

AG. BUSINESS  
DAIRY ENTERPRISE

B. Protein

1. nitrogen containing portion of plants and animals
2. animals use protein for the growth and building of tissues, milk production, and fetal growth.
3. **effect of protein deficiency**
  - a. poor growth rate
  - b. poor feed conversion
  - c. lowered birth weight
  - d. lower milk production
  - e. infertility

C. Minerals(major)

1. calcium
  - a. bones and teeth(99% of calcium)
  - b. bone formation and maintenance
  - c. muscles
2. magnesium
3. phosphorous
4. potassium(muscles)
5. salt
6. sulfur
  - a. major function: essential component of amino acids

D. Vitamins

1. organic food substances
2. required in small amounts but essential
3. B vitamins and vitamin K produced naturally by the cow without supplement except in baby calves until the rumen develops enough immune system to ward off infection.
4. A and D supplement to dairy cows in diet

E. Water

1. **4 functions**
  - a. major component of the body
  - b. temperature regulator
  - c. necessary for digestion and transport of nutrients, as well as eliminating body waste products
  - d. major factor in body chemical reaction
2. water amount is much greater than any other nutrient
3. death come much sooner from lack of water than from a lack of food.

III. Roughages

A. feeds that are high in fiber; i.e. hay, pasture, straw, haylage, silage, cottonseed

B. **functions of forages**

1. maintain rumen digestion
2. stimulate rumen microbial growth for milk prod. and fat test
3. increase rumination
4. economical source of nutrients