

SUBJECT: AGRICULTURAL SCIENCE

TOPIC: ANIMAL NUTRITION

WEEK: 9

TERM: 1ST TERM

CLASS: SS3

MEANING OF ANIMAL NUTRITION

Nutrition is defined as the process of absorbing nutrients from food and processing them in the body in order to keep healthy or grow. A nutrient is also an element or compound present in the food and required by the animals for proper functioning of the body.

CLASSIFICATION OF FEEDS

Feeds and feeding stuffs are classified according to the nutrients they contain. Feeds can be classified into three main groups namely;

1. Concentrates
2. Forages and roughages
3. Additives / vitamins/mineral/growth promoters

(1).CONCENTRATES

These are feeds prepared from cereals and other materials used in the feeding farm animals. They are by-products of plants and animals. Other qualities of concentrates

- i. Less crude fibre
- ii. High protein content
- iii. Low in carbohydrate
- iv. Low in fat
- v. Digestibility is high

Concentrates consist of the following:

- a. Carbohydrates: maize, millet, guineacorn, etc.
- b. Plant protein: groundnut cake, seed cake, soya beans cakes etc.
- c. Animal's protein supplement: fish meal, meat meal, bone meal etc.
- d. Synthetic protein: urea, 45% nitrogen or 28.1% crude protein.
- e. Miscellaneous by-products: wheat bran, dried brewers grains, rice bran, maize bran, brewer's yeast cold liver oil, sea weed meal etc.

- f. Additives: common salt, grits, drugs antioxidants, antibiotics anti-fungal ,vitamins, minerals, pre-mix

USES OF CONCENTRATES

- A. Concentrates are used to feed all livestock. It supplies all the necessary requirement of the body of the farm animals for their optimum growth.it also enhances the production of milk, egg, wool, and skin.
- B. It is mostly used in feeding monogastric animals because of their low fibre content and high digestion rate.
- C. Concentrates are blended by feed producers to provide balanced ration for livestock at various stages of growth.

BASAL OR ENERGY FEEDS

Basal feeds are highly digestible energy giving feeds, rich in soluble starch, highly palatable to livestock and low fibre content. Basal energy feeds consist mainly of:

1. Grains /cereals: maize, sorghum, millet, rice, etc.
2. Root and tuber: yam, cassava, potatoes.

ROUGHAGES AND FORAGES

Roughages are characterized by the relatively large amount of crude fibre that dry matter contains. They are further subdivided into dry roughages and succulent roughages. The dry roughages include mostly grasses, hay, straws and haulm from cereals such as rice, maize, sorghum and millet. While succulent roughages include practically all growing or fresh vegetation of which forages form a major part.

ADDITIVES

They consist certain chemicals added to rations as supplement of the existing ones. Producers of animals' feeds normally add vitamins and minerals supplements to their rations.

COMPONENTS OF FOOD

The food that animals eat is essentially composed of the same elements that form its body and product. thus all food contains the following:

1. Water
2. Mineral salt

3. Vitamins
4. Carbohydrate
5. Lipid (fats and oil)
6. Protein

RATION FORMULATION

A ration is the particular quantity of food an animal is given per day; ration formulation involves careful combination of all the food nutrients in such a way that it will meet the nutritional requirement for a particular animal.

DIET

A diet is defined as the amount of food regularly given to consume by an animal. It is formulated to meet specific metabolic or physiological function such as: growth, lactation maintenance of pregnancy, reproduction, egg laying.

TYPES OF RATION

BALANCED RATION: A balanced ration contains the correct proportion of all the different food nutrients required for adequate energy, health, good nourishment, growth, and reproduction of animals. Such ration contains carbohydrate, protein, fat and oil, vitamins, minerals and water in their required quantity and quality.

MAINTENANCE RATION: This is the ration prepared to supply the animal with enough nutrients just to be able to carry on the normal body activities without losing or gaining weight. The ration is enough to maintain the supply of energy and protein for all metabolic activities such as blood circulation, respiration, digestion and maintenance of body temperature.

PRODUCTION RATION: This is the ration that is given to animals so as to supply nutrients above what is required for maintenance, and to make the animals capable of high production in form of laying eggs, milk and meat production.

Categories of farm animals that require production ration includes:

1. Lactation animals: for milk production
2. Weaning animals : for growth increase

3. Pregnant animals: for maintenance of the foetus
4. Fattening animals: for addition of more meat or flesh
5. Broiler: for rapid growth
6. Layers: for more eggs production
7. Flushing: for animals before mating to produce quality sperms.

MALNUTRITION

Malnutrition is a condition caused by a deficiency or excess of one or more essential nutrients in the diet of farm animals. Malnutrition refers to imperfect or faulty nutrition of animals

CAUSES OF MALNUTRITION

1. Unbalanced diet
2. Low quality feed
3. Under feeding

SYMPTOMS OF MALNUTRITION

1. Drop in production
2. Susceptibility to disease attack
3. Emaciation and leanness'
4. High death rate
5. Reduced growth
6. Nutrient disorder.

ASSIGNMENT

1. State the different classes of feeds
2. Mention two examples of feed for each class stated above