ALPHA CHOICE INNOVATIVE ACADEMY

(International Secondary School)

4/6 Richard Okoroike Close, Praise Hill Estate, Arepo, Ogun State.

GRADE 8

SECOND TERM, 2022/2023 SESSION

AGRIC SCIENCE

MASTERNOTE

NAME: _____

SYNOPSIS

WEEK	TOPIC
1	Animal feeds and feeding
2	Classification of livestock feeds
3	Factors to consider before deciding animal feed
4	Animal pests and disease control
5	Farm Animal Diseases and Control
6	Farm Animal Diseases
7	Mid-term break
8	Farm Animal Diseases
9	Farm animal diseases
10-12	Revision and examination

WEEK 1&2: ANIMAL FEEDS AND FEEDING

OBJECTIVES: At the end of the lesson, I will be able to;

1. *Define animal feed*
2. *Mention types of animal feed*
3. *Mention feeding tools for animal*

INTRODUCTION: like human beings animals also need food. Animals need to be fed well and in sufficient quantities in order to grow well and produce meat, milk, eggs and all other products derived from them.

When animals are fed well, they will be healthy and their performance will be better than animals that are not well fed.

Definition: Feed is any substance either in solid, liquid or in gas form that when eaten by animals provides energy, stimulates growth, repair old cells and tissues and produce new one.

Ration: ration is a portion of food given to an animal

Balanced ration: this is a feed that contains all the essential nutrients in right and adequate proportion.

TYPES OF ANIMAL FEEDS

There are different types of animal feeds depending on the following;

a. Livestock specie
b. Nature of the digestive system
c. Productive capacity e.g. milk, meat and skin
d. The purpose for which animal is being raised

1. Basal or energy feeds; these are feeds that are rich in energy, fat and oil and are easily digested by the animals. It supplies them with adequate amount of energy for normal growth and productivity.

Examples of basal or energy feeds are:

i. **Cereal:** These are dry seeds known as grain. These feeds stuff are mostly grown as human food but sometimes we may feed animals with broken grains, or the grains that has been spoilt by insect, or part of grain that are not used for food by people like the bran of maize, millet and rice.

ii**. Legumes**: These are crop that belong to the family of *Leguminaceae* commonly called beans. Examples of legumes include soya bean, cowpea and lima bean. Legumes are fed to livestock as real product or by product and they supply protein and carbohydrate to their body.

iii.**Root crops**: These are also energy feed which when fed adequately to them in right quantity gives energy. Examples are; cocoyam, carrot, leaves, sweet potato, cassava and yam or yam peel, plantains and their peels in dried form.

2. **Roughage feeds**: These are those feed items that are not easily digested by farm animal when fed to them. They are very low in protein and contain a lot of fibers. Examples include dried grasses such as hay, which are dried and stored green as grasses or legumes; straw which consist of stems and leaves. It can also be inform of silage which contains fresh cut grasses that are stored in silo and Stover of maize, cowpea, soya bean, rice husk.
3. **Body building feeds**: These are feeds that are rich in body building compounds known as protein. They are useful for the repair or replacement of worn out cells and tissues and the building up or production of new ones in animal body. Examples of animal protein feedstuffs are the local and imported fish meal. Examples of plant protein feedstuffs include soya beans and lima beans. Examples of feed substance are groundnut cake, palm kernel cake and coconut shaft.
4. **Additive or Preservative feed**: These are feedstuffs that are added to the animal feed in small amount in order to improve the quality of the feed.

   Additive feeds are also called preservative feeds as they help in preventing the feed from spoilage which may be due to pest and disease attack. Examples of additive are: lysine, methionine. They

contain different types of vitamins, minerals and protein that help in the fast growth of animal tissues.

5. **Supplement feed**: They are those feedstuff given to livestock to support, increase the quality of the existing feedstuffs used in feeding them. Supplement feeds are of different types:

a. **Concentrate**: A concentrate is a kind of feedstuff that is rich in protein and carbohydrate or energy.

b. **The mineral supplement**: This gives the animal mineral salts in order to allow their bones to develop well. When an animal lacks mineral salts, it often limps and its legs become weak. Mineral salt include substance like lime, common salt, bone ash.

FEEDING TOOLS

1. **Feeding trough**: This is the container or a cavity where the feed of the animals is placed for them to consume. It may be made of metal, plastic or with cement as a concrete cavity.

2. **Bowl**: It is used to pack feedstuff into the trough or container.

3. **Bucket**: It is mostly used to fetch water. It could also be used for packing feedstuffs

4. **Spade/Shovel**: This is used to mix feed ingredients together.

