

Harvest of
the Month
at Home

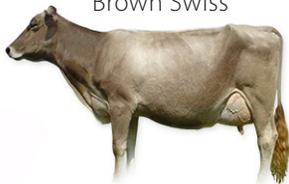
Dairy



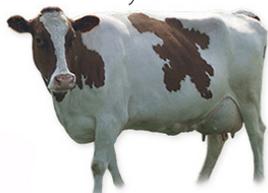
Holstein



Brown Swiss



Ayrshire



Guernsey



Jersey



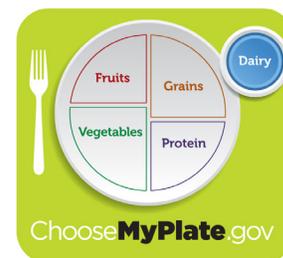
Milking Shorthorn



Did You Know

- All dairy products are derived from mammal milk. Although milk most commonly comes from cows, Montana also has goat and sheep milk producers. People also consume milk from different animals including donkeys, horses, oxen, buffaloes, and camels.
- There are six main dairy cattle breeds in the United States, including: Holstein, Ayrshire, Brown Swiss, Milking Shorthorn, Guernsey, and Jersey. The Holstein cow produces the most milk of all breeds, about nine gallons of milk per day! Each cow produces an average of six to seven gallons per day, which is 2,500 gallons of milk annually. Besides the amount of milk produced, different breeds produce varying amounts of milk fat, making them more or less suitable for making dairy products like cheese.
- In 2015, Montana was home to approximately 13,000 dairy cows on nearly 65 dairy farms. The average herd size was about 210 cows in Montana.
- Cheese varieties are classified based on a number of characteristics, but most commonly according to firmness and moisture content. Moisture content may be as low as 30% in firm cheese, while soft or fresh cheese may be as high as 80%. Common cheese varieties include: fresh or un-ripened (mozzarella), soft ripened (Brie), semi-hard (cheddar), hard (Parmesan), blue-veined (Gorgonzola), processed (American), and cheese substitute.
- Dairy products are rich in calcium, potassium, B vitamins, and protein, and they are often fortified with vitamin D. Not many foods contain vitamin D, as

our bodies are designed to produce it with the help of sunlight. Vitamin D promotes calcium absorption and bone growth. Calcium is necessary to maintain healthy bones and to carry out other body functions. Dairy products such as milk, yogurt, and cheese are excellent sources of calcium and constitute a majority of Americans' calcium intake. The Dietary Guidelines for Americans recommend choosing low-fat and fat-free dairy foods most often. Some individuals are lactose intolerant. This means they do not produce enough lactase, a digestive enzyme used to break down the milk sugar, lactose. Individuals with lactose intolerance can try alternatives such as fortified lactose-free yogurt or milk.



Agriculture & Processing

The dairy supply chain starts with growing feed for the dairy cows, such as alfalfa hay. Dairy cows are housed on farms, fed high quality feed, and milked on average two times a day. The milk is then transported from the farm to one of several Montana dairy processing plants where it is pasteurized. The pasteurization process heats milk to a very high temperature (just below boiling) and then rapidly chills it, which destroys bacteria and extends the shelf life of the milk. Milk is then either packaged or turned into dairy products such as cheese, yogurt, or sour cream. After packaging, the milk and dairy products are distributed to grocers, schools, and other markets in refrigerated trucks, then stored in refrigeration.

— Continued on page 2 —

— Continued from page 1 —

Yogurt is milk that is fermented with lactic bacteria; once there is enough lactic acid produced, the milk begins to thicken. Cheese is created from the coagulation (thickening) and draining of milk, cream, or both. Similar to making yogurt, cheesemaking requires lactic acid produced by enzymes, acid, or a combination of heat and acid that will cause milk solids (curds) to form. The firm cheese texture is developed by separating and draining the curds from the whey (liquid) proteins. Cheese is then salted and aged (stored at different temperatures, humidity levels, and lengths of time) to develop different textures and flavors. Of the 72 varieties of cheeses, most age for at least 60 days, but fresh cheeses like ricotta, feta, or cottage cheese do not get aged or preserved.

Buying Tips

Dairy products include milk, yogurt, cheese, ice cream, butter, and other products. Milk is perishable, so use the sell by dates to select milk that is fresh. Dairy products should be refrigerated at or below 40°F and not be left at room temperature for any longer than two hours. Avoid storing milk in a refrigerator door where the temperature may fluctuate.

Book Nook

Kiss the Cow, by Phyllis Root,
Will Hillenbrand

It's Milking Time, by Phyllis Alsdurf

Out and About at the Dairy Farm, by Andy Murphy

Cows Can Moo! Can You? by Bonnie Worth

The Milk Makers (Reading Rainbow Book), by Gail Gibbons



Cooking

Razzle Dazzle Smoothie

Create-a-Smoothie,
New England Dairy and
Food Council

Servings

6

Ingredients

- 1 1/2 cups Fat-free milk
- 3 cups Vanilla yogurt, *low-fat*
- 1 1/2 cups Mixed berries, *frozen*
- 1 Banana, *frozen*

Preparation

1. Collect and measure all ingredients.
2. Add the fruit and yogurt to the blender.
3. Pour the milk into the blender.
4. Blend for about 30-45 seconds until smooth.
5. Refrigerate leftovers immediately. Drink within 2 days.



Dig Deeper

For sources and photo credits along with more recipes, lessons, quick activities, resources, and guides, visit:
www.montana.edu/mtharvestofthemonth.

2 Montana Harvest of the Month: Dairy



The Montana Harvest of the Month program showcases Montana grown foods in Montana communities. This program is a collaboration between Montana Farm to School, Office of Public Instruction, Montana Team Nutrition Program, National Center for Appropriate Technology, Montana State University Extension, Gallatin Valley Farm to School, FoodCorps Montana, and Montana Department of Agriculture. More information and resources are available at: www.montana.edu/mtharvestofthemonth.

Funds were provided in part by USDA Team Nutrition Training grants and Dairy MAX. USDA is an equal opportunity provider and employer. The Montana State University Extension Service is an ADA/EO/AA/Veteran's Preference Employer and Provider of Educational Outreach. This publication was supported by the Grants or Cooperative Agreements Numbers, 6 U58DP004818-03-01 & 5 U58DP004818-03-00.