

# Livestock Health and Diseases

## Introduction

Health is the state of the body in which all the organs and systems are normal and functioning normally.

Disease is any deviation from the normal health of the animal.

### Importance of Keeping Livestock Healthy

- (i) Healthy animals give high income due to low treatment costs.
- (ii) The productive life span of a healthy animal is longer.
- (iii) High production.
- (iv) Healthy animals can multiply regularly.
- (v) Healthy animals give high quality products, e.g. eggs.
- (vi) Safety of consumers of livestock products.

### Signs of Sickness in Livestock

- (i) Abnormal behaviour e.g. separation from the rest of the herd and restlessness.
- (ii) Abnormal posture e.g. limping, lameness, etc.
- (iii) Alimentary canal disfunction e.g. blood stained faeces and abnormal defaecation, diarrhoea and dysentery.
- (iv) Urination: High frequency or too low and having strange colour.
- (v) Skin: Rough with scaly skin, blisters on the skin and hair loss.

### Causes of Diseases

- (i) Pathogenic causes e.g. viruses, rickettsiae, bacteria, protozoa and fungus.

- (ii) Physical causes e.g. fractures, dislocation, etc.
- (iii) Nutritional disorders e.g. milk fever.
- (iv) Chemical causes e.g. poisoning by agrochemicals.

### Categories of Diseases

- (i) Notifiable diseases - These are diseases which cause high economic losses. Any case should be reported to chiefs, D.Os., veterinary officers or the police.
- (ii) Tick-borne diseases - Transmitted by ticks.
- (iii) Breeding disease - Transmitted through mating.
- (iv) Nutritional diseases e.g. milk fever, bloat and enzootic haematuria.
- (v) Parasitic diseases e.g. ringworms.

### General Methods of Disease Control

- (i) Quarantine.
- (ii) Vaccination.
- (iii) Control of vectors by use of acaricides, rotational grazing, etc.
- (iv) Disinfecting the equipment and buildings.
- (v) Use of preventive drugs.
- (vi) Proper feeding of livestock.
- (vii) Culling of the animals which are carriers.
- (viii) Use of artificial insemination to control breeding diseases.

### Parasitism in Livestock

A parasite is an organism which obtains its food from another organism while the host does not benefit.

**The Effects of Parasites on the Host Animal are:**

- (i) Depriving the host of its food.
- (ii) Sucking blood.
- (iii) Damaging the organs of the host.
- (iv) Cause irritation on the skin of the host.
- (v) Destruction of hides and skins.
- (vi) Transmission of diseases.
- (vii) Cause obstruction in body passages.

**General Symptoms of Parasites**

- (i) Emaciation.
- (ii) Pot bellied condition.
- (iii) Swellings in the jaw or other areas.
- (iv) Rough hair or rough coat.
- (v) Anaemia.
- (vi) Diarrhoea.
- (vii) Presence of worm segments and blood stains.

**Types of Parasites**

There are two types of parasites:

- (a) External (ecto-parasites),
- (b) Internal (endo-parasites).

External parasites are ticks, tsetseflies, mites, lice and fleas.

**Life Cycle of Ticks**

Eggs are laid in cracks on the ground. They hatch in 4-6 weeks into larvae which climb on the grass waiting for a passing animal.

**(a) One-Host Tick**

This requires one host to complete its life cycle.

*Example:* Blue tick (*Boophilus decoloratus*).

*Predilection site:* Face, neck, dewlap and side of the body.

*Diseases transmitted:* Redwater and anaplasmosis

**(b) Two-Host Tick**

This requires two different hosts to complete its life cycle.

*Example:* The red legged tick (*Rhipicephalus everti*).

*Predilection site:* Ears, anus, udder and the tail.

*Diseases transmitted:* Redwater, east coast fever.

*Example:* Bont legged tick (*Amblyomma spp*).

*Site:* Udder, scrotum and tail switch.

*Disease:* Sweating sickness.

**(c) Three-Host Tick**

This requires three hosts to complete life cycle.

*Example:*

- (i) The brown ear tick (*Rhipicephalus appendiculatus*)

*Site:* Ears, tail switch and around the eyes.

*Disease:* East coast fever, redwater, etc.

- (ii) Bont tick transmit Heartwater (*Amblyomma spp*).

**Control of Ticks**

- (i) Dipping/spraying/hand dressing with acaricides.
- (ii) Rotational grazing.
- (iii) Ploughing the land to break the life cycle.
- (iv) Hand picking and killing.
- (v) Fencing of the grazing fields to keep off other animals including wild game.
- (vi) Burning of grass to kill them in various stages.

