

# How Resources Move from Farm to Community

Dairy farms play an important role in communities. They affect ways of life in both urban and rural communities. Dairy farms depend on natural resources such as the land, soil, air, and water to produce milk. The milk is then used to make products that people eat.

## The Dairy Production Cycle

Dairy production involves a cycle of natural resources and human activities:

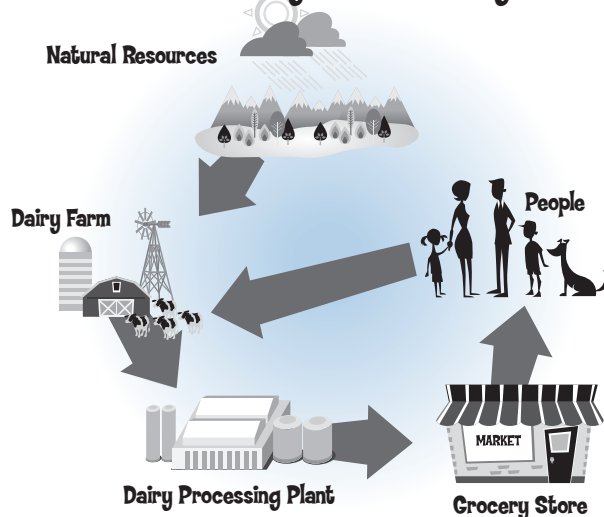
- Dairy farmers depend on natural resources to feed their cows and produce raw milk.
- The milk is stored in a refrigerated tank and then transported in an insulated tanker to a **dairy processing plant**, which is where milk is made into various products like different types of milk, cream, or yogurt.
- The processing plant uses the milk to make many different products – such as bottled milk, buttermilk, ice cream, yogurt, cheese, butter, and sour cream. On some Alberta farms, they also do their own processing. Some dairies specialize in making their own cheese or yogurt.

- Whether products are made at the processing plant or on the dairy farm, they are transported to stores across Alberta and Canada.
- People in communities buy these dairy products. This creates a **demand**, the desire that people have to buy a product, for the milk that cows make. Dairy farmers continue to raise and milk their cows to meet this demand.

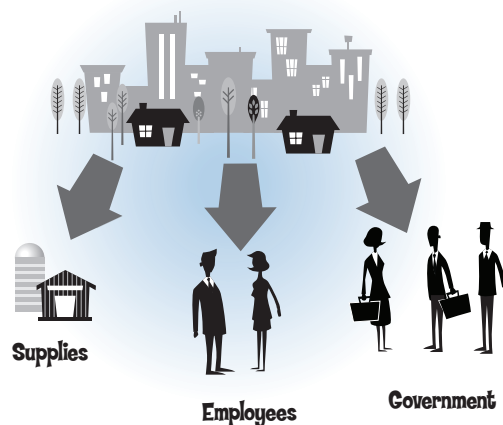
Some other factors affect the cycle of dairy production:

- Dairy farms hire employees and buy supplies from nearby communities.
- The dairy industry is connected to other industries. Dairy farms and processing plants need energy to run their equipment and transport their products.
- The dairy industry is connected to the government. All dairies must have **licenses**, which give them official permission from the government to operate. Dairies follow rules and laws to make sure milk is safe and healthy.