A spade

EXERCISE:

1. What is animal feed?
2. Discuss briefly the types of animal feeds
3. Mention the types of feeding tools
4. Examples of additive are _____ and _____
5. Mineral salt include substance like _____, _____,and _____
6. _____ is a portion of food given to an animal
7. _____ are very low in protein and contain a lot of fibers.
8. Examples of plant protein feedstuffs include _____ and _____
9. When an animal lacks mineral salts, it often _____
10. Feeding trough can be made of _____ and _____

WEEK 3: DISEASE CAUSING ORGANISMS

OBJECTIVES:

i. Define the term disease
ii. Mention the disease causing organisms
iii. Highlight factors aiding animal disease.

Meaning of diseases

A disease can be defined as any abnormality in the functions of the tissues, organs or system of the animal body. In other words, disease is any condition in which there is a deviation from normal state of health or normal functioning of any or all the tissues and organs of the animal body. Animal diseases are generally caused by viruses, bacteria, fungi, protozoa and malnutrition**.**

FACTORS THAT COULD PRE-DISPOSE ANIMALS TO DISEASE

Factors that could predispose animals to diseases include:

(1) **Health status of the animal:** Animals with poor health stand the risk of getting infected with diseases faster than animals with good health**.**

(2) **Nutrition:** Animals which are poorly fed are easily infected with diseases than animals that are well fed with balanced diet.

(3) **Sanitation:** Poor or improper sanitation, including dirty environment could predispose animals to diseases.

(4) **Management:** Poor management of the animals such as non-administration of vaccines and drugs at appropriate doses and time could predispose animals to diseases.

(5) **Breeds of animals:** Poor breeds of animals are in position to get infected with diseases than good breeds.

(6) **Poor housing:** This pre-disposes farm animals to diseases due to unfavourable climatic conditions like heavy rainfall, high temperature, etc. Diseases and parasitic infestation can also break out due to poor housing.

Exercise

1. Define a disease.
2. Animal disease are caused by _____
3. Fungi is known as _____
4. Bacteria can be caused by _____
5. _____ is zoonotic disease.
6. Any abnormality in the functions of the tissues is known as _____
7. Poor management of the animals can leads to _____
8. Diseases and parasitic infestation can also break out due to _____
9. Protozoan is caused by _____
10. Example of disease caused by malnutrition is _____

WEEK 4&5: FARM ANIMAL DISEASE

OBJECTIVES: At the end of the lesson I will be able to:

i. Explain farm animal disease.
ii. List various disease of farm animal.
iii. Mention organisms that cause farm animal disease.

CONTENT

TYPES OF DISEASE

There are two different types' farm animal diseases depending on how animal contact them;

1. **Contagious disease:** These are diseases that can be transmitted from one animal to the other through physical contact.
2. **Infectious diseases:** These are diseases that can affect an animal which can be transferred through air, water, dust and other agents. Examples include fowl cholera, coccidiosis, tuberculosis, etc.

Some common diseases of farm animals

a. Bacterial diseases

1. Mastitis (inflammation of the udder)

Affected animals: Cattle, goat, pig.
Causative organisms: *Staphylococcus* and *Streptococcusspecies*.
Vector: house flies (*Muscadomestica*)
Symptoms/ signs:

i. High temperature
ii. Traces of blood in milk
iii. Swollen udder with pus coming out of it

Mode of transmission

i. Poor hygienic condition during milking
ii. Excessive consumption of high proteinous forage
iii. Injury on the udder

Prevention control and treatment

i. High hygienic standards should be maintained in the animal house, get rid of flies in animal house.

2. **Tuberculosis**

Animal: Cattle, birds.

Causative organisms:*Mycobacteriumboris* in cattle.

Mycobacterium*avium* in birds.

Symptoms:

i. Decrease in milk production.

ii. Severe emaciation.

iii. Swelling of body organs, cough, and respiratory distress.

Mode of transmission

i. Ingestion of contaminated materials.

Prevention, control and treatment

i. Vaccination using oral administration of BCG(Bacillus Calmette Guerin).

3. **Contagious Bovine Abortion (Brucellosis):** This is highly contagious disease which attacks the female reproductive systems of cattle, sheep, goats and pigs.

i. **Causal organism:** it is caused by bacteria known as Brucella abortus in ruminants, and Brucella suis in pigs.

ii. **Mode of transmission:** By direct contact with

- Infected afterbirth
- Foetal fluid
- Aborted fetuses
- By coition

iii. **Symptoms:**

- Habitual abortion
- Inflammation of uterus and mammary glands
- Still birth
- Retention of after birth.

iv. **Treatment:** No effective treatment is known

v. **Prevention and control:**

- Culling of carriers
- Vaccination using S19 vaccines.

