MJF College Of Veterinary & Animal Sciences

DEPARTMENT OF ANIMAL NUTRITION

TOPIC – IMPORTANCE OF SCIENTIFIC FEEDING AND FEEDING STANDARD.

FEEDING STANDARD

- Feeding standards are statements of amount of nutrient required by animals.
- Feeding standards may be expressed in quantities of nutrients or in dietary proportions.
- Standard feeding, on the other hand, involves providing animals with a fixed diet that may not meet their specific nutritional needs.
- This method relies on traditional practices, local feed resources, and common sense rather than scientific principles, which can lead to under nutrition or overnutrition and increase the risk of diseases and mortality

▪□Classification of Feeding Standard

1.**Comparative type** 》

- Hay standard
- Scandinavian feed unit" Standard

2.**Digestible Nutrient system**

- Morrison standard
- National Research Council standard
- Indian standard system

3.**Production value type**

- Kellner-feeding standard
- Armsby feeding standard
- Agricultural Research Council Standard.

- Hay standard :

1. In 1810 German scientist Albert Thaer gave a concept of "hay equivalent" as measures of relative value based on determining the materials in feed extractable with water or other solvents.
2. He suggested that different feeds should be compared using meadow hay as a unit.
3. Thaer, in selecting hay, states: "As hay is more known and more used than any of the other kinds of fodder, I shall make that article the standard by which all the others may be compared." He gave the value of 100 to hay and expressed all other feeds in terms of his famous hay equivalents.

Scandinavian "feed unit" standard

In 1884, Professor Fjord formulated the Scandinavian feeding standard.

- In this system only one factor, namely, the feed unit was taken into account.
- The value of one pound of common grain such as corn, barley or wheat, is given as oneunit value and the value of all other foods is based upon this.
- According to this standard one feed unit is required for each 150 lbs. of body weight and an additional feed unit for every three pounds of milk production

Morrison feeding standard

- F.B. Morrison observed that stockmen are spending large sums of money for entirely unnecessary amounts on protein supplement, thus considerably reducing their profits.

- He therefore, combined nutrients requirement in one set of standards as the best guide available in computation of rations for the various classes of stock.
- These standards were first presented in the 15th edition of "Feeds and Feedings" published in 1915 and where then called "Modified Wolff and Lehmann standard".They soon came to be known as the "Morrison Feeding Standard".

- Morrison indicated the nutrient requirement of animals in a range rather than in one figure. The average of Morrison standards has been accepted for Indian livestock

National Research Council (N.R.C.) standard.

- IN 1942 the Committee on Animal Nutrition of the National Research Council (NRC) of the National Academy of Sciences published the Recommended Nutrient Allowances for Farm Animals, comprising separate reports for poultry, swine, dairy cattle, beef cattle, sheep; and horses.

- The NRC reports representing in each case the pooled judgment of a group of experts in the field or the species in question, and it should be considered the most authoritative statements of the nutritional needs of farm animals for feeding practice in the United states.

- The standard includes digestible protein and total digestible nutrients and also includes the recommended requirements for calcium, phosphorus, carotene and vitamin D for dairy cattle, beef cattle, pigs, poultry, sheep dogs, horses, laboratory animals etc.

▪□Usefulness and Limitations of Feeding Standards

1.Feeding standards serve as guides in feeding animals and in estimating the adequacy of feed intakes and of feed supplies for groups of animals.

2.In practical feeding operations it is frequently desirable to take economic factors into account. Thus, modifications (in feeding standards) may be called for in the interest of obtaining the rate of gain or level of milk production that seems the most economical in terms of current feed costs and the market price of the product.

3. No standard can be a complete guide to feeding because other factors such as palatability and the physical nature of the ration must also be taken into account.

4. Further, environment may change nutrient requirements.

Scientific Feeding :

Knowledge of the quantitative needs of the body for these nutrients and of the relative value of feeds as source of them is known as scientific feeding.

Scientific feeding involves formulating diets based on the nutritional requirements of each animal species, age, weight, and production goals.

This method uses advanced technologies such as computer software, laboratory analysis, and feed additives to optimize the nutrient intake of animals and enhance their growth, reproduction, and immunity.

▪☐Advantages of Scientific Feeding

▪☐Scientific feeding has several advantages over standard feeding.

▪☐Firstly, it ensures that animals receive the right amount and balance of nutrients, which improves their health and reduces the incidence of metabolic disorders.

▪☐Secondly, it maximizes the efficiency of feed utilization, which reduces the cost of production and minimizes the environmental impact of animal agriculture.

▪☐Lastly, it enhances the quality and safety of animal products, which increases their market value and consumer acceptance.

Challenges of Scientific Feeding

- ☐Despite its benefits, scientific feeding also faces some challenges.
- ☐ Firstly, it requires specialized knowledge and skills, which may not be available or affordable for small- scale farmers.
- ☐Secondly, it relies on imported or expensive feed ingredients, which may not be sustainable or feasible in some regions or seasons.
- ☐Lastly, it may create dependency on technology and reduce the diversity of feed resources, which may limit the resilience of animal systems.

https://www.slideshare.net/pramodkumar1341/feeding-standard
Applied Nutrition third edition by DV Reddy
https://tanuvas.ac.in/mvc_nutrition.php

Thankyou