

Lab12

Science, Biology



1. Why is dairy an important type of agriculture in northern area? Because of the regular colder temperatures in the North it can be very risky to attempt traditional crops that may not survive the bad weather. However, dairy cattle are hardy and rely on grass pasturelands, both of which can withstand the colder weather. This makes dairy agriculture so popular in the Northern area.

2. What role do microorganisms play in a cow's digestive system?

Cattle are called ruminants, which mean that they have four stomachs. The first of the four stomachs are filled with symbiotic, good microorganisms that help cattle to breakdown cellulose. Cellulose is the most abundant compound on the planet, yet most animals cannot digest it. However, these microorganisms living in the stomachs of cattle make that possible.

3. How can today's farmers supply such an abundance of food for Americans?

It is true that there are far less food producing farmers as there was in the past, yet the need for food continues to increase. How do modern farmers meet that need? It can be most logically attributed to efficiency of production and labor saving endeavors.

4. What is silage? What process destroys disease organisms in a silo?

Silage is chopped up and mashed of plant product that is often stored in upright silos and used by dairy farmers as wet-feed for the cattle. Many modern farmers, however, now prefer to keep wet-feed in ground level bunkers as opposed to the traditional structures. The sealed container creates an anaerobic that kills the "botulism" bacteria and, also, prevents the wet-feed, or silage, from spoiling.

5. Name two waste products that can be fed to cattle.

There are a number of organic waste products that can be fed to dairy cattle. These options include Cotton seed, which is a byproduct of the clothing industry, and old cereals are also another waste product of food processing, also, easily and regularly fed to dairy cattle.

6. What nutrient in cow waste causes eutrophication in our waterways?

Nitrates and phosphorous is what is contained in dairy cattle waste that leads to the process caused eutrophication in waterways, which refers to these nutrients that encourage plant growth.

7. What often happens when farmers spread cow manure on their fields during the winter months? Why would the farmer not wait until spring?

When the cattle manure is spread onto the fields during the winter it becomes subject to weather conditions, like rain and snow. This can allow the phosphorous and nitrates to be washed into streams and waterways, creating a serious problem across the United States.

8. Why is the new type of barn (the free-stall barn) better for cattle than the older style barns?

Cattle can handle cold weather a lot better than weather that is too hot. For this reason the traditional enclosed stable-barn construction made the environment much too hot for the cattle, which subsequently faced health problems. Modern dairy farmers now employ “ free-stall barns,” which are open to the air and allow better fresh air and prevent too much warmth. It is, also, designed with a manure pit underneath the floor. This allows the farmer to store the manure safely for the spring planting season.

9. How much milk can a cow produce every day?

Dairy cows are milked twice a day and can produce up to 10 gallons of milk each and every day.

10. Follow the steps that are taken bringing milk from the cow to the table.

What is pasteurization? How is milk pasteurized?

The pasteurization process is intended to kill of any undesirable or dangerous bacteria within fresh, unprocessed milk. The processed is accomplished by heating the milk to 162 degrees for 16 seconds.

11. It is estimated that American households waste approximately 30 % of their food. Is your household above or below that value? Comment.

My family is well below that number. We waster very little food product or waste products, I think. We consume leftover foods regularly for exactly that reason and we seldom make foods in large quantities to avoid the potential for waste.