



# AG MAG

An agricultural magazine for kids from Georgia Ag in the Classroom and The Dairy Alliance. For more activities, visit [gfb.ag/AITC](http://gfb.ag/AITC) and [gfb.ag/dairyalliance](http://gfb.ag/dairyalliance).



## THE HISTORY OF GEORGIA DAIRY FARMING

The first dairy cows arrived in Georgia in the early 1700s when James Edward Oglethorpe, the founder of the colony, arrived. During the early history of Georgia, each family owned a dairy cow and if they had excess dairy products, they could sell or trade them. The dairy industry slowly grew and after the Civil War (1861-1865), the demand for dairy products grew. Cows were put into pastures and milked by hand. People cooled their milk in cans that were placed in water tanks filled with spring or well water. Dairy farmers located near towns provided milk while the dairy farmers further away from the towns produced butter. By the 1930s the dairy industry had gained success as a business enterprise in Georgia. Today dairy cows are milked by machines and human hands never touch the milk. There are 140 dairy farms producing over 1.7 billion pounds (or 206 million gallons).

Source: <https://gfb.ag/h9k>

## EVERYDAY COW CARE

The care of dairy cows is an important part of successful dairy farming. Dairy farmers take excellent care of their cows, providing their animals clean and comfortable housing, fresh water, food and medical attention when necessary. Dairy farmers know that healthy, happy cows produce more high-quality milk so the animals' well-being is a farmer's top priority. Dairy cows can eat up to 100 pounds of food per day. Some dairy farmers allow their cows to graze on grass or provide them alfalfa hay, but many farmers also choose to supplement their cows' diets with mixed ration feeds including corn, soybeans, sorghum and other grains to provide additional nutrients and fiber. Many farmers employ a nutritionist who will formulate feed rations and a specific diet for cows based on their age, weight, if they're milking or dry, or if they have any other health considerations. Water is just as important. Cows can drink as much as 50 gallons of water each day, so it is important for dairy cows to have a clean and accessible water supply.

Cows require a lot of time to rest and digest their food, so dairy farmers provide cows with a variety of bedding options. Fun fact: cows spend up to 12 hours lying down daily. Some of the products used include sawdust shavings, sand, shredded recycled tire rubber, dried manure that's been pressed and sanitized, and some barns even have waterbed-style mattresses. Keeping dairy cows cool, especially in the summertime, is important in keeping milk production up. Many farmers equip their cow barns with fans and sprinklers or mister systems. The beds and walkways are scraped for manure and flushed with water several times a day.

Source: <https://gfb.ag/happycows>



## FARMER DEDICATION TO SUSTAINABILITY

With a growing population, farmers must increase food production while facing a decrease in resources. Considering the nutrients milk contains, dairy has a lower carbon footprint than many other foods, and that continues to improve. Today, the carbon footprint of a glass of milk is two-thirds less than a glass of milk 70 years ago! Since 1950, US dairy herds have decreased from 25 million to 9 million dairy cows, still producing 60% more milk. Through improved genetics, reproduction practices, health practices, and diet, cows are more efficient today than in 1950. The more efficient a dairy cow, the lower a cow's emissions.

Cows are the ultimate upcyclers, eating byproducts that humans cannot eat, such as citrus pulp,

almond hulls, Brewers grain and more, that reduces our food waste going into landfills. These byproducts are also beneficial to the cows, providing energy needed to more efficiently produce milk.

Dairy farming can also contribute to crop production. When growing crops, many dairy farmers reuse the waste from other practices. After cooling milk, cleaning equipment and then cleaning barns, the used water is recycled as irrigation. A benefit of reused water is that it has been enriched by the manure it cleared from barns. Manure itself is also used as a natural fertilizer for crops. This nourishes the soil for future years and benefits all farmers.



## BREEDS OF DAIRY COWS

1

### Holstein

Holsteins are the best-known breed of dairy cows. They have a black and white spotted body. These cows are large sized and weigh about 1,500 pounds when they are full grown. Holsteins came from the Netherlands to the United States in the late 1850s. Fun fact! No two Holstein cows have the same spots!



2

### Jersey

Jerseys are known for their large eyes and brown colors. Jerseys give milk that is high in butterfat. These cows weigh about 1,000 pounds when they are full grown. Jerseys came from the Island of Jersey, a small British Island in the English Channel.



3

### Brown Swiss

Brown Swiss are considered to be the oldest of all the breeds of dairy cows. The brown Swiss cow weighs about 1,500 pounds when they are full grown. These cows came from Switzerland.



4

### Guernsey

Guernseys are brown or light yellowish tan with white spots on their body or face. These cows weigh about 1,200 pounds when full grown. Their milk has a golden color because it has a higher amount of butterfat and protein. The Guernseys came from the Isle of Guernsey, a tiny island in the English Channel.



5

### Ayrshire

Ayrshires are white with reddish-brown colored spots. These cows weigh about 1,200 pounds when they are full grown. The Ayrshires came from the county of Ayr in Scotland.



6

### Red and White Holstein

Red and White Holsteins are marked by red and white spots. These cows weigh about 1,400 pounds when they are full grown. These cows came from the United States and Canada when farmers started selecting Holsteins for their recessive red hair color trait. This is the most recently recognized dairy breed, being recognized in 1964.



Source: <https://gfb.ag/typesofcows>

## SECTIONS OF A DAIRY FARM

Visit <https://gfb.ag/dairytour> to virtually visit each section and learn more information about the sections of a dairy farm.



