

Canola



History

"Canola" refers to a particular group of rapeseed varieties, which is a species of the much larger mustard family. As an ancient oilseed, rapeseed was cultivated in Asia and Europe as a source of lamp oil and, later, cooking oil. Much later its physical properties made it an essential lubricant for steam engines on naval and merchant ships. It was first grown in Canada as an emergency measure during the Second World War when European and Asian supplies were cut off. Canada responded by quickly increasing its limited rapeseed production. By 1950, steam power had been converted to diesel and the crop had almost disappeared.

Until the 1960s, Canada's edible oil production was based on imported oilseeds. Rapeseed could not be consumed by humans and livestock because of the significant levels of erucic acid and eicosenoic acids, as well as sulphur compounds called glucosinolates. The solution was canola (an acronym for "**Can**ada **oil low acid**"), developed by plant breeders in Saskatchewan and Manitoba during the 1960s and 1970s. Through traditional plant breeding experiments, they minimized the undesirable compounds and developed varieties that yielded food-grade oil. By the 1980s, canola had replaced rapeseed in Canadian oilseed production.

Production

The small, yellow flower of the canola plant produces tiny round seeds in small pods. These seeds are crushed to produce oil and the remainder is processed into meal which can be used as a high-protein livestock feed. Canola seeds are

about 40% oil and 60% meal.

Canola is a cool-season crop. It grows particularly well on the Prairies where cool night temperatures allow it to recover from hot days. Canola is grown across the province but the majority is grown in the black and dark brown soil zones.

Fields are seeded, fertilized, and pesticides are applied to control insects, weeds, and diseases. Seedlings emerge four to ten days after planting. The bottom leaves are produced in a rosette and the plant sends up a flower stalk when the days lengthen. Flowering lasts 14 to 21 days. The fields at this time are a brilliant wave of yellow blossoms. Once the flowers are fertilized, pods form and take 35 to 45 days to fill.

The field is swathed when about one-third to one-half of the seeds have turned colour from green to yellow or brown. The swathed crop is allowed to dry for about ten days and then combined. Alternatively, the crop can be desiccated (or dried) down in the field using sprays, or straight cut without the need of swathing.



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Nutrition

Our body needs fat to provide energy and help us absorb fat-soluble vitamins. Certain fats such as omega-3 and omega-6 fats are essential for good nutrition and must be consumed as part of a healthy diet. It is important to choose fats wisely because some fats are healthier for us than others. In keeping with dietary recommendations, canola oil is:

- Cholesterol and trans fat free. Trans fat raises bad LDL cholesterol and lowers good HDL cholesterol.
- Low in saturated fat. Saturated fat raises the bad LDL cholesterol in our blood and has been linked to increased risk of coronary heart disease.
- High in omega-3 fat. Omega-3 fat must also be consumed in our diet and helps protect against heart attacks and strokes.
- High in monounsaturated fat. Monounsaturated fat may reduce the risk of coronary heart disease by lowering bad LDL cholesterol in the blood and helping control blood glucose.
- A good source of omega-6 fat. Omega-6 fat must be consumed in our diet and is important for the brain and essential for the growth and development of infants.

Canola oil has the lowest level of saturated fats of the available vegetable oils at 6 to 7%. It has won health and nutrition awards because of its low amount of saturation and balance of fatty acids.

Did you know?

Canola oil has the lowest saturated fat content of any culinary oil.

By-Products

Common uses of canola include food and non-food products. Canola oil is made into cooking oil, margarine, shortening, salad oil, cooking spray, mayonnaise, sandwich spread, coffee whitener, creamer, cookies, crackers, cake mixes, bread, and snack food. Canola oil is an ingredient in non-food products such as fuels, plastics, sunscreen, printing ink, de-icer for airplanes, anti-static for paper, plastic wrap, biodegradable greases, and bio-plastics.

Canola meal that is left over after pressing the canola is used as a high protein feed supplement for livestock, pet food, fish food, and as a fertilizer.



Trials are underway to use canola as a diesel fuel, hydraulic oil, and as biodegradable chain saw oil. Biodiesel is a biodegradable and renewable fuel made from canola oil which comes from canola seed.

Use of biodiesel can help improve urban air quality by significantly reducing emissions of sulfur dioxide, carbon monoxide, and particulate matter. Reduced emissions may help offset the health risk associated with the inhalation of air pollutants found in diesel exhaust. Since conventional diesel, an incomplete burning fuel, released compounds which have been linked to lung, stomach, and skin cancer, biodiesel is referred to as a "cleaner" burning diesel fuel.

Canola



Canola Industry in Canada

Canola is Canada's most valuable crop and generates a quarter of all cash receipts. Canadian-grown canola contributes \$26.7 billion to the Canadian economy every year including more than 250,000 Canadian jobs and \$11.2 billion in wages.

Canada exports 90% of its canola as meal, oil or seed to 55 markets worldwide. The largest exporter for Canadian canola is the United States which, in 2014, accounted for 96% of canola meal exports and 65% of oil exports. China, Japan, Mexico and the United States are Canada's biggest exporters for raw canola seeds.

Canada has 14 crushing and refining plants which are able to crush around 10 million tonnes of seed and produce 3 million tonnes of oil and 4 million tonnes of meal every year.

Careers

- Agronomist
- Crop scientist
- Geneticist
- Mechanic
- Soil scientist



Industry in Saskatchewan

Production: 10.9 metric tonnes

Number of Producers: 20,500

Value to Economy: \$10.2 billion in canola exports (2018)

Industry in Canada

Production: 20.3 metric tonnes

Number of Producers: 37,500

Value to Economy: \$18.5 billion in canola exports (2018)