"SVCR Government

Degree college

Palamaner."

Name :- B.Bhanu.

Class :- B.Voc.DAH.

Sem :- 2nd sem

Topic :- classification of Nutrients.

Notice :- Assignment

Signature of lecture.

B.Bhanu

Signature of student.

Carbohydrates:- provide a ready source of energy for the body and provide structural constituents for the formation of cells.

fat:- Provides stored energy for body, functions as structural components of cells, and signaling molecule for proper cellular communication It provides insulation vital organs and works to maintain body temperature.

Vitamins:- Regulate body process and promate normal body-system functions.

Minerals:- Regulate body processes, are necessary for Proper cellular function, and compise body tissue.

Water:- Transport essential nutrients to all body parts, transports waste products for disposal, and aids with body temperature maintenance.

Classification of Nutrients:-

There are six classes of Nutrients required for the body to function and maintain overall health. Thes are carbohydrates, lipids, protein, water, vitamins, & minerals. foods also contain non-nutrients that may harmful such as natural toxins common Imprant foods. The food we eat contain nutrients.

Nutrients:-

1) Protein
2) Carbohydrates
3) fat
4) Vitamins
5) Minerals
6) water.

Proteins:- Necessary for tissue formations cell reparation and harmone and enzymee production It is essential for building strong muscle anda healthy immune system.

Animal Nutrient focuses on the dietery nutrients needs of animals, primarly those in agriculture and food production, but also in zoos, aquariums and wlid life management.

A nutrient is a substance that promotes the growth maintenance, function, and reproduction of a cell or an organism. The principal nutrients of all feeding stuffs are water, organic and mineral matters. The organic in turn is composed of crude protein, ether extract, crude fibre and nitrogen free extract. The occurence of these nutrients in feeds and their role as constituents of feed in the nutrition of animal body may briefly be stated as fallows

Water is one of the most vital of all Nutrients. Infact Animals may live for mae than 100days without organic food but they die in 5-10 days.

* Classification of Nutrients.

- Carbohydrates
  - Nitrogen free Extract
    - Monosaccharides
      - Glucose
      - Fructose
      - galactose
      - mannose
    - Disaccharides
      - sucrose
      - lactose
      - maltose
    - Polysaccharides
      - Starch
  - Crude fibre.
    - Polysaccharides
      - Cellulose
      - Hemicelulose.
    - Lignin.

Lipids

simple

Fatty Acids

Palmitic
oleic
steric
linoleic
arrachidonic

sterols

cholesterol
ergosterol

compound

Triglycerides

esters of glycerol and fatty acids, such as butterfat lard, beef tallow and soybean oil.

Phospholipids

lecithin
cephalin
sphingomyelin

Waxes

esters of fatty acid & long chain alcohol. Thus Palmatic acid + myricyl alcohol = $C_{30}H_{33}OH$. in beeswax.

Nitrogenous

Protein

essential Amino Acid
- Arginine
- Histidine
- isoleucine
- leucine
- lysine
- methionine
- Phenylalanine
- theronine
- tryptophan
- Valine.

semiessential Amino Acid
- Cysteine
- Cystine
(synthesized from methionine)
- tyrosine (synthesized from phenylalanine)

Non protein

Nonessential Amino Acid.
- Alanine
- asparagine
- Aspartic
- glycine
- serine
- Proline
- Hydroxyproline
- glutamine.
- glutamic acid.

NON Protein
- Amine
- Free Amino acids
- Urea.

Vitamins.

Fat soluble
- A (Carotene)
- D_2, D_3
- E
- K.

Water soluble

B complex
- Choline
- Insitol
- niacin
- B_1 - thiamin
- B_2 - riboflavin
- B_6 - Pyridoxine
- B_{12}

C (Ascorbic acid

Minerals

Essential Minerals

Macro

- Calcium (Ca)
- Chlorine (Cl)
- Magnesium (Mg)
- Phosphorus (P)
- Potassium (K)
- Sodium (Na)
- Sulfar (S)

Micro

- Chromium (Cr)
- cobalt (Co)
- copper (Cu)
- Fluorine (F)
- Iodine (I)
- iron (Fe)
- Manganese (Mn)
- Molybdenum (Mo)
- selenium (Se)
- silicon (Si)
- zinc (Zn)

Possible Essential Minerals

- Barium (Ba)
- Bromine (Br)
- Nickel (Ni)
- Stontium (Sr)
- tin (Sn)
- Vanadium (V)

Water quality is of great importance in many areas. Excess salt will cause greater excretion. Domestic ruminants can tolerate about 1.5-1.8% total dissolved solids (TDS). Higher TDS will reduce production. Surface water in particular those from closed lakes, may be very high in some other mineral elements are mentioned along with safe upper limit in mg/litre given in bracket Arsenic (0.2), cadmium (0.05), chromium (1.0), cobalt (1.0), copper (0.5), Fluoride (2.0), Lead (0.1), Nitrate (100.0) and zinc (25.0).

Toxins of various type produced by micro-organism as well as from industrial pollution, will become an increasing problem for liver in many areas.