

Adding Value to our Natural Resources



Many agricultural products are processed in some way before they are used. **Food processing** is a method used to change food ingredients into a product. For example, grains are processed into flour and made into many different foods, such as bread, cereals, crackers, and pasta. Timber is processed when it is made into woods that are used for furniture and floors. Milk is also processed into many different dairy products.

About Canadian Milk

The processing of milk takes no more than two days from beginning to end. At the dairy farm, cows are milked at least twice or even three times a day by machine. Before it is milked, each cow's **teats**, or nipples, are cleaned either by hand or with a mechanical milking machine. The machine is attached to the teats and the milk is then squeezed into a holding container. The milk flows into pipes that go directly into a large refrigerated holding tank. Some barns have a robotic system where the cows enter the milking stall individually; the machine positions itself and milks the cow automatically.

Approximately every other day, a special insulated tanker truck arrives at the farm to collect the milk and take it to a dairy. Before it leaves the farm, the milk is tested for quality and a sample is taken by the milk hauler for more testing. The milk is tested to make sure it has been stored at the correct temperature. The milk is taken directly to the dairy where it is processed into milk, cream, and other milk products.

Whole milk straight from the cow contains 3.8 % to 4 % fat. At the dairy, a **separator**, or a machine that removes the fat from the milk, is used. The fat is then added back to the milk in specific amounts, depending on the desired fat content of the final milk product.



Many different dairy products are produced in Canada and distributed to local communities. What different dairy products do you like to eat or drink?

Dairy Farming – One of Canada’s Primary Industries

Dairy farming is a **primary industry**, as it changes natural resources into an ingredient or material that is used to make other products. Dairy farming starts with natural resources, as cows need land, soil, water, and sunlight to produce milk. When milk is transported to a dairy processing plant, it is made into many different products.

Dairy processing adds value to Canada’s natural resources because farmers use these resources to raise cows and produce milk. There are many different types of jobs that are created by the dairy industry.

A Secondary Industry, Too

The production of food products is an important part of Canada’s secondary industries. A **secondary industry** uses materials or ingredients made by primary industries. Secondary industries change these materials or ingredients into products. When milk is transported to the dairies, it is pasteurized. **Pasteurization** is the process of heating a food to a high temperature and then cooling it quickly. The heating process kills any harmful bacteria.

Milk is also **homogenized**, which means breaking up the fat into very small particles, so that the fat and milk can then be blended together in a smooth mixture. All table milk is **fortified** with vitamin D to make sure Canadians get enough of this important nutrient. Partly skimmed and skim milk also have vitamin A added, and other fortifying or enriching ingredients may be added to specialty milk products.

After it is homogenized, milk is quickly chilled. It is then transferred into bags, cartons, jugs, or bottles. These containers are stamped with the date and sealed. They are then ready to ship to stores and restaurants.

Dairy Farming has a History!

