**J.S.S 2 SCHEME OF WORK**

**WEEK TOPIC**

1. Farm structures and building

Meaning and types

1. Animals feed and feeding

Meaning and types of feeds

1. Classification of livestock feed
2. Factors to consider before deciding animal feeds
3. Animals pests and diseases.

Definition

Causes of diseases in farm animal

1. Farm animal diseases and control

Bacteria

Fungal

Viral

Protozoan

1. Farm animal diseases
2. Farm animal diseases
3. Farm animals diseases
4. Revision

11-12 Examination

**WEEK ONE**

**FARM STRUCTURES**

**Meaning of farm structure**

Farm structures are simple erections which are constructed in the farm site to make farm operations easier. They are usually very simple building which to are not made from concrete. Farm structures are constructed to serve specific purpose on the farm. They could be temporary or permanent dispending on their uses or the purpose they serve.

**MEANING AND TYPES**

1. PROCESSING STRUCTURES: These are structures used for the processing of different kinds of farm produce. They include shelling or hulling barns, smoking houses, slaughter shed, milk pasteurizing shed, drying shed, cassava mill, and rice mill. In addition, processing structures also include sheds designed and erected to accommodate (house) processing machines such as grinding machines, feed mills, oil palm press and rice mill.
2. STORAGE STRUCTURES: These are used for storing farm produce of different kinds. They include the following:
3. Yam barn for storing yam;
4. Silos for storing grains;
5. Cribs for storing unshelled maize;
6. Rhumbus for storing grains;
7. Compost pit for storing compost manure and
8. Silage pit.
9. UTILITY STRUCTURES: These are structures which provide service for the whole farm. They are useful for every aspect of the farm. Utility structures are wells, fences, dams, boreholes, irrigation carnals, animals dips, spray and water tanks
10. DAMS: A dam is a structure used to hold water across a river a stream. They are made with stones, wood, mud or concrete. Dams make water available all year round for irrigation of crops, water for animals to drink and other farming operations.
11. CANALS: These are structures used to control the flow of water on the farm. There are two types of canals. These are the ***irrigation canal*** which are constructed to carry water form rivers, lakes or streams to the field where crops are growing. The ***drainage canal*** however, is a kind of gutter which is constructed for removing excess water from the farm.
12. FENCES: These are constructed round the farm to serve various purpose such as:
13. To protect crops and animals
14. To prevent thieves from gaining access to the farm;
15. To mark or demarcate boundaries;
16. To control farm animals grazing and breeding habit and;
17. To prevent animals from destroying the crops.

Fences are of different types such as the barbed wire fence; bamboo fence; wall (concrete) fence, electric fence, wire netting fence; post and range fence; and hedge or live fence.

1. MAINTENANCE STRUCTURES: These are structures built for the purpose of maintaining farm tools and implements. A major examples is the shed used as workshop such as for woodwork or metal work where tools are being repaired on the farm
2. FARM SHELTER: These are simple buildings erected at different points in the farm for various purposes. They are constructed from cheap and locally available materials and are usually abandoned or destroyed as soon as the farming operation for which they were built is completed. Hence, they are also called ‘temporary buildings’ or ‘make shifts’. Commonly constructed farm shelters include sheds for rest or protection of farmers (workers) during rain or harsh sun; sheds for keeping machines, equipment and tools being used on a site, sheds for temporary storage of harvested produce before marketing or proper storage and nurseries for raising seedlings.

**WEEK 2**

**FEED OF FARM ANIMALS**

The food given to farm animals is called livestock feed or simply put ‘feed’. The livestock farmer must supply his animals with the appropriate quantity and quality of feed for:

1. Growth
2. Repair of worn out tissues
3. Energy
4. General well being of animals
5. High production of animal produce such as milk, meat, and egg production

**TYPES OF FEED**

Animals are fed with different kind of feeds which vary in composition and uses. Hence, they are classified according to the quantity of fibre and moisture in the feed into four. These are:

1. Basal or energy feeds
2. Concentrates
3. Roughages
4. Supplements and additive

**Basal of Energy Feeds**

Basal feeds are feeds made to supply energy to the animals. They have crude fibre content less than 18%. They usually make up 60-90% of livestock ration. Examples are maize, rice, millet, guinea corn, roots and tubers like yam and cassava. Basal feed must be supplemented to meet the growth and maintenance need of farm animals.

**Characteristics**

It is high in carbohydrates or starchy food

It is low in fibre

It is low in protein

It lacks vitamins and importance minerals.

