**AGRICULTURAL SCIENCE JSS 2**

**SECOND TERM**

## SCHEME OF WORK

**WEEK TOPIC**

1. Revision of last term’s work
2. Animals feed and feeding
3. Classification of livestockfeed
4. Factor to consider before deciding Animal Feeds
5. Farm animals diseases: definition and causes
6. Farm animal diseases- Bacterial
7. Farm animal diseases-Viral
8. Farm animal diseases-Fungal and Protozoan
9. Farm animal diseases-worms and nutritional
10. Revision
11. Examinations

**REFERENCE BOOK**

* Junior Secondary Agriculture for Nigerian Schools Book 2 by Anthony Yandeowei, S.O.Adesiyan, J.N Ogbazi, Terry Olowu.

**WEEK ONE**

**TOPIC: REVISION OF LAST TERM’S WORK**

**CONTENT**

* Answers to last term’s objective questions
* Answers to last term’s theory questions

**WEEK TWO**

**TOPIC: ANIMAL FEED AND FEEDING**

Introduction:

Feed, in the context of agriculture, refers to the nourishment provided to livestock. It consists of various nutrients, either individually or in combination with other substances, essential for the healthy growth and development of animals. In this discussion, we'll explore different types of animal feed and the equipment used for feeding farm animals.

Types of Animal Feed:

Animal feeds can be categorized into four primary groups based on their digestibility, fiber content, moisture levels, and the quantity required. These groups include:

1. Concentrates:

Concentrates are feeds with a low proportion of fiber and moisture content, making them easily digestible by farm animals. Concentrates can be further subdivided into two groups:

- Carbohydrate Concentrates: These contain a high proportion of carbohydrates and serve as energy feeds. Examples include maize, guinea corn, and cassava.

- Protein Concentrates: These contain a high proportion of proteins. Examples include beans, peas, cottonseed, sunflower seeds, and animal products like meat, blood meal, bone meal, fishmeal, and milk.

2. Roughages:

Roughages are low in protein and carbohydrates but high in fiber, making them less digestible by animals. They are often combined with concentrate foods for young animals and those raised for milk and meat production. Examples include hay, groundnut hulls, straw, bean pods, and maize stover.

3. Succulents:

Succulents have high water content and are easy to digest. Examples include freshly cut or lush grass and legume plants, pumpkin, silage, melons, and most green crops.

4. Supplements (Minerals and Vitamins):

Supplements are required in small quantities and are low in energy, protein, and fiber but rich in vitamins and minerals. They aid digestion and enhance animal resistance to diseases. They are available in basal and protein concentrate feeds. Other sources of supplements include bone meal, oyster shell, and salt licks.

**II. Feeding Tools and Equipment for Farm Animals:**

Common feeding equipment used for farm animals include:

1. Hay Racks: Used for feeding animals with hay and other forages.

2. Feed Troughs or Bunks: Utilized for feeding grain and silage. Troughs for cattle are typically stationary and placed on well-drained surfaces, preferably concrete or hard surfaces.

3. Self-Feeders: Mainly used for fattening cattle. These may be stationary or portable.

4. Watering Facilities: Essential for the animals' survival. Adequate water supply is crucial, with mature cattle consuming an average of 12 liters per head daily, depending on factors like animal size, season, and diet. Water troughs, wells, springs, streams, or lakes are common water sources for cattle. Properly sized troughs and tanks are essential.

**Note**: Providing suitable shade for farm animals during feeding, especially in dry seasons, helps reduce heat stress.

General Evaluation/Revision Questions:

1. Define animal feeds.

2. Mention and explain three types of animal feed.

3. Describe four tools and equipment commonly used for feeding livestock.

Book Review:

Review answers to revision questions 2 and 3 on page 67 of "WABP Junior Secondary Agriculture for Nigerian Schools BK 2" by A. Youdeowei, S.O. Adesiyan, J.N. Ogbazi, Terry Olowu.

Weekend Assignment:

1. The following are not easily digested by animals except:

(a) Hay

(b) Groundnut hulls

(c) Bean pods

(d) Silage

2. Protein concentrates include the following except:

(a) Meats

(b) Peas

(c) Cottonseed

(d) Maize stover

3. The types of feed which have high water content are known as \_\_\_\_\_\_\_\_\_\_\_\_\_.

(a) Succulent

(b) Roughages

(c) Concentrates

(d) Fiber

4. \_\_\_\_\_\_\_\_\_\_\_\_\_ are used for feeding animals with hay and other forages.

