

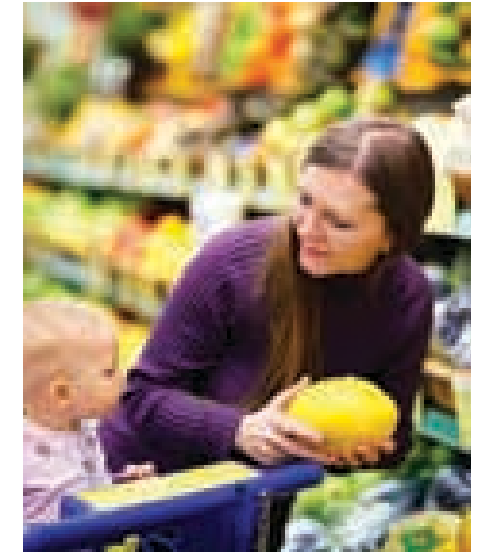


Please visit www.whybiotech.ca for more information on plant biotechnology, including detailed fact sheets on:

- Biotechnology and Biofuels
- Addressing the Challenges of Drought
- Biotech basics – a guide to plant biotechnology in Canada

TALKING ABOUT AGRICULTURAL BIOTECHNOLOGY

Key messages to help deliver the straight goods on plant biotechnology.
Safety, Health & Food, Environment & Productivity



SAFETY

Years of extensive study show biotech crops to be just as safe as other food crops.

- Biotech crops have been thoroughly tested and analyzed for over two decades, showing the technology is sound and safe for people and animals.
- More than 200 million consumers and tens of millions of acres of biotech crops in North America alone attest to their safety.

Biotech crops undergo intense regulatory scrutiny to ensure food and environmental safety.

- In Canada, more than 7,000 field trials for environmental safety of biotech crop varieties have been conducted for over 20 consecutive growing seasons.
- Several federal departments and agencies have regulatory responsibilities for novel agricultural products, including the Canadian Food Inspection Agency and Health Canada.

The industry is committed to responsible and safe use of plant biotechnology throughout its lifecycle.

- The plant science industry makes the responsible introduction and commercialization of new plant biotech products their first priority.
- Beyond government regulations, the plant science industry develops training and educational materials such as the CropLife Canada Compliance Management for Confined Field Trials Program which has trained over 300 Canadian researchers.

DID YOU KNOW?

More than 3,400 scientists worldwide have signed declarations in support of agricultural biotechnology and its safety to humans, animals and the environment.¹

With regard to the estimated 90 approved genetically modified foods, Health Canada states that “a scientific comparison of their traits with those of conventional foods indicates that they are no less safe than conventional foods which have been safely part of the Canadian diet for a long time.”²

After fifteen years of reviewing the safety of novel foods, Health Canada is not aware of any published scientific evidence demonstrating that novel foods are any less safe than traditional foods.³

The safety of biotech food has been endorsed by scientific and regulatory agencies around the world – including the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the Organization for Economic Cooperation and Development (OECD), the U.S. National Academy of Sciences, and the Royal Societies of London and Canada.

In 2008, over 13 million farmers grew 125 million hectares of biotech crops, demonstrating the safety and benefits of this technology.⁴

COUNCIL FOR BIOTECHNOLOGY INFORMATION

The Council for Biotechnology Information is a NAFTA-aligned, non-profit association whose mandate is to communicate science-based information about the benefits and safety of agricultural and food biotechnology. CBI members are the leading agricultural biotechnology companies.

Council for Biotechnology Information (CBI) Canada
 Toll-Free: 1-866-922-1944
 Email: info@canadacbi.ca
 Web: www.whybiotech.ca

¹ www.agbioworld.org

² Health Canada

³ Health Canada, Frequently Asked Questions. Updated from 2006-06-19.

⁴ James, Clive. 2008. Global Status of Commercialized Biotech/GM Crops: 2008. ISAAA Brief No. 39. ISAAA: Ithaca, NY.

⁵ Consultative Group on International Agricultural Research (CGIAR)

⁶ Corn Crops in Canada, CropLife Canada Study, November 2007.

⁷ Canadian Seed Trade Association

⁸ www.croplife.ca

⁹ UN Population Division. (2004) World Food Population Prospects, Revised population Database.

¹⁰ UNEP GEO-4. (2007) Global Environment Outlook: Environment for Development.

¹¹ United Nations, N.Y. (2006) UN World Water Report.

¹² Brookes, G., and P. Barfoot. (May 2009) GM Crops: global socio-economic and environmental impacts 1996-2007.

¹³ Brookes, G., and P. Barfoot. (May 2009) GM Crops: global socio-economic and environmental impacts 1996-2007.

¹⁴ Goklany, I.M. "Meeting global food needs: The Environmental trade-offs between increasing land conversion and land productivity". Technology. 6, 107-130.1999.