**Endoparasites (internal parasites)**

Endoparasites are helminths. They can be divided into:

1. Platyhelminthes/flatworms include trematodes (flukes) and cestodes (tapeworms).
2. Nematodes e.g. roundworms.

**General Symptoms of Helminthiasis**

- (i) Diarrhoea which foul the anal and tail region.
- (ii) Dullness.
- (iii) Anaemia.
- (iv) Big stomach (pot bellied condition).
- (v) Presence of worm segments in faeces.
- (vi) Coughing.

**Post Mortem Signs**

- (vii) Presence of worms in certain organs.
- (viii) Haemorrhages of the alimentary canal.
- (ix) Obstruction of bile ducts.
- (x) Bottle jaw (accumulation of fluids in body cavities).
- (xi) Presence of cysts in organs e.g bladder worm in muscles.

**Trematodes (Liver Fluke)**

There are two species of flukes: *Fasciola gigantica* and *Fasciola hepatica*. The latter is more common. This is commonly found in the liver and bile duct of cattle, sheep and goats. Liver fluke is a problem in marshy and low lying wet areas.

**Life Cycle of the Liver Fluke**

- (i) Adult fluke in the liver of the primary host lays eggs.
- (ii) Eggs pass through the bile duct into the small intestines and passed out in faeces onto the pasture.
- (iii) Under moist conditions, they hatch into a miracidium larva which swims about in search of a secondary host (fresh water snail).
- (iv) In the snail, it develops through sporocyst, rediae and cercaria.
- (v) When it leaves the snail, the cercaria gets encysted on vegetation and becomes metacercaria.
- (vi) This is swallowed by the primary host with grass. The young fluke migrates into the liver through blood vessels where it matures.

**Control of Liver Flukes**

- (i) Keep livestock off marshy areas near the rivers/streams/lakes/dams, etc.
- (ii) Drench affected animals.
- (iii) Drainage of swampy areas.
- (iv) Eradicate the intermediate host by use of molluscicides.
- (v) Provide water to livestock in elevated troughs.

**Tapeworms**

There are many species of tapeworms e.g. *Taenia solium* and *Taenia saginata*. The adults live in the small intestines of man (the primary host). The intermediate host of *Taenia solium* is pig while that of *Taenia saginata* is cattle.

**Life Cycle of Tapeworm**

- (i) Adult tapeworm lives in man's intestines where it lays eggs.
- (ii) Eggs are passed out with faeces, then they develop an outer covering known as onchosphere.
- (iii) The eggs are swallowed by intermediate host.
- (iv) The outer covering is digested and the young worm emerges. This bores into the blood vessels and is carried to specific muscles e.g. tongue, heart, thigh muscles.
- (v) It develops into an encysted form called bladder-worm.
- (vi) When the animal is killed and meat is eaten raw or in an inadequately cooked form, man gets infected by the bladderworm.
- (vii) In man, the bladder-worm evaginates and attaches itself onto the intestinal wall where it develops into an adult.

**Control of Tapeworms**

- (i) Meat should be well cooked before eating.
- (ii) Use of drugs in primary host.
- (iii) Meat inspection by meat inspectors/veterinary officers.
- (iv) Use of pit latrines by man.

**Nematodes (Roundworms)**

There are many types of roundworms but the most common ones are *Ascaris suum* (pig roundworm), *Ascaris lumbricoides* found in man and sheep and *Haemonchus contortus* found in sheep, cattle and goats.

Roundworms are common in warm areas especially in areas where the standards of hygiene and sanitation are low.

#### Nature of Damage

- (i) Damage done to the liver and lungs as they migrate in the body.
- (ii) Suck out blood.
- (iii) Deprive the host of food.

#### Control of Roundworms

- (i) Use of drugs.
- (ii) Rotational grazing.
- (iii) Use of proper stocking rates to avoid overgrazing.
- (iv) Practising high standards of cleanliness and hygiene e.g. use of latrines.

### Livestock Diseases

#### 1. Mastitis

Is an inflammation of the udder.

*Animals attacked:* Goats, cows, pigs, bitch and women.

*Cause:* Bacteria (*Streptococcus spp.* or *Staphylococcus spp.*).

#### *Pre-disposing Factors*

- (i) Incomplete milking.
- (ii) Injuries on the udders and teats.
- (iii) Weak sphincter muscles of the teats allowing free flow of milk.

#### *Symptoms*

Milk is watery, blood stained or clotted. Swollen udder.

#### *Control*

- (i) Proper milking technique.
- (ii) Treatment by use of antibiotics.
- (iii) Culling of animals which are often attacked.

#### 2. Anthrax

Attacks all domestic animals.

