Unit 5: Feeds, Nutrition and Digestion

Lesson 3: Understanding Nutrients 1: Proteins, Lipids and Carbohydrates

Proteins

Long, complex organic compounds formed when amino acids are combined with each other into polymers. They are needed to produce body structures (muscle, bone, organs), for reproduction and lactation.

Protein Sources

1. Animal By-products
   a. Tankage and meat scraps
   b. Meat and bone scraps
   c. Blood meal
   d. Fish meal

2. Dairy Products and By-products
   a. Skim milk and buttermilk
   b. Dried skim milk and buttermilk

Protein Sources

3. Seed By-products
   a. Soybean meal
   b. Soybeans
   c. Cottonseed meal and cake
   d. Linseed meal
   e. Peanut meal

4. Legume Roughages
   a. Dry Roughages
   b. Silage
   c. Pasture

Protein Functions

A. Develop and repair body organs and tissues

B. Milk, wool and egg production

C. Fetus development

D. Enzyme and hormone construction

E. Immune antibodies development

F. Hereditary DNA transmission

Lipids

- Two types of lipids
  - 1. Fats are solid at room temp
    - Saturated fats (single carbon bond)
  - 2. Oils are liquid at room temp
    - Unsaturated fats (double carbon bond)
- Fats contain **2.25 times the energy** of carbohydrates

Carbohydrates

- Simple Carbohydrates
  - Starch
    - Supply major feed source for monogastric animals
- Complex Carbohydrates
  - Cellulose
    - Supply major feed source for ruminants and modified monogastric animals (horses)