Dairy

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How hard could dairy production be?

- This is what most people that are not familiar with the dairy industry think happens during milking on a dairy farm.

The Major Needs of a Dairy Farm Operation

- Equipment
- Cattle
- Employees
- Feed Production for Cattle
- Feed Storage
- Barns for Cattle
- Milking Parlor
- Cow Reproduction

Equipment

- Tractors, combines, and implements.
- Equipment is crucial for harvesting crops and hauling feed wagons for feeding cattle.
- Milkers are also necessary equipment to run a dairy.

Cattle

- Cattle are an obvious necessity to a dairy operation.
- Six major dairy breeds: Holstein, Jersey, Guernsey, Ayrshire, Milking Shorthorn, and Brown Swiss.
- Holstein and Jersey are most common.
- Dairy cattle breeds are usually either higher in volume of production or butter fat content.

Dairy Cattle Breeds

Employees

- Employees are very important to the milking process on a dairy farm.
- They are responsible for bringing cows to the milking parlor and then milking them.
- Employees also help out with other miscellaneous tasks on a dairy farm such as cleaning of barns.

Cattle Feed

- Most dairy farmers grow corn as a main ingredient for the Total Mix Ration (TMR) that the cattle are fed.
- This is because corn is high in energy, which is important for lactating cows.
- There must be enough feed produced and stored to feed the cows year round.

Feed Storage

- Most dairies feed silage, which requires a place where no oxygen can get in contact with the harvested feeds.
- Upright silos used to be the most common form of storage.
- Bunker silos are becoming the most commonly used form of storage.

Milking Parlor

- The milking parlor is the facility where the cows are milked.
- There are many different types of milking parlors that are commonly used.

Cattle Barns

- Cows need a place to lay around, eat, and rest when they are not being milked.
- There are plenty of different barn designs but the most common type of barn nowadays is a free-stall barn.
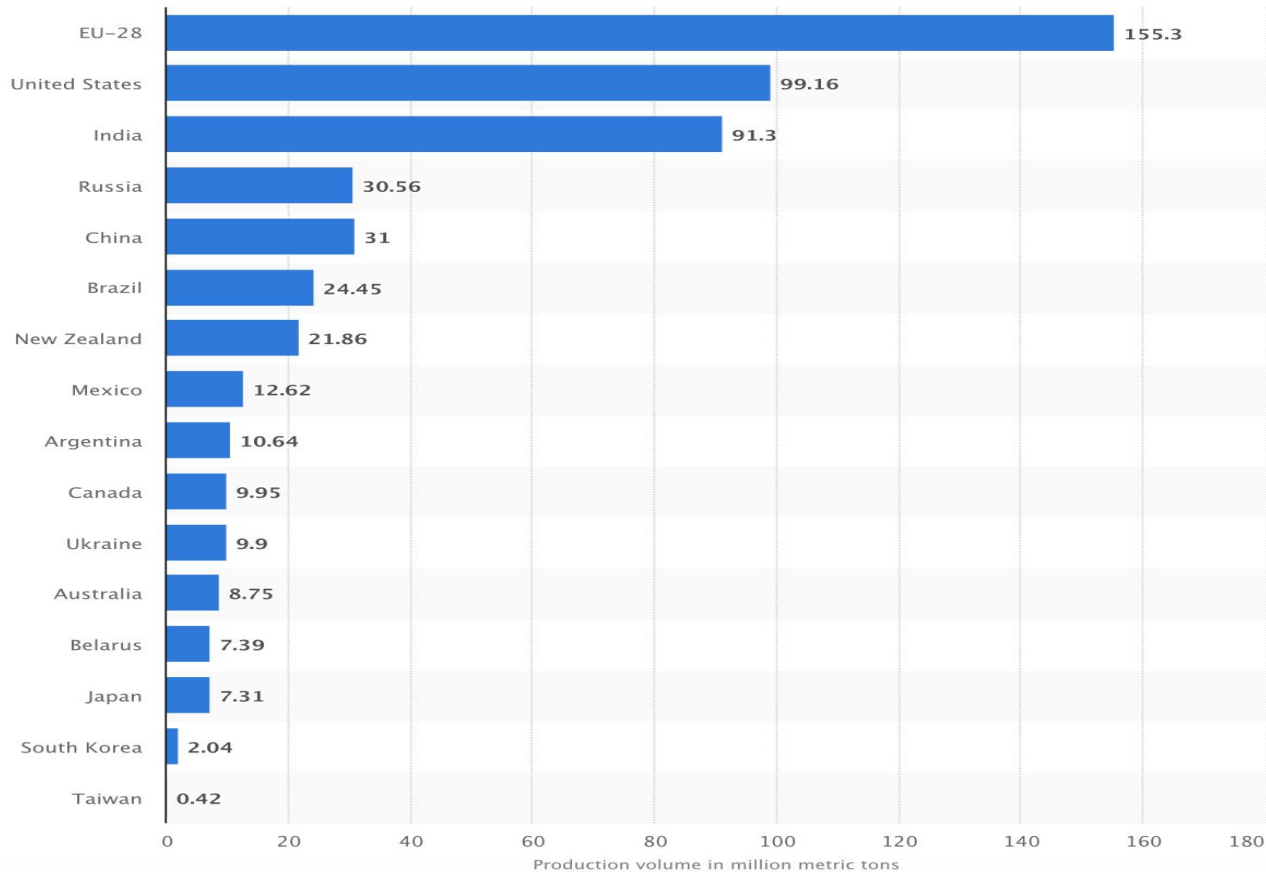
Cow Reproduction

- In order to milk cows, the cows must produce milk. This means they must first have a calf.
- The goal is to have one calf per year for each cow.
- Most dairies use artificial insemination instead of bulls due to the problems caused with having a bull in the milking herd. (such as safety)

What Happens to the Milk Produced?

