



Bi-weekly Bulletin

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CORN: SITUATION AND OUTLOOK

For 2006-2007, the world price of corn has increased substantially because of increased demand, related to ethanol production and low expected carry-out stocks in the United States (US). In Canada, imports of corn are forecast to increase from 2005-2006 due to the low quality of the crop in Ontario and the continued expansion of the Canadian ethanol industry. Canadian corn prices have increased significantly due to higher US corn prices. For 2007-2008, US corn production is expected to increase significantly due to historically high prices in the US related to the strong demand for ethanol. Higher corn prices are expected to support feedgrain prices in general in 2007-2008. Corn production and prices in Canada are also expected to increase. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for corn.

SITUATION: 2006-2007

Coarse Grains

World coarse grain production, as estimated by the United States Department of Agriculture (USDA), decreased to 966.7 million tonnes (Mt) from 977.5 Mt in 2005-2006. Increased production in China, Argentina, Mexico and Russia has been offset by lower production in Australia, Canada, the European Union (EU) and the US. Australia suffered its worst drought in years and, as a result, its coarse grain production decreased to 6.7 Mt from 13.7 Mt in 2005-2006. World trade is expected to decrease marginally, to 107.9 Mt. Utilization is forecast to increase by 3% from 2005-2006 to a record 1.0 billion tonnes, largely due to increased consumption in the US, China, the EU and Ukraine. Carry-out stocks are forecast to fall sharply to 118.6 Mt from 166.4 Mt in 2005-2006, as most major coarse grain producing countries, except Mexico and Ukraine, experience significant reductions in carry-out stocks.

Corn

World corn production is estimated to decrease to 693.1 Mt from 695.4 Mt in 2005-2006. Corn represents about 70% of the world coarse grain market. The US and China produce about 40% and 20%

of the world corn crop, respectively. World corn supply is expected to decrease by 9 Mt from 2005-2006 to 817.5 Mt. For 2006-2007, world corn consumption is projected to reach a record 729.8 Mt, up 28.2 Mt from last year due to a sharp increase in expected industrial demand for ethanol production. The largest increases in industrial demand are expected to be the US and

China. World trade is forecast at a record 85.0 Mt, 2.0 Mt above last year. World carry-out stocks are estimated to decrease significantly to about 87.8 Mt from the near record high of 124.4 Mt in 2005-2006.

United States

The US is the world's largest producer and exporter of grain corn. On average, US production represents 40% of the total world corn production and US exports represent 60% of the world corn trade. As a result, world corn prices are largely determined by US corn prices.

In the **US**, corn production is expected to decrease to 10.5 billion bushels (Gbu) from 11.1 Gbu in 2005-2006. This is due to a decrease in harvested area to 70.6 million acres (Mac) from 75.1 Mac in 2005-2006. Total domestic supply is forecast at 12.5 Gbu, 5% below last year. US corn domestic use is forecast to reach a record 9.5 Gbu, largely due to record industrial use, despite lower feed use. Higher US corn prices are expected to restrict the use of corn in domestic feed rations, while the incorporation of by-products, such as distillers' dried grains (DDGS), of the ethanol industry is forecast to increase. The rapid expansion of the domestic ethanol sector has led to a large

WORLD: CORN SUPPLY AND DISPOSITION			
Local Marketing Year	2005 -2006	2006 -2007e	2007 -2008f
	...million tonnes.....		
Carry-in Stocks	130.6	124.4	87.8
Production			
United States	282.3	267.6	309.8
China	139.4	143.0	145.0
EU-27**	60.5	53.9	60.4
Brazil	41.7	48.0	48.0
Mexico	19.5	22.0	23.0
Argentina	15.8	21.5	21.0
Canada*	9.5	9.3	11.1
Other	126.7	129.6	131.7
Total Production	695.4	693.1	750.2
Total Supply	826.0	817.5	838.0
Feed Use	475.0	480.9	475.0
Food & Industrial Use	226.6	248.9	280.0
Total Use	701.6	729.8	755.0
Carry-out Stocks	124.4	87.8	83.0
Trade	83.1	85.0	82.0

e: estimate, USDA
f: forecast, AAFC, March, 2007
Source: USDA, except *which is Statistics Canada;
** includes Romania and Bulgaria

increase in the availability of DDGS. US corn exports are forecast at 2.3 Gbu, up by 5% from 2005-2006, largely to Japan, Korea, Mexico and Egypt. US corn carry-out stocks are projected to fall by 62% from 2005-2006 to 752 Mbu.

