BRIEFING

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Dry Peas: Trends in Production, Trade, and Price

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Dry peas are a high protein, high starch legume used for human consumption and also as animal feed. Over the past 10 years, U.S. dry pea production has increased substantially, especially in North Dakota and Montana which have become the two largest pea-producing states. This Briefing Paper describes recent trends in dry pea production, trade, and prices.

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Objective Analysis For Informed Decision Making

Background

Dry peas, *Pisum sativum*, also referred to as field peas, are a cool-season pulse crop. As a legume, dry peas convert atmospheric nitrogen into soil-borne nitrogen that can be used by subsequent crops. Hence, dry peas may provide benefits in rotations with cereal crops by increasing yields and, to some extent, reducing fertilizer expenditures.

Peas are shallow-rooted plants that tolerate drier growing season conditions and limited rainfall. Like other pulse crops, peas are relatively frost-tolerant because their growing points, or cotyledons, remain below ground. Pea yields are negatively impacted by high temperatures during the flowering period because of reduced seed setting.

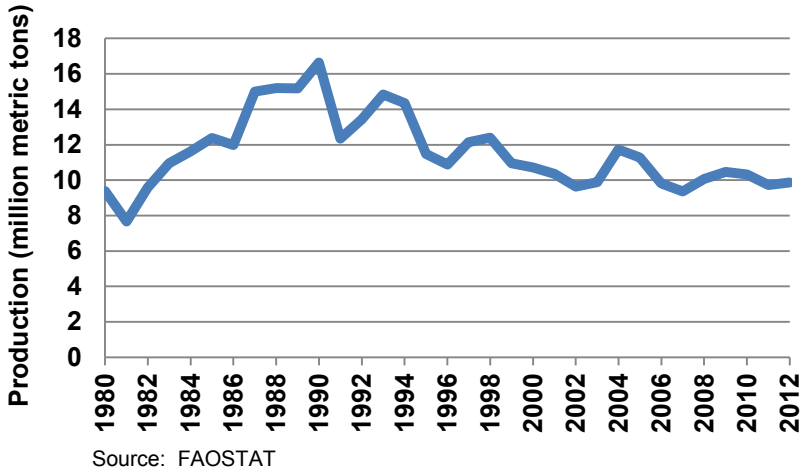
Two main varieties of dry peas are produced: green cotyledon and yellow cotyledon. Both varieties are grown in the United States, although U.S. consumers prefer green peas. Yellow peas are widely consumed in India. Seed colors for the two varieties range from light to dark green and from cream to yellow.

For human consumption, green and yellow peas are often split to reduce cooking times. In addition to providing whole and split peas, food manufacturers are increasingly using pea flour, protein, starch, and other fractions as ingredients in prepared food products.

Production

World[1]*:* World dry pea production peaked in 1990 at 16.6 million metric tons. Since 1990, global dry pea production declined at an average annual percentage rate of 1.8 percent (Figure 1) and, in 2012, was approximately 9.9 million metric tons (just over 10 billion pounds).

Figure 1. World Dry Pea Production, 1980-2012



Source: FAOSTAT

[1] Data on world production of dry peas is compiled from the FAOSTAT database of the Food and Agriculture Organization of the United Nations, which is compiled on a calendar year basis. Marketing year and crop year information collected by the National Agricultural Statistics Service and other U.S. organizations may differ slightly from FAOSTAT data.

Dry peas are grown commercially in almost 100 countries, but production is concentrated in Canada, Russia, and China. Jointly, these three countries produce over one-half of the world's dry peas (Figure 2). Canadian dry pea production increased considerably over the past 30 years, expanding from less than 200,000 metric tons per year in the early 1980s to approximately 3 million metric tons in 2012, or 12 percent per year.

