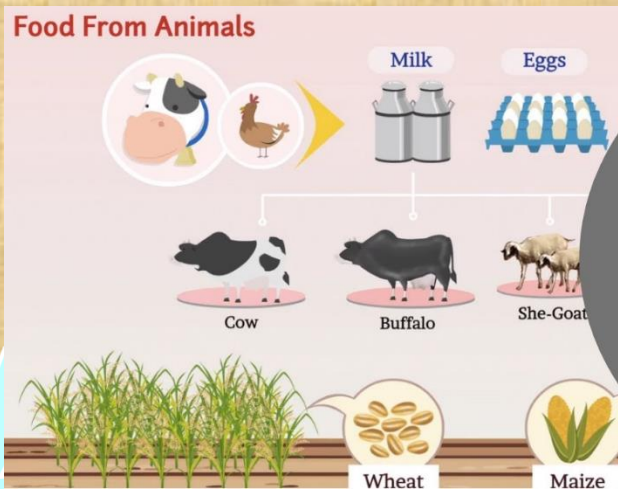


Chapter 09

Production of Food from Animals

Food production from plants alone doesn't fulfill our needs. We have to learn about the production of food from animals.



Since long time, we have been using animals for food, agriculture and transportation.

Now let us look at the period from which few animals were named for domestication.

Name of the animal	Period of Domestication
Dog	30,000 – 7000 BC
Sheep	11,000 – 9000 BC
Pig	9000 BC
Goat	8000 BC

- What is animal husbandry?

It is the practice of providing food, shelter, protection and breeding of animals.



Our farmers believe that animal husbandry is part and parcel of agriculture.



Since both of them are involved in the rearing of animals. Farm animals are resources of fertilizer and some of the animals are used for ploughing.



Types of animal rearing practices:

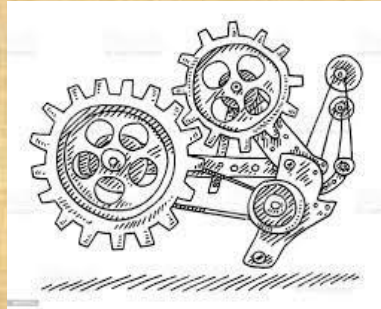
Cattle rearing:

You might have seen your grandparents taking the cattle for grazing where

grass is readily available. But now we have shifted to rear cattle in sheds and provide fodder in those sheds.



Most of the things have become mechanized.



So how is cattle rearing beneficial?

Benefits of cattle rearing:

We get meat, wool, milk, leather etc. from cattles. Moreover, it is useful in agriculture as well. We use bullocks for ploughing, cattle dung as fertilizer and all.

Sometimes, during off crop season, farmers makes fences in the field for cattle rearing, such that the land is put to good use.



Just like our health, cattles health is also of prime importance.

- We should clean the dung and leftover food from shed for proper hygiene.
- Prevent the growth of lice and mites on cattle's body, if not done so, they can also develop disease just like us.

For e.g. Galikuntu/foot and mouth disease in cows and buffaloes and Nattala vyadhi which is a worm infection seen in sheep and goat.

Parasites can also infect cattle and damage the intestine and liver.

Unhygienic food and habitat conditions can also give rise to viral and

bacterial infections, which will affect the milk production and extra care should be given during rainy season, since mosquito bites can disturb the cattle's health.

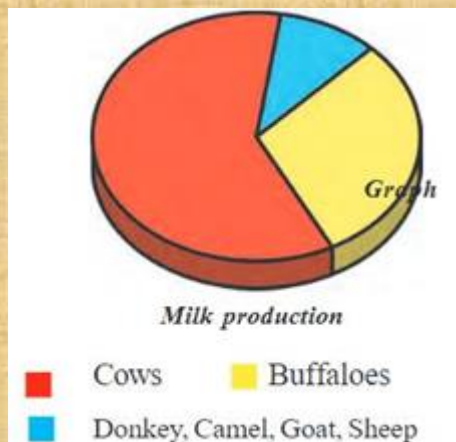


Veterinary doctors provide treatment and healthcare for these cattle.



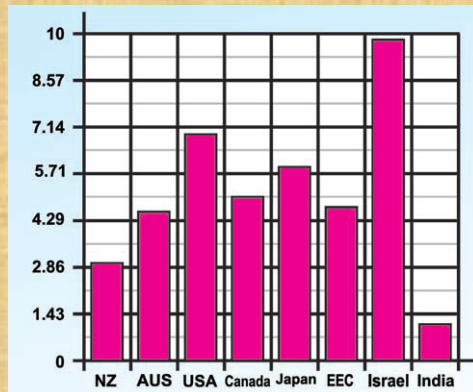
Milk production:

As we all know, we get milk from cow, buffalo, donkey, goat, sheep and all. So more than 50% of milk comes from cattle. The next major contributor is the buffalo and the remaining is shared by goat, camel, donkey, sheep and all.



So generally, farmers rear 1 to 5 cattle at their home for milk and provide the fodder from the cropland.

This figure shows the rate of **milk production of different countries**.



As you can see, The highest milk producing country is Israel followed by the USA.

- Where India stands in terms of production rate?
It's the lowest when compared to rest of the countries.
- What could be the reason, despite having high population of cattle?
 - It could be due to low yield varieties of cattle.
 - Unhealthy animal husbandry practices.
 - Lack of vaccination
 - Lack of health check up by veterinary doctors.
 - Low quality fodder.

Traditional species of cow:

- Among cows, traditional species give 2-5 litres of milk per day.
- The species **Murra**, which is reared the most in our state, produces upto 8 Litres/day.
- Traditional varieties like Haryana, Jaferabad, Nagapuri gives good yield of milk.

