

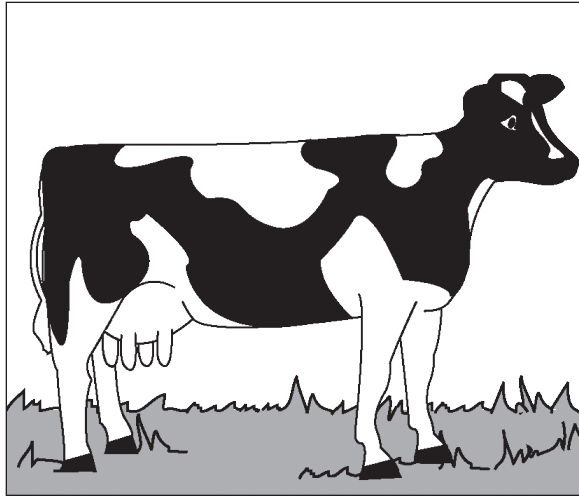
Commodity Fact Sheet

Dairy

Information compiled by the Dairy Council of California

How Produced – California produced 40.9 billion pounds of milk in 2015. Approximately 1.75 million dairy cows produce milk on approximately 1,438 dairies located throughout the state. California's available land, mild climate, and plentiful feed supply make it a desirable and productive location for dairies.

A dairy cow must give birth to a calf to produce milk. A female calf is called a heifer and a male is called a bull. After nine months gestation, a mature two-year old heifer gives birth and is called a "fresh cow." She produces milk (lactation) for 10 months during which time she is bred again. Her milk production then decreases until she produces no milk (dry) for two months. She will produce milk again after she has her next calf. Cows have a production cycle of four to seven years.



Dairy cows are milked two (sometimes three) times each day. A cow will produce six to seven gallons of milk each day which is more than 2,000 gallons of milk each year.

Cows are ruminant animals, which have four stomach compartments, and efficiently digest many different commodities such as hay, silage (fermented corn, wheat or hay including the stalks and leaves), and grain (corn, oats and barley). Cows also consume many different agricultural by-products including cottonseed, almond hulls, sugar beet pulp, and blemished vegetables. Cows drink approximately 35 gallons of water each day.

History – Anthropologists suggest that Ancient Egyptians, Romans, and Greeks made cheese and yogurt as early as 600 B.C. Missionaries brought the first dairy cows to California in 1770. During the Gold Rush, immigrants brought cows, cheese presses, and churns to California along with their own recipes for making dairy products.

In 1882, David Jacks, a Scotsman from Monterey, named his cheese Monterey Jack. He was the first person to sell cheese commercially in California. The early 1900s brought changes to the dairy industry including centralized manufacturing and distribution. As California's population increased, the dairy industry focused on improving sanitation, increasing production, and mechanization.

Today, California's dairy industry utilizes technology and

advanced food processing systems to provide safe, quality products for California, the United States, and the world.

Breeds – There are five dairy breeds in California. The black and white Holstein is the most common. The Jersey is a smaller cow whose milk is often used for cheese production. The Brown Swiss, Guernsey, and Ayrshire are other breeds used for milk production.

Commodity Value – California has been the nation's leading dairy state since 1993 when it surpassed Wisconsin in milk production. Sales of milk and cream contributed \$6.9 billion in 2015 to California's economy. California produces more than 20 percent of the nation's cheese and a fifth of its milk supply. California's cheese production

ranks second in the nation, with approximately 46.3 percent of all the Golden State's milk used to make cheese.

Top Producing Counties – Although during 2015, 31 counties contributed to the state's total milk production, a handful of counties continued to be responsible for the bulk of the production. Tulare, Merced, Kings, Stanislaus, and Kern counties accounted for 71.5 percent of the state's market milk production.

Nutritional Value – Dairy products such as milk, yogurt, and cheese contain numerous essential nutrients including calcium, potassium, phosphorus, magnesium, and protein. This "package of nutrients" is critical for the development of strong bones and teeth, maintaining a healthy weight, and reducing the risk of high blood pressure, osteoporosis, and certain cancers. Whether it's protein to help build and repair muscle tissue or vitamin A to help maintain healthy skin, dairy products are a natural nutrient powerhouse.

