the world chickpea trade, with production growing from about 1,000 metric tons in 1995 to 455,000 metric tons in 2001; however, Canadian production has dropped significantly since then. Countries in the Indian subcontinent and Australia produce mainly the desi type, Canada produces both the kabuli and desi types, and the remaining countries produce mainly the kabuli type.

The bulk of the desi type is produced in the Indian subcontinent. Major producers of the kabuli types are Turkey, Syria, Iran, Mexico, Morocco and Ethiopia. Compared with desi types, a greater proportion of global kabuli production is traded rather than consumed domestically.

Exporters

Australia, Mexico, Turkey and Canada are the major chickpea exporting countries, accounting for a large majority of world exports. Exports from Canada peaked in 2001, while exports from Turkey and Australia peaked in 1997. While India produces the majority of the world's chickpeas, it also consumes the majority of the world chickpea production. The country is not a significant supplier in the export market. Turkey and Mexico are the main exporters of kabuli chickpeas.

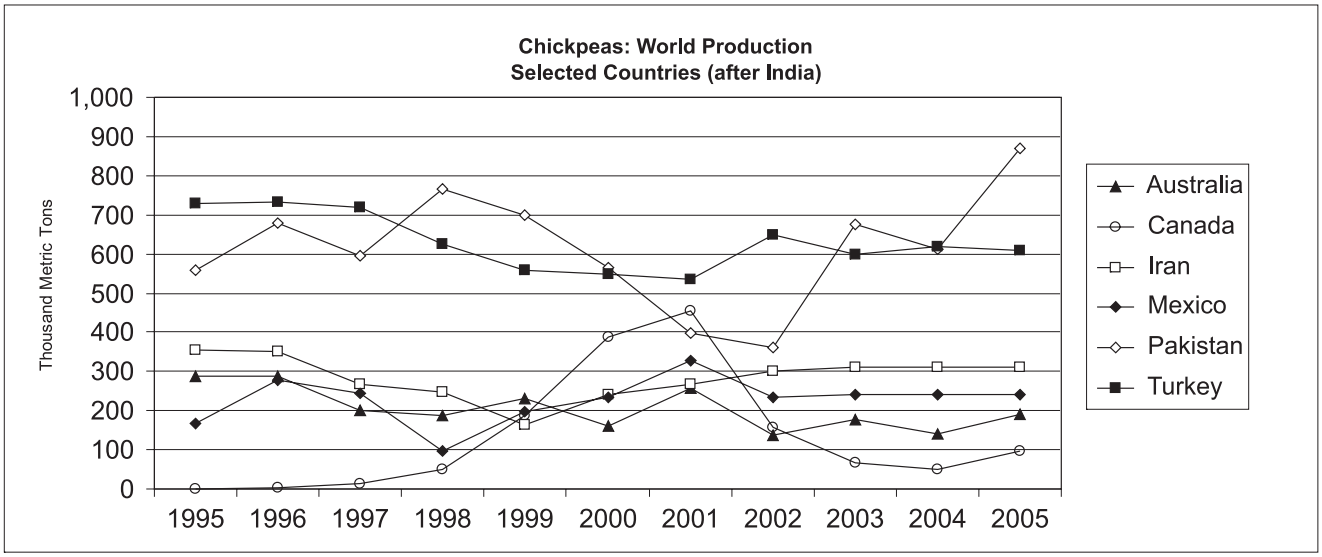
U.S. exports during July-June 2000-01 through 2004-05 varied from 42 percent to 60 percent of production. Although variable, exports have been fairly strong since 1998. Regional export destinations are presented in Figure 9. Table 10 shows the top 20 country destinations based on total U.S. exports to countries during 2001-05.

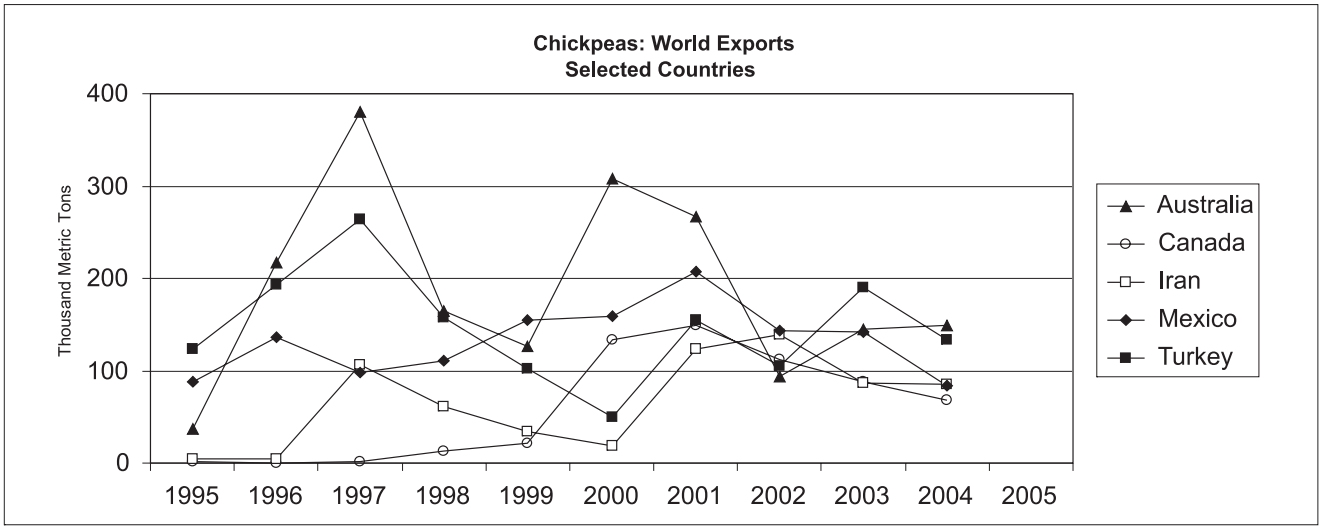
Canada and Spain were the largest destinations during 2001-05. India ranked a distant third while Algeria ranked a distant fourth. Italy, Australia, the United Kingdom and Cuba ranked 5 to 8, respectively. France was the ninth most important destination and Colombia ranked 10th.

The European Union was the most important regional destination during seven of the 10 years ending in 2005. Four of the top 10 destinations during 2001-05 were in that region. South Asia was the No. 1 destination during 2000 and 2001 largely because of imports by India. Pakistan also imported significant amounts from the United States in 2000.

