WEEK 1

TOPIC: ANIMAL FEED 1

ANIMALS FEED

Animal feed is the food given to animals which are domestic often refers to fodder in of care and management of farm animals by humans for profit. Supply of quality feed ensures the health of animals. Various feeds include poultry feed, sheep husbandry, cat food, pet food, pig farming, cattle feeding, dog food, equine nutrition and bird food.

Meaning of Feed

Livestock feeds are those food materials such as hay, straw, roughages, grasses and legumes, as well as concentrates, fed to farm animals to nourish their bodies, and achieve high returns. For this to be possible, the livestock farmer must have to ensure the supply of adequate and appropriate quantity and quality of feedstuff in their nutrition. **Nutrition,** on the other hand, is the application of scientific knowledge to the day-to-day feeding of livestock. The ultimate objective in feeding livestock is the conversation of the food fed into useful animal products. Much of the feed for livestock are either inedible to man, or surplus for his immediate requirement.

Types of Feeds

1. **Energy Yielding Feeds:**

Carbohydrates are energy giving or basal organic compounds, having hydrogen, oxygen and carbon (CHO) as their components. They provide the bulk of livestock feeds with hydrogen and oxygen occurring in the ratio of 2:1. Excess carbohydrates are stored in the liver and muscles, and maybe converted to fats and stored under the skin. Sources of carbohydrates for livestock feed include cereals (maize, millet, guinea corn, etc), cassava tubers and peels, yam peels, banana and plantain peels, rice and wheat bran, etc. They constitute 60%-90% of livestock rations.

2. **Protein-Yielding Feeds:**

Proteins are large complex molecules containing carbon, oxygen, nitrogen and hydrogen; sometimes sulphur and phosphorus. The basic units are amino acids. Plant sources of proteins for livestock include soya bean meals, groundnut cake, palm kernel cake, cottonseed meal, sunflower seed meal, legume pasture, etc. Animal sources for livestock include fish meal, blood meal, meat offal, etc. The functions of protein in animal feed are growth and bodybuilding, repair of damaged tissues, replacement of worn-out tissues, source of energy in times of needs, the formation of enzymes, hormones and blood, as well as strengthening anti-bodies.

3. **Fats and Oils (Lipids):**

Both fats and oils are referred to as lipids. Fats are solid at room temperature, while oils are liquid. They are energy-producing groups of food with carbon, hydrogen and a small amount of oxygen. They form an indispensable part of the animal's brain, heart, kidney, liver, egg and milk. Where they yield their energy by the process of oxidation. Fat as a poor conductor of heat, helps in body temperature maintenance. Fats and oil protect vital body organs. They are an energy reservoir and store fat-soluble vitamins. Sources of fat include oil seeds like groundnuts, palm kernel, coconut, soya bean, etc.

WEEK 2

4. **Minerals:**

The mineral yielding feeds contain elements needed for their importance in vital body activities. Minerals are left as ash when a living thing is oven-dried to a constant weight. Animals generally require up to 17 elements of minerals. These are classified into macro and micro nutrients. The macro or major nutrients are required by animals in relatively large or appreciable quantities. They include nitrogen, iron, phosphorus, calcium, magnesium, chlorine, potassium, sodium and sulphur. The micronutrient elements are referred to as trace elements. They are needed in relatively smaller amounts but vitally necessary in body activities of the animals. They are iodine, cobalt, copper, zinc, selenium and manganese. Only their traces suffice. Their functions include the formation of skeletal structures of the animals like the teeth, bones, eggshells in poultry, etc.

They serve in the formation of body fluids like blood, lymph, etc. Sources include bone meal, fish meal, blood meal, grasses and legume forages, cereal grains, oyster shell meal, salt licks and synthetic mineral supplements.

5. **Vitamin-Yielding Feeds:**

Vitamins are essential complex organic compounds required for normal growth and development of the livestock and maintenance of living things generally. They are grouped into water-soluble and fat-soluble vitamins.

The fat-soluble vitamins are essential in maintaining the epithelial tissues, calcium and phosphorous metabolism, bone calcification, normal production in hatching eggs and blood clothing among other functions. Sources of vitamins for the livestock include green forages, yellow maize, colostrum, wheat offal, yeast, cereal grains, soya beans, rice bran, silage, legumes, leafy vegetables, etc.

