Article 1

It Starts on the Farm

Quality milk starts at the farm and ends at the grocery store. In between the farm and grocery store, veterinarians, dairy researchers, computer technologists, equipment salespersons, truck drivers, animal nutritionists, dairy processors, and their workers are all involved in getting milk to your table.

Let's take a closer look. The main priority of dairy farmers is the health and well being of their animals. Dairy farmers provide proper feed, safe and clean housing to make sure that their cows are healthy and productive. On most farms, cows are milked twice a day.

Years ago, dairy farmers milked their cows by hand. This took a long time and was not as **sanitary**, or clean and healthy, as milking by machine. Milking today is done in stanchions or tie stalls. A **stanchion** is a bar that helps hold the cow in place while it is being milked. A **tie stall** is a stall where cows are tied in place to be milked. Many dairy farmers also use milking parlours, where dairy farmers come to the cow.

On some farms, milking is done with **robotic milking machines**, which are machines controlled by computers that keep track of when each cow is milked. The newest method of milking is called the voluntary milking system. This system uses computers and robots and allows a cow to choose when she wants to be milked.

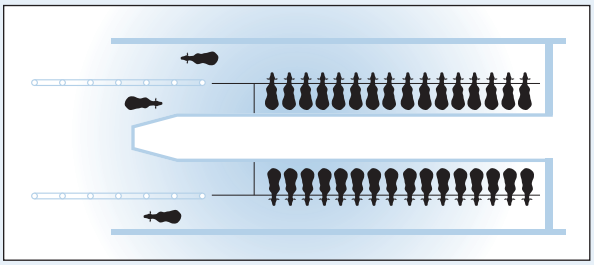
Watch a video that shows how cows are milked in a tie stall at **www.youtube.com/watch?v=p0NgrBj6WXw.**

Watch a video that shows robotic milking at **www.youtube.com/watch?v=kIbVwE5zb1Y**

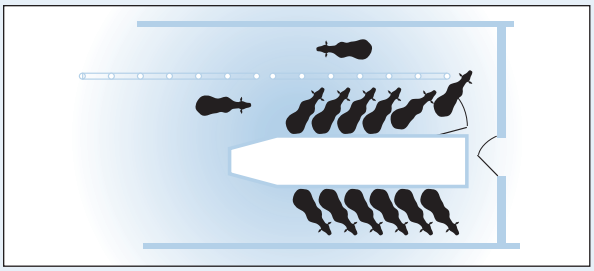
Did You Know?

There are different types of **milking parlours**, which are a part of the barn where farmers keep the milking machines.

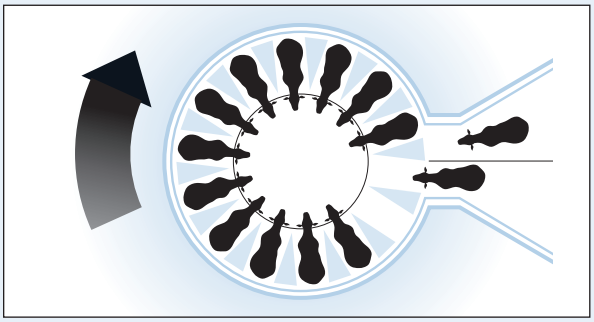
In a **parallel milking parlour**, cows are lined up in straight rows. The farmer moves from one cow to the next to attach the milking machine and milk the cow.



In a **herringbone milking parlour**, cows are lined up at an angle. This makes it easier for the milking machine to be attached and the cows to be milked.



A **carousel, or rotary, milking parlour** moves the cows around so that the farmer can stay in one place to attach the milking machine.



Before milking, the cow's identification is checked and the **udder**, where milk is produced by the cow, is gently massaged so the milk flows into the **teats**, or nipples. The teats are cleaned and sanitized before the milking machine is attached. Milking each cow takes about five minutes. Milking machines have automatic sensors that work much like the suckling of a baby calf. The sensors remove the machine when the milk flow has stopped.

