

Lecture 2

Ringworm

A fungal infection of the skin of domestic animals and man caused by *Trichophyton* and *Microsporum* species. They become infectious when animals are kept in close proximity in overcrowded conditions, which encourages spread by direct contact.

Symptoms – Lesions start as small areas of hair loss which enlarge to about three or four centimetres in diameter. They are typically round, raised, greyish-white and crusty in appearance.

Control – Ringworm can be tolerated but in severe cases affected animals should be isolated and treated with the fungicide, Griseofulvin, which is administered orally.

Epizootic Lymphangitis

A skin infection of horses caused by the fungus *Histoplasma farciminosum*. Commonly found where horses are kept in unhygienic conditions.

Symptoms – Nodules and abscesses develop in the skin of the head, neck, shoulders and legs. Lesions start as small swellings that eventually enlarge and rupture (ulcerate) discharging thick yellowish pus. Over a period of about ten days, the lesions form scabs, which slough off revealing a larger ulcer underneath still discharging pus. The eye and nostril may be involved and infection may extend to the lungs causing pneumonia. The disease is chronic and severely affected animals lose condition. Affected animals eventually recover by themselves.

Control – Isolation of affected animals is recommended to reduce spread, as treatment is rarely successful. Strict sanitary measures are required.

Aflatoxicoses

Aflatoxins are produced by *Aspergillus* species of fungi, which contaminate stored cereals, groundnuts, and other crops in warm, moist conditions.

Symptoms – They cause liver damage in all stock, but more commonly in young pigs and calves. Affected animals become weak and unthrifty and may die.

Control – Avoid feeding of contaminated feed.

Ergotism

The fungus, *Claviceps purpurea*, which contaminates cereal grains and ryegrass in warm, moist condition, produces ergotism. Ingestion over a period of time results in necrosis (tissue death) of the extremities as a result of constriction of the blood vessels.

Symptoms - Common in cattle and sheep, and characterised by lameness of affected animals.

Control – Avoid feeding of contaminated feed.

Facial Eczema

This is caused by a saprophytic fungus, *Pithomyces chartarum*, which contaminates dead pasture litter producing a liver toxin. The toxin sensitized the skin to ultra-violet rays of the sun, a condition called photosensitization. It is most common where sheep are reared intensively on pasture, e.g. New Zealand, Australia and South Africa.

Symptoms – Affected sheep usually have lesions on the face.

Control – Affected animals should be moved indoors. Secondary bacterial infections could be prevented by giving antibiotics.

Protozoan Diseases

Protozoa are single-celled organisms that can be considered to be the lowest form in the animal kingdom. There are thousands of species in nature but only a few are pathogenic to livestock. The pathogenic protozoa of animal health importance can be classified as either Flagellates or Apicomplexans.

The flagellates have whip-like structures called flagellae which the protozoa use for movement in fluid medium. Hence, they are found outside the cells, swimming in body fluids such as blood plasma, fluids of the brain, eye, or genitalia, e.g. *Trypanosoma* in the blood and *Trichomonas foetus* in the genitalia. In most cases, biting flies, e.g. Tsetsefly, transmits them.

Apicomplexans are complex intracellular organisms that have complicated life cycles with sexual and asexual forms of multiplication. Most of them invade and multiply inside the gut of animals, damaging them in the process. They produce infectious eggs (oocysts), which are passed out in the faeces and can be picked up by other susceptible animals, e.g. Coccidiosis and Cryptosporidiosis, both enteric diseases of young animals. Some other apicomplexans do not develop oocyst, but are spread via cyclical transmission in ticks, e.g. *Theileria* and *Babesia* species. The organisms invade blood cells in animals that have been bitten by an infected tick. Any ticks feeding on such animals become infected in turn so completing the cycle. Hence tick control is important in the control of theileriosis and babesiosis.

Coccidiosis

An infection of the intestine of domestic animals caused by *Eimeria* and *Isospora* species. The organisms are host specific, and transmission from one species of animal to the other does not occur. Organisms develop in the gut cells, damaging them in the process, and are expelled in faeces as oocysts. Oocysts can survive outside the host for several months, and are picked up by susceptible animal completing the life cycle.

Symptoms – include loss of appetite, bloody diarrhoea, and loss of condition.

Control – Medications include Sulfadimidine, Nitrofurazone and Amprolium, which are administered through feed or water. Avoid overcrowding and faecal contamination of feeds and water as clinical cases excrete millions of oocyst in their faeces. Clinical cases should therefore be isolated.

Theilerioses

Tick-borne infections caused by *Theileria* species.

Symptoms - Organisms localise and multiply in lymph nodes, which become enlarge and spread to other lymph nodes. Red blood cells are also infected, and animals become infective to ticks that bite them. Infected animals develop fever, difficult breathing, anaemia, and diarrhoea.

Control – Medications include Parvaquone and Buparvaquone, administered by injection, and Halofiginone through the mouth. Tick-control measures could also help.

Babesioses

Tick-borne disease caused by *Babesia* species, which infects red blood cells. It is also known as Redwater or Cattle tick fever.

Symptoms – Organisms invade red blood cells where they multiply, break out and invade more cells in increasing numbers, releasing large quantities of red cell pigments into the circulation. Affected animals are depressed, feverish, lose appetite, and jaundiced.

Control – Medications include Imidocarb and Diminazene aceturate. Tick-control measures could also help.

Importance of Livestock

- 1) What do you keep animals for?
- 2) Are the animals kept for meat or for work?
- 3) Do they provide you with milk?

- 4) What other things do you get from the livestock you keep?
- 5) If you keep animals for meat do you kill the young or the old animal for meat?
- 6) Do you keep some animals only for work or for meat, to give milk, or for other reasons?
- 7) Try to find out as much as you can about the use of animals in your community.

How good are your animals?

Are your animals providing you with enough milk or meat?

Are your livestock better than those of neighbouring communities or regions? How do your animals differ from those in neighbouring areas?

Communities in neighbouring regions can keep different types of animals. For example cows in one region can produce more milk or give better meat than those in another region. You should consider your livestock and compare them to those of your neighbouring communities.

You may already know of some health problems in your community's livestock. If you talk to others in the community you may find out about other animal health problems. There may be particular problems related to certain breeds or types and not others. Some of the health problems you may discover are:

- Animals die suddenly.
- Young animals are born sick or dead.
- Leg and foot problems.
- Skin troubles.
- Animals do not increase in weight.
- Livestock suffer from worms, ticks or lice.

The udders of milk animals become swollen and blood is found in the milk.

- Chickens stop laying eggs or die suddenly.

Problems of overstocking (too many animals)

- If we do not keep the numbers of livestock in relation to available feed and water then:
- Animals lose weight, become sick and disease spreads.
- Animals do not breed well and death of young occurs.
- Overgrazing and loss of pasture, bushes and trees occur.
- Loss of vegetation will result in erosion of soil and loss of good land.