For 2006-2007, the average US farm price is forecast to increase sharply to US\$3.00-3.40 per bushel (/bu) from US\$2.00/bu in 2005-2006. US nearby corn futures prices on the Chicago Board of Trade (CBoT) reached 10 year highs in February, 2007 as bullish long-term biofuel demand prospects and a continued strong export pace of US export corn sales supported prices. For 2006-2007, loan deficiency payment payouts on corn to-date have averaged US\$0.05/bu on 5.9 Mbu, which is less than 1% of the crop. In 2005-2006, payouts for the year averaged US\$0.40/bu on 884.3 Mbu, or 8% of the corn crop.

China

Although less than 20% of China's corn is for industrial use, 8.9 Mt of corn are forecast to be used for ethanol production in 2006-2007 and the demand for ethanol is expected to grow rapidly. The Chinese biofuel industry began developing in the 1980s and was supported and promoted by environmental groups as a clean, effective and renewable energy source. However, it was not until recently when international oil prices increased rapidly that biofuels became accepted as a possible alternative to fossil fuels such as petroleum and coal. China is now the third-largest ethanol fuel producer after Brazil and the US.

China is the second largest corn producer in the world and for 2006-2007, the USDA estimates China's corn production at a record 143.0 Mt, versus 139.4 Mt in 2005-2006, largely due to marginal increase in harvested area. Corn consumption is estimated to increase slightly with an expected increase in feed use and ethanol production. China is also the fourth largest corn exporter with exports forecast to reach 4.0 Mt in 2006-2007. The major Chinese export market is Korea. Carry-out stocks are forecast at 33.4 Mt, down 5% from 2005-2006.

EU-27

The EU-27, including Romania and Bulgaria as member states, is the third largest corn producer in the world. Production is forecast by the USDA at

53.8 Mt, down 11% from 2005-2006.

Although EU-27 corn area is partly irrigated, harvested area fell by 0.6 million hectares (Mha) to 8.5 Mha as a result of extreme heat stress in many of the EU member states, largely in Germany and Italy. With high carry-in stocks, EU-27 supply is estimated at 71.1 Mt, marginally lower than in 2005-2006. EU-27 imports are forecast at 4.5 Mt, largely from Argentina. Domestic use is estimated at 61.2 Mt, up 3% from last year, due to an expected increase in feed use. EU-27 exports are forecast at 1.3 Mt, the bulk of which is from Romania and Bulgaria. With lower supply and increased consumption, EU-27 carry-out stocks in 2006-2007 are expected to fall to 8.5 Mt, down 32% from last year.

Canada

Corn production in Canada has steadily increased in response to a growing need for feed corn for its livestock industry and as input to the growing fuel ethanol industry. Some of Canada's increased corn production in the past few years is attributed to the availability of higher yielding and pest resistant varieties of corn. For example, Statistics Canada reports that 41% of the area devoted to grain corn for 2006-2007 was planted with genetically modified (GM) seed. Ontario, Quebec and Manitoba are the three main corn producing provinces.

In **Ontario**, corn production is estimated at 6.1 Mt, up by 6% from 2005-2006. Yields increased from 145 bushels per acre (bu/ac) to an estimated record 150 bu/ac in 2006-2007, despite wet weather conditions which delayed the harvest.

Ontario historically produces about 70% of Canada's total corn production, however, that share dropped to about 65% in 2006-2007. In some regions of Ontario, the crop was damaged by fusarium. In **Quebec**, corn production decreased to 2.7 Mt from 3.5 Mt in 2005-2006, due to lower area and yield. For **Manitoba**, corn production has increased significantly since the mid 1990s and, for 2006-2007, is estimated at a record 406,400 t.