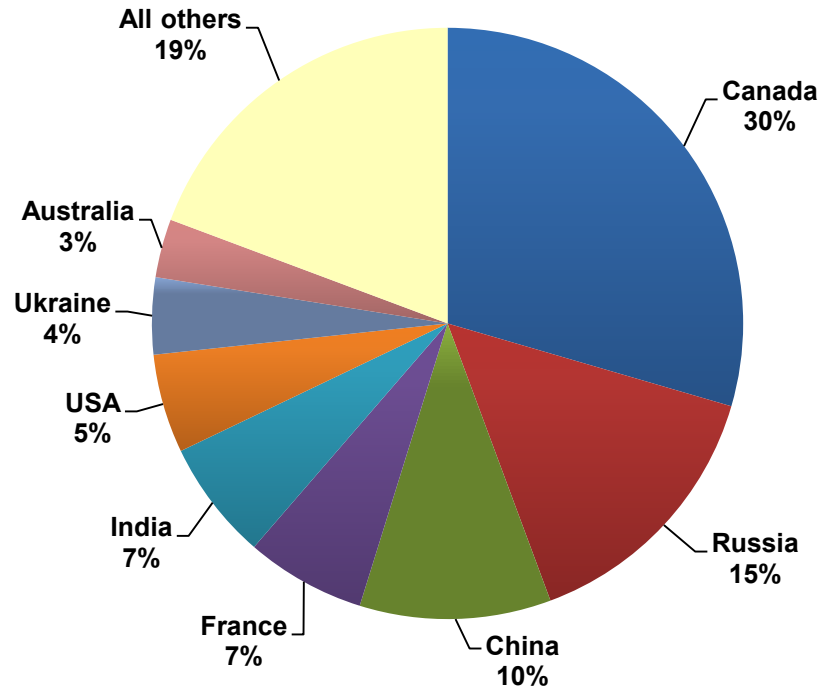
Production growth in Canada was offset by substantial decreases in pea production in Russia, Ukraine, and France. In 1992, these three countries accounted for 65 percent of world pea production; but now they produce only 26 percent. The decline in pea production in Russia and Ukraine mirrored similar declines for other crops following the demise of the Soviet Union. Pea production in Russia bottomed out in the late 1990s and has experienced some erratic growth since.

The European Union (EU) has used subsidies to arrest declines in domestic pea production as a way to reduce reliance on imported protein crops for animal feed and to promote agroecological benefits. Subsidies were partly responsible for France increasing dry pea production to over 1 million metric tons in 2010.

United States: U.S. pea production has increased even though world production has declined. Between 1980 and 2012, U.S. dry pea production increased at an annual average rate of 8.5 percent. The United States accounted for 5.4 percent of total world output between 2008 and 2012. In contrast to Canada, U.S. pea production did not expand substantially until 2003, and almost all of the expansion occurred in the Northern Great Plains.

Many factors have contributed to the increase in U.S. pea production since 2003 including improved yields, relatively favorable production costs, price supports, and improved access to subsidized crop insurance products.

Figure 2. World Dry Pea Production Shares by Country, 2008-2012



Source: FAOSTAT

U.S. pea acreage peaked in 2006 at 925,500 acres (Figure 3). However, total U.S. pea production peaked in 2009 at 777,332 metric tons (Table 1). Both the area planted to peas and pea production declined substantially in 2011 (when production fell to 255,146 metric tons) because of adverse weather conditions that prevented planting in many areas, especially in North Dakota. However, pea production rebounded in 2012 and 2013.

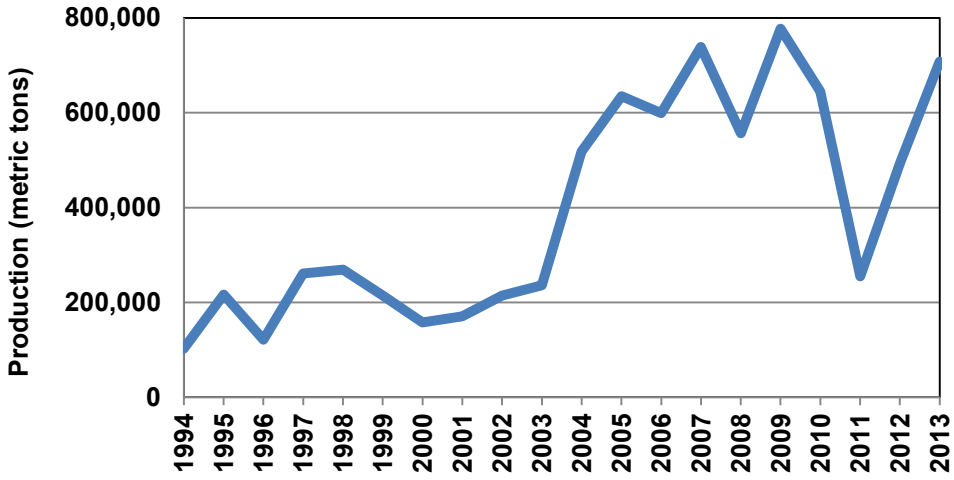
Preliminary data for 2013 indicate that U.S. pea production in 2013 was 707,650 metric tons. This represents a return to the average level for the period 2005-2010. In general, U.S. dry pea production has been fairly stable since the period of rapid growth between 2000 and 2005. However, substantial annual production variability occurs because of variations in growing conditions.