## The Dairy Production Cycle



## Resources that Communities Provide



## An Alberta Dairy Story

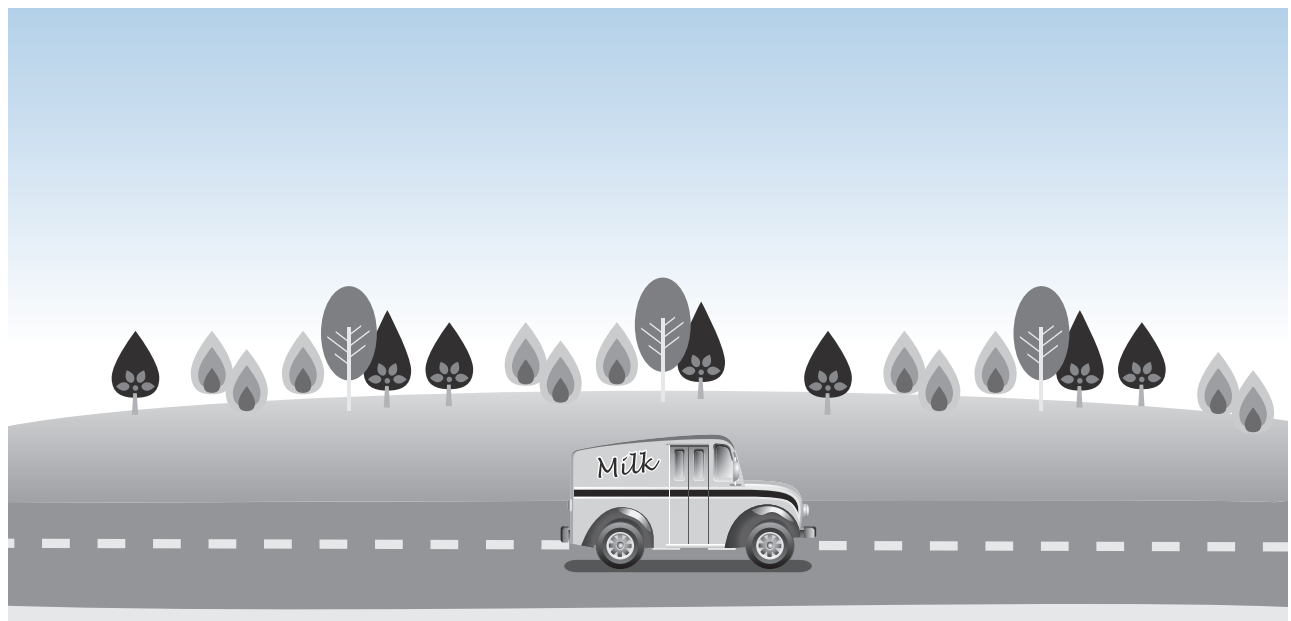
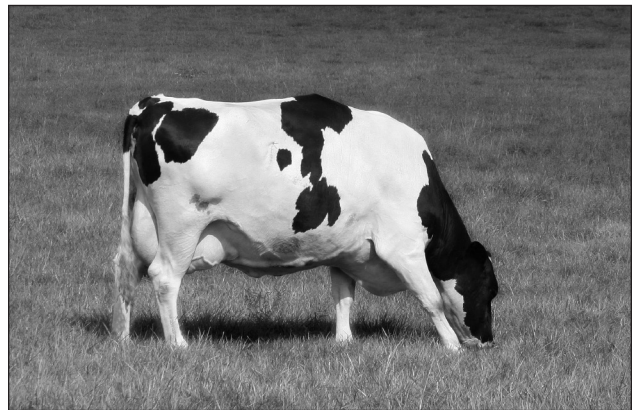
We started Bles-Wold Dairy in 1994, on a fine location near Lacombe, in Central Alberta's Parkland. The black soil is very fertile and excellent for growing feed crops for the cows.

In August 1994, we started building a new dairy building and by February 1995, we were ready to milk cows. In 1996, we started to produce yogurt as a hobby and it soon turned into a business. At that point, we changed the barn into a licensed processing dairy.

Currently, 270 cows are producing 2.7 million kilograms of milk per year. The majority of the animals are purebred Holsteins. The herd is milked three times per day.

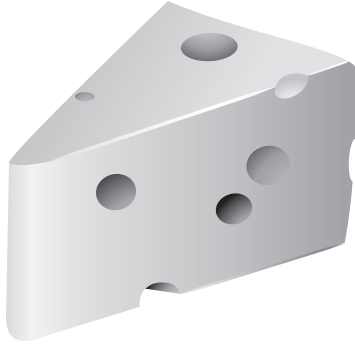
During the summer, our cows are kept outside on a daily basis. They are fed a mixture of hay, barley, **silage** (crops that are harvested while they are still green, packed into a silo, and covered with plastic to remove the oxygen from the crop plant), **haylage** (grass that is grown and cut the same as hay but left to dry for less time), rolled barley, ground corn, and sunflower seed. Most of the ingredients are grown on the farm.

Adapted with permission from the Bles-Wold Dairy Products website at [www.bles-wold.com/thedairy.htm](http://www.bles-wold.com/thedairy.htm).



## Sylvan Star Cheese

Sylvan Star Dairies makes Gouda, Edam, and Gruyere cheese at their cheese farm, using the milk of their own cows. Find out more about how cheese is made at [www.sylvanstarcheesefarm.ca](http://www.sylvanstarcheesefarm.ca).



## Going Organic

There were nine **certified** organic dairy producers in Alberta in 2010. A producer is certified when he or she meets **requirements**, which are sets of rules. When a product is certified organic, it means that it has been grown or made according to strict rules. It takes three years of testing land and soil to be certified as organic. Cows are fed and looked after organically for at least one year before they can be certified organic. Organic food production is based on farming practices that protect the environment and do not use any chemicals. Organic milk has the same nutrients as regular milk.

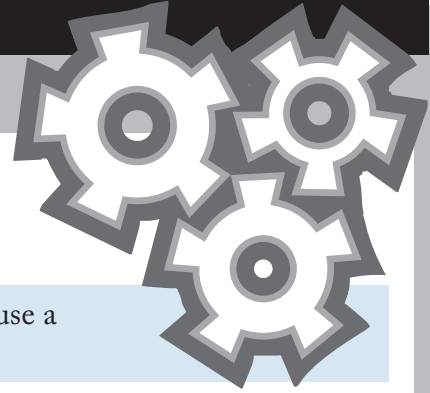


### Did You Know?

Did you know that the Red Deer city flag has a coat of arms with dairy cows and milk cans?