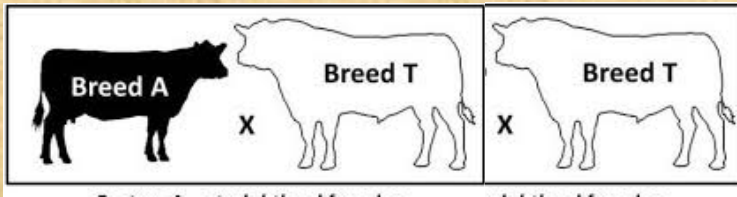


Foreign species of cow:

Example:

- Jersey, which is from England & Holstein from Denmark, gives 25 litres of milk per day.

So, just compare the difference in milk yield of foreign and traditional varieties. Foreign varieties are crossbred with our native varieties, where the crossbred variety can give 8-20 litres of milk per day.



Milk production in cow:

Now milk production in cow starts with the birth of calf and the milk from cow is to be collected only after 2 or 3 days of calving because the initial milk called the colostrum is required for the calf's health.

So after calving, the cow may produce milk for a period of up to 10 months and the milk contains fat, proteins, carbohydrate, minerals and vitamins especially A, B and E.



- Nowadays cattle rearers and dairy farmers are using hormone injections to get high yield of milk.

60% of milk produced in our country is used to make cheese, khova, ghee, curd, milk powder and other milk products.

There are lot of dairy farms in our state and the milk from households are sent to dairy farm where its pasteurized.

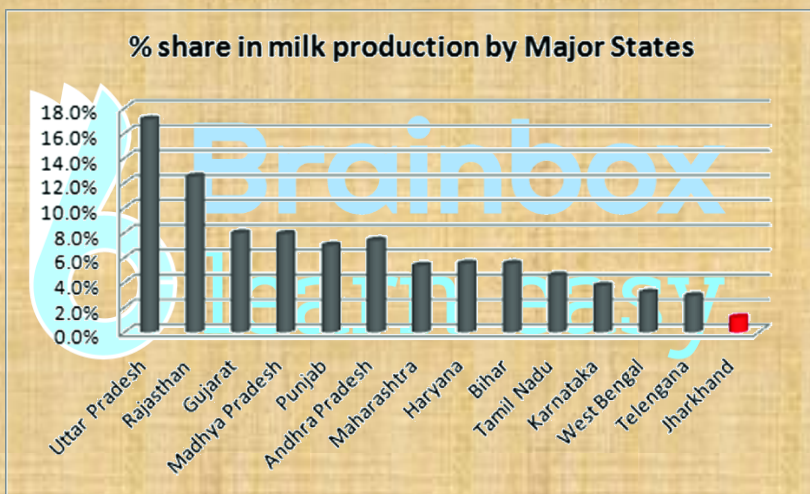
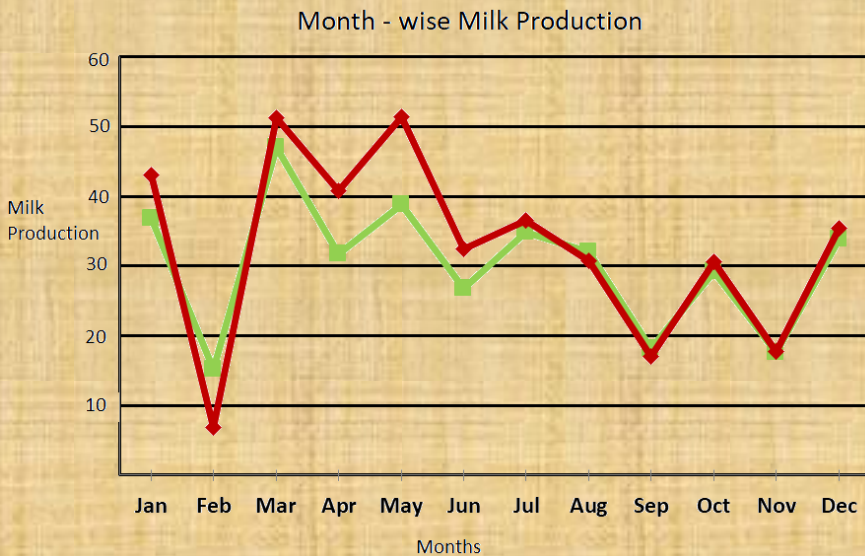
Pasteurization:

It is the process of destructing disease - causing microorganisms by boiling milk at 63°C/145F for a period of 30 min. This boiled milk is then cooled to below 10°C and stored.

- Pasteurization kills pathogens and extends the shelf life of milk and there are private and government collecting and chilling centers in our state.

Uttar Pradesh state that produces the highest amount of milk in our country.

Now let's look at monthly milk production yield in our state. It is the highest during November starting and lowest during whole month of April.



Now 60 to 70% of expenses in maintaining animals is for fodder.

- Why is fodder that much important?

Adequate nutritious food is required for health, reproduction and better yield. We provide them with hay, green and dry grass, oil seed cakes of groundnut etc.

Adulteration of milk:

Nowadays adulterated milk is available in the market. Urea, flour and different types of substances are used to make such milk.



- How do you distinguish the adulterated from the actual milk?

Milk slip test:

Put a drop of milk on a polished vertical surface. If it stops or flows slowly, leaving a white trail behind, it is pure milk. While, milk mixed with water or other agents will flow down immediately without a trace.

Iodine test:

If you add tincture of iodine to milk sample and if it turns blue it means it has the presence of starch implying the milk is adulterated.

White revolution/Operation flood:

- It was one of the biggest dairy development revolution to improve the production of milk in India.
- The father of white revolution is JK Kurian and he worked a lot in increasing milk production through co-operative society.
- He proposed innovative activities in producing hybrid varieties of cows and buffaloes animal health, milk collection and preservation.