**Dairy Dictionary**

**Antibiotics**

Medication that kills or slows the growth of harmful bacteria. Farmers give antibiotics to treat cows that are ill, just as humans sometimes need medication when they are sick. Milk from a cow being treated is separated to ensure it does not go into the milk supply. All milk is tested for the most commonly used antibiotics upon delivery at the dairy plant.

**Artificial Insemination (AI)**

Famers have options for breeding their cows. Most choose to have their cows artificially inseminated to protect the animals and workers as bulls (males) are large, powerful and can be dangerous. Studies show that AI is safer and more efficient than natural insemination, and the method allows farmers to breed animals that are healthier and produce higher quality milk.

**Ayrshire**

A breed of dairy cattle that originated from the County of Ayr in Scotland. The average mature Ayrshire cow weighs between 1,000 and 1,300 pounds and has red markings that can vary in color from orange to brown.

**Bedding**

Material used to absorb moisture and provide a comfortable cushion where cows can rest. Possible bedding materials include straw, sawdust, wood chips, sand, ground limestone, separated manure solids, shredded newspaper, corn stalks, bark, peanut hulls, sunflower hulls, and rice hulls.

**Biogas**

The methane produced by the fermentation of organic matter such as cow manure. The process of using biogas provides a convenient way of turning waster into electricity and decreasing the amount of waste that must be disposed.

**Biotechnology**

A biology-based technology that is used for agricultural, food science or medicinal purposes. In agriculture, the process involves creating or modifying DNA to impact beneficial genetic traits.

**Bovine**

Of the biological subfamily Bovine. This diverse group features about 24 species of medium sized to large ungulates (animals with hoofs), such as domestic cattle. Other members include bison, water buffalo and yak.

**Bovine Leukosis**

A viral disease of cattle that cannot be transferred to humans. The virus is destroyed in milk through pasteurization.

**Bovine Spongiform Encephalopathy (BSE)**

Also known as Mad Cow Disease, BSE is an infection of brain and neurological tissues with rogue proteins called prions that kills cattle as it causes degeneration in the brain and spinal cord. BSE is not contagious and does not spread from cow to cow. BSE has never been detected in muscle meat or milk, and transmission does not occur into cow’s milk.

**Bovine Tuberculosis (TB)**

A contagious animal disease that does not pose a threat to human health. Pasteurization effectively destroys the bacterium that causes bovine TB. The USDA has a testing and eradication program to eliminate TB from US herds.

**Brown Swiss**

A breed of dairy cattle that originated in the Swiss Alps and produces the second largest quantity of milk annually of any dairy breed. Their milk averages 4 percent butterfat and 3.4 percent protein, which makes it ideal for cheese production. Brown Swiss are gray-brown in color and are known for their docile temperament.

**Brucellosis**

A highly contagious disease caused by ingesting unpasteurized milk or undercooked meat from infected animals or being in close contact with their secretions. Brucella, the bacteria that causes brucellosis, is destroyed by pasteurization.

**Bulk Tank**

A refrigerated, stainless steel storage tank located at dairy farms, designed to hold milk as soon as it leaves the cow through a series of pipes that travel from the milking parlor to the tank. The milk is cooled immediately in the bulk tank, usually to 35-39 degrees. The milk is collected daily, or every other day at the farm (depending on total milk volume) and shipped to a processing plant where it is bottled or used to make other dairy products.

**Bull**

An adult male dairy animal.

**Butter**

Butter is produced by churning the fat from milk or cream until it solidifies. It may then be salted.

**Butterfat**

Also known as milkfat, the fatty portion of milk. Milk and cream are often sold according to the amount of butterfat they contain. In the United States, there are federal standards for butterfat content of dairy products.

**Byproducts**

The derivatives resulting from processing other foods and fibers. Dairy farmers routinely feed their cows byproducts such as citrus pulp, cotton seed, brewer’s grains, molasses, and almond hulls that are recommended by animal nutritionists who work with dairy farmers on creating menu plans to provide healthy diets for cows.

**Calf**

A young female dairy animal before she has matured. A young male is called a bull calf.