4. **Anthrax:** This is a deadly disease of ruminants which attack the vital organs such as brain, lungs, legs and the heart of the animals.

a) Causal organism: this disease is caused by bacteria known as Bacillus anthraxis.

b) **Mode of transmission:**

- Contact with infected animal
- Inhalation of anthrax spores
- Insect bite

c) **Symptoms:**

- High fever
- Convulsion
- Increase in breathing rate
- Muscular tremor
- Sudden death
- Black exudates from the natural openings

d) **Treatment:** Treatment of animals with antibiotics have proved successful if symptoms is noticed early.

e) **Prevention and control:**

- Dead animals should be burnt and buried.
- Infected animals should be isolated, slaughtered and burnt.
- Infected areas should be disinfected and care should be exercised because this disease is zoonotic.

b. VIRAL DISEASE

1. **Rinderpest** (Cattle plague)

Animal: Cattle, sheep and goat

Causative organism: *Rinderpest virus*

Symptoms:

i. Diarrhoea and fever

ii. Lesion in the mouth and tongue
iii. Discharge from the mouth, eyes, mouth and vulva of the affected animal.

Mode of transmission: Direct contact with an infected animal.

Prevention, control and treatment

i. Isolation of infected animals.
ii. Immunisation
iii. The use of tissue culture rinderpest vaccine on a calf below one year.

2. **Newcastle disease of fowl**
   Causative organism: Newcastle disease virus
   Animal: Chicken and other poultry birds.
   Symptoms:
   i. Reduction in egg production
   ii. Paralysis of the legs
   iii. Birds cough, sneeze, have difficulty in breathing
   iv. Watery greenish diarrhoea

   Mode of transmission

   i. Ingestion of food and water contaminated with the virus.
   ii. Introduction of infected birds into the farm.

   Prevention, control and treatment

   i. Adequate sanitation of the farm
   ii. Vaccination of all birds with Newcastle disease
   iii. Quarantine
3. **Foot and mouth disease:** this is an acute highly communicable disease which attack cattle, sheep, goats and pigs.
   a. **Causal organism:** Virus
   b. **Mode of transmission:**
      - Contact between infected and susceptible animals
      - Contamination of feed and water by bursting blisters, urine and nasal discharge of infected animals.
   c. **Symptoms:**

- High fever
- Lameness
- Refusal to eat
- Blisters on the muzzle, tongue, udder and feet.

d. Prevention, control and treatment:

- Vaccination of animals to prevent the disease.
- Isolation of infected animals.
- Culling of infected animals.

EXERCISE

With the aid of a table, give the affected animals, causative organism, symptoms, and mode of transmission, prevention, control and treatment of

1. Contagious abortion
2. Anthrax
3. Swine fever
4. Foot and mouth disease
5. The types of disease are _____ and _____.
6. The disease than can be transferred from animal to man and vice versa is known as _____
7. These diseases that can be transmitted through physical contact are called _____.
8. Examples of infectious diseases is _____ and _____
9. Examples of bacteria diseases is _____ and _____
10.

WEEK 6&7: FARM ANIMAL DISEASE

OBJECTIVES: At the end of the lesson I will be able to:

i. List various disease of farm animal
ii. Mention organisms that causes farm animal disease

CONTENT

c. FUNGAL DISEASE

1. Ringworms

Causative organisms: *Trichophyton* and *Micosporum* species of fungi

Animals: All farm animals

Symptoms:

i. Skin irritation
ii. Loss of appetite and weight
iii. Appearance of ring shaped greyish-white patterns on the skin.
iv. Reduction in the quality of hides and skin.

Mode of transmission

i. Contact with infected equipment.
ii. Physical contact with infected animals

Prevention, control and treatment

i. Apply anti-fungal medication on the affected body parts of infected animals
ii. Disinfect pens, feeders and water pens
iii. Quarantine the infected animals.
iv. Scrape the affected part with razor blade, add iodine and then apply sulphur drugs e.g penicillin.

2. Aspergillosis/Brooder Pneumonia

Causative organism: *Aspergillusfumigatus*

Animals: Poultry birds

Symptoms:

i. Difficulty in breathing
ii. Loss of feathers
iii. Fever

Mode of transmission: inhalation of contaminated air.

Prevention, control and treatment

i. Feed stores should be well ventilated
ii. Wash feed and water troughs daily
iii. Do not offer feeds with moulds to birds.

d. PROTOZOA DISEASES

1. Coccidiosis

Causative organism: Eimeria *spp*

Animals: Duck, turkey, domestic fowl, rabbit, gooseetc.

Symptoms:

i. Dropping wings, loss of hair
ii. High mortality
iii. Loss of appetite
iv. Loss of weight
v. Reduced egg production.

Mode of transmission: Contaminated feed, water, wet litters, etc.