It is highly digestible,

It is acceptable to most farm animals especially the monogastrics.

**Concentrates**

These are feed or feed mixtures which provide all the primary dietary needs of farm animals. It may be either whole grain feeds or mixture of basal and supplement feed. Concentrates may be high in energy called energy concentrates or high in protein called protein concentrates. They have high nutritive value because they are important sources of energy, protein, minerals and vitamins. Examples are blood meal, bone meal, fish meal, groundnut cake, palm kernel cake, oyster shell cake, cottonseed cake and coconut cake. They are usually fed to monogastrics but can be used as supplements for some herbivores

**Characteristics**

It has low fibre content

It may be high in protein or energy

It is highly digestible

It is low in minerals

**Roughages**

Roughages are feeds which are high in fibre content. They add bulk to animal feeds and are relatively less digestible. Roughages are poor in nutritive value hence, animals fed on roughage need supplements. Roughages are fed mostly to ruminants (cattle, sheep and goat). This is because other animals cannot digest hem. They include the vegetative part of plants or dry (preserved) vegetative matters. Roughages include:

1. **Succulent feed:** This is also called fresh forage or wet roughages. It include grasses, legumes, cereals and root crops grown for soilage (grazing) or silage. Silage refers to succulents which are stored in air-light containers such as silos in order to preserve their freshness.
2. **Fodder or dry roughages**
3. Hay: This is the young and succulent parts of grasses, legumes and other plant cut and dried for feeding animals. It is a cheap source of food for ruminants during the dry season. It is higher in nutrient than straw.
4. Straw: This refers to the parts of harvested crops or grasses cut and stored for future use. After the ripe seeds have been harvested the remains of plants are cut, dried and fed to animals during the dry season.
5. Chaff: This is the husk separated from grain during threshing. It is got from threshed grains such as maize, rice, cowpea an others.

**Characteristics**

They are high in fibre

They are low in protein and digestible carbohydrate.

They have poor digestibility

**Supplements and Additives**

Feed supplements are added to the main feed to supply nutrients that are lacking in the main feed or diet of the animals. They may be supplied separately or mixed with the feeds. Feed supplement include:

Cotton seed cake,

Soya bean meal,

Groundnut cake,

Egg shell meal,

Oyster shell meal,

Bone meal,

Fish meal,

Salt licks,

Lime stone,

Vitamins.

Feed

Concentrates

Roughages

Energy concentrates

Protein concentrates

Forages (succulents)

Fodder

**WEEK 3**

**CLASSIFICATION OF FEED**

Animals feed can be classified according to the nutrients they supply into the following:

1. Carbohydrates: these provide energy to farm animals for their activities such as growth, reproduction and milk production. Examples include maize, rice, millet.
2. Protein: This is needed for growth and repair of worn-out tissues and fro production of antibodies. Examples of protein are fishmeal, bone meal, poultry offal, soya bean meal, groundnut cake, palm kernel cake and others.
3. Fats and oil: This supply energy and keep the body temperature under control. Fats include palm oil, coconut meal, lard, cotton meal cake and so on.
4. Minerals: These help to carry out vital body functions such as bone and teeth formation, blood clothing, egg shell formation and so on. Minerals include calcium, iron, phosphorus, iodine, potassium and others.
5. Vitamins: These are required for proper growth and development of animal. They help to keep the animal healthy. Examples are vitamins A, B, C, D, E and K.
6. Water: This is constituent of body fluid. It helps to regulate body temperature, digest (breakdown) food and lubricate joints.

**WEEK 4**

**FACTORS TO CONSIDER BEFORE DESIDING ANIMAL FEED**

1. The physiological state of the animals whether for pregnant, dry or lactating or young animals.
2. The availability of the feed stuff
3. The composition of the nutrients
4. The age of the animals
5. The familiarity of the feed to animal
6. Palability of the feed.
7. The cost of feed stuff.

**WEEK 5**

**DISEASES OF FARM ANIMALS**

**Meaning of Diseases**

A disease is nay abnormality in health. It is a deviation from the normal functioning of any part of the animal body. Disease may manifest in form of infection, irritation or unfavourable condition. Hence, a diseased animal cannot perform the normal body processes. Disease results in ill health which may result in death.

**Types of Diseases**

A sick or diseased animal will show some or all the following signs.