For 2006-2007, Canadian corn production decreased to 9.3 Mt from 9.5 Mt in 2005-2006, largely due to reduced yields in Quebec. The domestic supply of corn in Canada was largely unchanged from 2005-2006, however, net imports are expected to increase due to the poor quality of the crop in some regions and strong demand for corn for ethanol. Canadian domestic use is forecast at 11.5 Mt, up 5% from 2005-2006. This is largely due to increased food and industrial use. The latter is forecast at a record 2.9 Mt. Carry-out stocks are expected to fall to 1.7 Mt, 15% below 2005-2006.

Chatham Corn Price Determination

The price of corn in Canada is determined by: the price of corn in the US where the major source of price discovery is the CBoT, the Canada-US dollar exchange rate, Canadian supply and demand conditions, freight from origin to destination and brokerage fees.

For a corn deficit region, which has generally been the case for Canada in recent years, domestic corn is priced on an import basis. If there is a surplus supply of Canadian corn, it is priced on an export basis.

For 2006-2007, US corn prices have reached 10 year highs on the CBoT. The CBoT is expected to average US\$3.50/bu for 2006-2007 versus US\$2.18/bu for

CANADA: CORN SUPPLY AND DISPOSITION			
<i>September-August crop year</i>	2005 2006	2006 2007e	2007 2008f
thousand tonnes.....		
Seeded Area (kha)	1,124	1,127	1,350
Harvested Area (kha)	1,096	1,093	1,300
Average Yields (t/ha)	8.63	8.48	8.46
Carry-in stocks	1,801	2,001	1,700
Production	9,461	9,268	11,100
Imports	<u>1,905</u>	<u>2,100</u>	<u>1,800</u>
Total Supply	13,167	13,369	14,600
Exports	242	150	200
Feed, Waste & Dockage	8,692	8,604	8,685
Food & Industrial Use	<u>2,220</u>	<u>2,900</u>	<u>3,900</u>
Total Use	11,166	11,669	12,800
Carry-out Stocks	2,001	1,700	1,800
Price* CAN\$ per tonne,	96	135	150
In-store, Chatham		-155	-170
*No. 2 CE, cash			
e: estimate, f: forecast, AAFC – March, 2007			
Source: Statistics Canada			

WTO CONSULTATIONS ON UNITED STATES SUBSIDIES TO CORN AND OTHER PRODUCTS

On January 8, 2007, Canada officially requested consultations with the US at the World Trade Organization (WTO) on subsidies provided to US corn growers, as well as on the total level of US trade distorting agricultural support and certain US export credit guarantee programs.

US corn subsidy programs impact Canadian corn growers through their effects on prices in the Canadian market. US domestic support programs to US corn producers over the last two marketing years (2004-2005 and 2005-2006) have averaged almost US\$9 billion per year and have resulted in a significant distortion of corn prices in Canada.

The US Congress will soon begin to draft new legislation to replace the *2002 Farm Security and Rural Investment Act*. This will provide the foundation of US domestic support programs for the next five years. As such, it has the unique opportunity to ensure that the US is in full compliance with its WTO obligations and can contribute to a more level playing field for international trade in agriculture.

2005-2006. For 2006-2007, Chatham corn prices have increased much less, largely due to the strength in the Canadian dollar against the US dollar and a very weak CBoT-Chatham basis associated with the poor Canadian corn crop quality. To-date, the CBoT corn price has averaged CAN\$25/t above Chatham corn price versus CAN\$21/t below Chatham for 2005-2006 to-date. For 2006-2007, the Chatham No.2 CE cash corn price is forecast by AAFC to average \$145/t, up from \$96/t in 2005-2006.

OUTLOOK: 2007-2008

Coarse Grains

For 2007-2008, **world** coarse grain production is forecast by the USDA to increase by 11.0 Mt to 978.0 Mt due mostly to higher US corn production. Supply is expected to decrease slightly, due to lower carry-in stocks. With lower supply, and a small increase in the consumption, the stocks-to-use ratio is expected to drop to about 14%, the lowest level since 1995-1996 (12%), and significantly lower than the 10-year average of 17%.

Corn

World corn production is forecast at a record 750.2 Mt, up 8% from 2006-2007. World corn supply is also expected to increase marginally to a record 838.0 Mt, due to higher corn production in the US, Canada, China and EU-27. Utilization is projected to reach 755.0 Mt, up 3% from 2006-2007. This is due to an expected 12% rise in food and industrial use, to 280.0 Mt. World corn trade and carry-out stocks are forecast at 82.0 Mt and 83.0 Mt, respectively, down slightly from 2006-2007.