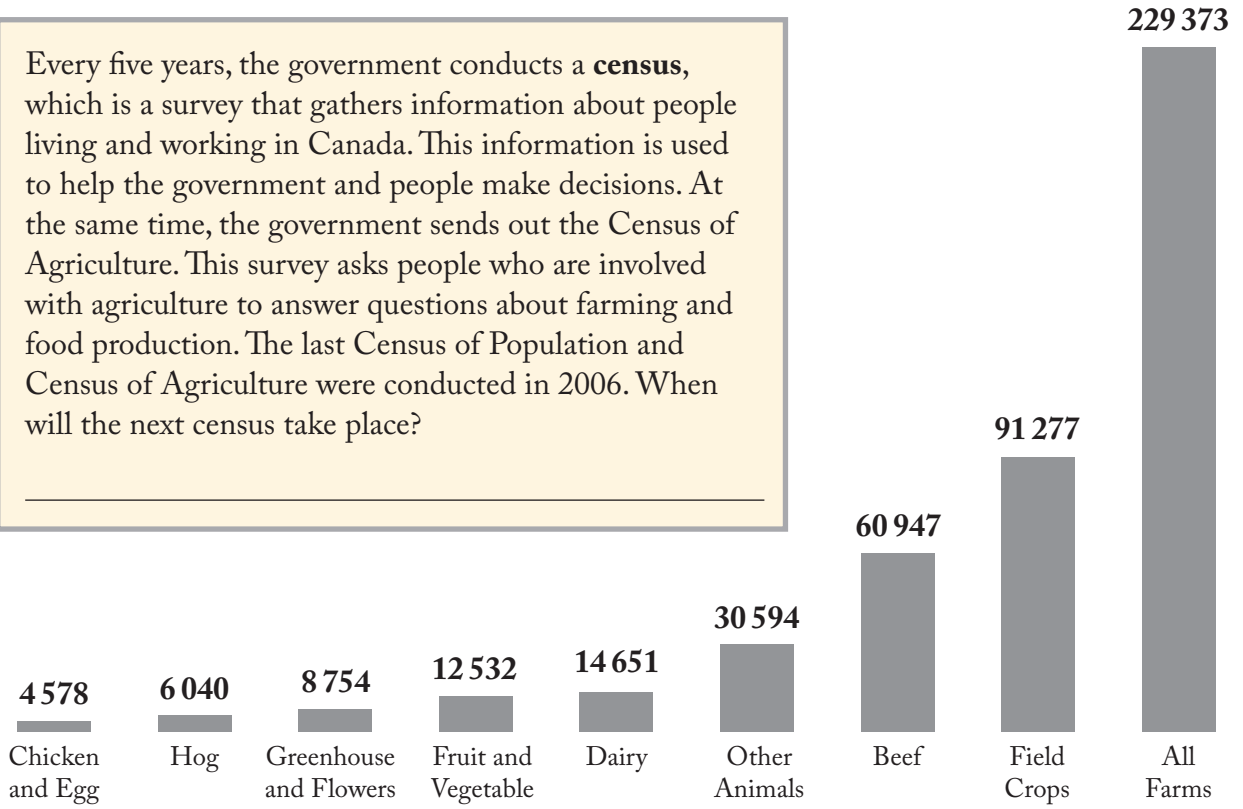
How did the dairy industry and agriculture develop in Canada? Go to the CN Image of Canada Gallery at www.imagescn.technomuses.ca/ and click on the Agriculture and Natural Resources links to find photograph evidence. Use a **Picture Frame** to analyze one of the photographs. Share what you found out with a partner.

Dairy farming is an important human activity in Canada. Here’s why:

- The dairy industry is the third largest agricultural activity in Canada, in terms of the total value of the products it creates.
- In 2010, about 30 000 people were working on 13 587 dairy farms across Canada.
- There are over one million dairy cows in Canada.
- These dairy cows produce a combined total of about 7.6 billion litres of milk every year.



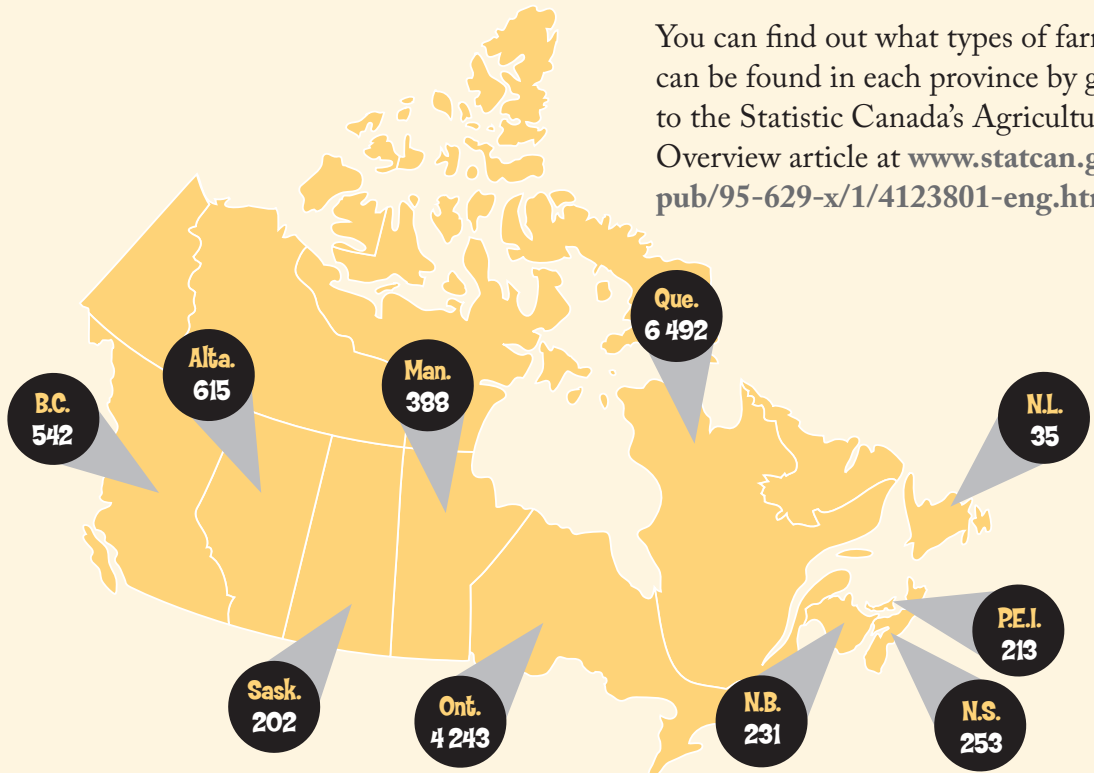
Every five years, the government conducts a **census**, which is a survey that gathers information about people living and working in Canada. This information is used to help the government and people make decisions. At the same time, the government sends out the Census of Agriculture. This survey asks people who are involved with agriculture to answer questions about farming and food production. The last Census of Population and Census of Agriculture were conducted in 2006. When will the next census take place?