Importers

The major chickpea importing countries are India and Pakistan. Bangladesh, Spain and Algeria also are significant importers. India imports significant amounts of chickpeas despite being the world's largest producer. Canada





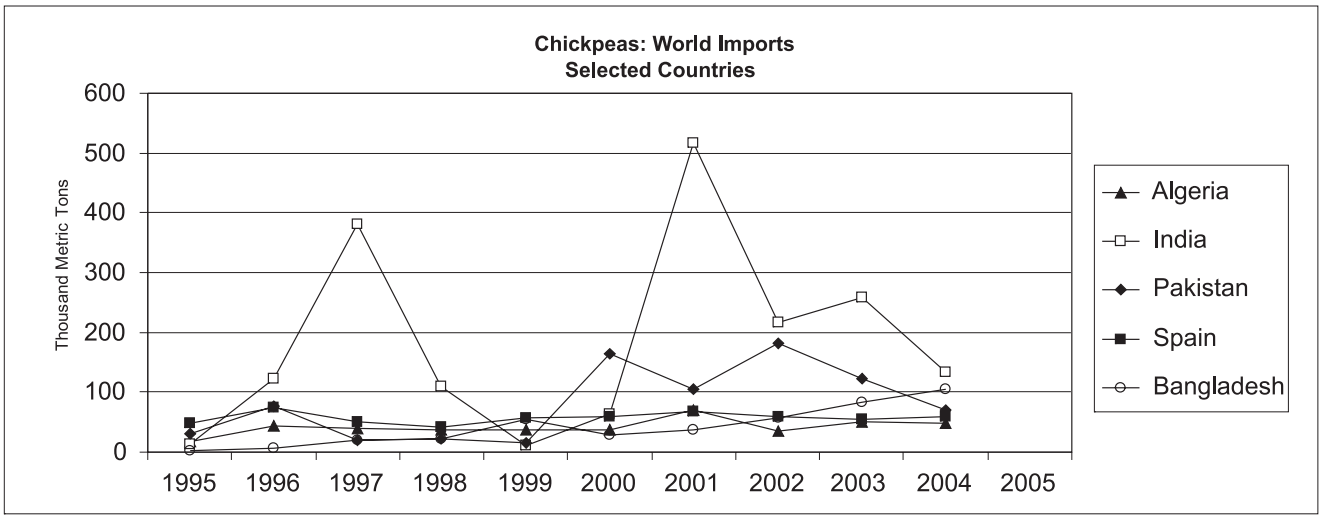


Figure 8: Chickpeas: Production and Trade Statistics
(Source: FAO STAT Database)

Table 9. CHICKPEAS: World Production and Trade

Production (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	286.9	287.7	199.8	187.6	229.9	162.0	258.0	136.0	178.0	140.0	189.0
Canada	1.0	4.0	14.5	50.9	187.2	387.5	455.0	156.5	67.6	51.2	97.6
Ethiopia	124.5	142.1	118.4	137.1	138.8	164.6	175.7	186.8	114.1	135.9	134.0
India	6,435.5	4,979.0	5,566.0	6,132.0	6,800.7	5,120.0	3,855.4	5,473.0	4,130.0	5,770.0	6,000.0
Iran	354.9	350.1	267.0	248.6	164.6	242.4	268.8	300.0	310.0	310.0	310.0
Mexico	167.2	278.7	243.7	98.5	197.6	233.8	326.1	235.1	240.0	240.0	240.0
Myanmar	76.0	91.0	89.0	89.0	67.9	84.3	119.3	211.9	228.0	230.0	230.0
Pakistan	558.5	679.6	594.4	767.1	697.9	564.5	397.0	362.1	675.2	611.1	868.2
Spain	31.0	91.5	75.1	58.5	30.2	55.5	56.9	70.5	51.1	56.9	17.7
Syria	53.5	45.7	58.9	84.6	28.9	64.5	60.1	88.8	87.0	45.3	55.3
Turkey	730.0	732.0	720.0	625.0	560.0	548.0	535.0	650.0	600.0	620.0	610.0
United States	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other Countries	318.5	405.9	370.3	391.6	311.9	319.8	386.2	413.4	432.1	415.5	420.7
WORLD	9,137.6	8,087.4	8,317.1	8,870.5	9,415.6	7,946.9	6,893.5	8,284.0	7,113.1	8,625.9	9,172.5
US as Pct of World	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Canada as % of World	0.0%	0.0%	0.2%	0.6%	2.0%	4.9%	6.6%	1.9%	1.0%	0.6%	1.1%

Exports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	36.5	216.7	379.7	164.6	126.7	307.3	266.5	94.2	144.1	149.3	
Canada	0.9	0.5	0.9	12.3	20.6	132.8	149.2	111.6	88.6	68.3	
Iran	4.0	4.0	106.4	61.6	33.5	18.9	123.5	139.7	87.1	85.2	
Mexico	88.2	136.8	97.6	110.7	155.0	158.9	207.1	142.7	141.4	83.2	
Turkey	123.8	192.7	263.2	157.9	101.7	50.1	154.0	104.7	189.6	133.1	
United States	14.0	7.9	6.3	10.3	22.7	34.7	29.6	23.0	14.9	12.5	
Other Countries	46.6	29.4	33.4	90.1	53.6	50.4	68.7	140.2	120.1	149.3	
WORLD	314.1	588.0	887.5	607.4	513.8	753.1	998.6	756.0	785.7	681.0	
US as % of World	4.5%	1.3%	0.7%	1.7%	4.4%	4.6%	3.0%	3.0%	1.9%	1.8%	
Canada as % of World	0.3%	0.1%	0.1%	2.0%	4.0%	17.6%	14.9%	14.8%	11.3%	10.0%	

Imports (1,000 Mt)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Algeria	17.8	43.9	39.8	37.7	38.1	36.8	70.5	34.4	50.8	48.7	
Bangladesh	2.7	7.2	19.8	22.1	55.0	29.3	37.5	56.8	83.9	104.7	
Colombia	6.7	6.4	8.6	10.1	8.9	7.5	10.3	10.1	11.7	9.3	
France	10.4	19.0	11.5	11.6	8.6	13.0	13.4	11.2	11.0	9.1	
India	13.7	122.1	380.9	110.1	11.0	64.0	516.8	217.6	259.2	132.5	
Italy	17.1	26.2	19.1	19.0	17.6	18.2	22.7	22.3	20.7	28.5	
Jordan	10.5	4.9	17.4	17.7	19.0	18.1	21.9	21.1	22.6	24.5	
Lebanon	4.5	6.6	8.9	9.0	7.0	9.3	17.3	10.3	8.8	6.7	
Pakistan	31.2	75.8	20.2	21.0	15.4	165.2	106.1	182.1	123.3	69.3	
Portugal	6.4	9.0	7.6	9.2	6.7	9.6	12.2	11.9	11.6	11.4	
Saudi Arabia	13.3	18.1	18.4	20.4	13.0	18.8	25.4	22.8	23.7	17.5	
Spain	48.9	74.3	50.3	41.3	56.3	59.4	68.7	58.1	53.9	58.1	
Sri Lanka	4.3	6.1	14.0	14.6	13.2	14.3	13.4	17.4	19.6	22.7	
Tunisia	12.9	14.2	19.9	18.0	19.2	18.2	20.0	18.7	18.9	20.3	
Turkey	0.5	0.2	1.4	21.1	8.1	7.4	14.4	10.6	0.4	0.5	
United Kingdom	12.7	14.2	15.1	15.4	12.5	15.9	15.7	17.9	17.6	20.3	
United States	10.3	13.3	14.5	11.5	12.3	12.3	11.0	11.6	10.4	13.7	
Other Countries	79.3	117.5	181.3	102.4	91.2	98.5	121.1	125.4	162.8	137.0	
WORLD	303.1	579.0	848.7	512.2	413.0	615.7	1,118.4	860.3	910.8	734.9	

SOURCE: FAO STATS Database

and Australia account for a large percentage of total Indian imports. Because of its proximity, Australia has a distinct marketing advantage over Canada (and the United States) in the Indian subcontinent.