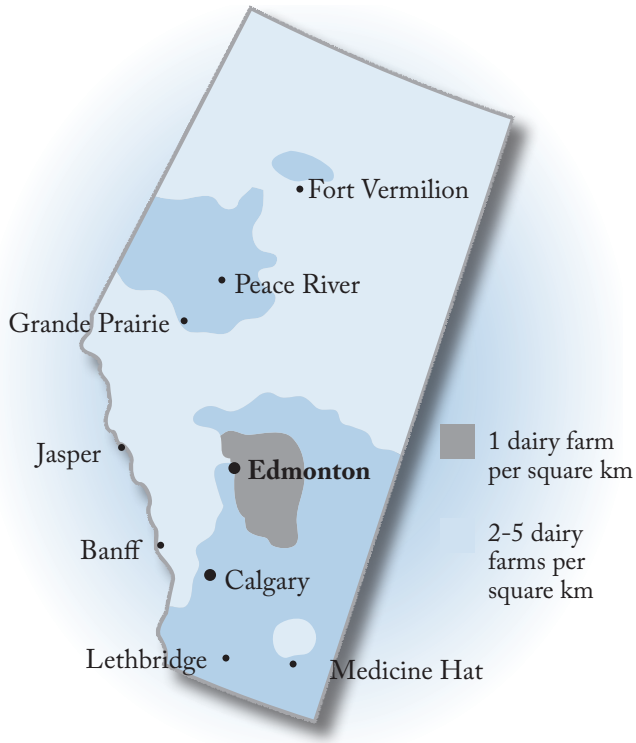
Stainless steel pipes send the milk directly to a large refrigerated bulk tank in the milk house. The milk arrives in the bulk tank as raw, or **unprocessed**, milk. Unprocessed milk has had nothing done or added to it. The milk is quickly cooled in the bulk tank to just below 4°C.

This raw milk is then picked up and transported by a milk hauler every second day to the **dairy processing plant**, which is where milk is made into a various products like different types of milk, cream, or yogurt. A **milk hauler** collects the milk in an insulated tanker truck, but also checks and tests it. Milk haulers must have a **license**, which gives them official permission from the government, in order to check the milk and make sure it is safe. The milk hauler must make sure the milk is delivered quickly to the processing plant.

A milk hauler often picks up milk from several farms and takes a full load to the dairy processing plant. Dairies today must be registered with the government or have a provincial license. This registration or license says that the dairy meets safety and health requirements for making food products. A dairy plant inspector inspects the dairies to ensure they are clean and safe. They also make sure that proper processes are used to make healthy dairy products. In today's automated dairy plants, milk is never exposed to air, light, or human hands. Milk is kept cold and stored in insulated silos, large containers used for storage, until it is processed and packaged.

Adapted with permission from Alberta Milk and Calgary Herald. *Calgary Stampede Aggie Days: A special information supplement*, 2010: p. 11. **http://ag.calgarystampede.com/upload/media_element/78/01/aggiedays_mar14.pdf**

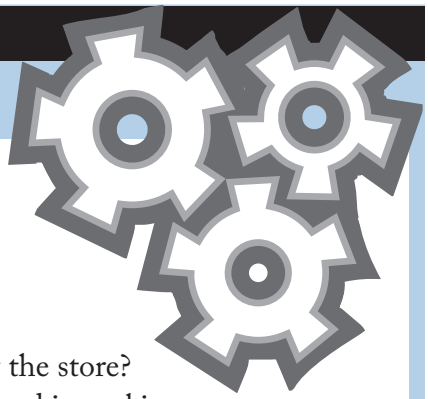
Dairy Farms in Alberta



Why do you think most of Alberta's dairy farms are located in central and southern Alberta? Compare the information from this map to other maps that show climate, landforms, and vegetation.

What other industries are located in these areas? Find maps of Alberta's natural resources, including agriculture, soil, forestry, coal, natural gas, and oil in Alberta's Resource Inventory at **www.abheritage.ca/abresources/inventory/index.html.**

Exploring Human Activities



Agriculture is an important human activity, and Alberta's agricultural products are sold all over Alberta and the world. Human activities involved in agriculture can be complex and involve many people, goods, and services.

What are the steps involved in making the milk that you buy at the store? Use the box below to show all the steps that you think are involved in making a glass of milk. Draw a picture to show each step or make a list.

Picture the dairy production system in three parts. Use the **Triple T-Chart** below or make one of your own to describe what you think you would find in each part of the dairy production system. Use words, phrases, or sketches in each column of the chart.

Resources, Goods, and Services that Farmers Need to Raise Cows	Activities For Which the Farmer is Responsible	What Happens When Milk Leaves the Farm