**Carbon Footprint**

Members of the US dairy industry – from the local farm to the retailer – have long played a significant role in our nation’s food system, communities and economy by providing wholesome, nutrient-rich products that are produced in a sustainable manner. Today, a gallon of milk is produced with 90 percent less land, 65 percent less water, 75 percent less manure and a 63 percent smaller carbon footprint than in 1944.

**Casein**

The dominant protein (80 percent) in cow’s milk. Casein is vital to cheesemaking and has a variety of uses in manufacturing.

**Colostrum**

The first milk given to calves in the first 24 hours of life by a dairy cow following birth. Colostrum is rich in fat and protein and has immunity elements.

**Compost**

A process used by dairy farmers in which cow manure and other organic matter at the farm is collected and processed into a natural soil enhancement, furthering dairy’s commitment to sustainability.

**Conventional**

A commonly used term to describe commercial agriculture and milk production in the United States in which farmers use approved farming methods that involved the use of synthetic pesticides, chemical fertilizers and other science-based technologies. Conventional food is as safe and wholesome as food produced by non-conventional methods.

**Cow**

A mature female of cattle that has delivered a calf, usually around 2 years of age.

**Cream**

The high-fat portion of milk that is separated during processing. Cream is used to produce products such as ice cream, half and half, and whipping and heavy cream. Cream also is dried and powdered, and some is condensed by evaporation and canned.

**Cud**

The partially digested food that is regurgitated from the first compartment of the cow’s stomach into the mouth to be chewed again. A cow may spend seven hours a day eating food and an additional 10 hours a day chewing her cud.

**Curd**

The clumps of protein and other milk components that are formed during the cheesemaking process. Curds are pressed into blocks or barrels for proper aging and curing of cheese.

**Dairy Nutritionist**

Professionally trained and educated animal health consultants who specialize in the nutritional needs of dairy cows. Nutritionists recommend the optimal, scientifically balanced diets that are designed for the specific needs of different cows. Nutritionists work with farmers to monitor how cows respond to their customized feeding programs.

**Dairy Sustainability**

The practice of continuous improvement to provide consumers with nutritious dairy products in a way that makes the industry, people and the earth more economically, environmentally and socially better – now and for future generations. Since 1944, the US dairy industry has reduced its carbon footprint 63 print. Compared to nearly 70 years ago, a gallon of milk today is produced using 90 percent less land and 65 percent less water from cows that produce 76 percent less manure.

**Dam**

The mother of a calf.

**Dehorning/Disbudding**

Dehorning is a traditional practice that farmers use to remove a cow’s horns to help reduce the risk of injury to other cows and people. As farmers work to continuously improve their cow care practices, they are increasingly adopting the practice of disbudding, which is supported by the industry-wide Farmers Assuring Responsibility Management (FARM) animal care program. Disbudding involves the removal of horn-producing cells in calves less than two months of age. This practice has the endorsement of leading associations, including the American Veterinary Medical Association.

**Dry Cows**

A segment of time during which a cow is not producing milk. The “dry” period lasts between 50 and 70 days when a cow is preparing to give birth to a calf, which then begins a new lactation period.

**Ear Tag**

A device like an earring that dairy farmers place in the ears of their animals to identify each member of the herd. Ear tags contain a number that is given to a cow and allows the dairy farmer to maintain accurate health and milk production records.

**Factory Farm**

A term used by critics of modern food production (often used to describe animal agriculture) to refer to larger-scale farms. According to USDA, 97 percent of dairy farms in the United States are family-owned and operated.

**Family Farm**

A USDA report shows 97 percent of dairy farms in the United States are owned and operated by families.

**Foot-And-Mouth Disease (FMD)**

A severe, highly contagious viral disease of cattle and other livestock including sheep, goats, and other cloven-hooved ruminants. FMD is not a health threat to humans. The US has been free of FMD since 1929.

**Forage**

Cow feed that is high in fiber, such as whole plants of corn, small grains (such as oats, barley, or wheat), legumes, and grasses.