India and the subcontinent, where chickpeas are a staple in their diet, import mainly the desi type, while countries in the Western Hemisphere, Europe, the Middle East and northern Africa import primarily the kabuli type.

U.S. imports during 2001-05 were 57 percent of exports. Mexico and Canada were the predominate sources. Much smaller quantities were purchased from India and Turkey.

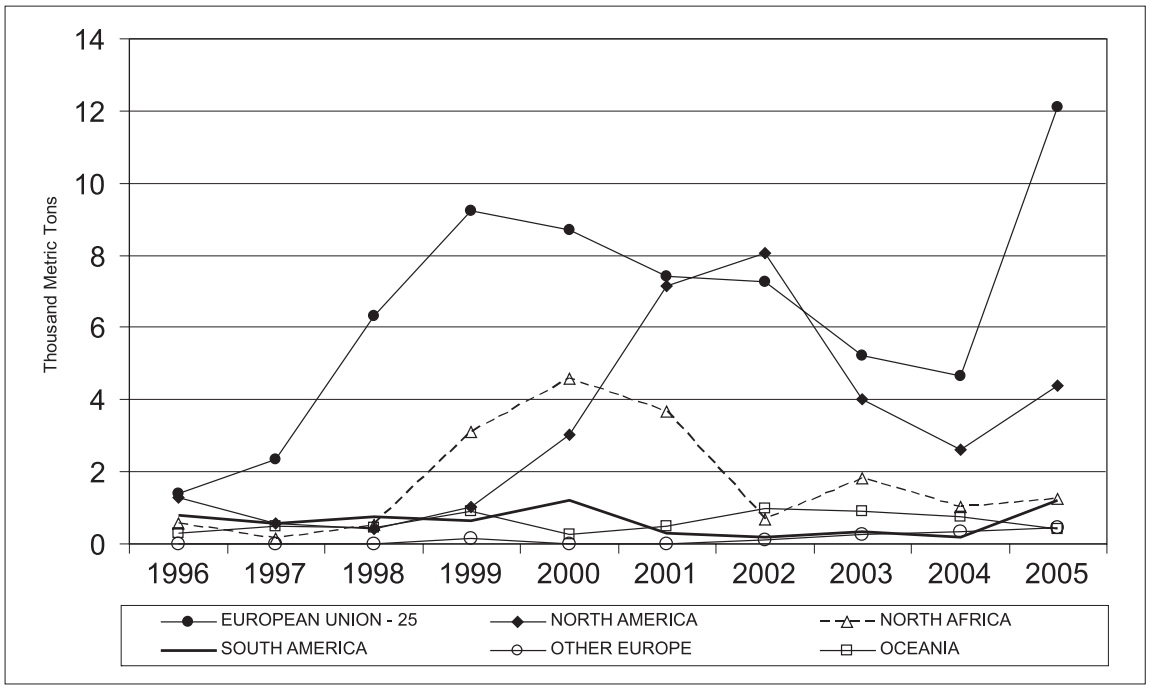


Figure 9: Chickpeas: U.S. Exports (Source: U.S. Trade Internet System)

Table 10. CHICKPEAS: U.S. Exports

(1,000 Mt)

	Region	2001	2002	2003	2004	2005	Total	Rank
Canada	North America	7.1	8.1	4.0	2.6	4.4	26.1	1
Spain	EU-25	4.3	4.4	3.7	3.5	10.1	26.0	2
India	South Asia	7.6	3.0	0.8	0.0	0.3	11.8	3
Algeria	North Africa	3.0	0.7	1.8	1.0	1.3	7.7	4
Italy	EU-25	1.0	0.6	0.4	0.2	0.4	2.6	5
Australia	Oceania	0.4	0.8	0.7	0.5	0.0	2.4	6
United Kingdom	EU-25	0.4	0.8	0.7	0.1	0.4	2.3	7
Cuba	Caribbean	0.0	0.0	0.0	2.0	0.0	2.0	8
France	EU-25	0.4	0.0	0.0	0.3	0.9	1.6	9
Colombia	South America	0.0	0.0	0.1	0.0	1.1	1.2	10
Sweden	EU-25	0.3	0.3	0.2	0.2	0.2	1.2	11
Norway	Other Europe	0.0	0.1	0.3	0.3	0.5	1.2	12
New Zealand	Oceania	0.1	0.2	0.2	0.2	0.4	1.1	13
Belgium-Luxembourg	EU-25	0.2	0.7	0.1	0.0	0.0	1.0	14
Pakistan	South Asia	0.2	0.6	0.0	0.0	0.0	0.9	15
Taiwan	East Asia	0.2	0.2	0.3	0.0	0.2	0.9	16
Philippines	Southeast Asia	0.0	0.1	0.4	0.1	0.1	0.8	17
China, Peoples Rep	East Asia	0.4	0.3	0.0	0.0	0.0	0.7	18
Netherlands	EU-25	0.1	0.3	0.1	0.2	0.0	0.7	19
Japan	East Asia	0.1	0.3	0.1	0.2	0.1	0.7	20

Source: USDA US Trade Internet System

Marketing of Pulses

Demand Factors

The pulse industry in North America has grown at a tremendous pace, particularly in Canada. Pulse production in the Prairie Provinces has expanded rapidly to meet the growing global demand for pulses. The dramatic increase in demand for (Canadian) pulses is being driven by several factors (12):

- Populations of some countries, where pulses are a staple in the diet, are growing faster than their agricultural sectors are expanding.
- Globalization is allowing local producers to stop growing pulses for the domestic market if they can produce more profitable crops for export.
- Weather patterns are changing and disturbing the expected agricultural output in some regions of the world.
- Health-conscious consumers in affluent markets are increasing their consumption of vegetable protein in their diets and pulses are the perfect fit for this purpose.
- Feed peas are used extensively as feed ingredients in Canada and Europe.

In addition to affecting total demand for pulses, the above factors provide an indication of where the increased demand likely will occur. Since the pulse industry in Canada is the major influence for the pulse industry in the United States, it follows that the above factors are equally important to the demand for U.S. pulses.

Market Complexity

The pulse industry is fairly complex because of the great amount of product diversity. As discussed in the introduction to each of the pulse categories, each category has various distinct product types. Each product type basically represents a different market segment.

The markets for pulse crops often are variety specific, more so than for other commodities. Identifying target markets and determining the characteristics (often specific varieties) of interest in those market areas is important. Unfortunately, published statistics on planting intentions, production and trade (exports and imports) generally relate to a pulse category as a whole and are not broken down by type within the category.

Market Categories

Market opportunities are shifting constantly as world supply patterns in competing producing areas change because of weather conditions, disease and pest incidences, economics of competing crops, etc. Discussions with potential local brokers/buyers can help producers determine what market to target before selecting a pulse type or variety to include in their farm enterprise.

The market for U.S. pulse crops can be broadly classified into the domestic, export and PL 480 markets. The domestic and export markets include separate markets for human consumption and livestock feed.

Domestic Market

Lentils and chickpeas are used primarily for human consumption. Field peas, however, are used for human consumption, and within the last several years, have been recognized as a valuable feed ingredient for the livestock industry.

While pulses account for a significant portion of the dietary protein in many of the world's diets, meat still is the primary protein source in U.S. diets. Pulses have not been a part of the traditional American diet and domestic consumption is limited. However, opportunities exist with the growing ethnic populations in numerous U.S. cities.

