

Lecture 3

INTRODUCTION TO LIVESTOCK PRODUCTS AND BY-PRODUCTS

The primary livestock products include

Cattle	-	Milk, meat, hides
Sheep	-	Meat, wool, skin
Goat	-	Meat, milk
Swine	-	Meat
Poultry	-	Egg
Rabbit	-	Meat

Other by-products include: blood, bones, piths, horns, hooves, gall bladder liquid (bile), rumen digest, condemned carcasses, intestines, hair, tail hair, hides and skin, fat and feather.

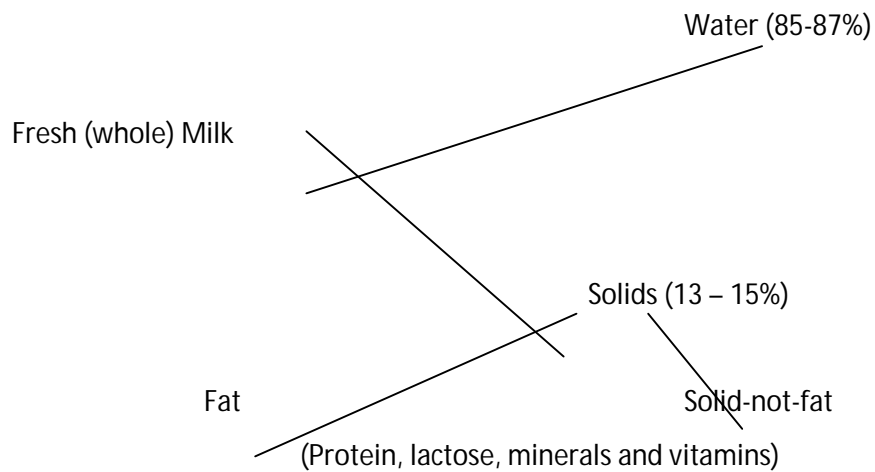
Characteristics and Food Value of Meat

Meat is important in our diet because virtually **everybody finds it to be highly palatable** including babies and adults. The nutritive value of meat is excellent. Meat is high in good quality protein. The vitamin quality of meat is high. **Meat is rich in Fe, Cu** and other minerals. **The quality of meat is surpassed only by milk and egg.** Meat has an attractive appearance and desirable aroma. Meat has an important role in satisfaction of appetite and it is highly digestible. The protein content of meat is 97% digestible. Fat is 95% digestible. Carbohydrate (in form of glycogen) is 98% digestible. Meat contain Protein (17%), Fat (20%), Water (62%) and Ash or Minerals (1%).

Food value of Milk

Milk is an important food for humans because of its high nutritive value. It is rich in proteins, minerals as well as vitamins. There is however a deficiency of Fe in milk. Living on milk alone may result in anaemia. But quite often the Fe supplied from other components of a diet would make up for the deficiency in milk. Milk is a rich source of Ca and P.

Most of the vitamins, except vitamin D, are present in adequate quantities. But in order to meet the minimum body requirements of these nutrients especially for infants, milk is usually fortified with synthetic forms of vitamins and minerals.



POULTRY MEAT

Poultry meat provides man with nutrients for growth, tissue replacement and **for weight control**. Its usefulness in this respect is due to its **lower fat content**. Poultry meat is about 20 to 35% protein, 1.3 – 33.8% fat. The protein in poultry meat corresponds with that of turkey, beef and pork in amino acids. It also contains all the essential amino acids required by man and is easily digested. Poultry meat contains more protein than other meats.

Unlike red meats, most fat in poultry meat is found under the skin and not distributed throughout the tissues i.e. there is no intramuscular fat. Poultry meat is a good source of riboflavin, thiamin and ascorbic acid, and the liver is richer in these nutrients as well as vitamin A than other parts. Minerals present in poultry meat include Na, Fe, S, Ca, P and Cl.

Some uses of animal by-products

1. Hides and skins can be turned into glue and adhesives.
2. Blood meal is prepared from the by-product blood. The blood meal contains lysine, which is an essential amino acid in poultry feeds. Blood meal as a component of stock feed is used in calf-starter ration, swine feed mix and poultry feed mix. Dried blood is used as an organic fertilizer. It is a specially prepared organic nitrogen source in the cultivation of citrus fruits, tobacco, and flower growing.
3. Fats extracted from bones as tallow is suitable for cosmetics and soap manufacture.
4. Pure bones are also burnt and converted into lime (chalk) or animal feed (bone meal)

5. Horns and hooves, if heated they melt and are turned into gelatin, which is very good glue. Horns are locally used as musical instruments and ornaments.
6. The gall bladder liquid (Bile) if properly treated is an excellent detergent. The advantage is that there will be no need for synthetic detergent in the cleaning of slaughter house floor.
7. Intestine can be used for various surgical applications, sausage casings and as a cover on raw areas caused by the removal of skin for grafts.
8. Hair and tail are used in making brushes and local domestic cleaning appliances
9. Bone meal is a good source of phosphorus in that it contains 35% Ca and 17.9% P. Thus it can be used to replace the imported Dicalcium – phosphate (Ca_2PO_4) in preparation of poultry feeds.
10. Tanners (Leather workers) Convert hides and skins into leather for different domestic and industrial uses.
11. Farm yard manure (FYM) is a form of organic fertilizer which aids the growth of crops plantations and vegetables.