

Lecture 1

INTRODUCTION

Nigeria is blessed with vast range of feed resources such as grains, oilseeds and agro-industrial by-products which could be used in the formulation of good quality livestock feed. These local available feed resources in Nigeria have potential to support a flourishing livestock industry. However, these potentials are grossly under-utilized by the farmers resulting in a depressed livestock industry, thus making it second to crop production in Nigeria.

This low capacity feed resources utilization could be linked to inadequate information based on location and localization of feed resources, processing, preservation/storage and quality enhancement/assessment. On the other hand, it is associated with long time dependence by major players in livestock industry on conventional and imported feed resources while cheap local feed resources suffer a great neglect and low patronage.

Nutrition can be defined as the science involving various chemical and physiological activities which transform feed elements (nutrients) into body elements and activities.

Nutrition is the process of anabolism, assimilating or transforming food into living tissue. It is called constructive metabolism or tissue building and the cells in the body are responsible for the transformation into different tissues. Nutrition can be defined as the sum of the processes whereby an organism provides itself or it is provided with the materials (nutrients) necessary for energy release, growth, repair, various secretions, storage, transport, maintenance of internal osmotic and pH environment. It is the science that deals with the interaction between the animal body and its food supply with the ultimate aim of providing a fully adequate food supply for any type of internal and external uses. It involves the ingestion, digestion, transportation, absorption and assimilation of the various nutrients and their transportation to all body cells and the removal of unusable elements/by-products and waste products of metabolism. Nutrition, in essence, aims at providing all essential nutrients in adequate amounts and in optimum

proportions. In other words, nutrition is the scientific way of how feed/food is used by the body man, rabbit and farm animals. Nutrition is one of the major constraints to survival and satisfactory productivity of livestock in this country. Feeds and feeding constitute about 65-75% of total production cost in intensive livestock production e.g. poultry and pig production, the ability to judiciously manipulate feed ingredients to maximize productivity is therefore central to the maintenance of a stable poultry production enterprise.

The rapid success and expansion of the livestock industry, therefore depends on the availability of good quality, quantity and cheap compounded feeds. This is particularly true of the intensive livestock enterprises – poultry, pigs and rabbits, whose performance depends mainly on the use concentrate and balanced compounded feeds. Therefore the single most important constraint facing the livestock industry, several problems relating to the inadequate supply, high cost and poor quality of feeds have seriously threatened the (poultry) livestock industry in recent times.

Nutrition is an aspect of science that deals with the relationship of food to the proper functioning of the living body. It includes the intake of food and body's uses of chemicals that the food contains to sustain life, promote growth and provide energy for day to day living. Thus nutrition is concerned not only with food itself but also with the factors which influence the quality, quantity and availability of food nutrients to the body (animal). Those chemical compounds found in food are referred to as chemicals. Good nutrition therefore involves nutrient intake which are adequate in quantity and quality.

Poor nutrition or malnutrition is classified as either under-nutrition, over-nutrition or imbalanced nutrient intake.

Under-nutrition results from inadequate intake of food and/or impaired utilization of available nutrients.

Over-nutrition result from over indulgence of feed food. Over-nutrition during the pre-school years can lead to adult obesity.

Imbalanced nutrient intake results from inadequate feed/food intake or poor quality protein and insufficient calories, is a poor diet which is liable to be deficient in other essential nutrients thus making adequate growth, improved productive performance, and proper maintenance of body functions impossible.

TYPES OF NUTRITION

There are essentially two types of nutrition and these are:

- (i) Autotrophic nutrition
 - (ii) Heterotrophic nutrition
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- (i) Autotrophic nutrition – occurs in organisms that are capable of synthesizing organic molecules from simple, inorganic materials such as carbon IV oxide (CO₂) and water e.g. photosynthesis
 - (ii) Heterotrophic nutrition – is the nutrition that involves dependence upon preformed organic molecules such as fairly complex, energy-rich organic molecules secured directly or indirectly from the environment e.g. poultry nutrition.