



CANOLA

A SUSTAINABLE SOURCE FOR FOOD AND FUEL

Canadian canola farmers are ready to respond to growing global food demands along with an emerging biofuels sector.



Canola is significant oilseed crop in Canada with over 16 million harvested acres, and 11.8 million tonnes (MT) produced in 2010.¹ We're also the largest exporter of canola in the world, with approximately 85 percent of canola production exported to key food customers in the U.S., Japan, Mexico, China and other countries. While food is always the first market for Canadian canola, an emerging biofuel sector offers an important new market.

The federal government's mandate of a two percent inclusion standard for biofuel in all diesel fuel sold in Canada will create a sustainable domestic market for excess canola seed, improve farm revenues and help generate jobs and economic activity in the value-added industries such as crushing and processing. It's also good news for the environment – using canola as a feedstock in biodiesel reduces lifecycle greenhouse gas emissions by 90 percent compared to fossil diesel². This means that switching Canada's diesel engines to a two percent biodiesel blend will reduce GHG emissions by 1.8 million tonnes, equal to taking 300,000 cars off the road.

It's important that we support Canadian farmers so they can continue to grow enough food and build a biodiesel industry that benefits growers, our economy and our environment.

THE CANADIAN CANOLA INDUSTRY HAS A STRATEGY TO CREATE 15 MILLION TONNES (MT) OF SUSTAINED MARKET DEMAND AND PRODUCTION BY 2015:

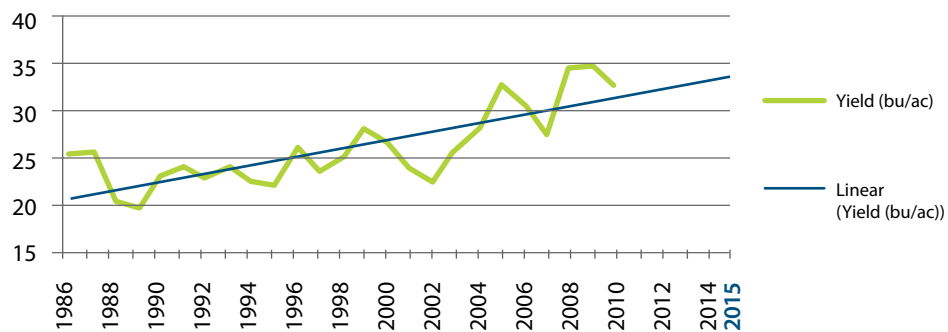
ELEMENT	2006 BENCHMARK	2015 TARGET
Export canola seed for major food markets	5.2 MT	7.5 MT
Crushed canola for domestic and export food markets	3.4 MT	5.0 MT
Canola seed demand from biodiesel	0.3 MT	2.5 MT

How will Canadian farmers produce enough canola for both food and fuel?

The introduction of new canola hybrids and biotech traits, along with improved agronomic practices has allowed Canadian farmers to improve canola yields over the past 15 years, to meet both food and fuel demands. According to Statistics Canada, canola yields have risen 50% from an average of 21.8 bushels per acre in 1995 to 32.5 bushels per acre in 2010.

CANADIAN CANOLA YIELD (BU/AC)

Source: Field Crop Reporting Series - Statistics Canada

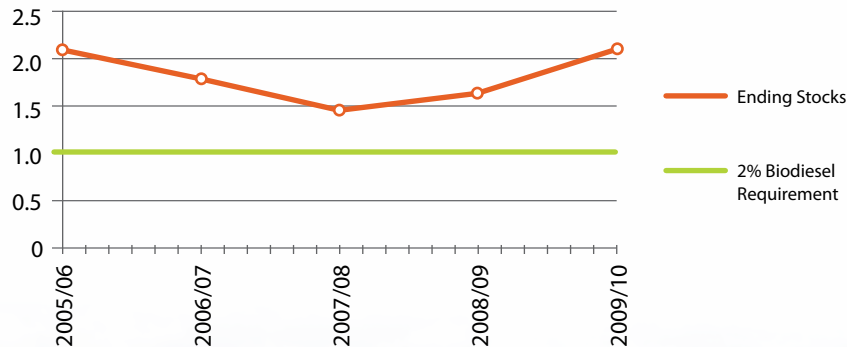


Note: Annual canola yield fluctuations are common due to seasonality issues including excess moisture, drought, frost, heat stress, etc.

Continued yield improvements mean that Canadian farmers are already growing more than enough canola to fill the demand for both food and fuel. The federal government's two percent biodiesel mandate would require about one million tonnes (MT) of canola seed annually. Historically, food demand has left us with enough carryover (ending stocks) of canola seed to fill this biofuel demand.