Montana: As U.S. production has increased, Montana has become an important dry pea producing state. Montana dry pea production increased at an average annual rate of 22 percent from 1998 to 2012 and Montana accounted for 28 percent of total U.S. dry pea production between 2008 and 2012.

In 2011, Montana produced more peas than any other state (120,000 metric tons) surpassing North Dakota where excess moisture during the planting season reduced pea acreage.

In 2012, Montana planted 315,000 acres of dry peas and total pea production was 199,354 metric tons (Table 2). Preliminary data for 2013 indicate that Montana dry pea acreage and pea production continued to increase, with 2013 production estimated to be 64 percent higher than the record level set in 2012.

Figure 3. U.S. Dry Pea Production, 1994-2013



Source: USDA-National Agricultural Statistics Service

Table 1. U.S. Dry Pea Acreage, Yield, and Production

Year	Acres Planted	Acres Harvested	Yield (lbs/acre)	Production (lbs)	Production (metric tons)
2008	882,500	847,300	1,448	1,227,000,000	556,558
2009	863,300	837,900	2,045	1,713,700,000	777,322
2010	756,000	711,400	1,999	1,422,100,000	645,054
2011	362,000	342,800	1,641	562,500,000	255,146
2012	649,000	621,000	1,751	1,087,200,000	493,146
2013P	840,000	782,000	1,995	1,560,100,000	707,650

Note: Figures for 2013 are preliminary Source: USDA-NASS

Table 2. Montana Dry Pea Acreage, Yield, and Production

Year	Acres Planted	Acres Harvested	Yield (lbs/acre)	Production (lbs)	Production (metric tons)
2008	245,000	231,000	1,080	249,500,000	113,171
2009	240,000	226,000	1,330	300,600,000	136,350
2010	220,000	207,000	2,000	414,000,000	187,787
2011	190,000	177,000	1,500	265,500,000	120,429
2012	315,000	293,000	1,500	439,500,000	199,354
2013P	420,000	380,000	1,900	722,000,000	327,494

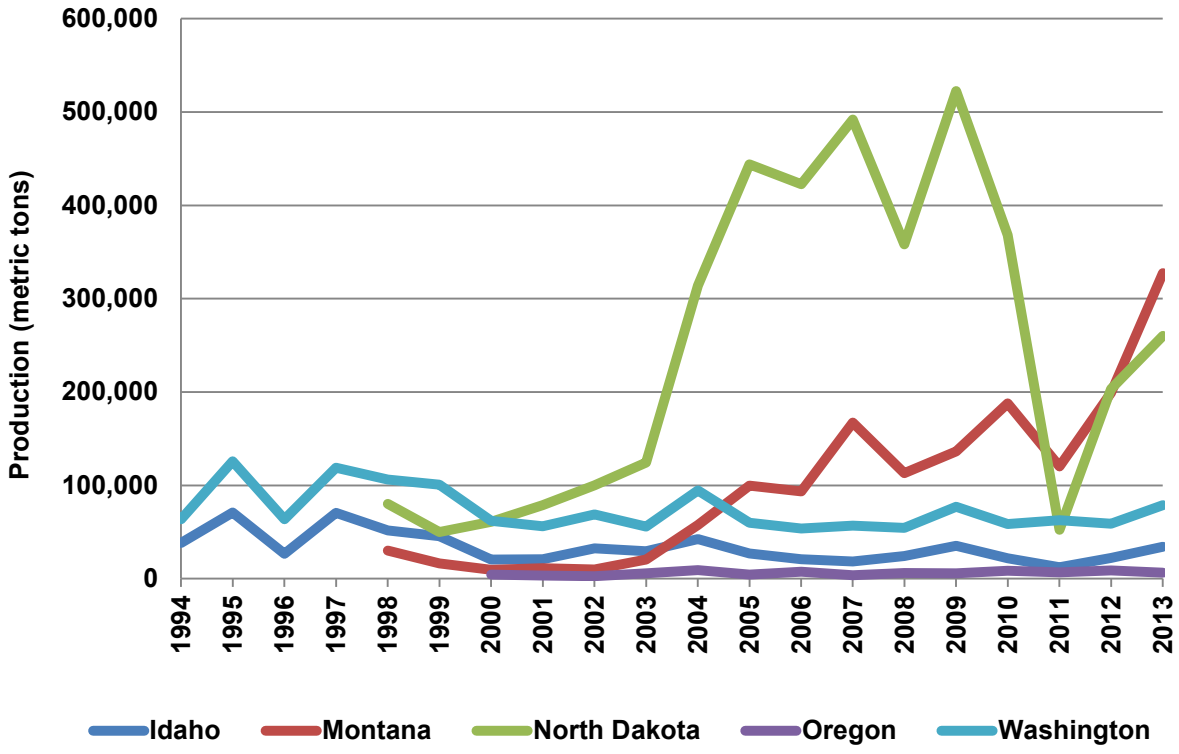
Note: Figures for 2013 are preliminary Source: USDA-NASS