(a) Hay troughs

(b) Hay racks

(c) Hay pan

(d) Feed racks

5. Farm animals should be provided with suitable \_\_\_\_\_\_\_\_\_\_\_\_\_.

(a) Feed troughs

(b) Watering facilities

(c) Self-feeders

(d) Shade

Theory:

1. What criteria are used in classifying animal feed?

2. List four feeding tools and equipment for farm animals..

**WEEK THREE**

**TOPIC: CLASSIFICATION OF LIVESTOCK FEED**

**CONTENT**

* Feed nutrients.
* Classes of feed nutrient.

**FEED NUTRIENTS**

These are substances obtained from feed and used by the body to promote growth, maintenance and repairs of body tissues. About 21 chemical elements make up the various feed nutrients needed for the nutrition of farm animals. The following shows the elements and their chemical symbols.

**Name of element Chemical symbol**

Carbon C

Hydrogen H

Non mineral elements

Oxygen O

Nitrogen N

Phosphorus P

Potassium K

Chlorine Cl

Macro mineral elements

Magnesium Mg

Sulphur S

Calcium Ca

Sodium Na

Cobalt Co

Copper Cu

Fluorine F

Manganese Mn

Zinc Zn

Micro mineral elements

Molybdenum Mo

Selenium Se

Chromium Cr

Iodine I

Iron Fe

**EVALUATION**

1. State the elements which make up feed nutrients.
2. Provide the chemical symbol of (a) Calcium (b) Nitrogen (c) Chlorine (d) Fluorine (e) Phosphorus (f) Molybdenum.

**Classes of Livestock Feed Nutrients**

Major Feed Nutrients

The major feed nutrients that support the growth and health of livestock include:

1. Carbohydrates:

Carbohydrates are essential for providing the energy required by the body for various functions and activities. They occur in nature as starches, cellulose, or fiber and consist of carbon, hydrogen, and oxygen. Carbohydrates are easily oxidized to produce energy. Examples include yams, cassava, potatoes, rice, and bread.

2. Fats:

Fats, which contain carbon, hydrogen, and oxygen, have more carbon and oxygen compared to carbohydrates. They play a crucial role in maintaining the body's temperature and provide two and a half times more energy than carbohydrates. Fats can be found in both plant and animal materials. Examples include milk, fatty seeds like groundnuts and coconuts, animal by-products, fish by-products, cereals, roots, and tubers.

3. Proteins:

Proteins contain carbon, hydrogen, oxygen, nitrogen, and sometimes iron, phosphorus, or sulfur. They are found in the protoplasm of all animals and plants. Proteins are essential for animal growth and repairing worn-out tissues and organs. Protein-rich foods include soybeans, cotton seeds, groundnuts, peas, beans, fish, and meat. Common sources of protein for animal feeds include forages, animal and fish by-products, roots, tubers, and cereal grains.

4. Minerals:

Minerals are essential components of an animal's diet, although they are required in small quantities. Phosphorus and calcium, crucial for bone formation, are exceptions. Of the twenty-one elements involved in animal nutrition, four—carbon, hydrogen, oxygen, and nitrogen—are considered non-mineral elements. The remaining seventeen elements are classified as mineral elements. Macro-elements, needed in large quantities, include calcium, phosphorus, potassium, sodium, sulfur, chlorine, and magnesium. The remaining ten elements, known as micro-elements or trace elements, are required in very small quantities and include iron, iodine, copper, cobalt, chromium, fluorine, manganese, zinc, molybdenum, and selenium.

5. Water:

Water, consisting of hydrogen and oxygen, is essential for aiding digestion and distributing food within an animal's body. It also plays a role in regulating body temperature through heat loss via evaporation from the skin and lungs. Water is naturally present in animal feeds.

6. Vitamins:

Vitamins are essential micronutrients required in very small amounts in animal diets. They are critical for the proper functioning of an animal's body, and their deficiency can lead to health issues. Vitamins mainly consist of carbon, hydrogen, and oxygen and can be categorized into:

- Water-soluble vitamins (e.g., Vitamin B and C)

- Fat-soluble vitamins (e.g., Vitamin A, D, E, and K).

Evaluation Questions:

1. Differentiate between macro and micro elements.

2. Mention types of vitamins you know, along with examples.

General Evaluation:

1. Define animal feeds.

2. Explain why the following food elements are beneficial for livestock:

a. Carbohydrates

b. Proteins

c. Fats and oils

Reading Assignment:

Answer revision questions 1, 4, and 5 on page 67 of "WABP Junior Secondary Agriculture for Nigerian Schools, Book 2" by A. Youdeowei et al.