**1. CALF BARN** – The nursery is very similar to hospitals where babies are kept in that it allows for farmers to protect the fragile calves in their earliest hours of life. The nursery also allows the calves to receive the individual attention they deserve to become healthy, happy and productive adult cows. After their birth, calves spend some time with their mothers but are then moved to specialized pens or covered hutches in the nursery. Hutches look like little igloos and are essentially hard-sided tents to protect the calves from the elements. One of the most important things that happens right away is the newborn calves receive bottles of ‘Colostrum,’ which is the new milk from the mother cow, and contains a rich combination of vital nutrients and antibodies that help strengthen the cow’s immune system and protect it from getting sick. Calves will also receive vaccinations to protect against a variety of potential diseases.

**2. BARN** – Dairy cows spend most of their time resting, eating and chewing their cud. That’s why it’s best to have a place that’s covered, cool and comfortable like a freestall barn. Freestall barns provide a quiet, safe place for cows to gather, with individual stalls for cows to either stand or lie down while they rest and ruminate, or chew and digest their food. There are wide lanes for the cows to roam and also get their food. There are also large tubs filled with water so the cows have plenty to drink. The stalls are usually padded with something soft and dry, like hay, wood chips or sand.

**3. PARLOR** – The milking parlor is where the real action is, where all of the hard work, dedication and care for the cows reveals itself. Twice a day, or on some farms

three times a day, the cows are brought into the parlor to be milked. Parlors can come in all shapes and sizes, depending on how many cows are in the herd and how much time the farmer wants to spend each day milking. When the cows walk into the parlor, they move into their spot and the farmer washes the udder with water or a soap solution, then dips the teats with iodine or antiseptic solution. Next milking suction tubes, also called a ‘claw,’ are gently attached to the cow’s teats and the milking begins. The milk is gently sucked through a series of tubes into large, clear glass jars or in some cases, it’s sent directly into a large stainless steel holding tank.

**4. BULK TANK AND COOLING SYSTEM** – On the majority of dairy farms around the Southeast, a cow’s milk is sent through a series of tubes and pipes from the milking parlor, through a ‘cooling plate,’ and into a large stainless steel holding tank or ‘bulk tank.’ The bulk tank keeps the milk around 38-39 degrees until the milk hauling truck from the co-op or processor arrives to pick it up.

**5. MILK PICKUP AND TRANSPORT** – This is one of the most important parts of the process that gets the fresh milk into stores and then into your refrigerator! That untreated, or ‘raw’ milk, is transported in large tanker trucks from the farm to processing plants. When the driver arrives at the farm, he takes a sample of the milk from the bulk tank and tests it for antibiotics. Processors will not accept any milk containing antibiotics. That’s because if there are ANY traces of antibiotics in the milk, they will not load that milk into their tanker to contaminate any milk they might already have in the tank.



## MILK: FROM DAIRY FARM TO THE REFRIGERATOR

1

Milk comes from healthy, well-fed cows. Cows eat up to 100 pounds of food and drink as much as 50 gallons of water each day.



2

Cows are milked 2-3 times with mechanical machines in the milking parlor. Before being milked the cow's udder is cleaned. A cow can produce anywhere from 7 to 9 gallons of milk per day.



3

When cows are milked the milk is 101 degrees. Milk is quickly cooled and stored at 38-39 degrees. The milk is tested to make sure it is safe for people to drink.



4

Every day or two the milk is pumped into a tanker truck. Super tanker trucks can hold up to 12,000 gallons of milk! The milk is now headed to the dairy plant.



5

At the dairy plant, the milk is tested again to make sure it is fresh and safe. While at the plant, the milk is homogenized and pasteurized so any bacteria is killed and the milk stays fresher longer. Georgia has 2 commercial milk processing plants: one in Atlanta and one in Lawrenceville. During this process, the milk is never touched by human hands.



6

Milk is tested once again and then stored in refrigerated rooms until it is loaded into a refrigerated truck and delivered to the store. It takes 2 days or less for milk to travel from the farm to the dairy processor and finally to you to enjoy!



## DID YOU KNOW?

**IT TAKES 21.2 POUNDS OF WHOLE MILK TO MAKE ONE POUND OF BUTTER.**

## HOMEMADE BUTTER RECIPE

### INGREDIENTS

**2/3 cups** room temperature heavy whipping cream

**1** cup jar with lid

**2-3** marbles

### DIRECTIONS

**1.** Pour cream into the jar, place the marbles in the jar and screw on the lid.

**2.** Shake jar until butter forms a soft lump, 15-20 mins.

**3.** Continue to shake until the buttermilk separates out of the lump and the jar contains a solid lump of butter and buttermilk.

**4.** Pour off the buttermilk and enjoy!

## SELECT THE RIGHT ANSWER

**1. What is best known type of dairy cows?**

a. Holstein b. Ayrshire c. Jersey d. Brown Swiss

**2. How often are cows milked per day?**

a. 1-2 b. 2-3 c. 3-4 d. 5-6

**3. Dairy cows can eat up to \_\_\_ pounds of food a day.**

a. 25 b. 50 c. 75 d. 100

**4. When did the first dairy cows arrived in Georgia?**

a. 1600's b. 1700's c. 1800's d. 1900's

**5. There are over 250 dairy farms in Georgia.**

a. true b. false

**6. Milk is homogenized and pasteurized so \_\_\_ is killed.**

a. bacteria b. germs c. worms d. insects

**7. A dairy cows' diets with mixed ration feeds includes:**

a. corn b. soybeans c. sorghum d. all the above

**8. Dairy cows spend most of their time resting, eating, and chewing their cud.**

a. true b. false

**9. Caitlyn Rodgers, at Hillcrest Farm, said that the average cow at their dairy provides \_\_\_ pounds of milk.**

a. 85 b. 90 c. 95 d. 100

**10. One of the best parts of Dr. Fyke's job is delivering a calf.**

a. true b. false

