

TITLE -  
SUBJECT - AGRICULTURAL SCIENCE  
WEEK - Three  
CLASS - S S 2  
TOPIC - Animal Nutrition

SUB-TOPIC - Sources and Functions of nutrients  
ANIMAL NUTRITION

Animal nutrition is the process by which an animal obtains a nutrient necessary for its healthy growth and development.

DIET - This is defined as the amount of feed regularly given to an animal.

### FOOD NUTRIENTS OF LIVESTOCK

There are six classes of food nutrients and they are:

1. CARBOHYDRATES: These are organic substances having H, C and O<sub>2</sub> as their constituent. They exist under different forms such as monosaccharides, disaccharides, trisaccharides and polysaccharides. Carbohydrate breakdown is represented with a single equation;  
 $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Energy}$ .

SOURCES - Yam, cassava, grasses, grains, maize etc.  
FUNCTIONS

- 1. It provides energy for work.
- 2. They are constituent of milk in dairy animals.
- 3. It provides heat which helps in the regulation of the body temperature to keep the body of the animal.

2. PROTEIN: These are organic compounds composed of carbon, hydrogen, nitrogen, oxygen and often with S, P. The most essential factor of proteins is amino acids.

SOURCES - Fish meal, blood meal, milk, meat, groundnut cake, beans etc.

FUNCTIONS - They are used in the formation of eggs and help in the repair of worn-out tissues. They are used in forming digestive juices.

3 **FAT AND OIL** - Fats are esters of fatty acids and glycerol. They exist in an animal's body under two forms depot fats and fats that form a part of the structural components of the cells of the body. Fat contains C, H, & O<sub>2</sub>.

**SOURCES** - palm kernel cake, cotton seed cake, soya bean cake, etc.

**FUNCTIONS** - They are source of energy to the animal. They act as insulator to the body of the animal.

They promote the distribution of both vit A and carotene.

4 **WATER** - This exist in the body as part of the protoplasm and is a constituent of the blood lymph and can be around cells. It claims about 50% - 80% of the body content.

**FUNCTIONS** - It helps to maintain cell rigidity and elasticity. It provides a medium for important chemical reactions in the animal.

It aid in the maintenance of the body temperature.

5 **MINERALS** These are needed in small quantities and they exist in the body of the animal as ions or as component of organic compounds of the body. There are two

classifications of minerals: Macro minerals (Ca, P, Na, Cl, Mg, K and S) and these are required in large quantities.

Micro minerals are (Fe, Cu, molybdenum, manganese, Zn, Cobalt, iodine and selenium etc) are needed in small quantities.

#### FUNCTIONS OF MINERALS

i Maintenance of constant Osmotic pressure and acid and alkalinity of the body fluids.

ii They aid in the transport of minerals through membrane.

6 **VITAMINS** - These are organic compounds essential for growth and maintenance of living things. They are divided into two (i) water soluble

vitamins and (ii) fat soluble vitamins.

## Assignment

Explain the following classification of feeds.

(i) Basal/Energy feed  
# Roughages

(ii) Protein Concentrates

(iii) Mineral and Vitamin Supplements