Book Review:

Review pages 56–67 of "WABP Junior Secondary Agriculture for Nigerian Schools, Book 2" by A. Youdeowei et al.

Weekend Assignment:

1. \_\_\_\_\_\_\_ are required by the animals in large quantities.

A. Mega-elements

B. Nano-elements

C. Macro-elements

D. Micro-elements.

2. One of the nutrients that supply energy needed by the body for keeping the body temperature at the correct level is:

A. Protein

B. Carbohydrates

C. Fat

D. Vitamin.

3. The following are trace elements except:

A. Iron

B. Iodine

C. Manganese

D. Potassium.

4. Carbohydrates occur in nature as:

A. Starches

B. Cellulose

C. Fiber

D. Fat.

5. Protein concentrates include the following except:

A. Meats

B. Peas

C. Cottonseed

D. Maize stover.

IV. Theory Questions:

1. State the elements that make up feed nutrients along with their chemical symbols.

2. Explain the importance of constituents of livestock feed

**WEEK FOUR**

**FACTORS TO CONSIDER BEFORE DECIDING ON ANIMAL FEED**

Introduction:

Selecting the appropriate feed for animals is a critical decision in livestock management. Several factors must be considered to ensure that animals receive the right nutrition for their age, physiological status, purpose, and management system.

Factors to Consider:

Age:

Animals of different ages have varying nutritional needs. Younger animals typically require more protein-rich feeds compared to older animals. Their rapid growth and development demand higher levels of nutrients.

2. Physiological Status:

The physiological condition of animals greatly influences their nutritional requirements. Pregnant and lactating animals, for instance, need more feed to sustain both themselves and their young. Nutrient-dense feeds are essential to support the growth of the foetus and the production of milk.

3. Purpose of Rearing:

The intended purpose of raising animals also dictates their dietary needs. Animals kept for milk production, egg laying, or work require specific feeds tailored to support these activities. Such animals may require larger quantities of feed to meet the demands of their production.

4. Management System:

The management system under which animals are kept plays a crucial role in determining their feeding requirements. Animals in intensive management systems are typically confined and unable to forage for their own food. Therefore, they rely on the provision of both quality and quantity of feed to meet their needs. In contrast, animals under extensive management systems have more opportunities to graze and may require fewer supplemental feeds.

Definitions:

1. Diet:

A diet is the specific amount of feed formulated to meet the nutritional needs of an animal. It is carefully designed to provide the essential nutrients required for optimal health and performance.

2. Ration:

A ration refers to the total amount of feed supplied to an animal within a 24-hour period. It encompasses all the feeds provided to meet the daily nutritional requirements of the animal.

3. Balanced Ration:

A balanced ration is a feed constituent that contains all essential nutrients in their appropriate quantities before being offered to an animal. Two types of balanced rations exist:

a. Maintenance Ration:

This is the amount of feed given to an animal within a 24-hour period, which is just enough for the animal to maintain its normal bodily functions without adding or losing live weight.

b. Production Ration:

A production ration is the amount of feed given to a specific group of animals within a 24-hour period to enable them to produce appropriately. Categories of animals that require production ration include lactating animals for milk production, growing/weaning animals for growth, fattening animals to reach a desired weight, flushing for female animals prior to breeding, steaming up for pregnant animals prior to parturition, pregnant animals to support growing foetuses, broilers for rapid growth, and layers for quality egg production.

Evaluation Questions:

1. Differentiate between macro and micro elements.

2. Mention types of vitamins you know, along with examples.

IV. General Evaluation:

1. Define animal feeds.

2. Explain why the following food elements are beneficial for livestock:

a. Carbohydrates

b. Proteins

c. Fats and oils

Weekend Assignment:

1. A \_\_\_\_\_\_\_\_ is a feed constituent that contains all essential nutrients in their appropriate quantities.

A. Balanced ration

B. Imbalanced ration

C. Maintenance ratio

D. Diet

2. Layers are animals that:

A. Lay eggs

B. Are reared for meat

C. Produce milk

D. Are used for mating

3. Flushing is the process of getting an animal ready for:

A. Breeding purposes

B. Daily activities

C. Parturition

D. Lactation

4. \_\_\_\_\_\_\_\_ is the amount of feed formulated to meet the specific need of an animal.

