



Livestock Farming

Handout 8

Feedlot Definitions



Definitions:

Feeding stuffs

In general, this term is synonymous with feed, food or fodder, but it is a broader term in that it includes all materials included in the diet for their nutritional properties. It includes plant or animal products and by-products as well as chemically synthesised pure nutrients or mixtures of nutrients added to animal feeds. Thus, maize meal is a stock or human food, but the vitamin thiamine-HCl is a pure nutrient that can be chemically synthesised. The vitamin is not food but is a foodstuff.

Ration: Diet

A ration is a 24-hour allowance of a feed or of a mixture of feedstuffs. The term implies nothing with respect to the suitability or adequacy of the allowance but merely refers to the amount of the provisions permitted. We commonly refer to the daily allowances for animals as rations but speak of human diets. For all practical purposes these terms are synonymous.

Balanced ration

This refers to a feed mixture just sufficient to provide for all the requirements of a specified animal for one day. The term "balanced" originally referred to the proportions of fat, carbohydrate and protein in the ration. In the feed trade a balanced ration refers to a mixture of feedstuffs nutritionally adequate for the feeding of specified animals when used as recommended by the manufacturer.

Nutrient

A nutrient is any food constituent or chemical substance that aids in the support of animal life. Thus, carbohydrates, fats, proteins, individual amino acids and the various vitamins and minerals are all nutrients.

Toxicity

This term should be distinguished from "poisonous". A nutrient may be essential to an animal in small amounts, but when taken in excess it may result in toxicity, mild or acute.

Fluorine is desirable in small amounts (about 1 mg/kg in the DM of the ration), but it is harmful in large amounts (about 30mg/kg) and it may actually poison the animal.

Feeding standard

A general term for tabulations of the amounts of the various nutrients required by specified animals.

Feed allowance

The amount of feed actually given to an animal daily. It is usually greater than the "requirements" by a safety margin to allow for variations in requirements between individuals.

Nutrient requirement

A statement of what an animal on average requires for a particular function.

Digestibility

This term is usually taken to mean that nutrients which are consumed are broken down in the digestive tract and absorbed. In common language both processes, digestive attack as well as uptake of the resulting nutrients, are understood by the term "digestion".

Composition and concentration

Composition may be expressed as a percentage (%) or as mass/unit mass e.g. g/kg.

Concentration may be percentage or mass/unit volume e.g. ml/litre.

Very low concentrations are usually expressed as mg/kg (ppm - parts per million)

Vitamin units are usually expressed in terms of mass of active compound and called i.u.

Antioxidants

Natural fats possess a certain degree of resistance to oxidation, owing to the presence of compounds termed antioxidants. These prevent the oxidation of unsaturated fats until they themselves have been transformed into inert products.

Metabolic body size

This is the mass of an animal (kg) raised to the power 0.75 ($Wkg^{0.75}$)

Energy

The international unit of work and energy is the joule. One joule is the work done by a force of 1 Newton exerted through a distance of 1m. One Newton is the force that will give a mass of 1kg an acceleration of 1m/sec².

1kcal = 4.184 kJ or 1 kJ = 0.239 kcal

Previously energy content of feeds was expressed as TDN (total digestible nutrients), whereas ME (metabolisable energy) is the modern unit used.

To convert TDN to MJ of ME, multiply the TDN value with 0.15%.