United States

Area seeded to corn in the US is expected to increase significantly as farmers respond to high US farm prices for corn. Expected net returns for corn are forecast by the USDA to increase by US\$209 per acre (/ac) from 2006-2007, compared to increases of US\$75/ac and US\$42/ac for soybeans and wheat respectively. This substantial rise in net returns for US corn is expected to result in corn area expansion, largely at the expense of soybean area in the US Corn Belt and Central Plains, spring wheat area in the US Northern Plains, rice area in the Delta, and cotton area in the southern US states.

US corn supply is forecast by the USDA to increase to 13.0 Gbu, despite relatively low carry-in stocks. Production is expected to increase by about 15% from 2006-2007, to 12.2 Gbu. Feed use is expected to remain stable due to a good export market for beef and pork, however, total domestic use is projected to rise to a record 10.4 Gbu, with 3.2 Gbu used for ethanol production versus 2.15 Gbu in 2006-2007. US carry-out stocks are expected to decrease for the third consecutive year.

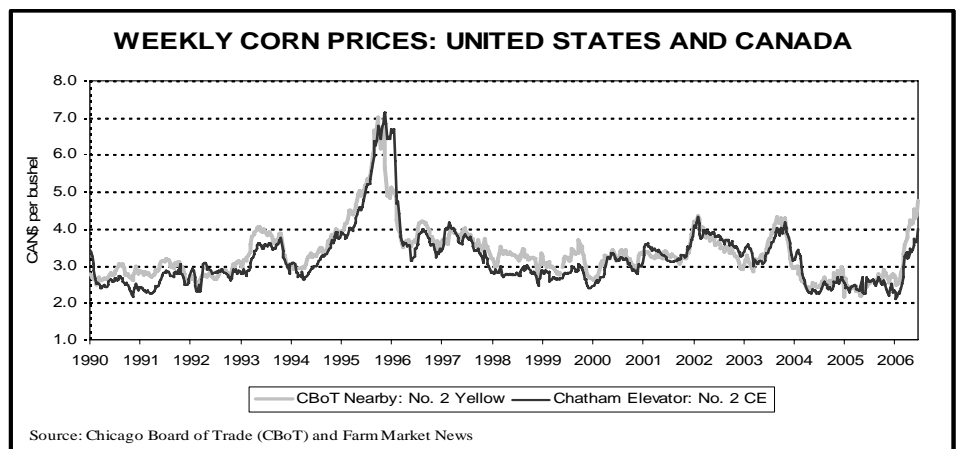
Despite forecasts for a substantially larger US corn crop, as well as large South American supply, corn futures prices are expected to continue to strengthen. The average US farm price of corn is forecast by USDA to increase to US\$3.60/bu from US\$3.20/bu in 2006-2007. This implies a nearby average futures price on the Chicago Board of Trade of about US\$3.80/bu, 8% above 2006-2007.

China

Production in China is forecast by the USDA to increase marginally to 145.0 Mt due to higher yields and area, which is expected to be offset by lower carry-in stocks. Supply is expected to be unchanged. Chinese corn exports are expected to fall marginally to 3.9 Mt as it continues to provide increased competition to the US in some of the Asian markets.

EU-27

Improved profitability of corn for the new member states is expected to lead to a slight increase in seeded area for 2007-2008. Assuming average yields corn production is projected at 60.4 Mt, up 12%



from 2006-2007. Corn supply is expected to rise marginally from 2006-2007, as the increase in production is expected to more than offset the decrease in carry-in stocks. Corn imports are forecast to fall from 4.5 Mt this year to 2.5 Mt. Corn consumption is expected to fall marginally for 2007-2008. Corn exports are projected to reach 1.9 Mt, up significantly from 2006-2007. Carry-out stocks are forecast at 10.4 Mt, up 20% from 2006-2007.