- The groundwork of mountains showing the setting sun represents sunny Alberta.
- The dairy cows in the foreground represent dairy farming.
- Above the cow are six milk cans to show the shipping of dairy products.

# Exploring a Cycle



What natural resources and human activities are involved in the dairy production cycle? Identify these natural resources and human activities in the two columns of the **T-Chart** below.

Once you identify the elements of the dairy production cycle, use a **Cycle Diagram** to place them in order.

Natural Resources	Human Activities

The elements in a cycle are related to each other. Each element is affected by the other elements. A dairy production cycle is no exception. What do you think would happen if:

- Energy costs increased a lot?
- The number of dairy farms decreased?
- The local grocery store closed?
- Truck drivers all went on vacation?
- The only local veterinarian took a job in another province?
- The water supply was polluted?

Use a **Cause and Effect Chart** to explore each “What If...” question.

# Taking Care of Cows



Taking good care of cows is how dairy farmers take good care of their business. A healthy, happy cow produces more milk. To keep their cows happy, dairy farmers pay attention to the same things that people need for good health:

- A clean and safe place to live
- The right amount of healthy food
- A doctor who helps prevent or treat illnesses. An animal doctor is called a **veterinarian**.

Most dairy farmers produce at least some of the feed on their farms. But it takes more than hay and barley to keep a cow healthy and producing milk. Responsible animal care is the number one priority of the dairy farmer. It is in the farmer's best interest to ensure that the cows are comfortable. Cows that are comfortable and well cared for grow better, are healthier, and produce more milk. The proper care of dairy cows includes feeding, watering, providing shelter, and monitoring their health and safety.

Dairy cows are fed a diet that has lots of fibre. This diet can include:

- High quality hay (4 kg per day)
- **Silage**, which is a mixture of grasses and grains that are packed and covered in an airtight storage tank or a pit called a **sil**o (16 kg per day)
- Mixed grains (10 kg per day)
- Salt
- Vitamins and minerals.

This diet amounts to 75 000 calories per day. Compare this to the diet of a human adult, which is about 2 000 calories a day.

It is also important that fresh clean water is available all the time as dairy cows drink about 60 to 150 litres of water per day. Compare this to a bathtub, which holds about 100 litres of water.

Healthy animals are needed to produce good quality milk. In Canada, the government also has a role to play in the dairy production cycle. Canada has laws that protect farm animals. These laws and **regulations**, or rules, help make sure that animals are treated **humanely**, with understanding, respect, and caring. Everyone who handles **livestock**, animals used for food, as well as the food products that we get from livestock, must follow these regulations.

Most provinces are members of Farm Animal Care Associations, which are made of people from different industries who work together for the responsible care of animals.

## Have you ever had to take antibiotics?

**Antibiotics**, medicine used to control infections, are used very carefully with cows. Sometimes dairy cows get sick and antibiotics may be needed to help them get better. Health Canada has strict guidelines in place that dairy farmers must follow. Cows that need antibiotics are identified and their milk is discarded to make sure that any leftover antibiotics do not get into the milk supply.

As an extra safety measure, once treatment is finished, the cow's milk is tested to ensure it is free of any traces of antibiotics before including it in the milk supply. In addition, milk processors test all milk for traces of antibiotics before accepting it. Milk is rejected if it tests positive for any trace of antibiotics.

## Using A Web Resource

Alberta Farm Animal Care provides information about the laws that protect farm animals. Use the weblink below to find out more about why these laws exist.

[www.afac.ab.ca/education/elem/booklet.pdf](http://www.afac.ab.ca/education/elem/booklet.pdf)

Who is involved in animal care?

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Why do you think animal care is part of the dairy production cycle?

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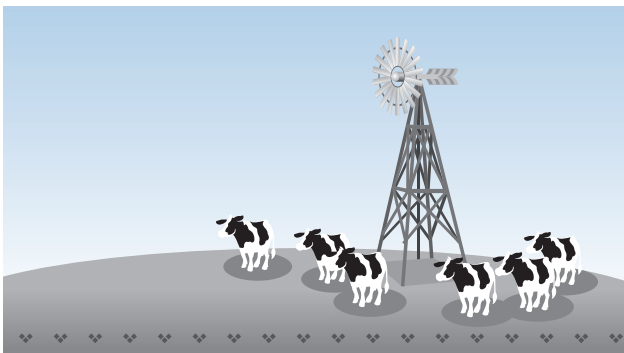
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Photograph courtesy of Morsan Farms.

### The Million Dollar Cow

Eastside Lewisdale Gold Missy lives in Ponoka, Alberta. She is only one of five cows in the world, and the second in Canada, to sell for more than \$1 million.

Missy is now one of the most famous cows in the world too! She is a Holstein cow and was born in Prince Edward Island. Missy has a very high rating and has won a number of awards for milk production. Her calves are also very valuable. Even though her new owners live in the United States and Denmark, Missy will continue to live in Ponoka.

Try a web search, using the search term "missy million dollar cow." Why do you think Missy is so famous?

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