**Freestall Barn**

A modern barn that houses and protects the dairy herd and provides a comfortable resting area. It includes individual stalls and bedding for each cow, and access to clean water and feed 24 hours a day. Freestall barns provide optimal ventilation and many are climate controlled, allowing for cow cooling measures such as misters and fans in the summer and curtains and sidewalls for the winter. Cows are not restrained and are free to enter, lie down, rise, and leave the barn as they desire.

**Fresh Cow**

A cow that has recently given birth to a calf.

**Fuel Up to Play 60**

An in-school nutrition and physical activity program launched by the National Football League and dairy farmers (through National Dairy Council), in collaboration with the US Department of Agriculture. The program encourages youth to consume nutrient-rich foods (low-fat and fat-free dairy, fruits, vegetables, and whole grains) and achieve at least 60 minutes of physical activity every day.

**Genetically Modified Organism-GMO**

The process of intentionally making a copy of a gene for a desired trait from one plant or organism and using it in another plant. Fluid milk is not genetically modified nor are the cows that produce the milk.

**GENYOUth Foundation**

Founded through a public-private partnership with National Dairy Council (NDC), and the National Football League (NFL), and committed to child health and wellness. GENYOUth brings leaders in health, education, government and business together in a movement to help America’s youth achieve a healthier future. This flagship program, Fuel Up to Play 60, in the largest health and wellness program in schools across the country and is active in more than 73,000 schools.

**GMO Feed**

The feed for cows on dairy farms can be grown from genetically modified seeds. Genetically modified crops allow farmers to grow feed and foods more efficiently using the same amount of land to maximize crop yields and minimize use of water and other natural resources. Scientific experts have confirmed that the crops are safe and provide the same nutrition, for animals and people, as other crops.

**Guernsey**

A small, cream-and-brown breed of dairy cattle that produces more milk per unit of body weight that any other breed. Guernsey’s are renowned for their high butterfat content of their milk. The Guernsey was bred on the British Channel Island of Guernsey and descended from cattle stock brought from nearby Normandy.

**Hay**

Dried feed such as rye, alfalfa, clover, grass, and oats, which is used as a food source for dairy cows. A hay field is mowed, and the trimmings dry in the sun for two to three days.
Also see Forage & Silage

**Heifer**

A female dairy animal that has yet to give birth to a calf.

**Herd**

A grouping of cows on a dairy farm. Cows are often placed into herds with other cows of their age or milking status, such as dry cows and heifers.

**Holstein**

A black and white dairy cow (through there also are “Red Holsteins”) that is the most predominant breed of dairy cattle worldwide and represent approximately 90 percent of dairy cows in the United States. The Holstein originated in the province of Friesland, The Netherlands. They are known for having the highest milk production of all dairy cattle breeds.

**Homogenization**

A process applied to milk that results in fat globules being reduced in size to allow a smooth consistency.

**Hoof Trimmer**

A trained professional who specializes in the trimming of a cow’s hooves on a regular basis to maintain comfort. Hoof trimmers are trained to detect disease, injury or other hoof related problems and can advise farmers on treatments.

**Hormone**

A chemical messenger from one cell (or group of cells) to another. Hormones are naturally present in many foods of plant and animals’ origin, including all milk. Bovine somatotropin is a naturally-occurring protein hormone in cows. A trace amount of this hormone is present in all milk, including organic products, and is digested when humans eat it, just like other proteins. References to hormones on milk packaging refer to whether farmers produce milk by treating their cows with a supplemental hormone.

**Hutch**

An individual housing unit designed for young calves.

**In Vitro Fertilization (IVF)**

A form of assisted reproduction of dairy cows used by farmers.

**Innovation Center for US Dairy**

A forum for the dairy industry – including farmer organizations, dairy cooperatives, processors, and brands – to work together pre-competitively to address barriers and foster innovation. The innovation center aligns the collective resources of the industry to offer consumers nutritious dairy products and ingredients, and promote the health of people, communities, and the planet.

**Irrigation**

The replacement of supplementation of rainfall with water from another source to grow crops. Irrigation sources include a nearby or distant body of water such as a river, spring, lake, aquifer, well or snowpack. The water can be directly channeled to the fields or stored in a reservoir for later use.

