Innovation through biotechnology

GM FOODS, CROPS MAKE KEY CONTRIBUTION

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As the drivers of innovation in agriculture, the seed industry employs many different tools to bring new more productive, healthier and safer products to consumers around the world. Modern biotechnology is one of those tools.

Genetically modified (GM) plants and foods have been making a strong contribution to farm income and to the health and welfare of consumers and the environment since the first GM cheese enzyme was approved for sale in Canada in 1990.

GM plants are now produced on over 282 million acres in 23 different countries. In Canada, 17 million acres are planted to GM crops.

• Corn is an ingredient in more than two thousand products available to Canadian consumers. Sixty-five per cent of Canada's corn acreage is planted to GM crops.

• Internationally recognized for its health attributes, Canola oil is found in many of the products on Canadian grocery store shelves. Eighty per cent of the acreage planted to Canola in Canada is planted to GM varieties.

• Soybean products are found in a wide variety of food and non-food products. Sixty-five per cent of Canada's soybean acreage is planted to GM crops.

Other important crops for both the developed and developing world have been improved with biotechnology, including: cotton, rice, sugar beets, tomatoes, sweet peppers, squash and papaya.

Improving the incomes of farmers — Farmers around the world who have adopted GM technology have seen increased yields and better use of inputs. As the result, global farm incomes have increased. According to the Journal of Agro-Biotechnology Management and Economics, in 2005 alone GM crops increased global farm income by $US 5 billion.

Improving the environment — Since 1996 the use of GM crops has reduced the global use of pesticides by 224 million kilograms of active ingredient. GM crops have also allowed farmers to reduce tillage and increase the amount of carbon that stays in the soil. In 2005, the direct impact of GM crops was equivalent to removing four million cars from the road.

Improving health — In China alone, farmers using GM crops have reduced the use of the most toxic pesticides by 80 per cent. The health system reports that cases of "pesticide poisoning" in China have dropped by 400 per cent.

Improving the future — There are new and exciting developments in the GM pipeline for farmers, consumers and the environment. Here are just a few examples:

• Researchers in India and the United States have produced GM plants in the lab that can grow and produce flowers in salt concentrations that are typically lethal to plants

• Japanese scientists have produced a mustard plant that makes 30 per cent better use of nitrogen, potentially reducing fertilizer requirements

• University of Georgia Scientists have developed a poplar tree that removes toxic mercury from the soil

• Researchers at Stanford University in Washington have used biotechnology to make plant produced plastics that biodegrade in land fills within a year

• Genetically modified oilseed plants have been developed in the lab to produce fatty acids that fight cancer and improve liver function

• "Golden Rice" boosts vitamin A and has the potential to prevent blindness in over 118 countries

• Scientists have developed a GM corn that contains 32 per cent more protein, and a GM rice with 20 per cent more protein has been produced in the lab

All of these exciting developments are being made under the very watchful eyes of regulators and informed consumers around the world.

In fact, GM foods are more highly regulated than food produced by any other process. In Canada, before it becomes available to consumers, a product of biotechnology must be approved by three government agencies operating under at least five pieces of legislation and associated regulations.

All of assessments done by government and independent scientists have determined that products derived from biotechnology are as safe as are products produced with more traditional methods. In fact, after 15 years of study and assessment, the European Union has concluded that "the use of more precise technology and the greater regulatory scrutiny probably make (genetically-modified foods) even safer than conventional plants and foods."

Lists of all of the plants, foods, and feeds derived through biotechnology are publicly available on the websites of the Canadian Food Inspection Agency (CFIA) and Health Canada.

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