A. Balanced ration

B. Imbalanced ration

C. Maintenance ratio

D. Diet

5. \_\_\_\_\_\_\_\_ is the total amount of feed supplied to an animal per day.

A. Ration

B. Imbalanced ration

C. Ratio

D. Diet

Theory Questions:

1. What are the factors to consider before deciding on animal feed?

2. List four categories of animals that require production ration.

**WEEK FIVE**

**TOPIC: FARM ANIMAL DISEASE I**

**CONTENT**

* Definition of disease
* Causes of diseases in farm animal
* Mode of transmission of farm animal disease
* Symptoms of farm animals diseases

**DEFINITION**

Disease is any change in the normal function or well-being of farm animals caused by another organism. Animals, like human beings, suffer from many serious diseases which may make them sick and may cause their death in large numbers if they are not treated.

**CAUSES OF DISEASES IN FARM ANIMAL**

Five groups of organism which commonly cause animal disease; they are:

1. Bacteria
2. Viruses
3. Protozoa
4. Worms (parasitic nematodes)
5. Fungi

**EVALUATION**

1. What do you understand by the term ‘Disease’ in farm animals?
2. List four causes of disease.

**MODE OF TRANSMISSION OF FARM ANIMAL DISEASE**

Disease-causing organisms can transit diseases to farm animals through the following modes:

1. Air (airborne)
2. Water
3. Direct contact with organism
4. Bites from insects, ticks and mites

However, preventing exposure of farm animals to these sources of transmission of diseases, the chances of farm animals being affected by diseases which can make them sick can be reduced.

**SYMPTOMS OF FARM ANIMAL DISEASES**

Symptom refers to the sign or indication of the presence of an abnormal condition in an animal. Diseased animals show specific symptoms which farmers can recognize that there are changes in the normal functioning of the bodies of farm animals. Farmers can recognize symptoms of different diseases in their sick animals. Such sick animals are taken to veterinary doctors who can prescribe medicines to cure the farm animals. Common symptoms of diseases in animals include the following:

1. Stunted growth
2. Reduced food utilization
3. Rise in temperature- high fever
4. Abortion in female animals
5. Sores and exudates from the skin
6. Enlarged udder
7. Stained blood in orifices
8. Loss of hair (alopecia)
9. Loss of weight (emaciation)
10. Loss of appetite (anorexia)
11. Anaemia (shortage of blood)

**EVALUATION**

1. Define the term disease.
2. Mention how farm animals can be infected.

**GENERAL EVALUATION/REVISION QUESTIONS**

1. What is a disease?
2. What are the four major modes of transmission of diseases in farm animals by the disease-causing organisms?
3. Define the term symptoms.
4. List eight Symptoms of farm animals diseases.

**WEEKEND ASSIGNMENT**

1. Which of the following is a common symptom of disease in animal.A. uremia B. normal blood C.AnaemiaD. increase food consumption.
2. A change in the normal function or well-being of farm animals caused by another organism is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A. pest B. parasite C. disease D. symptoms.
3. The following are mode of transmission of farm animal disease except A.Air (airborne) B. Water C.direct contact with organism D. in-direct contact with organism.
4. Veterinary doctors help to A. disseminate information to farmers B. vaccinates infected human being C. apply chemicals to wipe-out diseases D. prescribe medicines to cure the farm animals diseases.
5. Loss of hair and appetite are parts of the symptoms of A. parasites B.pest C. disease D. harsh weather.

**THEORY**

1. Differentiate between cause of a disease and symptoms.
2. Mention three common symptoms of diseases in animals.

**WEEK SIX**

**TOPIC: FARM ANIMAL DISEASES II**

Content:

Bacterial Diseases - Modes of Transmission, Methods of Control, Symptoms

BACTERIAL DISEASES

1. Anthrax:

Anthrax is a bacterial disease that primarily affects mammals, especially herbivorous animals such as sheep and goats.

Mode of Transmission: The disease is mostly transmitted through the ingestion of infected or contaminated materials. It can also be spread through direct contact with affected animals, contaminated feeding equipment, and open wounds.

Symptoms:Anthrax is characterized by symptoms such as teeth grinding, a sudden rise in body temperature, and convulsions. Affected animals often stop feeding and exhibit rapid respiration. The disease can lead to sudden death.

Method of Prevention and Control:Isolate sick animals to prevent further spread. Regular vaccination of animals is essential. Maintain proper sanitation in all animal housing areas. Properly dispose of animals that succumb to the disease, along with their bedding, through deep burial. Ensure immediate disinfection of the affected animal housing.