**Jersey**

A breed of dairy cattle that is renowned for the high butterfat content of its milk. Jersey cows are smaller than other breeds (800 to 1,200 pounds) and are known for their big eyes, honey-brown color and docile natures.

**Johne’s Disease**

A bacterial infection in the intestines of ruminant animals, including cattle and certain other domesticated and wild animals worldwide. While not known to be transmissible to humans, the US government and the dairy industry are working to control/manage Johne’s because it affects the productivity of dairy cows.

**Lactation**

The secretion of milk from the cow’s udder.

**Lagoon**

An on-farm storage basin for cow manure that is dug into the ground like a pond and lined to prevent absorption into the earth. Manure is mixed with water to provide a natural fertilizer for crops that are grown to feed cows.

**Livestock Veterinarian**

Animal doctors who have earned a degree in veterinary medicine. Sometimes called “large animal veterinarians,” many specialize in the treatment of dairy cows and work directly with dairy farmers to ensure healthy herds.

**Mad Cow Disease**

See Bovine Spongiform Encephalopathy (BSE).

**Mastitis**

An inflammation of a dairy cow’s milk ducts while she is lactating. Mastitis is usually caused by bacteria and can be treated with antibiotics.

**Methane Digester**

Technology that converts cow manure into methane gas that is burned as fuel to generate electricity.

**Milking Machines**

Machinery used on the farm to extract milk from cows. Electronic milking machines use a pulsating vacuum that simulates the effect of a suckling calf. The machines do not cause any harm or discomfort to the cows and they keep the milk safe from external contamination.

**Milking Parlor**

A specialized area on the dairy farm where cows are milked two or three times a day. Equipment delivers the milk directly from the cows to a refrigerated holding tank to preserve freshness and safety. The milk is then quickly transported to the dairy plant. Parlors come in many types, including flat barn, herringbone, parallel, swing, walk-through and rotary.

**Milk Shorthorn**

A breed of reddish-brown and white dairy cattle that originated in Britain. They are large in size.

**National Dairy Council**

The non-profit organization founded by dairy farmers and funded by the national dairy checkoff that is committed to nutrition education and research-based communications. Established in 1915, NDC compromises a nationwide staff of registered dietitians and nutrition research and communications experts.

**National Dairy Farm Program**

FARM, or Farmers Assuring Responsible Management, was created by the dairy industry to demonstrate and provide verification over time that US dairy farmers are committed to providing the highest standards of animal care and quality assurance.

**Nutrient Management Plan**

A planning resource that defines the nutrient needs of crops and the amount, sources, placement, and timing of fertilizer applications to maximize nutrient uptake of crops and improve yields. Nutrient management plans help protection for the environment and crop production.

**Organic Milk**

Milk and milk products that are labeled “USDA organic.” This is products deriving from milk that comes from farms that meet USDA’s National Organic Program standards. Organic milk is one of many options in the dairy case – and all pasteurized milk is safe, delicious, and nutritious, no matter which variety people choose.

**Pasteurization**

A simple, effective method to kill harmful pathogens through heat treatment without affecting the taste of nutritional value of milk. Pasteurization is recognized around the world as an essential tool for protecting public health since it was first introduced in 1864. The process was named after French scientist Louis Pasteur.

**Pasture**

Land at a dairy farm that is lush with grasses or legumes and is used for grazing dairy cows.

**Pesticides**

Any substance created to prevent, destroy or repel insects, plant pathogens, weeds, nematodes, and microbes that destroy property, spread disease or are a nuisance.

**Processing Plant**

A facility that pasteurizes, homogenizes and packages/bottles milk that comes directly from dairy farms. Once milk leaves the plant, it is available to the public through a variety of channels, including grocery stores, schools and restaurants.

**Raw Milk**

Milk that has not been pasteurized before consumption. The dairy industry has long endorsed pasteurization in killing potentially harmful microorganisms as a major public health protection. Pasteurization does not affect the nutritional value of milk in any meaningful way.

**RBGH or rbST**

A synthetic version of bovine somatotropin that some farmers opt to use to increase milk production, rbST is a naturally-occurring protein hormone in cows. A trace amount of this hormone is present in all milk, including organic products, and is digested when humans eat it, just like other proteins. rbST has been in use for more than 20 years, and its safety has been affirmed and reaffirmed by government agencies in the United States and around the world.

