

## **The Milky Way: Dairy Farming Today**

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Did you know that cows can wear FitBit type collars and get milked by a robot? These and other innovations and technologies help farmers and their animals to do their jobs.

### **Just the Basics- Cow terminology**

Every industry has jargon that is specific to it. Dairy farming is no different. A calf is an immature cow or bull. A heifer is an immature female calf. A bull is a male, fully grown or a calf. Steers are castrated males. A cow is a mature dairy cow. A cow reaches maturity at about 3 years of age that's when a cow stops growing. A heifer is bred at about 1 ½ years of age. She has her first calf when she is about 2 years old. That seems young, but heifers start their reproductive cycle at 6 months of age. It is a lot healthier for the first time momma to have her calf when she's older than that.

### **Cows aren't milked by hand!**

Unless a family has a cow or two for their own milk usage, most cows are not milked by hand. There are dairy farms in our area that are milking well over 1,000 cows. There are also farms as small as 40 milking cows. Each farm is a little different, but the cows are pretty much all milked in a parlor.

A parlor is just a fancy name for where the cow gets milked. Cows are milked 2-3 times a day depending on the farm. A vacuum pump system is what powers the milking operation. The milking attachment is put on manually by a worker after a cow's udder has been cleaned with a microbial spray or dip. The spray is wiped off with a paper or cloth towel. The milker is attached to a small computer system via chain or rope. A sensor in the system reads how much milk is flowing through it. Once the flow decreases significantly the computer shuts off the vacuum and retracts the milking unit. These systems have been on farms for over 30 years. After a cow is done her udder is manually checked to make sure she has milked out and then a post dip or spray is applied to keep her udder healthy.

There are two farms in the area that have robotic parlors. Cows come into the parlor whenever they want to be milked. These farms utilize the "Fitbit" type collars more often because the computer reads if the cow should be milked again or not. Some cows like to be milked often and others not so much. A sorting system is in place to either send the cow to the robot or to send her out into the barn again. The robotic systems lets the cow decide when she wants to be milked. Amy Martin, co-owner of Gingrich Meadows Farm, said the cows seem to be more content and have less health issues because the robot lets the cow be in a more natural state. Her robotic parlor tests the milk for different things and lets Amy or her employees know if a cow isn't feeling well. The collar also helps Amy detect other issues with her cows.

### **Fitbit for Cows**

Cow comfort and cow health are extremely important to all dairy farmers. Cows start wearing the tracking collars when they start producing milk after their first calf. The collar sends measurements to a computer that tracks quite a few things, such as temperature, activity, or rumination (the rumen is the main stomach of the cow). Temperature is important to know for a couple of reasons. A cow may be getting sick and her temperature spikes, or she is ready to be bred. The collar will send alerts out to the farmer via computer or even through a smartphone app that certain cows are showing a temperature spike.

Rumination sounds are important to know as well. When a cow's stomach is working well she's healthy, but when it's not a cow can go downhill very fast. The rumination feature will let the farmer know that something isn't right and the farmer can take preventative measures before things turn ugly. Sisters Liz Alt and Ashley Benthem from Benthem Homestead Farm said that the collars have cut down their vet bills and helped them diagnose cows that aren't feeling well so much quicker than before. The money expended on the collars have been well worth the investment and have already paid for themselves. The ladies also said that collar helps them identify which cows need to be bred quicker than without the collar. Again, saving time and money for the farm and keeping the cow more productive overall.

### Who's Your Daddy?

Let's talk a little about breeding on a dairy farm. Cows need to have a calf every year to keep producing milk. Cows are given at least a 2 month break from being pregnant and another 2 month vacation from being milked just before calving. These breaks ensures that cows remain healthy and functional for a long time. An average cow age is 5-7 years, but many cows live a lot longer and still are productive at an advanced age. Genetics plays a large part in how long a cow will remain productive.

Most dairy farms use Artificial Insemination or AI to breed their cows. Some farms use both AI and bulls. The bull catches what the farmer may not. Molly Plugger from Yonkman Dairy Farm said at times the farm has used both methods. Right now she does all the AI work for the farm.

There are several reasons for using AI over a bull. Bulls are very large. They are close to a ton when fully grown. An average cow is 1500-1800 pounds. A bull mounting a cow can cause damage to the cow since he's so large. If a dairy uses a bull they use one that isn't fully grown. Most bulls on dairy farms are not much older than 4 years old. A bull also breeds a cow sooner than the farmer may want. Remember that 2 month vacation? She may not get that if there is a bull in the herd. Bulls are also territorial and get mean fairly quickly. Bulls are good at breeding cows but are just not very nice to the farmer.

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Farmers want people to know how a modern dairy farm operates. This display board at Gingrich Meadows farm in Osceola County explains cow collars and robotic milkers to people who visit the farm.



Sisters Liz Alt and Ashley Benthem from Benthem Homestead Farm in Missaukee County with their herd of healthy cows. Computerized cow collars allow them to catch an illness in its early stages, keeping cows healthier and reducing vet bills.



Molly Plugger from Yonkman Dairy Farm near McBain using artificial insemination to breed a cow. By breeding a cow at the right time, she can help ensure the health of a cow and good milk production.