

Canola Facts: Why Growers Choose GM Canola

Here are some key facts on growing genetically modified (GM) canola in Canada.

GM or transgenic canola varieties have been modified to be resistant to specific herbicides. They are called herbicide-resistant varieties. The plants are modified, but the oil is not modified. It is identical to canola oil from non-modified or conventional canola.

Herbicide-resistant GM canola is grown on about 80% of the acres in western Canada. GM canola was first introduced in 1995.

In conventional canola, there are some weeds that are difficult to control. Growers choose herbicide-resistant canola varieties primarily because weed control is easier and better. Other reasons growers choose herbicide-resistant canola are better yields, better returns and more profit.

Regardless of the type of canola, growers manage canola plants that grow in subsequent crops. These plants are called volunteers. Canola volunteers from GM canola can be easily controlled by management practises such as proper tillage and herbicides, just like conventional volunteers. A study was conducted in 2001 and in 2005 on growers' use of GM canola. The majority of growers in both studies reported that managing GM volunteers is the same or easier than managing conventional volunteers.

There are no cases of GM canola crossing with weeds in Canada.

GM canola has crossed with other types of canola, as would be expected with conventional canola. In a few cases, growers have found canola volunteers with multiple resistance to herbicides. However, these plants are easily controlled with other herbicides that are readily available.

Growers reported an average 10% yield increase (3 bu/ac) for their GM canola compared to conventional canola (2001 study). The factors that contributed to this increase included better yielding varieties, earlier seeding and better weed control.

The study found that dockage – anything in the harvested crop that is not canola (like weed seeds and chaff) – dropped by 1.27% in GM canola, resulting in higher canola prices for growers.

Growers use tillage to control weeds and prepare the soil for planting. Excessive tillage can cause soil structure changes and increase soil erosion. In the 2001 study, growers using GM canola reduced the number of tillage operations compared to conventional canola growers. Growers increased direct-seeding and reduced summer fallow. This resulted in 2.6 million acres (1.05 million ha) with less tillage in 2000.

The study showed that growers using GM canola used less fuel due to fewer field operations (tillage, harrowing, fertilizing and less summer fallow). Growers used 31 million less litres of fuel in 2000, saving them \$13 million. Less fuel use resulted in less greenhouse gas emissions.

Growers of GM canola in the study used less herbicide. They applied 6,000 tonnes less chemical in both 1999 and 2000.

Herbicide costs for growers using GM canola were 40% lower than for the conventional growers.

Growers reported an average of \$8.50/acre increase in net return on their GM canola acres compared to conventional acres in 2000. An economic model developed for the study calculated a \$10.62 profit advantage. Revenue was higher due to increased yields, less dockage and lower herbicide costs. The direct economic impact to growers due to the adoption of GM canola from 1997 to 2000 was between \$144 and \$249 million.

When a technology like GM canola is adopted, it can indirectly impact the whole community due to:

- added investment in canola crushing capacity;
- improvements in the local seed, herbicide and equipment industry; and
- added shipping, handling, and marketing, etc.

From 1997 to 2000, the study estimated this indirect impact was from \$58 to \$215 million. Therefore, the total value to the industry from 1997 to 2000, including both direct revenue to the growers and the indirect value, was up to \$464 million.

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