Use of alternative ingredient sources (such as field peas) for livestock feeds has become widely accepted in Europe and is growing rapidly in Canada. Acceptance has been much slower in the United States. Part of this reluctance has been the lack of critical mass and the current variability in energy and protein levels of field peas, compared with other energy and protein sources. Availability of supply and consistent quality of the product are important to feed formulators. The other challenge in the United States is that field peas must compete with readily available and generally plentiful supplies of other energy and protein sources (corn and soybeans).

Field peas may be grown specifically for the feed market but the use of lentils and chickpeas in livestock rations generally is limited to small quantities of low-grade product.

Export Market

Perhaps more so than in most pulse-producing countries, the pulse industry in the United States, Canada and Australia is heavily dependent on the export market. In these countries, population and dietary preferences limit the potential to expand the domestic market.

The market for pulses for human consumption centers primarily on those countries where those crops are a staple and primary source of protein in the local diets for religious, dietary preference or economic reasons. The Indian subcontinent (India, Pakistan, Bangladesh, Sri Lanka) and the Middle East are major consumers of pulses.

Europe is a major and significant market for field peas for livestock. Feed peas are an accepted and important feed ingredient for feed formulators. Key importers of feed peas include Spain, Belgium and the Netherlands. Canada also is a market where use of field peas in livestock rations has gained acceptance. The United States and Canada are working to establish feed pea markets in the Asian Pacific countries. The Philippines is one country where a market for feed peas is emerging.

Major importing countries for each of the major pulse categories are noted in the figures and tables in the previous sections.

PL-480

In the U.S. marketplace, one of the primary outlets for food-grade pulses is the PL 480 U.S. Food Aid Program. Peas and lentils increasingly are used in food-aid projects. Those crops are high in protein, making them ideal for food-aid efforts and many cultures accept them as a part of their local diet.

PL 480 is a government program designed to use U.S. commodities to aid developing countries. The ultimate destinations for PL 480 shipments are designated countries overseas; the buyer, however, is the U.S. government. Tender releases for pulses can be very irregular in both timing and quantity, which means counting on that program as a regular and steady outlet for U.S. pulse producers is difficult. The intent of the program is to use "surplus" commodities without disrupting or competing with normal market channels.

The significance of this market is illustrated by the percentage that PL 480 exports are of total exports. During the 2001-2005 fiscal years (October-September), PL 480 exports averaged 44 percent of total exports for dry peas and 70 percent for lentils (13).

Product Quality

The pulse industry in the United States historically has been geared toward the production of high-quality human food-grade product, a large portion of which is purchased by the federal government for foreign aid distribution under programs such as PL 480 (14).

The most recognized definition of quality is one based on physical specifications, including foreign material, color, damage and degree of soundness. Competition in the international pulse markets continually will push the standards for quality to higher levels as suppliers attempt to differentiate their product from that of the competition. Consistency arguably is the most important aspect of quality and convincing the customer, whether domestic or international, to accept the product.

For the feed market (primarily field peas), consistent analysis of energy and protein levels, within acceptable tolerance levels, is significant. Feed formulators need to know they can depend on consistent nutritional analysis before they seriously will consider including field peas in their ration formulas.

Selecting good seed is the fundamental factor in product quality. Beyond seed selection, weather, agronomic practices and handling procedures are key factors in determining quality characteristics and how well products meet quality standards. Weather is beyond producers' control, but they must make sure the other factors are focused on meeting quality standards.

Current U.S. grading standards for dry peas, lentils and chickpeas are summarized in Appendix B.

Market Challenges and Issues

Numerous economic issues/obstacles may slow growth of pulse production in the northern Plains. Key challenges include:

Market Access

Entry into a new market always is difficult when competing with large, established producers such as Canada. Developing sufficient quantities (critical mass) to meet the needs of potential major customers and assure them that producers can be a reliable supplier is a slow and difficult task.

Logistics

One of the problems in new production areas is that not all elevators serving the farmers' small-grain requirements are capable of or willing to accept alternative crops such as pulses. Quantities initially are small and require special care to minimize seed splitting during handling. Quantities

likely won't reach the levels at which they can compete with the 100-car train rates that small grains enjoy. Facilities with first-level processing (cleaning and bagging) for human consumption are limited, but growing in numbers.

Edible pulse buyers increasingly are demanding identity-preserved crops and "just-in-time" delivery. Containerized shipments are the preferred, and often required, way of shipping to the international food-grade markets. However, the shortage of inter-modal terminals in the upper Midwest hinders containerized shipment handling. Transportation costs for getting to a port facility from North Dakota make competing with Pacific Northwest and Prairie Provinces producers difficult.

Trade Issues

Numerous trade issues affect the competitiveness of U.S. pulses in export markets. Wide ranges of import tariffs exist on feed ingredients. These tariffs are major deterrents to the development of new market opportunities because they affect the price competitiveness relative to other ingredients. In some countries, quotas are allocated based on traditional market share, which puts new exporters at a disadvantage.

Cuba, one of the largest consumers in the Western Hemisphere, is a prime example of a potentially significant market for U.S. pulses that is entangled in trade embargo issues and political agendas. Although Cuba recently has ordered shipments of dry peas and lentils (and some other food commodities) from the United States, numerous political obstacles remain to be tackled before regular trade patterns with Cuba can emerge.

Market Development/ Opportunities

A key objective of the pulse industry trade and promotion groups in the United States and Canada is to open new markets or create new demand for high-quality pulse products. Several aspects are being pursued.

Market Acceptance

Pulses are not a familiar item in the diet of most Americans and few are forced to choose pulses because they cannot afford protein from meat. The growing ethnic populations in some of our larger cities offer a potential market, with customers familiar with and accustomed to pulses and even preferring pulses in their regular diets.

Focus on Health Issues

Health-conscious consumers in affluent markets are increasing their consumption of vegetable protein in their diets. Pulses have the potential to be key components in the nutraceutical and functional food industries. Interest is growing in foods that may help prevent or treat diseases such as cardiovascular conditions, cancers, type 2 diabetes or gluten intolerance. These markets are of interest but they are at best niche markets and not likely to become large users of pulses.

Organic Market

Opportunities for high-quality, food-grade pulses may exist in the organic market, which is growing rapidly in the United States and Europe. Pulses also often meet the protein needs of those, who in addition to opting for organic foods, choose to adopt a strict vegetarian diet. However, this is a potential niche market that likely won't demand a large quantity of pulse products.

Non-GMO Market Opportunities

Unique marketing opportunities may be available for pulses because no genetically modified organism (GMO) pulse varieties are registered in the United States or Canada and none are identified as being developed in the immediate future. As the European Union and others struggle with concerns over genetic modification issues, some of their food requirements may be met with increased use of non-GMO pulses. In the feed market, field peas may be in a unique position to provide the non-GMO energy and protein sources that several European countries desire/require in livestock rations.

Market Factors

General

As with all specialty crops, growers should locate markets and delivery points, and when possible, negotiate a suitable price before committing major acreage to pulse crops. Markets come and go. A market available this year might not be available next year. Reviewing key market factors is important when identifying target markets to enhance the success of producing and marketing pulse crops.