1. Loss of appetite;
2. High temperature;
3. Persistent coughing;
4. Sluggishness;
5. Watery, smelling or blood stained feaces;
6. Discharge from the eyes, mouth, nostril or anus;
7. Rough skin
8. Dropping of tail or wings in birds;
9. Emaciation;
10. Death.

Disease could be categorized into two. These are:-

1. Infectious Disease:- Infectious disease are the disease which can affect an animal without the animal coming in contact with the infected animal or infected materials. They are transmitted through the air, water, dust or other agents. Examples of contagious diseases are anthrax, fowl typhoid, conccidiosis and new castle disease
2. Contagious Disease:- These disease can only affect an animal by physical contact with an infected animal. Examples of contagious diseases are foot and mouth disease, mastitis and contagious bovine abortion.

Animals can contact disease through the following:

1. Air.
2. Contaminated feed and water.
3. Dropping or feaces or infected animals
4. Infected feeding materials e.g. water troughs, feed troughs and others.
5. Insect vectors.

**WEEK 6**

**Common Disease of Farm Animals**

The common disease of farm animals include the following

1. **Cattle**
2. Foot and mouth disease
3. Rinder pest
4. Anthrax
5. Brucellosis or contagious bovine abortion
6. Mastitis
7. Tuberculosis
8. Trypanosomiasis
9. Heart water disease
10. Babesiosis or Tick-borne fever
11. Kirchi (Cowpox or streptothricosis)
12. **Sheep and goats**
13. Blue tongue
14. Kata (stomatitis or pseudorinderpest)
15. Contagious ethyma or dermatitis
16. Foot rot
17. **Pigs (swine)**
18. Swine fever
19. Swine erysipelas (Diamond skin disease)
20. Contagious abortion of swine
21. Transmissible gastoententis (TGE)
22. Roundworm infection (Nemathelminthes)
23. **Rabbits**
24. Sore hock
25. Mange
26. Bloat
27. Coccidiosis
28. **Poultry**
29. New castle disease
30. Fowl pox
31. Fowl typhoid
32. Coccidiosis
33. Chronic respiratory disease (CRD)

**Table showing common disease of farm animal**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of disease** | **Causal organism (agent)** | **Animal affected** | **Symptoms** | **Mode of transmission** | **Body area affected** | **Effects** | **Treatments** | **Prevention on and control measures** |
| Foot and mouth | Virus | Cattle | 1. High fever 2. Loss of appetite 3. Blisters or sores on the muzzle (lips), tongue, cheek, udder and feet 4. Weakness and lameness 5. Excessive salivation and foaming | By contact with infected animals, contaminated feed. | Legs | Serious loss of animals (death) | No effective treatment | 1. Vaccination to prevent the disease 2. Isolation of diseased animals 3. Slaughter and bury infected animals |
| Rinderpest or cattle plague | Virus | Cattle can also affect sheep, goat and pigs | 1. High fever (rise in temperature 2. Loss of appetite 3. Blood stained diarrhea 4. Difficulty in breathing 5. Grinding | 1. Eating contaminated food. 2. Contact with infected animals | Entire body | High rate of animals | No treatment | 1. Vaccination to prevent the disease 2. Isolation of infected animals 3. Quarantine 4. Kill and bury diseased animals |

**WEEK 7**

**COMMON DISEASES OF FARM ANIMALS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of disease** | **Causal organism (agent)** | **Animal affected** | **Symptoms** | **Mode of transmission** | **Body area affected** | **Effects** | **Treatments** | **Prevention on and control measures** |
| Anthrax | Bacteria | Ruminants (cattle, sheep and goat) | 1. High fever 2. Convulsion 3. Increased breathing rate 4. Black or blood stained discharge from mouth, eyes, nostrils etc. 5. Sudden death 6. Welling out of neck, abdomen after death | Contact with infected animals and their products | Whole body | Sudden death of animals (sometimes without symptoms | If symptoms are noticed early, treat with antibiotics. | 1. Vaccination 2. Isolation and slaughter of diseased animals should be burnt and buried. |
| Brucellosis (contagious bovide abortion | Bacteria | Cattle pigs | 1. Inflammation of uterus and mammary glands 2. Abortion or pregnancy at 5th – 7th month as still birth 3. Retention of after birth | 1. Direct contact with:  * Infected after birth * Foetal fluid or aborted fetuses * Coition with infected bull. * Contaminated feed or pasture | Foetus (pregnancy) | 1. Loss of foetus 2. Low rate of production 3. It is zoonotic (i.e. it can affect human beings). | No effective treatment | 1. Vaccination 2. Report any occurrent to veterinary doctor |
| Trypano somiasis (nagana) | Protozoa (trypanosoms) | Cattle | 1. Severe anaemia 2. Intermittent fever 3. General weakness 4. Hairs on tail often pull-out 5. Staggering 6. Death | By tse-tse fly | The brain | 1. Drop in the level of production 2. Death of animals | Use drugs such as Babesin, Bayer 2005 etc. | 1. Use insecticide to kill vectors (tse-tse fly) 2. Good sanitation such as cleaning and burning of bush. |
| Bloat | Nutritional disorder | Ruminants (cattle, goat, sheep and rabbit) | 1. Diarrhea 2. Prof use salivation 3. Swollen stomach 4. Vomiting 5. Difficulty in breath 6. Death | Feeding on immature pasture | Stomach | Swollen stomach and digestive tract | 1. Use defoaming agents such as groundnut 2. Pass a large tube into stomach to remove obstacle causing obstruct | 1. Do not graze animals on immature pasture 2. Feed high protein supplements or feeds. |