6. **Feed Supplements and Concentrates:**

Feed supplements are those feed materials given to animals to supply deficient nutrients. They are usually rich in protein and may contain also reasonable quantities of minerals and vitamins fed either separately or mixed with other feeds. Concentrate feeds are feed mixtures or feed providing the primary dietary needs of animal-like protein, carbohydrates, fats and oils, minerals and vitamins. They are either whole-grain feeds or feed mixtures of supplemental basal feeds. Examples of supplements and concentrates include bone meal, fish meal, groundnut and palm kernel cakes, and cottonseed cake and oyster shell meal.

WEEK 3

NEW TOPIC: CLASSSIFICATION LIVESTOCK.

Farm animals are classified based on the following: Size, Habitat, Mammals, Non-mammal and their types of stomach.

Classification based on size: Farm animals are grouped into two. Large farm animals and small farm animals.

Large farm animals: Large farm animals are large in size, bigger and stronger than other farm animals. They can be used to perform specific work in the farm, such as helping to till the farm, transporting farmers and their farm yields. Large farm animals like castrated bulls, horses, camels and donkeys are very useful to farmers and agriculture generally. Milk, meat, bones, horns, hides and skin comes from this group of farm animals. These items are good raw materials; Examples are donkey, cattle, horse, goat, sheep, camel, pig etc.

Small farm animals: These groups of farm animals are small in size and are useful also. Eggs, honey, fish, snail and chicken types of meat are gotten from small farm animals. The body coverage of small farm animals varies. Poultry is covered with feathers, fish with scales, and snail with shell, grass-cutters and bees with hairs. Examples are fish, snail, grass-cutter, rabbit, poultry (chicken, duck, turkey, guinea fowl, geese, pigeon, and parrot), honey bees etc.

Classification based on habitat: Farm animals are classified into two categories of habitat. They are aquatic and terrestrial farm animals.

Aquatic farm animals: These are farm animals that live in water. They are cold blood because they live throughout their life span in water. Examples are fish, crabs, crayfish, prawn, shrimps, lobster etc.

Terrestrial farm animals: Terrestrial refers to land. Thus, terrestrial animals are farm animals that live on land. Examples are sheep, goats, cattle, horses, poultry, pigs, snails, honeybees etc. Most farm animals live on land. Their bodies are covered with hair, feather, shell and they are warm-blooded. Land animals are divided into two, mammals and Non-mammals.

Classification based on mammal and Non-mammal farm animals and their type of stomachs.

(i) **Mammal farm animals**: These are farm animals that give birth to their young one alive and feed them with milk from their udder breast. Their bodies are covered with hairs and they are warm-blooded. Examples are goat, sheep, pig etc.

(ii) **Non – mammal farm animals**: They are farm animals that give birth to their young ones through egg-laying. Their bodies are covered with shells, scales and feathers. They are both warm and cold-blooded. Examples are poultry, fish, snail etc. Mammal and non-mammal farm animals are further divided into two ruminants and non-ruminants based on their types of the stomach.

Classification based on stomach type

(i) Ruminant: These are animals that chew the cod. They have four stomach compartment **examples are sheep, goat, cattle, donkeys etc.**

(ii) Non-ruminant animals: these are animals with simple stomach type. Examples are pig, poultry, dog, and rabbit.

WEEK 4

NEW TOPIC: FARM ANIMAL DISEASES

Livestock disease can be defined as the deviation of an animal from normal state of health.

Disease causing organisms are referred to as **pathogens** while organisms that help to transmit disease from a sick animal to a healthy animal is known as a **vector.**

The process by which an animal contrast a diseases is known as **infection**

The disease that can be transmitted from one animal to another is called an **infectious disease**

The branch of medicine called **veterinary medicine** deals with the study, prevention, and treatment of diseases animals.

Disease causing organisms or pathogens in farm animals are grouped into four. They are:

I. Viruses
II. Bacterium(plural Bcteriaa0
III. Protozoon(plural protozoa)
IV. Fungus(plural fungi)

General effect of disease on livestock

i. Reduction in yield and productivity of the animals in terms of meat , milk,, eggs etc
ii. The animals may not be able to reproduce
iii. It may lead to stunted growth of the animal
iv. Leads to body weakness and loss of weight
v. Lead t reduction in feed conversion
vi. Disease may lead to death
vii. It leads to reduced work rate of the animal

General method of transmission of livestock disease

i. Direct contact with infected animals
ii. Through contaminated feed and water
iii. Contact with the dropping or faeces of infected animals
iv. Contact with dead body of infected animals
v. Through mating or sexual intercourse

Common symptoms of livestock diseases

i. High temperature or high fever.

ii. Sores on mouth and feet of animals

iii. Blood stained diarrhea

iv. Loss of appetite by animals

v. Weakness of the animals body

vi. Premature abortion of the foetus or developing young animal

vii. Reduced production of eggs and milk

viii. Death of the animals in severe cases.