Other States: U.S. dry pea production is almost exclusively concentrated in five states - Montana, North Dakota, Washington, Idaho, and Oregon - but acreage and production shares have shifted from the Pacific Northwest to the Northern Great Plains (Figure 4). North Dakota typically produces the largest share of U.S. dry pea output; over the period 2008 to 2012, North Dakota averaged 34 percent of the total U.S. area planted to peas and accounted for 55 percent of total U.S. dry pea production. Farmers in the states of Washington, Idaho, and Oregon produced 11%, 4%, and 1%, respectively, of U.S. dry peas over the same period.

Trade

A substantial portion of world dry pea production is traded internationally. Between 2008 and 2011, 42 percent of world dry pea production was exported. Exports from all countries were 4.8 million metric tons in 2011. Dry pea exports are concentrated among a few countries, while imports are slightly more diffuse (Table 3).

Figure 4. U.S. Dry Pea Production by State, 1994-2013



Source: USDA-NASS

Table 3. Pea Exporting and Importing Countries and Quantities, metric tons

Exporting Country	Average Annual Quantity (2008-2011)	Importing Country	Average Annual Quantity (2008-2011)
Canada	2,544,670	India	1,518,178
U.S.A.	464,018	China	464,749
France	279,627	Bangladesh	315,745
Russia	227,376	Belgium	107,604
Australia	170,078	Italy	91,619
Ukraine	152,967	Pakistan	83,503
Tanzania	69,916	Spain	82,768
Argentina	54,332	Norway	67,258
Malawi	27,798	Germany	67,164
Belgium	26,898	United Arab Emirates	55,064
Other Countries	210,515	Other Countries	886,478
Total	**4,228,193**	**Total**	**3,740,128**

Source: FAOSTAT

Canada is the world's dominant exporter accounting for slightly more than 60 percent of world exports between 2008 and 2011. The United States was second in dry pea exports over the same period. France, Russia, and Australia are other important exporting countries. French exports have declined since the early 1990s when France was the world's largest dry pea exporter. Russian exports, generally negligible for most of the post-Soviet period, have increased dramatically since 2009.

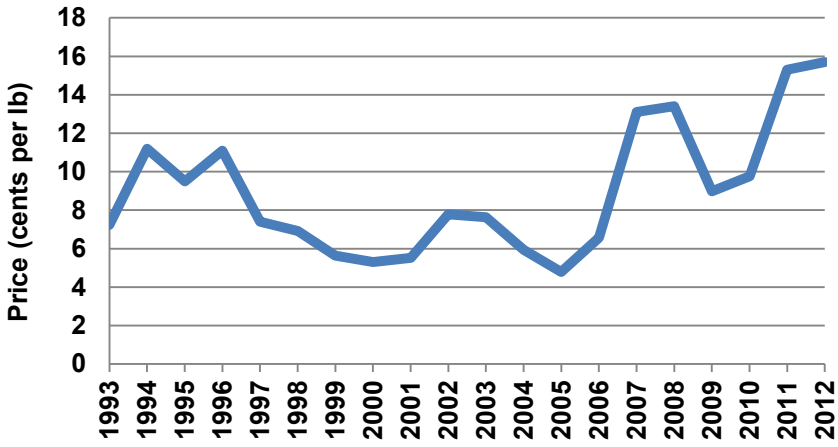
Since the early 2000s, U.S. dry pea export quantities approximately quadrupled. Between 2008 and 2011, the United States exported an average of 464,000 metric tons of dry peas annually. India, China, and the Philippines were the most important export destinations during this period. Ethiopia, Kenya, and Pakistan were the most important export destinations for U.S. split pea exports.