**WEEK 8**

**COMMON DISEASES OF FARM ANIMALS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of disease** | **Causal organism (agent)** | **Animal affected** | **Symptoms** | **Mode of transmission** | **Body area affected** | **Effects** | **Treatments** | **Prevention on and control measures** |
| Mastitis | Bacteria | Ruminants may affect pigs | 1. Swollen under 2. High temperature 3. Discharge of pus from the udder 4. Yellowish smelling milk | Through injury especially on the teat | Udder | Drop in milk yield | Injection of antibiotics  Massaging the mammary gland after injection | 1. Good sanitation 2. Clean milking practice to avoided injury 3. Keeping the udder dry |
| Krchi (cowpox or streptothricosis | Bacteria | Ruminatns and igs | 1. High lesion 2. Irritation 3. Loss of hair 4. Swollen udder | * Direct contact with infected animals | Skin | 1. Poor production of hair and milk | Treatment of wounds with tetracy cline capsules | 1. Regular bathing 2. Disinfect and feeding and milking equipment 3. Vaccination on slaughter and bury infected animals |
| Swine fever | Virus | Pigs | 1. High temperature 2. Lost of appetite 3. Diarrohoea 4. Bluish discoloration at the ears, legs and snouth | Contact with infected pig | Whole body | Death of animals | No successful treatment, no available vaccine |  |
| New castle disease (fowl plague) | Virus | Poulty | 1. Sudden death without symptoms 2. Breathing difficulty 3. Loss of weight 4. Watery greenish diarrhea 5. Diarrhea 6. Circling movement | 1. Air borne spread 2. Contaminated vaccine and equipement 3. Infected birds | 1. Nervous system 2. Respiratory tract | Loss of poultry birds | No effective treatment | 1. Quarantine 2. Vaccination 3. Sanitation |

**WEEK 9**

**COMMON DISEASES OF FARM ANIMALS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of disease** | **Causal organism (agent)** | **Animal affected** | **Symptoms** | **Mode of transmission** | **Body area affected** | **Effects** | **Treatments** | **Prevention on and control measures** |
| Fowl pox | Virus | Poultry | 1. Blisters on comble, wattle and feed 2. Loss of weight 3. Reduced egg production | Bitting insects | Comb | Light weight poultry birds  Low e.g. production | Use of antibiotics | 1. Vaccination on and sanitation 2. Culling of diseased birds |
| Coccidiosis | Protozoa | Poultry, rabbits | 1. Blood stained dropping or feaces 2. Loss of weight 3. Diarrhoea 4. Ruffle feathers | Feeding of infected feed, water and infected feaces | Digest ice tract | 1. Reduced egg production 2. Death of animal | Use of sulphur drugs | 1. Good sanitation 2. Use of coccidiotic tablets 3. Disinfect poultry houses before stocking |
| Chronic respiratory disorder (CRD) | Myuco plasma (virus like microbe) | Poultry | 1. Nasal discharge 2. Swollen face 3. Breathing difficultry 4. Loss of weight | Breathing in of virus from contaminated feed, water or urine and | Air sac | 1. Loss of birds | Use of antibiotics | 1. Sanitation 2. Good ventilation 3. Avoid use of dust litter |
| Mange | Lice | Rabbit | Loss o hair |  | 1. Skin |  | Dusting with chemical | 1. Dust with powder 2. Good sanitation |