CANADIAN CANOLA SEED ENDING STOCKS (MILLION TONNES)

Source: Statistics Canada and COPA Monthly ³



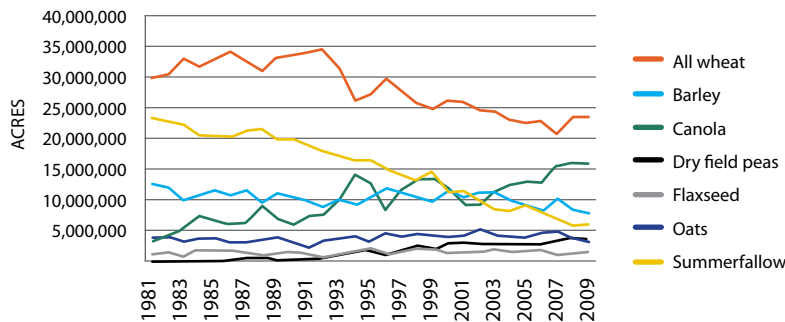
In addition to excess supply, biodiesel production also offers a good market for some lower quality, non-food grade canola that is difficult to sell. Each year, canola growers face problems and price discounts due to immature green seed in their harvest that naturally contains a high level of chlorophyll. High levels of chlorophyll in oil are undesirable for food uses because they are difficult and expensive to remove, and are associated with increased oxidative rancidity and difficulties in hydrogenation.⁴ For example, in 2010, almost 25% of Western Canadian canola samples were downgraded in part due to their green seed and chlorophyll content.⁵

How has canola production increased without converting land away from food production?

The availability of an economically viable, non-cereal crop in western Canada has facilitated the reduction of summerfallow area and the increase in no-till agriculture. Increased canola production has therefore not been a result of increased agricultural land, but rather the more sustainable use of the existing land base.⁶ According to Statistics Canada, the percentage of land in conservation and no-till changed from 24 and 7 percent respectively in 1991 to 26 and 46 percent respectively in 2006.⁷

WESTERN CANADA HARVESTED AREA

Source: Statistics Canada



Farmers have transitioned from an erosion prone summerfallow/wheat rotation to a more sustainable, diverse rotation that integrates canola and other food crops such as pulses in place of summerfallow area.

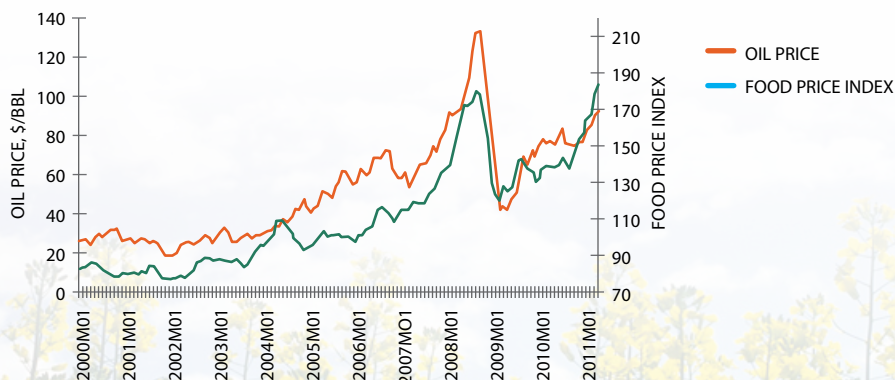
ENVIRONMENTAL BENEFITS OF CONSERVATION TILLAGE

A recent survey of Canadian canola producers revealed that the majority of canola grown on the prairies is combined with a zero or minimum tillage method, with 86 percent of growers reporting reduced soil erosion and 83 percent indicating greater soil moisture.⁸

How do biofuels relate to food price spikes?

There is a mounting body of evidence and agreement among leading global bodies that the impact of biofuels on food prices is often over-stated and that crude oil prices are the major culprit in driving up food prices. The following chart clearly outlines the strong correlation between the UN FAO's food price index and oil prices globally. As oil prices rise, so does the price of food.⁹

UN FAO FOOD PRICE INDEX VS. PRICE OF CRUDE OIL



“Unexpected oil price spikes could further exacerbate an already precarious situation in food markets.”¹¹

“Our consideration of the evidence has led us to place a lower emphasis on biofuels and speculation than some prominent commentators and a greater emphasis on oil as an input, and the depreciation of the dollar.”¹²

“The demand for grains and oilseeds as biofuel feedstocks has been cited as the main cause of the price rise, but there is little direct evidence for this contention.”¹³

The U.S. Congressional Budget Office has estimated that the maximum effect of biofuels on food prices in 2008 was 0.5 to 0.8 percent – or about \$35-60 dollars per year based on an average Canadian family annual expenditure on food and beverages (restaurant meals included) of \$7,264 in 2009.¹⁰

Can biofuels lower fuel costs?