¹⁵ www.canola-council.org

¹⁶ Brookes, G., and P. Barfoot. (May 2009) GM Crops: global socio-economic and environmental impacts 1996-2007.



HEALTH & FOOD

Biotechnology can help feed a growing world.

- Biotechnology has improved crop yields dramatically for over a decade, with the potential to increase productivity by another 25% worldwide.⁵
- Biotech corn, soybeans and canola, grown in Canada since 1996, have increased yields significantly. For example:
 - Canadian corn yields have increased 33% from 112.4 bushels per acre to 150.5 bushels per acre in 2007.⁶
 - Canola yields have increased 27% in the last 15 years.⁷

Biotechnology offers healthier food choices.

For example:

- Vegetable oils derived from biotech oilseed crops offer heart-healthy oils and low saturated fats.
- Research is being conducted to provide fresher foods that taste better. For example, longer-lasting tomatoes with more flavour and colour; peppers and peas that will remain sweeter; and strawberries and soybeans with better flavour.⁸
- By adding vision-protecting Vitamin A to rice, a staple in the developing world, millions of cases of blindness could be prevented through diet.
- Research is currently being conducted to fortify fruits and vegetables with higher than normal levels of vitamins such as C and E – with the potential to protect against the risk of chronic diseases such as cancer and heart disease.
- Researchers are looking at developing strawberries with high ellagic acid, a cancer fighting agent, and tomatoes with boosted lycopene, the antioxidant associated with reducing risk of cancer.

Over a decade of use has shown there are no negative health effects from biotech crops.

- No peer-reviewed scientifically proven cases of biotechnology adversely impacting food safety, human health or the environment have been reported.
- Biotech crops are among the most extensively studied foods in history, with over 20 years of scientific review.



DID YOU KNOW?

By 2030, the United Nations predicts there will be 1.7 billion more mouths to feed.⁹

By 2050, it is predicted that global demand for food will increase by at least 250%.¹⁰

The World Bank estimates that one hectare of land will need to feed 5 people in 2025, up from just 2 people in 1960.

Biotech crops have been consumed by billions of people without a single documented health problem.



ENVIRONMENT & PRODUCTIVITY

Biotech crops help reduce agriculture's environmental footprint.

- Biotech crops enable farmers to adopt conservation tillage practices which prevent wind and water erosion, reduce loss of soil moisture and greenhouse gas emissions, and increase soil biodiversity and fertility.
- By helping farmers grow more food per acre with biotech crops, wildlife habitats can be kept free from cultivation – thus preserving wildlife habitat and biodiversity.
- Biotech crops provide the ability to produce more with less. For example:
 - Disease-resistant crops allow for fewer applications of crop protection products.
 - Plants with improved nitrogen use efficiency will reduce the need for added fertilizer and reduce greenhouse gas emissions.

Biotechnology can help address the challenges of drought.

- By 2025, it is estimated that about 1.8 billion people will be living in regions with water scarcity.¹¹
- Drought-tolerant and water-efficient crops can provide higher yields while saving precious water resources and protecting the environment.
- Field testing is well underway on drought-tolerant corn, soybeans and canola in Canada. Drought-tolerant corn is expected to be widely available as early as 2012.

Biotechnology can help make biofuels a sustainable energy choice.

- New crop varieties are being developed for more efficient processing into biofuels, lowering costs and boosting yields. For example:
 - Monsanto and Pioneer Hi-Bred have developed corn hybrids which contain higher levels of fermentable starch that allow ethanol plants to obtain higher fuel yields.
 - Syngenta has developed dent corn with high levels of amylase, a naturally-occurring enzyme which is typically supplemented in the ethanol production process, leading to environmental benefits and cost savings of 10 percent.
- Biotechnology can provide higher yields for more food and fuel, plus more robust plants so previously unproductive land can be used to grow biofuel crops.

DID YOU KNOW?

In 2007, the reduction in carbon emissions accomplished from adopting biotech canola in Canada alone was equal to removing 781,000 cars from the road for a year. Global savings from all biotech crops equalled removing 6.3 million cars.¹²

If biotech traits had not been available in 2007, an additional 5.89 million hectares of soybeans, 3 million hectares of corn, 2.54 million of cotton and 0.32 million of canola would have been required to maintain global production levels.¹³

To produce the same amount of food we produce today with 1961 yield levels, an additional 970 million hectares would be required. That's more than the total land area of the United States.¹⁴

The agriculture and agri-food industry plays a significant role in the Canadian economy, contributing \$150 billion per year and employing one in seven Canadians.

Canola is a \$14 billion industry for Canada with biotech varieties making up nearly 90% of the planted acres.¹⁵

Since biotech soybeans were first planted in Canada in 1997, higher yields achieved with lower production costs have allowed farm incomes to increase by \$103.5 million.¹⁶