*Cause:* Bacteria (*Bacillus anthracis*)

#### *Symptoms*

- (i) Sudden death.
- (ii) High fever.
- (iii) Grinding of the teeth.

#### *After Death Signs*

- (i) Blood oozing out from the nose and anus without clotting.
- (ii) The body swells.
- (iii) Lack of rigor mortis.

*Prevention:* Vaccination.

*Control:* Proper disposal of carcass through burying or burning to ashes.

#### 3. Rinderpest

*Animals attacked:* Cattle and wild game.

*Cause:* Virus

#### *Symptoms*

- (i) Harsh staring coat.
- (ii) Rise in temperature.
- (iii) Eye discharge.
- (iv) Diarrhoea and dysentery.
- (v) Ulcers in the mouth.

*Control:* By vaccination and quarantine.

#### 4. Foot and Mouth Disease

*Animals attacked:* Cattle, sheep, goats and pigs.

*Cause:* Virus (strains A, O, SAT, I, etc).

*Symptoms:* Sharp rise in temperature.

Blisters in the mouth, hooves, udder and teats. Loss of appetite.

#### *Control:*

- (i) Vaccination.
- (ii) Quarantine and nursing with disinfectants on wounds.

#### 5. East Coast Fever

*Animals attacked:* Cattle

*Cause:* Protozoan, (*Theileria parva*)

It is a tick-borne disease transmitted by Red-legged tick and brown ear tick.

#### *Symptoms*

- (i) Rise in temperature.
- (ii) Swelling of lymph glands below the ear.
- (iii) Difficulties in breathing.
- (iv) Dullness.

#### *Control and Prevention*

- (i) Control of vectors through dipping, fencing, etc.
- (ii) Treatment by use of clexon in the early stages.

**6. Coccidiosis****Animal attacked:**

- (i) Calves between 2 month and 2 years.
- (ii) Poultry.
- (iii) Lambs and kids.
- (iv) Rabbits.

**Coccidiosis of poultry****Cause:** Protozoan (*Eimeria spp.*)**Symptoms:**

- (i) Sudden death of chicks.
- (ii) Whitish, yellow and blood stained diarrhoea.
- (iii) Ruffled feathers.
- (iv) Chicks become paralysed before dying.
- (v) Chick becomes anaemic and dull.

**Control**

- (i) Disinfection of chick houses.
- (ii) Prevention of contamination of food and water with droppings.
- (iii) Use of prophylactic drug e.g. Coccidiostats.

**7. Heartwater****Animals attacked:** Cattle, sheep and goats.**Cause:** (*Rickettsia ruminantium*).**Symptoms:**

- (i) Nervousness.
- (ii) Animal walks in circles.
- (iii) Twitching of the muscles.
- (iv) Rise in temperature.
- (v) Paddling of the legs by the animal when dying.

**Control**

- (i) Control of vectors by dipping/spraying/hand dressing.
- (ii) If noticed early treatment by use of antibiotic.

**8. Bloat****Animals attacked:** Cattle and sheep.**Cause:** Accumulation of gases as a result of fermentation in the rumen.**Symptoms**

- (i) The left side is blown up.
- (ii) Sudden death.

**Control**

- (i) Relieve by use of trocar and cannula.

- (ii) Chasing the animal around if noticed early.

- (iii) Drenching by use of stop bloat.

**WORK TO DO**

1. Name the micro-organisms which cause diseases in livestock.
2. State the signs of ill-health in livestock.
3. Give two parasitic diseases in livestock production
4. What do you understand by the following terms:
  - (a) Endemic disease?
  - (b) Acute disease?
  - (c) Symptom of a disease?
5. Differentiate between the following terms:
  - (a) Antiseptics and disinfectants.
  - (b) Antibiotics and antibodies.
  - (c) Antigens and antitoxins.
6. (a) Describe the life cycle of liver flukes with the help of a diagram.
  - (b) Why is it important to know the life cycle of liver flukes?
  - (c) State the control measures of liver flukes in livestock.
7. Describe the life cycle of roundworms in livestock.
8. (a) Describe economic importance of tsetseflies.
  - (b) State major problems associated with control of tsetseflies.
9. Discuss pneumonia and brucellosis under the following sub-headings:
  - (a) Causative agent.
  - (b) Symptoms.
  - (c) Control measures.
10. (a) Describe the economic importance of ticks.
  - (b) Describe the methods of controlling ticks in a herd of cattle.
11. Write short notes on each of the following:
  - (a) Notifiable diseases.
  - (b) Natural immunity.
  - (c) Pre-disposing factors.
  - (d) Antiserum.