Common diseases in farm animals

Viral Diseases

Disease	Causal organism	Mode of transmission	symptoms	Prevention and control
Foot and mouth disease	Foot and mouth virus	Contaminated feed and water, Faeces and urine of infected animals	Sore sand blisters on mouth and feet	Regular vaccination and practicing good hygiene
Fowl pox	Fowl pox virus	Through injuries	Loos of appetite, loss of weight, blisters on comb	Vaccinate the bird with fowl pox vaccine
Newcastle disease	Newcastle virus	Direct contact with infected birds, contaminated feeds	Difficulty in breathing, loss of appetite, shaking of the head and stretching of the neck	Regular vaccination, carry out proper sanitation

WEEK 4

Bacterial disease

Disease	Causal organism	Mode of transmission	symptoms	Prevention and control
Brucellosis(contagious abortion)	Brucella abortus	Through mating(sexually transmitted)	Premature abortion, infertility in male	Vaccination of animal especially before mating
Tuberculosis	Mycobacterium spp	Direct contact with infected animals	Loss of appetite, loss of weight, persistent cough	Regular vaccination
Mastitis	Streptococcus uberus and staphylococcus aureus	Direct contact with infected animals, contaminated feed, water and milking equipment	Swollen and painful udder, reduction in the yield and quality of milk	Cleaning and sterilizing milking equipment.

Protozoan diseases

Disease	Causal organism	Mode of transmission	symptoms	Prevention and control
Trypanosomiasis	Trypanosome brucci	It is transmitted by an insect known as tsetse fly	Sleepiness of infected animals, loss of weight and appetite	Spraying of insecticide to kill insect which is tsetse fly
Coccidiosis	coccidia	Through injuries	Loos of appetite, loss of weight, blisters on comb	Vaccinate the bird with fowl pox vaccine
Red water or babesiosis	Babesia spp	It is transmitted by an animal parasite called tick	Pale colour of urine, loss of appetite, loss of weight	Dipping of the animal in acaricide solution to kill ticks attached to the body

Fungal diseases

Disease	Causal organism	Mode of transmission	symptoms	Prevention and control
Aspergillosis	Aspergillus spp	Contaminated or mouldy feed	Difficulty in breading, loss of appetite, skin irritation	Regular disinfection of pens and equipment to prevent the growth of fungi
Ringworm	Micosporum spp. and trichophyton spp.	Contact with infection animals, contaminated feeders and drinkers	Irritation in skin, presence of ring-shaped patches on the skin	Treat infected skin with mixture of sulphur, vaseline and iodine
Newcastle disease	Newcastle virus	Direct contact with infected birds, contaminated feeds	Difficulty in breathing, loss of appetite, shaking of the head and stretching of the neck	Regular vaccination, carry out proper sanitation

General methods of prevention and control of livestock diseases.

1. Disease resistant breeds should be used to withstand diseases.

2. Foot dip containing disinfectants should be put at the entrance of the animals Practice of regular vaccination to build animal's immunity to diseases.
3. Isolation or removal of sick animals from the rest of the flock so prevent the spread of diseases to another animals
4. Avoidance of giving contaminated feed and water to animals.
5. Proper disposal of animal waste.
6. Animals that die as a result of diseases should be removed and burnt immediately.
7. Farm animals should be given balanced diet to boot their immunity.
8. Animal pens should be cleans and waste regularly and properly.
9. pens for visitors.

WEEK 5

NEW TOPIC: FISHERY

Meaning of fishery

Fishery refers to the process of rearing and harvesting of fishes in a body of water such as pond, lake, stream, River, Sea and Ocean.

Morphology of fish

The body of fish can be divided into three parts. They are:

1. Head: The head consist of mouth, nostrils, two eyes and operculum.
2. Truck: this is the body of the fish. It comprises the dorsal, pelvic and pectoral fins, the lateral line and the anus. The fins are used for swimming.
3. Tail: the tail is the posterior end of the fish. It consist of the anal fin, the caudal peduncle and caudal fin. The tail acts as a paddle that enables the fish to steer through the water.

6a. Fresh water fishes are fishes that live in fresh water bodies like river, lakes, swamps and artificial ponds.

b. Example of fresh water fishes tilapia, cat fish, carps, mudfish etc

c.