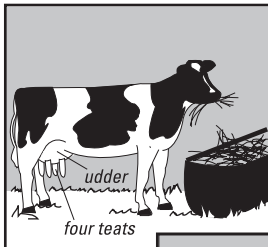
For additional information:

Dairy Council of California
(877) 324-7901
Website: www.HealthyEating.org

California Milk Advisory Board
Website: www.realcaliforniachese.com

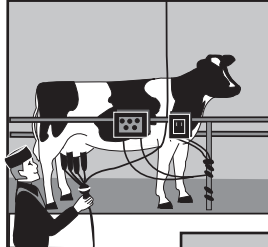


Dairy Activity Sheet



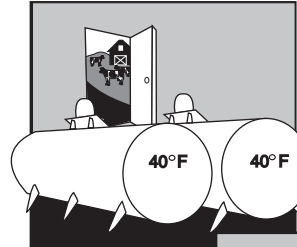
◀ #1

Dairy cattle convert feed energy to milk production. A cow produces milk in her udder. Milk is released through the udder's four teats.



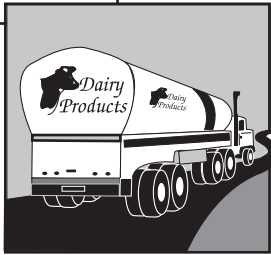
◀ #2

Cows are milked in a milking parlor where the teats are cleaned and attached to a milking machine.



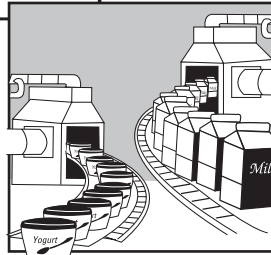
◀ #3

The milk is piped immediately to refrigerated storage tanks.



#4 ▶

The milk is transported daily, in large stainless steel tanker trucks, to processing facilities.



#5 ▶

The milk is pasteurized, homogenized, and processed into many products such as milk, yogurt, cheese, and ice cream.



#6 ▶

A variety of dairy products are available to meet the tastes and nutritional needs of consumers.

Lesson Ideas

- Explore different dairy breeds including their characteristics, history, and origin.
- Compare a cow's diet and digestive process to a human's diet and digestive process. Diagram ruminant and monogastric digestive systems.
- Make butter by shaking heavy whipping cream in baby food jars.
- Create a picture collage of products made from milk.
- Visit a dairy or milk processing facility.
- Taste test different cheese and dairy products.
- Make homemade ice cream.
- Research the nutrients found in dairy products.

Fantastic Facts

1. Cows have four stomach compartments.
2. Cottonseed, almond hulls, sugar beet pulp, and blemished vegetables are all agricultural by-products eaten by cows.
3. Monterey Jack cheese was developed by the Jacks family in Monterey, California.
4. Silage is partially fermented grains and grain by-products.
5. On average, a cow produces milk for four to seven years.
6. The most common dairy breed in California is the black and white Holstein.
7. Yogurt, ice cream, cheese, and butter are all dairy products.
8. Calcium is an essential nutrient found in milk.

Lesson Plan: Milk-From the Farm to the Family Class Book

Introduction: Dairy products have been around since 600 B.C. However, today's milk production and the production of dairy products is very scientific and technical.

Objective: Students will perform independent research on one aspect of milk and dairy product production. The class will produce a book that depicts the process.

California Standards: CC ELA: W.3-12.2, 4, 7
SL.3-12.4, 5

Materials: Index cards, resources including Internet access, books and encyclopedias, 12" x 18" paper, markers.

Procedure:

1. Write key words or phrases on index cards. These should be one card per student or pair of students. Example words include ruminant, lactation, cow diet, pasteurization, homogenization, etc.

2. Distribute one card to each student or partnership.
3. Have the students research, on the Internet and in libraries, the meaning of their word or phrase and learn how it relates to milk production.
4. Have the students write and roughly illustrate their findings using a standard format.
5. Have the students each read their page to the class. As a class, sequence the information and have the students use technology to create a professional looking page about their findings so that it blends with the work of other classmates.
6. Title the book "Milk: From the Farm to the Family." Bind the book and share it with other classes or at Open House.