**Replacement Heifers**

Female dairy animals that are raised with the intent of eventually replacing the cows currently in the milking herd.

**Robotic Milkers**

On farm technology that allows cows to be milked without human interaction. Each cow has a transponder than dangles from a neck collar and contains her personal data. Cows enter a farm’s robotic milking when they wish to be milked and are identified by her transponder. The robot is triggered to prepare the milking process and the cow’s udder is automatically cleansed. Then, a laser beam detects the exact position of the udder so suction cups that draw milk from the cow can be attached by a robotic arm. The milking stops once the robot senses the flow of milk has slowed. A gate opens, and the cow is free to return to her bed, eat or drink water.

**Rumen**

The largest of the four compartments in a cows’ stomach. The rumen allows cows to regurgitate forage and re-chew their cud for further digestion.

**Ruminant**

Any hooved animal, such as a dairy cow, that digests its food by first eating the raw material and then regurgitating a semi-digested form known as cud. These animals then eat their cud, a process called ruminating. Other ruminants include goats, sheep, camels, llamas, giraffes, bison, buffalo, and deer.

**Runoff**

Water from rain, snowmelt or other sources that flows over the land surface and is a major component of the water cycle. Dairy farms take measures to control the amount of runoff from their farms using drainage systems and retention ponds.

**Silage**

Fermented, high-moisture forage that is eaten by grazing animals such as dairy cows. Silage is most often made from grass crops such as corn or sorghum and retains a great deal of the nutrients present in the plant.
Also see Forage & Hay

**Silo**

A storage facility on farms that is designed to store silage.

**Sire**

The father of a calf.

**Skim Milk**

The product left after the cream is removed from milk. Skim or skimmed milk also is called fat-free milk.

**Somatic Cell Count**

The number of white blood cells per milliliter of milk or measurement of the number of somatic cells present in a sample of milk. All milk naturally contains some somatic cells, which enable cows to fight infection and ensure good health. Farmers routinely monitor their herds for somatic cell counts as a general gauge of the cow’s well-being.

**Tail Docking**

The practice among some dairy farmers to crop the tails of their animals to promote cleanliness and protect the people who are in close contact with the cows. The National Dairy FARM program endorses switch trimming, which is the removal of the hair at the end of a cow’s tail for hygiene purposes.

**Teat**

The cow’s udder contains four teats that function as the exit for milk.

**Tie Stall**

A style of dairy barn that has a designated stall for each cow in the herd. The cow is “tied” to the stall by a neck strap (similar to a collar).

**Total Mixed Rations (TMR)**

A nutritionally-balanced blend of forage and grain ingredients mixed by a machine to specific rations. This method allows cows to consume the desired proportion of forages when two or more forages are offered.

**Udder**

A bag-shaped body part on the underside of a female cow in which milk is formed and stored.

**Ultra-Filtered Milk**

A process by which milk is passed through a thin, porous membrane to separate its five components: water, vitamins, and minerals, lactose, protein, and butterfat. Dairy companies then recombine those parts in different percentage to make beverages that contain, for example, more protein and calcium or less sugar. Ultra-filtration also makes cheese manufacturing more efficient.

**Ultra-Pasteurization (UP)/Ultra-High Temperature (UHT) Pasteurization**

The process of heating milk to approximately 280 degrees Fahrenheit for 2 seconds and then rapidly chilling it. This process results in milk that is 99.9 percent free from bacteria and creates and extended shelf life for products that is up to three times the length as normal pasteurization.

**Veterinarian**

Animal doctors who have earned a degree in veterinary medicine. Sometimes called “large animal veterinarians” or “livestock veterinarians,” many specialize in the treatment of dairy cows and work directly with dairy farmers at their farms to ensure healthy herds.

**Whey**

The watery part of milk that separates from the curds during the cheese-making process. The composition of whey varies considerably, depending on the milk source and the manufacturing process involved. Typically, it is rich in lactose, minerals, vitamins, and protein.