India and China import the majority of internationally traded dry peas. Both countries are also important pea producers. Other major importers include Bangladesh and Pakistan where consumers have tastes and preferences similar to those of India. Belgium, Italy, Spain, and Germany use peas for animal feed.

Dry Pea Prices

Dry pea prices moved sharply higher in 2007, along with the prices for major field crops such as corn, wheat, and soybeans (Figure 5). U.S. marketing-year average producer prices reached a peak of 13.4 cents per pound in 2008-09. Prices were lower in the 2009-10 and 2010-11 marketing years, before reaching record levels in 2011-12 and 2012-13. The U.S. marketing-year average producer price was 15.7 cents per pound in 2012-13.

Figure 5. U.S. Dry Pea Producer Prices Received, Marketing Years 1993-2012



Source: USDA-NASS

The USDA Agricultural Marketing Service (AMS) reports weekly spot bids prices (when available) for whole green and yellow dry peas in Montana and North Dakota (Figure 6). Prices are usually at their lowest point at harvest when new crop production is widely available. Prices typically increase throughout the marketing year to compensate sellers for storage costs.

Summary

Although world pea production has declined since 1990, the United States has become an important producing and exporting country, particularly in the Northern Great Plains states of Montana and North Dakota. Whether or not this growth continues will likely be determined by the relative profitability of competing crops. In this context, dry pea prices have been high relative to their historical levels over the past three years.

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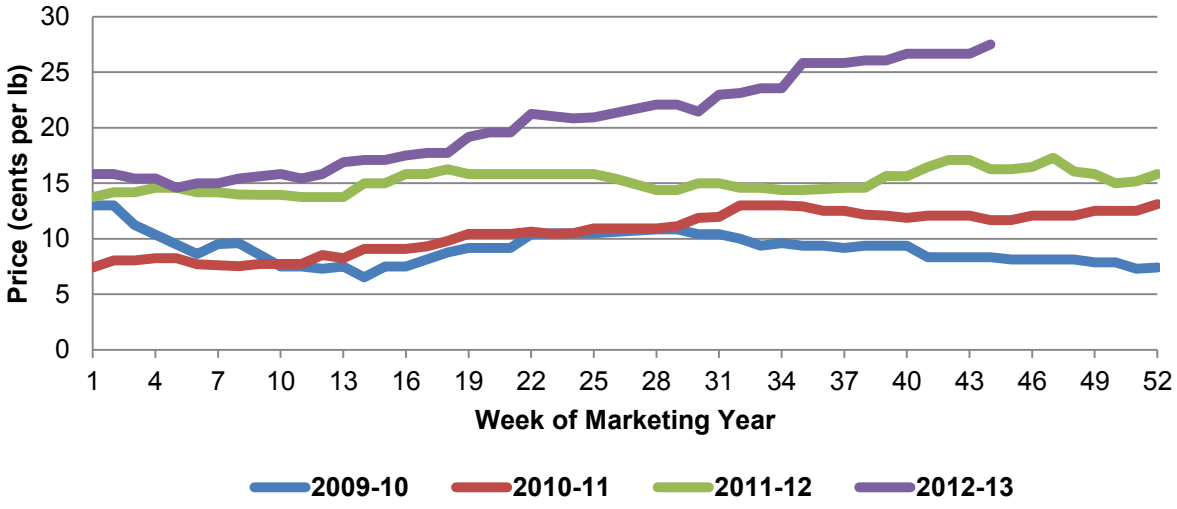
Figure 6. Montana/North Dakota Price for Whole Green Peas, Midpoint of Reported Bids, by Marketing Year, 2009-10 to 2012-13



Source: USDA-Agricultural Marketing Service