Treatment: Sick animals should be isolated and treated with antibiotics such as penicillin.

2. Typhoid:

Typhoid is a bacterial disease mainly found in poultry birds, affecting their intestinal tract.

Mode of Transmission:Typhoid spreads through contact with the body fluids of infected birds.

Symptoms: Symptoms include high fever, fatigue, and the presence of reddish droppings.

Method of Prevention and Control: Consultation with a veterinary doctor is crucial. Vaccination of poultry birds against this disease is recommended.

Treatment:Consultation with a veterinary doctor is essential for proper treatment.

3. Contagious Abortion (Brucellosis):

Contagious abortion is a bacterial disease that affects cattle, goats, and pigs.

Mode of Transmission: This disease is transmitted through food and water contaminated with discharges and aborted foetuses.

Symptoms:Symptoms include stillbirths, retained placenta, abortions during the 7th to 9th month of pregnancy, and infertility in males.

Method of Prevention and Control:Isolate affected animals from the rest of the herd. Vaccinate all animals before breeding. Ensure clean containers and surroundings when providing food. Proper hygiene measures should be maintained.

Treatment: Vaccination is the primary method of treatment.

4. Mastitis:

Mastitis is a bacterial disease that affects the mammary glands (udders) of cattle, sheep, goats, and pigs (swine).

Mode of Transmission: Bacteria from dirty floors and milkers can enter the mammary glands through the teat and udder, causing infection.

Symptoms: Symptoms include fever, pain, udder swelling, the presence of blood in the milk, and an increase in the animal's body temperature.

Method of Prevention and Control:

a. Properly clean the udder before and after milking.

b. Ensure milking is done in a clean environment.

c. Thoroughly wash hands with soap and clean water before milking.

d. Avoid overcrowding dairy animals to prevent stress.

Treatment: Antibiotics such as penicillin and other appropriate medications are used to treat affected animals.

5. Cowpox:

Cowpox is a disease that affects cows, as well as sheep and poultry.

Symptoms: Affected cows exhibit udder swelling and eruptions on their udders.

Method of Prevention and Control: Disinfect all equipment used for feeding and milking cattle.

EVALUATION QUESTIONS:

1. What is a disease?

2. Describe the mode of transmission, symptoms, method of prevention, and control of the following:

a. Anthrax

b. Typhoid

GENERAL EVALUATION:

1. List three bacterial diseases you know.

2. State the mode of transmission, symptoms, method of prevention, and control of the following:

a. Anthrax

b. Typhoid

c. Contagious Abortion (Brucellosis)

d. Mastitis

e. Cowpox

WEEKEND ASSIGNMENT:

1. The following are bacterial diseases except:

A. Anthrax

B. Typhoid

C. Mastitis

D. Ringworm

2. The following are methods of preventing and controlling anthrax disease except:

A. Sick animals should be isolated

B. Vaccination of the animals should be done regularly

C. Partial proper sanitation should be maintained in all animal houses

D. Animals that die of the disease, together with all the bedding, should be buried deep in the ground

3. Mastitis affects the following animals except:

A. Cattle

B. Sheep

C. Goats

D. Poultry

4. Which of these diseases mostly affects the intestines of birds?

A. Ringworm

B. Cowpox

C. Typhoid

D. Contagious Abortion (Brucellosis)

5. Another name for contagious abortion is:

A. Anthrax

B. Typhoid

C. Mastitis

D. Brucellosis

THEORY:

1. State the mode of transmission, symptoms, method of prevention, and control of the following:

a. Mastitis

b. Aspergillosis

**WEEK SEVEN**

**TOPIC: FARM ANIMAL DISEASES III**

CONTENT:

Viral Diseases - Symptoms, Mode of Transmission, Prevention, and Control

VIRAL DISEASES

1. Rinderpest or Cattle Plague:

Rinderpest is a highly contagious viral disease that poses a significant threat to cattle, and it can also affect sheep and goats. This deadly disease has caused considerable cattle losses in Nigeria and other regions.

Mode of Transmission: Rinderpest spreads through direct contact with infected animals and contaminated feed and water sources.

Symptoms: The disease presents symptoms such as elevated body temperature, reduced appetite, blood-stained diarrhea, labored breathing, and frequent abortion. The primary consequence of Rinderpest is a high mortality rate.

Method of Prevention and Control: Prevention primarily involves immunization through vaccination, as there is no successful medical treatment. Infected animals must be isolated to prevent further transmission.