Prevention, control and treatment

i. Remove wet litters and proper sanitation
ii. Use appropriate drug such as *Amprolium*

2. Trypanosomiasis (sleeping sickness)

Causative organism: *Trypanosoma spp*

Animals: cattle, pig, goat and sheep

Symptoms:

i. Dullness in appearance
ii. High body temperature
iii. Loss of appetite and weight

Mode of transmission: Tsetse flies transmit the pathogen from infected animals to the healthy animals

Prevention, control and treatment

i. Treat infected animals with appropriate drug
ii. Spray the insecticides to kill tsetse flies
iii. Destroy natural habitat of the vector (antelope)
iv. Good sanitation such as clearing and burning bush.

Exercise

With the aid of a table, give the affected animals, causative organism, symptoms, and mode of transmission, prevention, control and treatment of

1. Trypanosomiasis
2. Coccidiosis
3. Ringworm
4. Aspergillosis
5. The types of disease are _____ and _____.
6. The disease than can be transferred from animal to man and vice versa is known as _____
7. These diseases that can be transmitted through physical contact are called _____.
8. Examples of protozoan diseases are _____ and _____
9.

WEEK 8&9: FARM ANIMAL DISEASE

OBJECTIVES: At the end of the lesson I will be able to:

i. List various disease of farm animal
ii. Mention organisms that causes farm animal disease

CONTENT

e. WORMS

1. Tapeworms (Taeniasis)

Animals: all farm animals

Symptoms:

i. Anaemia
ii. Indigestion and vomiting
iii. Abdominal pain
iv. Weakness

Mode of transmission: Through meat

Prevention and control

i. Meat should be properly cooked
ii. Proper sanitation in livestock husbandry
iii. Thorough inspection of farm animals before slaughtering

2. Roundworms (Nemathelminthes)

Animals: All farm animals

Symptoms:

i. Loss of appetite
ii. Indigestion and constipation
iii. Death

Mode of transmission

i. Improper sanitary measures
ii. Contaminated feed and water

Prevention and control

i. Good sanitation.
ii. Clean feed and water should be supplied to farm animals.
iii. Pigs should be dewormed regularly.

Common Diseases caused by Nutritional Disorder

1. **Bloat:** This is an excessive accumulation of in the first two compactments of ruminant stomach. It affects all domestic animals.
   a. **Causes:** it is as a result of nutritional disorder.
   b. **Mode of transmission:** Through feeding
   c. **Symptoms**
      - Swollen stomach
      - Diarrhea
      - Profuse salivation
      - Difficulty in breeding
      - Death
   d. **Treatment:** Improvement can be achieved by:
      - Administration of defoaming agents e.g groundnut oil or vegetable oil.
      - Passing a long tube into the stomach to remove the object causing obstruction.
2. **Rickets (Rachitis):** These diseases results from lack of certain minerals and vitamin in the body.
   a. **Causes:** Lack of calcium, phosphorous and vitamin D
   b. **Mode of transmission:** Through poor feeding.
   c. **Symptoms**
      - Improperly developed one (flexible and curved bones), brittle bones.
      - Soft-shelled eggs.
   d. **Correction, treatment and control:** Add fish meal, oyster shell, bone meal, wheat bran to animal feed, increase vitamin D intake.
3. **Anaemia:** This disease occur in all domestic animals but very common in piglets.
   a. **Causes:** Low iron in the blood (iron deficiency).
   b. **Mode of transmission:** Through feeding
   c. **Symptoms**:
      - Loss of appetite
      - Nervousness
      - The animal look pale
      - Labored respiration

d. **Correction, treatment and control:**
    - Injection of 1-2ml of iron into the body.
    - Animals should be allowed to go out so that they can pick iron from the soil during grazing.

4. **Osetomalacia (Pica):** This disease occurs in pregnant, lactating cows and other domestic animals.
    a. **Causes:** it is caused by phosphorous deficiency in the body.
    b. **Mode of transmission:** Through poor feeding.
    c. **Symptoms:**
        - Retarded growth
        - Loss of appetite
        - Low fertility and production
        - Stiffness of gaits
        - Brittle bones and fractures.
    d. **Correction, treatment and control:** This is by increasing phosphorous intake through the addition of feed meal, bone meal, wheat bran and oyster shell to the feed.
5. **Ketosis (Acetonemia):** This disease occurs mostly in high milk producing animals like cows.
    a. **Causes:** It is caused by low level of blood sugar and high concentration of ketone bodies generated from deamination.
    b. **Mode of transmission:** Through feeding.
    c. **Symptoms:**
        - Low milk production
        - Muscular tremor
        - Low feed consumption
        - Secretion of sweet actone containing milk which smell like chloroform.
    d. **Correction, treatment and control:**
        - Inject animal with glucose.
        - Feed animals with molasses.

EXERCISE

1. List various disease of farm animal
2. Mention an organism that causes farm animal disease.

3. Explain the following:
4. Ketosis
5. Ricket
6. Bloat
7. Pica
8. Anaemia
9. Anaemia can be controlled by _____
10. Bloat can be prevented by _____