

Alberta Canola

> Nature's Advantage

Canola is the world's only crop that was
developed in Canada





- Canada's annual exports of canola seed, oil and meal are valued at over \$8 billion Canadian.
- Canada is responsible for over 20 percent of the world's canola production and over 60 percent of global canola exports.
- Alberta is an important producer of canola accounting for over 35% of Canada's total crop.

Canola is not rapeseed; canola was developed in the early 1960-70s using traditional plant breeding techniques. Canadian plant breeders were able to remove the undesirable qualities of erucic acid and glucosinolates present in rapeseed. The resulting new plant produced seeds with a unique fatty acid profile: a very low level of saturated fat (7 percent or below), a high monounsaturated fat level, as well as what some would consider a very good ratio of the polyunsaturated fats, Omega-3 and 6.

This new oilseed was named "canola," from the words Canada and low erucic acid oil. This means canola oil and meal are different from rapeseed oil and meal. Codex Alimentarius maintains a strict internationally regulated definition of canola that differentiates it from rapeseed, based upon it having less than 2 percent erucic acid in the oil and less than 30 umoles glucosinolates in the meal. Canola produces a nutritional, light textured and mild flavoured oil for human consumption, and a highly nutritious meal for animal feed.

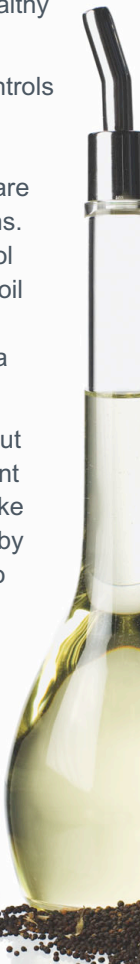
Canola from Canada is recognized for its high quality – a quality that is maintained through ongoing breeding programs, seed multiplication regulations, the Canadian grain grading and the Canadian Food Inspection systems.

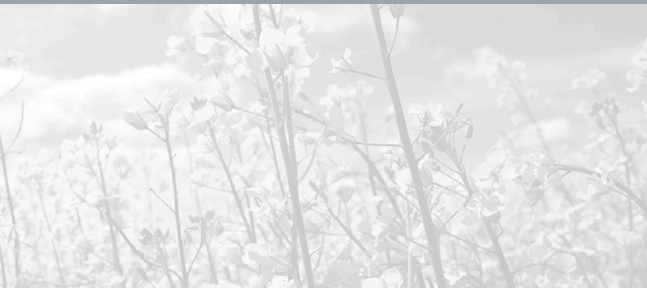
Production Advantage

Alberta's ideal growing conditions ensure strong plant growth and canola seed with an ongoing healthy fatty acid profile. Alberta has an abundance of rich farmland that allows for regular crop rotation, which in turn reduces disease. The nutrient rich soil provides the elements for strong healthy growth.

Alberta's cold weather also naturally controls some common field and storage insects which reduce yield and canola quality. This often means that fewer pesticides are needed in Alberta than in warmer regions. In addition, Alberta's warm days and cool summer evenings increases the seed's oil content and decreases the saturated fat level in the canola oil. The result: Alberta produces safer and healthier oilseeds.

Alberta growers are knowledgeable about modern biotechnology, crop management and other growing issues. Innovations like plant biotechnology and equipment run by global positioning systems allow them to be even more sustainable, efficient and to produce healthy food that is good for the world.





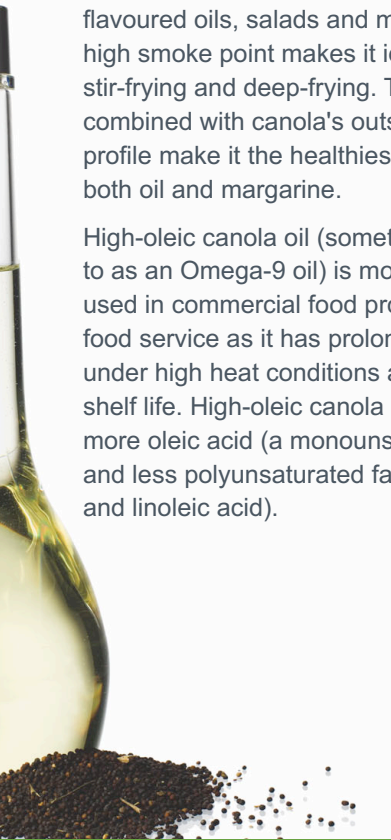
The Healthy Choice of Vegetable Oils

Canola oil is the healthiest commodity oil available to consumers, the food service industry, and food processors. It is low in saturated fat, high in LDL cholesterol-lowering monounsaturated fat, rich in vitamin E and the best source of plant based Omega-3 fats of all popular oils.