2. Foot and Mouth Disease:

Foot and Mouth Disease is a highly contagious viral disease affecting cattle, birds, goats, sheep, and pigs.

Mode of Transmission:The disease is transmitted through contact with infected animals.

Symptoms: Symptoms include fever, headache, and the appearance of blisters or swellings on the mouth, skin, udder, and excessive salivation.

Method of Prevention and Control: Control measures are more effective than treatment. Infected animals, especially cattle, are often culled to prevent the spread of the disease. Control methods include immunization and stringent sanitation. Isolation of infected animals from healthy ones is crucial.

3. Newcastle Disease:

Newcastle Disease is a viral disease that primarily affects poultry.

Mode of Transmission: The virus spreads through secretions from infected birds and can be airborne.

Symptoms: Symptoms include coughing, sneezing, nasal and eye discharge, difficulty in breathing, loss of appetite, diarrhea, paralysis, and overall weakness.

Method of Prevention and Control: Proper sanitation practices must be maintained. Infected birds should be quarantined, and vaccination is essential for all poultry.

4. Bird Flu (Avian Influenza):

Bird flu, also known as Avian Influenza, is a highly contagious viral disease affecting poultry. It has been reported in various countries, including Nigeria. This disease targets the respiratory, digestive, and nervous systems of poultry and, in some cases, can infect humans.

Mode of Transmission:Bird flu can be transmitted through direct contact with infected birds' secretions, especially feces. It can also be indirectly transmitted through contaminated water, feed, equipment, and clothing. The virus enters the body through the respiratory and digestive systems.

Symptoms: Symptoms include severe depression, reduced egg production, refusal to eat, difficulty in breathing, watery eyes, facial swelling (comb and wattle turning blueish-black), diarrhea, and sudden death, sometimes without visible symptoms. Ducks may succumb to the disease without exhibiting symptoms.

Method of Prevention and Control:

i. Prevent contact between domestic poultry and wild birds.

ii. Isolate different poultry species on the same farm from each other.

iii. Quarantine newly acquired or reintroduced birds.

iv. Restrict farm visits to authorized personnel only.

v. Install footbaths with disinfectants at poultry house entrances.

vi. Practice strict hand and foot hygiene when entering or leaving poultry houses.

vii. Regularly disinfect soiled materials and equipment.

viii. Ensure clean and uncontaminated sources of poultry feed and water.

ix. Report large poultry mortality or observed symptoms promptly to a veterinary doctor.

x. Properly dispose of dead or infected birds through burial or incineration, followed by thorough hand and foot hygiene.

5. Pneumonia:

Pneumonia is a viral disease that affects cattle, targeting their lungs.

Symptoms: Symptoms include increased body temperature, labored breathing, reduced appetite, and nasal and ocular discharges. (Note that pneumonia can also be caused by bacteria.)

Method of Prevention and Control: Proper sanitation practices should be observed. Infected animals must be isolated, and vaccination is recommended.

Treatment: Treatment involves the use of antibiotics or antiviral medications.

6. Kata (Peste des Petits Ruminants/Goat Plague):

Kata is a viral disease primarily affecting goats, commonly found in southern Nigeria. It impacts both the respiratory and intestinal tracts of animals.

Symptoms: Signs of the disease include coughing, nostril discharge, lip scabs, and diarrhea.

Control: Overcrowding of animals should be avoided.

Treatment: There is no specific treatment for kata. Outbreaks should be reported to a veterinary doctor.

GENERAL EVALUATION QUESTIONS:

1. Name three types of viral diseases.

2. State the mode of transmission, symptoms, method of prevention, and control for the following diseases:

a. Rinderpest

b. Foot and Mouth Disease

c. Newcastle Disease

d. Bird Flu (Avian Influenza)

WEEKEND ASSIGNMENT:

1. Difficulty in breathing is not a symptom in the following diseases, except:

A. Rinderpest

B. Newcastle Disease

C. Pneumonia

D. Kata

2. Which of these diseases is airborne?

A. Coccidiosis

B. Trypanosomiasis

C. Newcastle Disease

D. Rinderpest

3. The highly contagious viral disease that primarily affects poultry is known as:

A. Coccidiosis

B. Rinderpest

C. Bird Flu

D. Pneumonia

4. Pneumonia affects which part of the animal's body?

A. Brain

B. Lungs

C. Intestine

D. Skin

5. Another name for Rinderpest is:

A. Cattle Plague

B. Goat Plague

C. Sheep Plague

D. Contagious Abortion

THEORY:

1. List two symptoms of Kata (Peste des Petits Ruminants/Goat Plague).

2. Mention three methods of prevention and control for Bird Flu (Avian Influenza).

**WEEK EIGHT**

**TOPIC: FARM ANIMAL DISEASES IV**

**Fungal and Protozoan Diseases**

**PROTOZOAN DISEASES**

1. Trypanosomiasis (Nagana)

Trypanosomiasis, also known as Nagana, is a highly lethal disease that affects certain cattle breeds, such as White Fulani and Red Bororo. However, Ndama and Muturu cattle show resistance to this disease. It is caused by a protozoan parasite called Trypanosomes. These parasites are transmitted by infected tsetse flies when they bite humans, causing a condition known as sleeping sickness.

Mode of Transmission: Trypanosomiasis is transmitted through female tsetse flies. When these flies feed on the blood of infected animals and later bite healthy animals, they transmit the parasites. Female tsetse flies require mammalian blood for the development of their larvae, while male tsetse flies do not feed on blood and cannot transmit the parasite.

Symptoms: Clinical signs of Trypanosomiasis include an increase in body temperature, lethargy, drowsiness, nervous disorders, anemia, paralysis, weight loss, and eventual death in infected animals.

Method of Prevention and Control: To combat Trypanosomiasis:

- Eliminate tsetse fly habitats by clearing surrounding bushes and applying recommended insecticides to kill tsetse flies.

- Consult a veterinary doctor for treatment, and use drugs such as Bayer 205 or lomidine.

2. Coccidiosis

Coccidiosis is a protozoan disease that affects various animals, including cattle, sheep, goats, pigs, poultry, and rabbits.

Mode of Transmission: Coccidiosis is primarily transmitted through contamination with the feces of infected animals. It can occur through feed, contaminated water, and soil tainted with droppings.

Symptoms: Clinical signs of coccidiosis include watery discharge, loss of appetite, anemia, bloody feces, paleness, ruffled feathers (in poultry), progressive emaciation, and often leads to fatalities in affected animals.

Method of Prevention and Control: To prevent and control coccidiosis:

- Properly segregate droppings from infected poultry animals to protect healthy animals.

- Maintain high levels of sanitation in poultry houses.

- Keep feed and water troughs consistently clean.

- Seek treatment from a veterinary doctor who may prescribe various drugs.

FUNGAL DISEASES - Diseases Caused by Fungi

1. Aspergillosis

Aspergillosis is a fungal disease that affects poultry.

Mode of Transmission: This disease spreads through the air (airborne) as birds inhale spores. It can also be transmitted through moldy litter, contaminated feed, overcrowding, and contaminated incubators.

Symptoms: Clinical signs of aspergillosis include loss of appetite, respiratory difficulties, elevated body temperature, and wheezing noises.

Method of Prevention and Control: To prevent and control aspergillosis:

- Remove all potential sources of contamination.

- Maintain cleanliness in the hatchery and prevent water and feed spillage.

2. Ringworm

Ringworm is a fungal disease that can affect all farm animals.

Mode of Transmission: The disease is transmitted through contact with infected animals and contaminated surroundings.

Symptoms: Infected animals exhibit skin lesions, skin irritation, weight loss, and loss of appetite.

Method of Prevention and Control: To prevent and control ringworm:

- Clear all bushes around the farm.

- Treat affected skin with a mixture of sulfur and Vaseline.

- In poultry, apply violet or iodine ointment to ringworm lesions.

GENERAL EVALUATION

1. State the mode of transmission, symptoms, method of prevention, and control of the following diseases:

- Trypanosomiasis

- Coccidiosis

- Aspergillosis

- Ringworm

WEEKEND ASSIGNMENT

1. Which of the following is a fungal disease?

A. Coccidiosis

B. Anthrax

C. Aspergillosis

D. Foot and mouth

2. Among the symptoms listed, which one is not associated with Trypanosomiasis?

A. Rise in temperature

B. Nervous disorder

C. Paralysis

D. Hyperactivity

3. Skin irritation is commonly seen in animals infected with:

A. Newcastle disease

B. Rinderpest

C. Kata

D. Ringworm

4. Trypanosomiasis is primarily transmitted by:

A. Mosquitoes

B. Black flies

C. Tsetse flies

D. Ticks

5. Which of the following cattle breeds is not resistant to Nagana?

A. N'dama

B. Keteku

C. Red Bororo

D. Muturu

THEORY

1. List any type of protozoan diseases you know.

2. Mention three methods of prevention and control of Aspergillosis.

**WEEK 9**

**TOPIC: FARM ANIMAL DISEASES V**

**CONTENT:**

**Worms: Identification, Types of Worms, Symptoms, Control of Worms.**

**WORMS**

**Introduction:**

Parasitic worms can pose a significant threat to farm animals, potentially leading to severe health issues or even death. These worms can inhabit various parts of an animal's body, including the intestine, respiratory tract, and organs. Below are some examples of these parasitic worms.