Price Issues

As with other crops/commodities, a number of factors influence the price the producer can expect to receive for pulse crops. Key price determinants are world supply and demand in consuming/importing countries. One must look at conditions and factors in a global perspective to get a feel for what is happening or may happen to prices for the various pulse crops. In the United States, pulses still are specialty crops competing in a global pulse industry, with the price of pulses in the United States heavily dependent on the Canadian pulse crops and price structures.

The Indian subcontinent, a major consumer/importer of pulse crops, is very price-sensitive. Although buyers generally have traditional preferences (pulse category, type, color, size, etc.), a great deal of substitution occurs among pulse crops in these markets. In other situations, substituting one type of pulse crop for another is very limited in the market, creating a price spread between different types of the same class.

The prices of competing feed ingredients, particularly the price of soybean meal, influence the feed pea market, which makes up a significant part of field pea consumption. Pulse crops do not have futures markets. The Winnipeg Commodity Exchange has made several attempts to establish a pea futures contract, but each effort has ended in failure because participation levels were not sufficient to meet market objectives. Prices are negotiated directly between producers and dealers and dealers and customers based on supply and demand factors for each type of pulse crop. The prices negotiated can be for immediate delivery or for delivery at some future date. Production contracts may be used to help reduce price risk.

Supply/Production

World supply is the greatest factor affecting farm pulse price changes from year to year. Planting intentions or acres planted are a first indicator of what production levels (supply) might be expected. Production, of course, is very dependent on weather conditions. Extreme weather conditions (drought, excessive moisture, early freezing, etc.) impact yields and production levels. Weather conditions in producing countries impact supply levels.

In addition to price expectations, a key factor influencing acres planted in any region is the economic competitiveness of pulse crops compared with other potential crops the producer might consider.

Pulse crops are grown in both the Northern and Southern hemispheres, where planting and harvesting seasons vary, again adding complexity to an understanding of the global pulse industry's supply-demand conditions.

Demand/Usage

While consumption levels of pulses are relatively steady, demand for pulses in a particular region is very much a function of the level of local production. Weather conditions may adversely influence local production to the point that some regions may have to rely on increased imports to supplement local production to meet consumer demands.

The price sensitivity and substitutability in some of the major consuming countries definitely make the task of forecasting demand for a particular type or class of pulse crop more uncertain.

Political Issues

Political issues (trade sanctions, embargos, excessive tariffs, etc.) may limit U.S. access to potentially viable markets and distort the economic flow of products in the global marketplace. Cuba is an example where the U.S. pulse industry should have a competitive advantage if/when normal trade relationships are re-established.

Political considerations heavily influence purchases for food-aid programs (PL 480), a key market for U.S. pulse producers. Government programs, such as price supports, subsidies and loan deficiency payments, in major pulse-producing countries also have an impact on global prices and marketing of pulses.

Market Information

Studying and using market information is important for the producer. Key sources of current information on market factors influencing the pulse industry are STATpub and USDA Bean Market News. STATpub provides summary market information on its Web site, with a great deal of backup information and market data available to subscribers. Other publications and Web sites provide occasional information of interest to the pulse producer.

Sources of current market information and historical data for the pulse industry and a brief summary of the type of information available from each are listed in the Sources of Information. Producers should use all available market information sources and market outlooks for pulses to stay abreast of significant factors affecting prices in the pulse industry.

Sources of Information: Pulse Marketing

Industry/Trade Associations

North Dakota Dry Pea and Lentil Association
(www.ndpealentil.org)

The name changed to Northern Pulse Growers Association on July 1, 2006. The Web site address also will be changed eventually.

The North Dakota Dry Pea and Lentil Council and the North Dakota Dry Pea and Lentil Association support this Web site to provide producers with timely information about the pulse industry in the area. It provides information on weekly area market prices, Midwest buyers, upcoming events, production guides, links to other sites of interest to the pulse industry and other information.

South Dakota Pulse Growers
(www.sdpulsegrowers.com)

South Dakota Pulse Growers Inc. is a grass-roots organization formed to encourage better production of field peas, chickpeas, lentils and dry beans in South Dakota. Its Web site provides information on pulse production, South Dakota seed suppliers, market outlets and industry updates.

USA Dry Pea and Lentil Council
(www.pea-lentil.com)

The USA Dry Pea and Lentil Council represents more than 5,000 growers, processors and exporters of dry peas, lentils and chickpeas. Its target audience is importers, manufacturers, food service and consumers. The Web site includes a list of brokers, exporters, processors and warehouses primarily in the Palouse region in the Pacific Northwest. It also provides links to the USDA/GIPSA (Grain Inspection, Packers and Stockyards Administration) documents detailing grading standards for whole dry peas, split peas, lentils and chickpeas.

Pulse Canada
(www.pulsecanada.com)

Pulse Canada is a national industry association representing provincial pulse groups from Alberta, Saskatchewan, Manitoba, Ontario and the pulse trade from across Canada. Its Web site includes price information, pulse statistics, some trade news and general production and marketing information.

Alberta Pulse Growers
(www.pulse.ab.ca)

Alberta Pulse Growers is an industry association whose stated mission is "… to improve the net returns to the grower by providing responsible leadership toward expansion of a mature, viable pulse industry in Alberta." Its Web site provides local market information and more details on feed peas than other sites.

Manitoba Pulse Growers Association Inc.
(www.manitobapulse.ca/)

The Manitoba Pulse Growers Association represents producers of beans, peas, lentils, chickpeas, fababeans and soybeans. Its focus is to provide members with production and marketing support through focused research, advocacy and linkages with industry partners. Its publication, ***The Pulse Beat,*** is accessible on the Web site.

Saskatchewan Pulse Growers
(www.saskpulse.com)

The vision of Saskatchewan Pulse Growers is that the Canadian province's pulse industry will be the world's preferred supplier of peas, lentils, chickpeas and beans. Its stated mission is to maximize grower profitability and sustainability. The Web site provides access to its newsletter, ***Pulse News,*** and information about production and marketing of pulse crops.

Pulse Australia
(www.pulseaus.com.au)

The objective of Pulse Australia is to provide coordinated leadership to the Australian pulse industry and facilitate activities that will achieve improved profitability for all sectors of the industry. The Web site provides access to its monthly ***Pulse Market Overview*** and the ***Pulse Update Annual***.

Industry News Sources

AGWEEK: published weekly by the Grand Forks Herald, Grand Forks, N.D.

Specialty Crops Markets - A weekly column written by John Duvenaud, Winnipeg, publisher of the Wild Oats Grain Market Advisory, a newsletter for western Canadian producers of canola, flax, peas, lentils, mustard and canary seed. The Specialty Crops Markets column provides a current summary of market news affecting specialty crops markets, including pulse crops.

Inside the Specialty Markets - Peas and lentils: current week, week ago and year ago Idaho/Washington prices for green, yellow, Austrian winter peas and lentils. Feed peas and lentils/local bids: current week, week ago and year ago local bids for feed peas, green and yellow peas and lentils at AGP Grain, Valley City, N.D., and Agricore, Ray, N.D.

Selected features and news items are available on the AgLINK ***AGWEEK*** online Web site: www.grandforks.com/mld/agweek

FarmNet Services (www.farmnetservices.com)

FarmNet Services is an emerging Internet-based service with headquarters in Harvey, N.D., which offers the capability for cooperating buyers/processors and producers to list their needs and inventories for potential exchange of business information via e-mail. Market information includes pea and lentil price data from cooperating buyers/processors.