Types and Number of Farms across Canada in 2006

“The financial picture of farms in Canada (2006).” *2006 Census of Agriculture*: Statistics Canada. www.statcan.gc.ca/ca-ra2006/articles/finpicture-portrait-eng.htm

Number of Dairy Farms across Canada in 2010



You can find out what types of farms can be found in each province by going to the Statistic Canada’s Agricultural Overview article at www.statcan.gc.ca/pub/95-629-x/1/4123801-eng.htm.

The Real Dirt on Farming (2006). Ontario Farm Animal Council. www.farmissues.com/pdf/dirtFinal.pdf

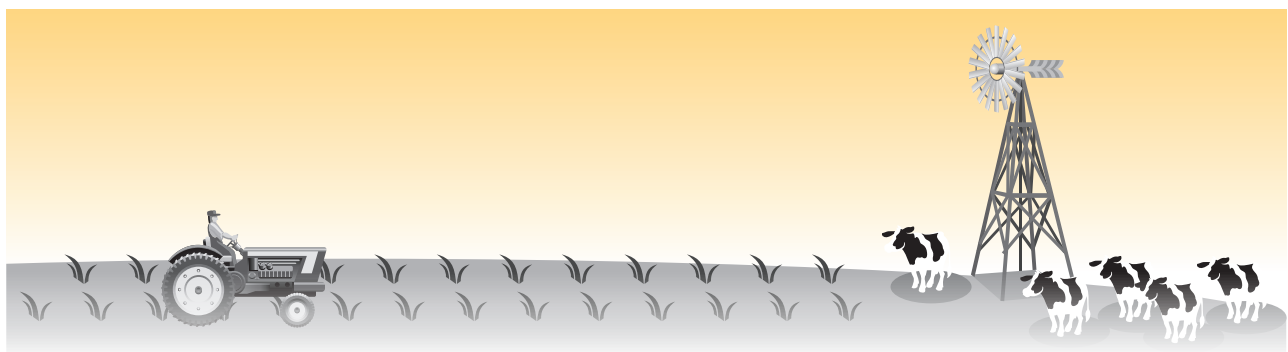
Exploring Resources



Agriculture is an important human activity, and Canada's agricultural products are sold all over Alberta, Canada, and the world.

What natural resources do agricultural activities depend on? Use the **T-Chart** below or make one of your own to list the different agricultural activities in Canada. Then, predict which natural resources you think each type of agricultural activity needs.

Types of Agricultural Activities	Natural Resources



Use the data displayed in the graphs in this article to answer the following questions.

- A.** Which province has the most dairy farms? Which has the least?
Why do you think these provinces have the most or least number of dairy farms?

	Most Dairy Farms	Least Dairy Farms
PROVINCES		
WHY		

- B.** Are there any businesses in your community involved with the dairy industry?
What are they?

Explore the *A Source of Pride* website at www.asourceofpride.ca.

What did you learn about dairy production in Canada that you didn't know before?