Canada

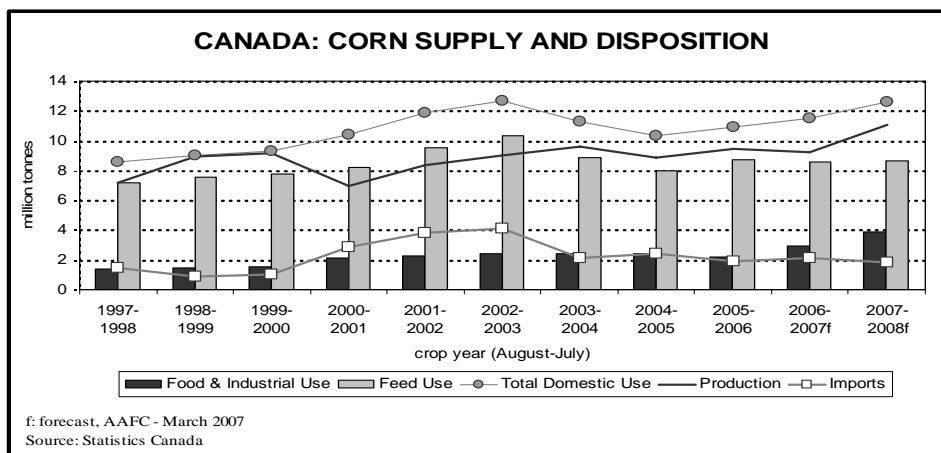
For 2007-2008, area seeded to corn is expected to increase by 20%, to 1.35 Mha, and yields are expected to be similar to 2006-2007. Agriculture and Agri-Food Canada forecasts corn production at 11.1 Mt, versus 9.3 Mt in 2006-2007. Corn supply is forecast to rise to a record 14.6 Mt as the expected increase in domestic production more than offsets the decrease in carry-in stocks. Domestic consumption is forecast to increase to a record 12.6 Mt due to a strong demand for ethanol production. Canadian food and industrial use is forecast at a record 3.9 Mt, up 26% from 2006-2007. With record domestic supply, Canada's corn imports for 2007-2008 are expected to fall by 14% to 1.8 Mt, the lowest since 1999-2000. Carry-out stocks are projected at 1.8 Mt, up marginally from 2006-2007.

Prices

For 2007-2008, Canadian corn prices are expected to strengthen. The Chatham price is forecast at CAN\$150-170/t, up from CAN\$135-155/t in 2006-2007. Increased domestic consumption for ethanol production and strength from higher US corn prices is expected to more than offset any pressures from the expected increase in Canadian corn supply.

Medium-Term Outlook

According to the *USDA Agricultural Projections to 2016*, US corn seeded area is expected to rise sharply over the medium term, reaching 90 Mac by 2009-2010. Much of this increase is expected to occur by adjusting US crop rotations between corn and soybeans, causing a decline in soybean plantings. Other sources of land for increased corn area



include cropland used as pasture, reduced summerfallow and shifts from other crops such as cotton. The rapid expansion in US ethanol production is projected to result in increases in corn demand, prices, and producer returns. As the growth in ethanol use stabilizes, annual increases in US corn production from yield gains outpace increases in corn use for ethanol, allowing US corn stocks to rise modestly and corn prices to ease somewhat. This supports renewed expansion in domestic corn feeding and exports. Stable, but moderate growth in corn ethanol demand plus growth in feeding and exports combine to support US producer returns and stabilize acreage at this higher level.

China may become a net corn importer in the future as a result of strong demand from ethanol production. Some Chinese farmers have shifted out of other crops, such as soybeans, into corn.

For Canada, seeded area to corn is expected to rise gradually over the medium term, particularly in Ontario and Quebec. This is largely at the expense of winter wheat and soybean area. Currently, about 1.0 Mt of corn and 0.5 Mt of wheat are used to produce 0.6 billion litres of ethanol in Canada. By 2009-2010, Canada is expected to use about 4.6 Mt of corn per year for ethanol production.

Although higher North American corn prices will lower the direct use of corn for feed, DDGS can be used in livestock rations, particularly in the diets of beef and dairy cattle. Thus, the growth of US and Canadian ethanol production and the increased supply of DDGS will result

in adjustments across US and Canadian livestock industries.

For information on ethanol and biodiesel, please refer to *Bi-weekly Bulletin*, Volume 19 Number 18, entitled "Ethanol" and *Bi-weekly Bulletin*, Volume 19 Number 15, entitled "Biodiesel."

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