STATpub.com (www.statpub.com)

STATpub is a Web-based publication of STAT Communications, British Columbia, Canada, (mailing address Blaine, Wash.). STAT describes its site as "the world's No. 1 source of market information on specialty crops, serving the information needs of processors, importers and exporters in the world's most important producing and consuming countries." Headlines and limited information are available to "visitors" to the Web site. Access to full-text articles; market intelligence bulletins serving the pea, bean, lentil and birdseed industry; and other information is available by subscription. Subscription rates as of June 2006 were: 30-day trial – USD $33.50; six-month subscription – USD $195; one-year subscription – USD $355.

The WESTERN PRODUCER, a weekly newspaper serving western Canadian farmers, is Canada's largest agricultural news organization. It is published in Saskatoon, Sask.

It includes frequent news articles of interest to the pulse industry. Planting intentions, crop yields and marketing information are of interest to producers, processors and marketers. It also publishes weekly prices for pulse and special crops (Source: STAT Publishing).

Subscription fees as of July 2006 were $120 U.S. funds for one year (51 issues). Most of the news articles and the weekly grain price data are available on the Web at www.producer.com/. There is no subscription fee to access the online version.

Government Sources

Agriculture and Agri-Food Canada, Market Analysis Division, Ottawa, Ont.

Canada: Pulse and Special Crops Outlook — Periodic reports on Canadian and world factors influencing the world pulse industry, with special sections on dry peas, lentils and chickpeas. Available on the Web at www.agr.gc.ca/mad-dam/index_e.php?s1=pubs&s2=spec&page=intro

Agriculture and Agri-Food Canada, Market and Industry Services Branch, Ottawa, Ont.

Special Crops Information — Sections with information on Canada's dry pea, lentil and chickpea industries. Available on the Web at www.agr.gc.ca/misb/spcrops/

USDA, Agricultural Marketing Service, Livestock and Seed Division, Market News Branch, Greeley, Colo.

Bean Market News — Weekly publication (every Tuesday) includes price information for dry edible beans; a Peas and Lentils Market Summary (this week, last week, last year); a summary of the Commodity Credit Corp.—invited offers for export programs (when applicable); a summary of exports by country of destination when available; and other market information. The current report is available at www.ams.usda.gov/LSMNpubs/pdf_weekly/bean.pdf. The weekly publication also is archived on the Internet (from 1999 to present).

USDA, Economic Research Service, Washington, D.C.

Vegetables and Melons Outlook — Published every other month, the report provides current intelligence and forecasts the effects of changing conditions in the U.S. vegetable and melon sector. It also includes sections on dry beans, dry peas and lentils, with tables summarizing production, prices, trade and more. Available on the Web at www.ers.usda.gov/publications/vgs

United Nations, Food and Agriculture Organization

World statistics on agriculture production and trade data are available in the FAO Agriculture Database. Annual data can be selected by country or region, commodity and data of interest for a number of years. The FAO-STAT Agriculture Database is available on the Web at http://faostat.fao.org/.

Publications

Pulses - General

Ali, Munir. Asia Commodity Ltd. *Understanding the Asian Pulse Buyer.* Presentation at Pulse Days 2002, Saskatoon, Sask, Canada, Jan. 7-8, 2002.

Bacon, Gordon, president, Pulse Canada. *Opportunities for Pulses in Food and Feed Markets.* Presentation at Pulse Days 1999, Saskatoon, Sask., Canada, Jan. 11-12, 1999.

Bacon, Gordon. *Opportunities in Pulses: Global Trends Affecting Human Pulse Consumption.* Pulse Day 1998 Proceedings, Saskatoon, Sask., Canada, Jan. 13, 1998.

Clancey, Brian. STAT Publishing. *What to Watch: Market Indicators for Pulses.* Presentation at Pulse Days 2003, Saskatoon, Sask., Canada, Jan. 6-7, 2002

Dawson, R.L.M., and John Zalud. *Future Pulse Crop Transportation in Saskatchewan* (a report prepared for the Saskatchewan Pulse Crop Development Board). Fulcrum Associates, Winnipeg, Man., Canada, October 2000.

Greenough & Associates Inc. and Miltura Economic Research Inc. *The Pulse Industry: State of the Industry Fact Sheet.* Saskatchewan Agrivision Corporation Inc., Saskatoon, Sask., Canada, June 2002.

Hickling, David. *Global Trends Affecting Animal Pulse Consumption.* Pulse Day 1998 Proceedings, Saskatoon, Sask., Canada, Jan. 13, 1998.

Hnatowich, Garry. *Pulse Production Manual 2000.* Saskatchewan Pulse Growers, Saskatoon, Sask., Canada, 2000.

McGreevy, Tim D., USA Dry Pea and Lentil Council. *The Pulse Industry Next Door: The U.S. Perspective.* Presentation at Pulse Days 2002, Saskatoon, Sask., Canada, Jan. 7-8, 2002.

Park, Bob, Ken Lopetinsky, et al. *Pulse Crops in Alberta.* Alberta Agriculture, Food and Rural Development. Edmonton, Alberta, Canada, 1999.

Price, Gregory K., Rip Landes and A. Govindan. *India's Pulse Sector: Results of Field Research.* Publication WRS-03-01. ERS/USDA, Washington, D.C., May 2003.

Price, Gregory K. *Will the Farm Act Get Pulses Racing?* Agricultural Outlook, ERS/USDA, Washington, D.C., November 2002.

Trimension Group. Pulse *Processing Potential in Alberta.* Alberta Pulse Growers, Leduc, Alberta, Canada, June 2002.

USDA-FAS. "Food Aid Reports." Available at: www.fas.usda.gov/excredits/FoodAid/Reports/reports.html

USDA-FAS. "U.S. Trade Internet System." Available at: www.fas.usda.gov/ustrade/

Vanderberg, Bert. *Can Canada Compete in the Future Pulse Industry?* Presentation at Pulse Days, Saskatoon, Sask., Canada, Jan. 7-8, 2002.

Field Peas

Anderson, Vern, editor. *A Guide to Feeding Field Peas to Livestock: Nutrient Content and Feeding Recommendations for Beef, Dairy, Sheep, Swine and Poultry.* Publication AS-1224, NDSU Extension Service, North Dakota State University, Fargo, N.D., January 2002.

Carlin, K.M., G.P. Lardy, R.J. Maddock, B. Ilse, V.L. Anderson. 2006. *Field Pea Inclusion in High Grain Diets for Beef Heifers Improves Beef Tenderness Without Altering Performance.* J. Anim. Sci. 84 (Suppl.1): (accepted) (Abstr).

Hnatowich, Garry. *Pulse Production Manual 2000.* Saskatchewan Pulse Growers. Saskatoon, Sask., Canada, 2000.

McKay, Kent, Blaine Schatz and Gregory Endres. *Field Pea Production.* Publication A-1166 (Revised), NDSU Extension Service, North Dakota State University, Fargo, N.D., March 2003.

McVicar, R., et al. *Dry Pea in Saskatchewan.* Saskatchewan Agriculture, Food and Rural Revitalization, Regina, Sask., Canada, December 2000.

Miller, Perry, et al. *Growing Dry Pea in Montana.* Fact Sheet 200502, Extension Service, Montana State University, Bozeman, May 2005.