Examples of Worms:

1. Tapeworms

2. Roundworms

3. Liver Fluke

Symptoms of Worm Infection:

The symptoms of worm infection vary depending on the location of the worms within the animal's body. Common signs of worm infection include:

1. Coughing

2. Diarrhea

3. Loss of Weight

4. Anaemia

5. Presence of Worms in Feces

Control of Worm Infection:

Effective control of worm infection in farm animals involves several measures:

1. Isolation and Treatment: Isolate affected animals and provide them with appropriate worm expellers or deworming treatments.

2. Pasture Management: Avoid grazing animals on pastures contaminated with worm larvae. Regularly remove animal feces from pastures to prevent contamination of water and feed sources.

3. Proper Feeding: Ensure farm animals receive proper nutrition to help them build resistance to the effects of worm infections.

Nutritional Bloat:

Nutritional bloat is a disease that affects cattle, sheep, goats, and rabbits. It is primarily caused by the consumption of succulent fodder, which can block the digestive tract, particularly in cattle.

Mode of Transmission: Nutritional bloat is contracted by consuming succulent fodder.

Symptoms: Symptoms include a swollen digestive tract and enlargement of the bowel.

Prevention and Control: To prevent and control nutritional bloat:

- Reduce the feeding of succulent fodder.

- Provide animals with protein supplements.

- Limit the consumption of seeds, especially in cattle.

General Guidelines for Prevention and Control of Animal Diseases:

Maintaining the health of farm animals requires adherence to several general guidelines:

1. Healthy Animal Acquisition: Only bring clean and healthy animals into the herd.

2. Drainage: Ensure proper drainage of lots to keep them dry and free from stagnant water.

3. Isolation of Diseased Animals: Isolate farm animals with contagious diseases to prevent the spread of infection.

4. Regular Testing: Conduct annual testing of farm animals for diseases such as brucellosis and tuberculosis.

5. Vaccination: Vaccinate farm animals against common local diseases as a preventive measure.

6. Regular Disinfection: Maintain regular disinfection of housing and equipment.

7. Parasite Control: Use recommended insecticides and methods to control parasites.

8. Comfortable Flooring:Avoid allowing animals to lie on cold floors, which can lead to health issues.

9. Quarantine: Isolate newly acquired animals for a minimum of three weeks to prevent the spread of diseases.

10. Inspection and Treatment: Inspect and treat newly acquired animals for external and internal parasites.

11. Consult a Veterinary Doctor: Seek advice from a veterinary doctor for proper disease management.

GENERAL EVALUATION QUESTIONS:

1. State three symptoms of worm infections.

2. List three methods of controlling worm infections.

3. Explain the transmission, symptoms, prevention, and control of nutritional bloat disease.

4. State five general guidelines for the prevention and control of animal diseases.

WEEKEND ASSIGNMENT:

1. Which of the following is not a symptom of worm infection?

A. Coughing

B. Diarrhea

C. Loss of Weight

D. Tuberculosis

2. Which of the following measures is effective in controlling worm infections in farm animals?

A. Isolation and treatment of infected animals

B. Increasing grazing on contaminated pastures

C. Irregular sanitation of farm animal waste

D. Rarely feeding farm animals to build resistance to worms

3. \_\_\_\_\_ of newly acquired animals is important before introducing them to other animals on a farm.

A. Unity

B. Feeding

C. Treatment

D. Isolation

4. The disease characterized by the enlargement of the bowel is called:

A. Kata

B. Diarrhea

C. Bloat

D. Coccidiosis

5. The following are examples of worms affecting farm animals except:

A. Earthworm

B. Tapeworm

C. Roundworm

D. Liver Fluke

THEORY

1. Describe the transmission, symptoms, prevention, and control of nutritional bloat disease.

2. Mention two general guidelines for the prevention and control of animal diseases.

**WEEK TEN**

**REVISION**

**WEEK ELEVEN**

**EXAMINATIONS**