- After the milk is sent through the pipes in the milking parlor, it travels through a filtration system and a chiller to cool down the milk where it is then stored in a bulk tank.
- It is then sent in a tanker truck to a processing facility where testing of the milk for antibiotics takes place.
- Then pasteurization and homogenization can occur.
- Depending on the final product the milk is going to become, it will go to different facilities.

Top Dairy Producing Countries

Country	Production volume in million metric tons
EU-28	155.3
United States	99.16
India	91.3
Russia	30.56
China	31
Brazil	24.45
New Zealand	21.86
Mexico	12.62
Argentina	10.64
Canada	9.95
Ukraine	9.9
Australia	8.75
Belarus	7.39
Japan	7.31
South Korea	2.04
Taiwan	0.42

Production volume in million metric tons

https://www.statista.com/statistics/268191/cow-milk-production-worldwide-top-producers/

Top Dairy Producing States in the US

State	Volume in Billion lbs	% of Total US Production
California	40.41	18.57%
Wisconsin	30.58	14.05%
Idaho	15.15	6.96%
New York	14.882	6.84%
Texas	12.852	5.91%

Yearly Fluctuations in Domestic Demand

- Butter consumption in November and December is almost twice as much as the rest of the year.
- Milk consumption increases during the traditional K-12 school year.
- Demand for cheese used on pizza increases during college semesters and decreases during college breaks.
- Demand for sliced cheese increases during the summer with a spike in cheeseburger consumption at home, cookouts, etc.
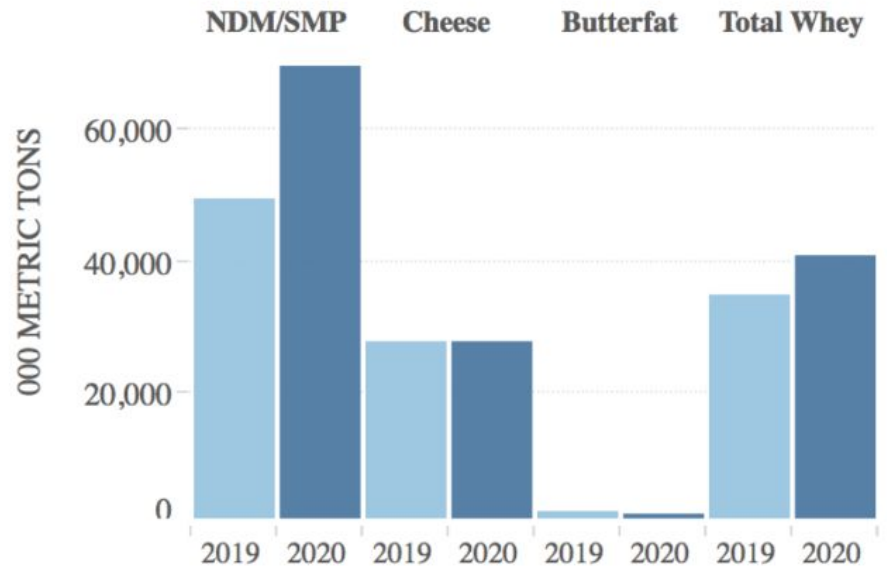- Ice cream demand spikes in the summer.

US Exports

- As of December 2019, US dairy exports were valued at ~$6 billion.

- Main market is Mexico, with a total of 329,321 metric tons in 2019.

- The second biggest customer is Southeast Asia, with 227,321 metric tons in 2019.

US Exports cont.

Percentage of each dairy product exported:

- Milk: 14.5%
- Lactose: 68%
- Skim milk/non fat dry milk: 68%
- Whey protein concentrate: 65%
- Dry Whey: 35%
- Cheese: 6%
- Butterfat: 2%

U.S. Exports Volume - YTD

Recent Struggles with Dairy Pricing

- The price of milk in the US dramatically decreased in 2015 after a record year for dairy farmers in 2014, causing many farmers to go bankrupt and sell their farms.
- Big factors were increased efficiency in dairy cows and the rise in popularity of alternative "milk" options.
- The problem persists, with around 2,700 farms shutting down during 2018, equating to ~100,000 cows lost.

- The 2018 Farm Bill offered support for farmers after 5 consecutive years of low pricing.
- The USDA's Dairy Margin Coverage program offers monetary protection when the difference between the price of milk and average feed cost falls below a certain amount selected by the farmer.
- The dairy industry is subject to economies of scale.

Pricing cont.

- At the end of February, the price of milk was 18.90 cwt, down from 19.60 in January.
- The high in 2019 was 21.00 with a low of 16.60.
- The lowest point in the last 5 years was 14.50 in May 2016

Dairy In the News

- As Dairies Dump Milk, Frustration Mounts Over Retail Buying Limits. https://www.dairyherd.com/article/dairies-dump-milk-frustration-mounts-over-retail-buying-limits

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