Park, Bob, Ken Lopetinsky, et al. *Pulse Crops in Alberta.* Alberta Agriculture, Food and Rural Development. Edmonton, Alberta, Canada, 1999.

Skrypetz, Stan. *Dry Peas: Situation and Outlook.* Bi-Weekly Bulletin, Agriculture and Agri-Food Canada, Winnipeg, Man., Canada, Vol. 19 No. 2, February 2006.

Skrypetz, Stan. *United States: Pulse Crops Situation and Outlook.* Bi-Weekly Bulletin, Agriculture and Agri-Food Canada, Winnipeg, Man., Canada, Vol. 19 No. 4, February 2006.

Slinkard, A.E. *Pea Production in Canada.* Canadian Peas: Feed Industry Guide. Canadian International Grains Institute, Winnipeg, Man., Canada, March 1997.

Lentils

Hnatowich, Garry. *Pulse Production Manual 2000.* Saskatchewan Pulse Growers. Saskatoon, Sask., Canada, 2000.

McVicar, R., et al. *Lentil in Saskatchewan.* Saskatchewan Agriculture, Food and Rural Revitalization, Regina, Sask., Canada, December 2001.

Park, Bob, Ken Lopetinsky, et al. *Pulse Crops in Alberta.* Alberta Agriculture, Food and Rural Development. Edmonton, Alberta, Canada, 1999.

Skrypetz, Stan. *Lentils: Situation and Outlook.* Bi-Weekly Bulletin, Agriculture and Agri-Food Canada, Winnipeg, Man., Canada, Vol. 17 No. 8, May 2004..

Chickpeas

Hnatowich, Garry. *Pulse Production Manual 2000.* Saskatchewan Pulse Growers, Saskatoon, Sask., Canada, 2000.

McKay, Kent, et al. *Growing Chickpea in the Northern Great Plains.* Publication A-1236, NDSU Extension Service, North Dakota State University, Fargo, N.D., November 2002.

McVicar, R., et al. *Chickpea in Saskatchewan.* Saskatchewan Agriculture, Food and Rural Revitalization, Regina, Sask., Canada, May 2002.

Park, Bob, Ken Lopetinsky, et al. *Pulse Crops in Alberta.* Alberta Agriculture, Food and Rural Development. Edmonton, Alberta, Canada, 1999.

Skrypetz, Stan. *Chickpeas: Situation and Outlook.* Bi-Weekly Bulletin, Agriculture and Agri-Food Canada, Winnipeg, Man., Canada, Vol. 17 No. 15, September 2004.

Vanderburg, Bert, Tom Warkentin and Al Slinkard. *"The Chickpea Story: Past, Present and Future."* Pulse Point, Saskatchewan Pulse Growers, Saskatoon, Sask., January 2003.

References

(1) Pulse Crops in Alberta, Alberta Agriculture, Food and Rural Development, Edmonton, Alberta, Canada, 1999.

(2) USDA/ERS VGS-291, June 20, 2002.

(3) USDA Agricultural Marketing Service, Bean Market News 2005 Summary, Available at: www.ams.usda.gov/LSMNpubs/annualbean/BA2005.pdf

(4) Slinkard, A.E. Pea Production in Canada. 1997.

(5) USDA/ERS, VGS-291, June 20, 2002.

(6) Eric Bartsch, director of North Dakota Dry Pea and Lentil Association, e-mail, April 11, 2006.

(7) Carlin, K.M., G.P. Lardy, R.J. Maddock, B. Ilse, V.L. Anderson. 2006. Field Pea Inclusion in High Grain Diets for Beef Heifers Improves Beef Tenderness Without Altering Performance. J. Anim. Sci. 84 (Suppl.1): (accepted) (Abstr).

(8) USDA Agricultural Marketing Service, Bean Market News 2005 Summary, Available at: www.ams.usda.gov/LSMNpubs/annualbean/BA2005.pdf

(9) Agriculture & Agri-Food Canada.

(10) Vanderburg, Bert, Tom Warkentin and Al Slinkard. "The Chickpea Story: Past, Present and Future." Pulse Point, Saskatchewan Pulse Growers, Saskatoon, Sask., January 2003.

(11) Pulse Production Manual, Saskatchewan Pulse Growers, Saskatoon, Sask., Canada, (Second Edition), April 2000.

(12) Canada's Pulse Industry, Agriculture and Agri-food Canada.

(13 USDA-FAS Food Aid Reports and U.S. Trade Internet System.

(14) USDA/ERS VGS-291, June 20, 2002

APPENDIX A.

Pulse Crop Budgets, North Dakota

(Farm Management Planning Guides)

Updated Annually

Available from:

Distribution Center, Morrill Hall
North Dakota State University
Fargo, ND 58105-5655

or available on the Web at:
www.ext.nodak.edu/extpubs/ecguides.htm

FIELD PEAS

Projected 2006 Crop Budgets, North Dakota

	North West	North Central	North East	North Valley	South West	South Central
Market Yield (bu/acre)	32.00	34.00	36.00	40.00	29.00	30.00
Market Price ($/bu)[1]	$3.50	$3.50	$3.50	$3.50	$3.50	$3.50
MARKET INCOME	112.00	119.00	126.00	140.00	101.50	105.00
DIRECT COSTS						
Seed[2]	17.25	17.25	17.25	17.25	17.25	17.25
Herbicides	16.00	16.00	16.00	16.00	16.00	16.00
Fungicides	-	-	-	-	-	-
Insecticides	-	-	-	-	-	-
Fertilizer	6.55	5.50	7.37	3.90	2.21	4.21
Crop Insurance	3.80	6.90	7.40	9.00	4.10	4.40
Fuel & Lubrication	10.40	10.47	12.36	12.88	10.31	10.34
Repairs	10.26	10.29	11.42	11.68	10.22	10.24
Drying	-	-	-	-	-	-
Miscellaneous	2.00	2.00	2.00	2.00	2.00	2.00
Operating Interest	2.57	2.65	2.86	2.82	2.41	2.50
Sum of Listed Direct Costs	66.84	71.06	76.66	75.54	64.49	66.94
INDIRECT (FIXED) COSTS						
Misc Overhead	3.51	3.54	3.86	3.89	3.47	3.49
Machinery Depreciation	13.29	13.35	14.52	14.52	13.20	13.23
Machinery Investment	7.50	7.53	8.54	8.54	7.45	7.47
Land Investment	26.70	34.30	35.30	53.40	25.00	27.30
Sum of Listed Indirect Costs	51.00	58.71	62.22	80.35	49.12	51.48
SUM OF ALL LISTED COSTS	119.83	129.77	138.88	155.89	113.62	118.42
RETURN TO LABOR & MANAGEMENT	(7.84)	(10.77)	(12.88)	(15.89)	(12.70)	(14.02)
LISTED COSTS PER BUDGET UNIT (bu)						
Direct Costs	2.15	2.09	2.13	1.89	2.22	2.23
Indirect Costs	1.59	1.73	1.73	2.01	1.69	1.73
Total Costs	3.75	3.82	3.86	3.90	3.92	3.95

SOURCE: NDSU Extension Service, Fargo, N.D.

[1]Price estimate is expected loan rate.

[2]Producer's own seed is used. Seed cost for new grower would be about $27.