Biofuels are a factor in suppressing oil demand and thus restraining global crude oil prices that continue to escalate fuel costs. The Organization of the Petroleum Exporting Countries (OPEC) has stated that the use of biofuels will “put more downward pressure on oil consumption worldwide.”¹⁴

For example in the U.S., it is estimated that ethanol blending has reduced retail gasoline prices – i.e. compared to what would have occurred without ethanol blending – by an average of \$0.06 to \$0.10 per litre. This equates to about \$100 to \$180 per year per vehicle.¹⁵ According to Merrill Lynch commodity strategist Francisco Blanch, “Oil and gasoline prices would be about 15 percent higher if biofuel producers weren’t increasing their output.”¹⁶

KEY FACTS ON BIOFUELS AND FOOD

- **Higher yields are allowing Canadian farmers to produce more canola for both food and fuel.**
- **Canola has enabled sustainable crop production on unproductive summerfallow area, putting more land into food production.**
- **High energy prices are a major culprit in driving up food prices.**
- **By suppressing oil demand, biofuels can help mitigate further increases in fuel prices.**

To learn more:

This factsheet is based upon a Canola Council of Canada review of existing literature and reports on canola production, biodiesel and the link between biofuels and food prices. Visit www.canolacouncil.org for the complete review.

ENDNOTES:

- ¹ Field Crop Reporting Series – Statistics Canada.
<http://www.canolacouncil.org/acreageyields.aspx>
- ² (S&T)2 Consultants Inc. 2010. Lifecycle Analysis Canola Biodiesel.
<http://www.canolacouncil.org/uploads/Canola%20Lifecycle%20Analysis.pdf>
- ³ Statistics Canada & COPA Monthly
http://www.canolacouncil.org/oil_meal_and_seed_supply_and_demand.aspx
- ⁴ Daun, J. K. and Symons, S. (2000) How green is green? Sampling and perception in assessing green seeds and chlorophyll in canola. JAOCS, Vol. 77; n. 11
<http://www.springerlink.com/content/037256n4628t5370/>
- ⁵ Canadian Grain Commission. 2010. Quality of western Canadian canola 2010.
<http://www.grainscanada.gc.ca/canola/harvest-recolte/2010/hqc10-qrc10-eng.pdf>
- ⁶ (S&T)2 Consultants Inc. 2010. Lifecycle Analysis Canola Biodiesel.
<http://www.canolacouncil.org/uploads/Canola%20Lifecycle%20Analysis.pdf>
- ⁷ Statistics Canada. 2007.
<http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1288279128588&lang=eng>
- ⁸ Smyth, S, M. Gusta and P. Phillips. 2010. Assessing the Economic and Ecological Impacts of Herbicide Tolerant Canola in Western Canada.
www.canolacouncil.org/uploads/Assessing%20the%20Economic%20and%20Ecological%20Impacts%20of%20Herbicide%20Tolerant%20Canola%20in%20Western%20Canada.pdf
- ⁹ Global Renewable Fuels Alliance, IMF Food Index and Oil Price
http://www.globalrfa.org/pr_030711.php
- ¹⁰ Daynard, Terry and KD Communications. April 2011. What are the Effects of Biofuels and Bioproducts on the Environment, Crop and Food Prices and World Hunger?
<http://www.gfo.ca/LinkClick.aspx?fileticket=HKfOeU3cHT1%3d&tabid=139>
- ¹¹ UN News Centre. March 3, 2011. Global food prices increase for eight straight months, UN agency reports.
<http://www.un.org/apps/news/story.asp?NewsID=37671&Cr=food+prices&Cr1>
- ¹² The UK's Department of Environment, Food and Rural Affairs. March 2010. The 2007/08 Agricultural Price Spikes: Causes and Policy Implications.
<http://archive.defra.gov.uk/foodfarm/food/security/price.htm>
- ¹³ Gilbert, Christopher, University of Trento, Italy. Journal of Agricultural Economics. April 23, 2010. How to Understand High Food Prices.
<http://onlinelibrary.wiley.com/doi/10.1111/j.1477-9552.2010.00248.x/abstract>
- ¹⁴ OPEC. Monthly Oil Market Report, December 2010.
http://www.opec.org/opec_web/static_files_project/media/downloads/publications/MOMR_December_2010.pdf
- ¹⁵ Daynard, Terry and KD Communications. April 2011. What are the Effects of Biofuels and Bioproducts on the Environment, Crop and Food Prices and World Hunger?
<http://www.gfo.ca/LinkClick.aspx?fileticket=HKfOeU3cHT1%3d&tabid=139>
- ¹⁶ Barta, Patrick. The Wall Street Journal. March 24, 2008. As Biofuels Catch On, Next Task Is to Deal with Environmental, Economic Impact.
http://online.wsj.com/article/SB120631198956758087.html?mod=googlenews_wsj