Canola oil and non-hydrogenated canola margarine have no trans fats or cholesterol. Canola oil contains just 7 percent saturated fat compared to 12 percent for sunflower oil, 15 percent for olive and soy oil, and 19 percent for peanut oil.

Canola oil is light, clear and mild, making it a great choice for cooking, baking, flavoured oils, salads and marinades. Its high smoke point makes it ideal for sautéing, stir-frying and deep-frying. These attributes, combined with canola's outstanding health profile make it the healthiest choice for both oil and margarine.

High-oleic canola oil (sometimes referred to as an Omega-9 oil) is most commonly used in commercial food production and food service as it has prolonged stability under high heat conditions and a longer shelf life. High-oleic canola oil contains more oleic acid (a monounsaturated fat) and less polyunsaturated fat (alpha-linolenic and linoleic acid).



Canola Meal for Feed and More

Canola meal, a coproduct of the canola-crushing industry, is a protein-packed feed ideal for all livestock species. Setting itself apart from rapeseed, canola meal is continuously demonstrated as a superior feed ingredient. It is an oilseed meal rich in protein with an excellent amino acid profile that is readily digested. And while it is a proven way to increase milk production in dairy cows, canola meal also serves as a great protein source for pigs, poultry and fish.

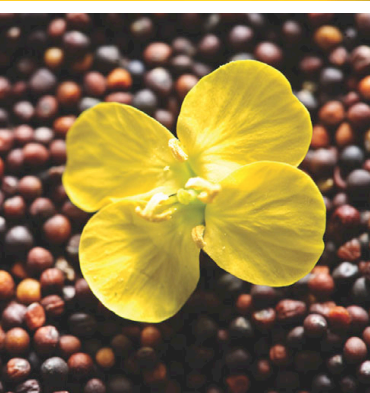
Canola meal may also be used as a high-quality fertilizer. In the future, canola meal will be a readily-available ingredient as a protein isolate for human nutrition.

Industrial Advantage

Canola oil can also be used industrially to make lubricants, oils, fuel, soaps, paints, plastics, cosmetics or inks. In fact, any organic hydrocarbon (including all vegetable oils), depending on their profiles, can be processed and denatured to make various chemicals and products.

In biodiesel production, canola produces more oil per unit of seed than other oilseeds. That means biodiesel producers realize greater efficiencies from canola than seeds with lower oil contents, notably soybeans. Canola oil boasts a number of characteristics, including the lowest level of saturated fat which helps canola biodiesel perform better in cold weather.





Another benefit for biodiesel production is the low iodine value in canola oil, which means it is more stable and less prone to oxidation. This quality reduces the likelihood of corrosive acids and deposits that can increase wear in engine fuel pumps and fuel injectors. The iodine value of canola oil is 114, versus more than 130 for soybean oil.

Innovation Advantage

Canada's canola industry continues to innovate.

Increasingly, producers are devoting canola acres to the production of canola varieties that have been developed to meet specific market needs, such as high stability varieties.

Research on the health benefits of canola oil continues. Ongoing studies include clinical trials into the heart health benefits of canola oil beyond its effect on cholesterol levels, observing its effects on blood glucose in diabetes, and examining the potential benefits of increasing the Omega-3's through DHA-enriched canola oil. In 2013, after discovering that results showed that those who consumed canola or high-oleic canola oils on a daily basis for four weeks lowered their belly fat by 1.6 percent. According to Professor Penny Kris-Etherton, Professor at the Pennsylvania State University and one of the lead researchers, "The Canola Oil Multicentre Intervention Trial (COMIT) indicates that simple dietary changes, such as using a high-MUFA vegetable oil, may reduce the risk of metabolic syndrome and therefore, heart disease, stroke and type 2 diabetes."

There are many private and public breeding organizations worldwide continually working

to improve canola through various conventional and innovative techniques. Alberta research is geared to expand product lines by using oilseed crops as a platform for producing different value-added foods, as well as healthcare and nutraceutical products from its oil and meal components. These new products help to diversify and grow the oilseed industry. As an example, petrochemical alternatives like biolubricants, biodiesel and bioplastics can also be derived from modified plant oils.

Supply Advantage

Alberta is one of the key exporters in Canada exporting approximately 2.8 million tonnes of seed, 552 thousand tonnes of canola oil (crude and refined) and 737 thousand tonnes of canola cake and meal annually.

Four of the world's largest oil processors have invested significant capital in Alberta to crush canola and provide value-added packaged canola oil, shortening and margarine. In addition, Alberta has four cold press plants – two, smaller local suppliers, one large consumer packager, and a fourth supplying the food processing industry.

Alberta is a reliable, consistent supplier of high quality canola. Alberta's strength as a major exporter of primary commodities and manufactured products to the global marketplace is supported by a highly efficient and competitive transportation and logistics system.

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