LENTILS

Projected 2006 Crop Budgets, North Dakota

	North West	North Central	South West
Market Yield (lbs/acre)	1300	1200	1200
Market Price ($/bu)[1]	$0.117	$0.117	$0.117
MARKET INCOME	152.10	140.40	140.40
DIRECT COSTS			
Seed	13.30	13.30	13.30
Herbicides	20.14	20.14	20.14
Fungicides	-	-	-
Insecticides	-	-	-
Fertilizer	4.44	3.24	1.52
Crop Insurance	7.80	14.90	8.20
Fuel & Lubrication	11.04	11.10	10.99
Repairs	10.93	11.10	10.90
Drying	-	-	-
Miscellaneous	4.00	4.00	4.00
Operating Interest	2.78	3.01	2.68
Sum of Listed Direct Costs	74.42	80.79	71.73
INDIRECT (FIXED) COSTS			
Misc Overhead	3.58	3.70	3.56
Machinery Depreciation	13.88	14.06	13.83
Machinery Investment	8.00	8.13	7.98
Land Investment	26.70	34.30	25.00
Sum of Listed Indirect Costs	52.16	60.19	50.37
SUM OF ALL LISTED COSTS	126.58	140.99	122.10
RETURN TO LABOR & MANAGEMENT	25.52	(0.59)	18.30
LISTED COSTS PER BUDGET UNIT			
Direct Costs	0.06	0.07	0.06
Indirect Costs	0.04	0.05	0.04
Total Costs	0.10	0.12	0.10

SOURCE: NDSU Extension Service, Fargo, N.D.
[1]Price estimate is expected loan rate.

LARGE CHICKPEAS

Projected 2006 Crop Budgets, North Dakota

	North West	South West
Market Yield (lbs/acre)	1100	1100
Market Price ($/bu)	$0.240	$0.240
MARKET INCOME	264.00	264.00
DIRECT COSTS		
Seed	78.00	78.00
Herbicides	16.14	16.14
Fungicides[1]	49.00	49.00
Insecticides	-	-
Fertilizer	5.26	2.25
Crop Insurance	7.00	6.80
Fuel & Lubrication	11.44	11.44
Repairs	11.78	11.78
Drying	-	-
Miscellaneous	6.00	6.00
Operating Interest	7.15	7.03
Sum of Listed Direct Costs	191.76	188.44
INDIRECT (FIXED) COSTS		
Misc Overhead	3.81	3.81
Machinery Depreciation	14.91	14.91
Machinery Investment	8.86	8.86
Land Investment	26.70	25.00
Sum of Listed Indirect Costs	54.27	52.57
SUM OF ALL LISTED COSTS	246.03	241.01
RETURN TO LABOR & MANAGEMENT	17.97	22.99
LISTED COSTS PER BUDGET UNIT		
Direct Costs	0.17	0.17
Indirect Costs	0.05	0.05
Total Costs	0.22	0.22

SOURCE: NDSU Extension Service, Fargo, N.D.

[1]Three treatments of ascochyta fungicide.

APPENDIX B.

U.S. Pulse Grading Standards

USDA/GIPSA

Full details available on the Web at:
www.gipsa.usda.gov/GIPSA/webapp?area=home&subject=grpi&topic=sq-ous

WHOLE DRY PEAS

Grades, Grade Requirements, and Grade Designations

Grading Factors	Maximum percent limits of Grades U.S. Nos.[1] 1	2	3
Weevil-Damaged Peas	0.3	0.8	1.5
Heat-Damaged Peas	0.2	0.5	1.0
Damaged Peas[2]	1.0	1.5	2.0
Other Classes[3]	0.3	0.8	1.5
Blended Peas[4]	1.5	3.0	5.0
Split Peas	0.5	1.0	1.5
Shriveled Peas	2.0	4.0	8.0
Peas with Cracked Seedcoats	5.0	7.0	9.0
Foreign Material	0.1	0.2	0.5
Minimum Requirements for Color	Good	Good	Poor

U.S. Sample grade: U.S. Sample grade shall be dockage-free peas which:
(a) Do not meet the requirements for the grades U.S. Nos. 1, 2, or 3; or
(b) Contain metal fragments, broken glass, or a commercially objectionable odor; or
(c) Contain more than 15% moisture; or
(d) Are materially weathered, heating, or distinctly low quality; or
(e) Are infested with live weevils or other live insects[5]

[1]Uniformity of Size Requirements – Dry peas of any of the numerical grades shall be of such size that not more than 3.0 percent shall pass through the appropriate oblong-hole sieve as follows:
Winter Dry peas.....9/64" x 3/4"
Special grade "Small" peas .....10/64" x 3/4"
All other peas.....11/64" x 3/4"
[2]Damaged peas do NOT include weevil-damaged or heat-damaged peas.
[3]These limits do not apply to the class Mixed Dry peas.
[4]These limits do not apply to Winter Field peas and wrinkled peas.
[5]As applied to dockage-free whole dry peas, the meaning of the term "infested" as set forth in the Pea and Lentil Handbook.

LENTILS

Grades, Grade Requirements, and Grade Designations

607 Grades and grade requirements for dockage-free lentils. (See also 609.)

Grading Factors	U.S. Grade No. 1	2	3
Defective Lentils			
Total[1]	2.0	3.5	5.0
Weevil-Damaged Lentils	0.3	0.8	0.8
Heat-Damaged Lentils	0.2	0.5	1.0
Foreign Material			
Total[2]	0.2	0.5	0.5
Stones	0.1	0.2	0.2
Skinned Lentils	4.0	7.0	10.0
Contrasting Lentils[3]	2.0	4.0	>4.0
Inconspicuous Admixture	0.5	0.8	1.0
Minimum Requirements for Color	Good	Fair	Poor

U.S. Sample grade shall be lentils which:
(a) Do not meet the requirements for the grades U.S. Nos. 1, 2, or 3; or
(b) Contain more than 14.0% moisture, live weevils, or other live insects, metal fragments, broken glass, or a commercially objectionable odor; or
(c) Are materially weathered, heating, or distinctly low quality.

[1]Defective lentils total is weevil-damaged, heat-damaged, and split lentils combined.
[2]Foreign material total includes stones.
[3]Lentils with more than 4.0% contrasting lentils shall grade no higher than No. 3.

CHICKPEAS

Grades and grade requirementsfor dockage-free dry chickpeas.

Grading Factors	U.S. Grade No. 1	2	3
	(maximum percent limits)		
Moisture	18.0	18.0	18.0
Total Defects[1]	2.0	4.0	6.0
Total Damaged	2.0	4.0	6.0
Foreign Material			
Total (includes stones)	0.5	1.0	1.5
Stones	0.2	0.4	0.6
Constrasting Classes[2]	0.5	1.0	2.0
Classes that Blend[3]	5.0	10.0	15.0

[1]Total damaged, total foreign material, contrasting classes, splits.
[2]Beans with more than 2% contrasting classes are graded Mixed beans.
[3]Beans with more than 15% classes that blend are graded Mixed beans.

For more information on this and other topics, see: www.ag.ndsu.edu

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. Duane Hauck, director, Fargo, N.D. Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all people regardless of race, color, national origin, religion, gender, disability, age, veteran's status or sexual orientation; and are an equal opportunity institution. This publication will be made available in alternative formats for people with disabilities upon request, (701) 231-7881. 3M-8-06