

## Lecture 5

### Antibiotics

These are medicine, drug or health insurance agents. The effect is to control the growth of harmful organisms. It makes the animal grow faster and convert feed into meat more efficiently. Examples are aureomycin, penicillin and terramycin. Ideal antibiotics for use as a feed additive must be

1. Active against a wide range of detrimental organisms
2. Save at high dosage levels
3. Palatable at necessary concentration
4. Readily absorbed and distributed throughout the animals system
5. Retained in the tissues long enough to be effective i.e. not easily excreted
6. Stable both in feed and tissue i.e. not easily decomposed
7. Should not cause the microorganisms to become resistant
8. Cheap enough to guarantee economic returns
9. Easy and practical to feed

High levels of inclusion however, cause a depression in appetite, apparently due to partial destruction of beneficial micro-organisms in the rumen. Before including antibiotics in ration, the beef producer should study the costs, type of ration and health of the animal. Expert advice is usually necessary.

### Hormones

Several synthetic estrogen substances are now used in beef cattle industry. They include diethyl stibetrol, hexestrol and dienestrol, diethylstibestrol generally referred to as the most extensively investigated of these estrogenic substances. The physiological properties of the female sex hormone and its action in animal body are similar to that of the natural sex hormone in both male and female. Several synthetic estrogen substances are now used in beef cattle industry. They include diethyl stibestrol, hexestrol and dienestrol, diethylstibestrol generally referred to as the most extensively investigated of these estrogenic substances. The physiological properties of the female sex hormone and its action in animal body are similar to that of the natural sex hormone in both male and female. Summarized results of various tests indicate an average increase of 16% in weight gains and reduction in feed requirement by 12%

### CONSERVATION OF GRASS FODDER

The need to maintain the nutritional status of animals at a satisfactory level throughout the year necessitates the provision of adequate feed during the unfavourable period e.g. dry season. Seasonality of forage production necessitates conservation of grass during the rainy season for dry season feeding. The most common methods of grass conservation are silage and hay making.

### Silage

Silage making is the process of controlled fermentation of succulent crops such that the growth of lactic acid producing organisms is favoured and that of other bacteria is suppressed. The quality of resulting

silage depends on the period of fermentation. Ensilage is done by chopping the crop during harvesting by rapid filling of the silo by adequate consolidation and sealing. Grasses, legumes, whole cereals and fruit residues are used. Grass for silage making must have the following properties:

- a. Must neither be high in moisture content nor too dry. Moisture content of up to 70% is still considered suitable.
- b. Sufficiently mature to contain above 28-30% dry matter, dry matter increased with maturity
- c. Grass must be rich in soluble carbohydrate e.g. sugar to provide energy for the anaerobic bacteria fermentation which results in the production of lactic and acetic acid.

In practical feedings, silage replaces the roughage fraction of the ration and lessens grain consumption because

1. Well preserved silage is more palatable than most dry roughage
2. The concentrate present in the silage naturally tends to replace part of that in the grain ration

### **Hay Making**

This is the cutting and drying of forages with a view to reducing the moisture content to levels conducive to storage. Drying should be accomplished rapidly to reduce dry matter losses through plant respiration. Handling should be carefully done so that the leaves which constitute the most nutritious part of the plant do not fall off. It can be done by field drying or barn drying. Barn drying is easier to handle but much more expensive. Hay cut when plants are high in protein and low in fiber is much better from nutritional stand point than mature hay. Method and length of drying and storage affect quality

### **Pelleted Feeds**

The pelleting of feeds is becoming popular as a means of ensuring uniform intake. This could take the form of all-pelleted ration or pelleted forages. The forage must be coarse enough to allow for optimum cellulose digestion in the rumen, and prevent the incidence of digestive disturbances. Qualities of all pelleted rations are

1. Prevents selective eating
2. It reduces weight of feed
3. Reduces dustiness
4. Reduces labour and equipment
5. Lessens storage space

### **Advantages of pelleted forage**

1. Reduction in transportation cost
2. Reduces dustiness
3. Reduces labour
4. Reduces nutrient losses
5. Makes automatic feeding feasible
6. Effective utilization of low quality forage is ensured since preparation ensures complete consumption of the roughage

## **Pelleted Feeds**

### **Grasses**

*Panicum maximum, Pennisetum purpureum, Andropogon gayanus, Cynodon dactylon.*

### **Tree Legumes**

Leucaena spp, Acacia spp, Sesbania spp, Ficus spp, Gliricidia spp, Gmelina spp,

### **Forage Legumes**

*Centrosema pubescens, Stylosanthes, Desmodium, Lablab, Alfafa, Trifolium, Tephrosia*

### **Concentrates**

Cottonseed cake, Wheat bran, Copra cake, Maize offal and bran, Groundnut cake, Rice bran, Soybean cake, Palm kernel cake

### **Agro-industrial by-products**

Cassava peels, Yam peels, Cocoyam peels, Cocoa pod husk, Coffee pulp, Brewers spent grain (Dry brewers grain), Pito mash

## **GRAZING METHODS, USES AND PROBLEMS**

### **Set Stocking:**

This is the least complicated and least productive system of grazing control. The cows are given access to a given area of pasture at predetermined stocking rate. No part of the grazing area is reserved for conservation but the pasture may be topped (a device for stimulating regeneration) with a moving machine during the grazing season. Its greatest disadvantage is a tremendous waste of forage involved as a result of trampling and soiling. There is consequently no provision for dry season feeding

### **Strip Grazing:**

This is a method involving a short term grazing of pasture followed by long period of rest of varying duration. A limited grazing area is allowed each day behind an electric fence. By this type of restriction of the grazing area, conservation of part of the pasture or hay or silage is possible. The stocking rate depends on the estimated daily dry matter requirement of the animals. This system ensures efficient pasture utilization with little selection and wastage.

### **Rotational Grazing:**

The controls of worms and ticks are also greatly facilitated. In most cases, however, efficient operation of the system involves a carefully worked out plan of fertilization with nitrogen to ensure a quick recovery of the pasture after the cattle would have been removed. The choice between strip and rotational grazing is largely a matter of convenience. The greater flexibility of the former appeals to the stockman with grassland/pastureland that is permanent. What is vital is to appreciate that both systems require a high stocking rate to achieve increased milk output.