Dairy Cattle Health Management

By Dr Wilfred Mutisya and Dr Humphrey Oyugi

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Livestock Diseases

Livestock diseases cause economic losses to farmers annually and their prevention and control is important in enhancing income generated from livestock farming.

Disease is anything that alters the normal function of the body with negative impact on production and/or reproduction.Livestock diseases are broadly classified into:

- Bacterial e.g. mastitis, anthrax, leptospirosis
- Viral e.g. Foot and mouth disease, Lumpy skin disease, Rift valley fever
- Protozoal/ Rickettsiae e.g. East coast fever, Anaplasmosis, Babesiosis, Heartwater
- Fungal e.g. dermatomycosis

Occurrence of diseases in cattle varies with age for example diarrhea and pneumonia in calves.

Common calf diseases

Scours (Diarrhoea)

- Scours could be caused by nutritional disorders, viruses or bacteria. Digestive upsets leading to scours are a major cause of death in young calves.
- The problem can however be minimized through ensuring calves receive adequate colostrum within 6 hours of birth and therefore acquire some natural immunity.

Pneumonia

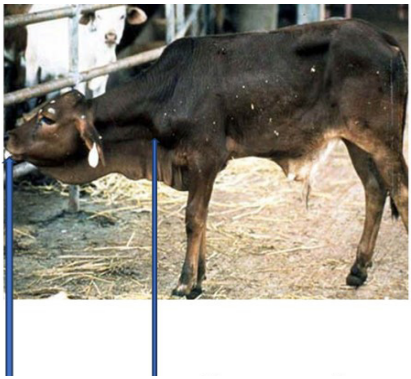
One cause of pneumonia in young calves is fluids going to the lungs via the windpipe (trachea). The first feeding of colostrum can cause problems if the feeding rate is faster than swallowing rate.

Tick borne diseases

East coast fever (theileriosis)

This is a disease of cattle, sheep and goats caused by the protozoan parasite and is transmitted by the brown ear tick

Brown ear Tick



froth swollen lymph nodes

Clinical signs

- Fever 42^{o}C
- Enlarged lymph nodes
- Frothy discharge

Prevention and control

- Tick control
- Vaccination

Treatment

- Administration of drugs such as Buparvaquone, Parvaquone among others

Anaplasmosis

This is a tick-borne disease of cattle caused by parasites transmitted by the blue tick.

Blue Tick.

Clinical signs

- Fever upto 40^{o}C
- Hard dung
- Anaemia

Prevention and Control

- Tick control

Treatment

- Administer Tetracycline and Imizol

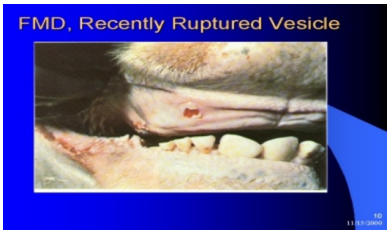
Viral diseases

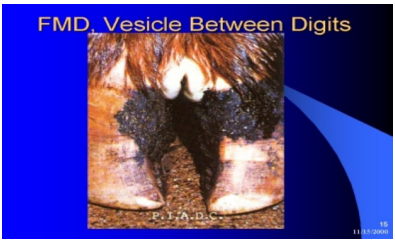
Foot and mouth disease

Foot and mouth disease (FMD) is an extremely contagious acute disease of all cloven-footed animals caused by a virus. It is transmitted mainly by inhalation and ingestion. Cattle infection is from pigs, which get infection from infected swill.

Clinical signs

- Drop in milk production
- High fever (40-41°C) accompanied by acute painful stomatitis
- Abundant salivation with saliva hanging in long ropey strings
- Careful chewing and a characteristic smacking of the lips
- Wounds appear inside the mouth, dental pad and tongue





Treatment and control

- No specific treatment for FMD
- Mild disinfectants and protective dressings e.g. Magadi salt, molasses
- Vaccination:

- Immunity lasts for 6-8 months therefore vaccinate once or twice a year
- In Kenya quadrivalent or trivalent vaccines are used depending on virus typing results
- Calf vaccination: if dam is vaccinated, then vaccinate at 6 and 10 months; if dam is unvaccinated then vaccinate at 4 and 8 months.

Lumpy Skin Disease

caused by a virus and transmitted by mosquitoes and flies

lumpy skin disease in cattle

Economic importance

- Major economic importance due to loss of production
- Severe emaciation
- Lowered milk production
- Abortion
- Secondary mastitis
- Loss of fertility

- Extensive damage to hides
- Loss of draft from lameness

Clinical signs

- Raised, circular firm nodules coalescing into plaques
    - Anywhere on the body
    - May harden into “sitfast” and be shed
- Swollen/tender udder or testicles
- Tongue, gum and hard palate lesions

Prevention and Control

- Vaccination
- Slaughter infected and exposed animals
- Quarantine sick animals
- Clean and disinfect premises

Treatment

- Animals generally recover with good nursing care
- Use antibiotics for secondary infection
- Takes up to 6 months for severely affected animals to recover fully

Reproductive diseases

Brucellosis

Brucellosis is a contagious disease of cattle caused by bacteria that might enter the body through mucous membranes, conjunctivae, wounds, in both humans and animals.

Clinical signs

- Infections may cause stillbirth or weak calves, retained placentas, and reduced milk yield
- Abortion in late pregnancy is the most obvious manifestation
- In bulls the testicles, and epididymis may be infected, and testicular abscesses may occur
- Long standing infections may result in arthritic joints in some cattle

Prevention and control

- Vaccination.
- screening and eradication.
- No practical treatment is available.

Retained afterbirth (Placenta)

Retained afterbirth is the failure to expel the foetal membranes within 12 to 24 hours after calving.

Placenta and foetal membranes hanging

Causes

- Abortion, calving before term, difficulty in calving
- Systemic diseases such as brucellosis, and leptospirosis
- Vitamin A, E and Ca deficiencies

Consequences of retained placenta

- Risk of uterine infection
- Reduced milk yield in case of systemic infection
- Reduced conception rate on subsequent heat

Management

- Retained placenta is gently pulled out by qualified personnel when the time is right(5-7) days
- Flush the uterus with mild disinfectants and instillation of antibiotic boluses

Mastitis

Mastitis is a complex disease of the udder characterized by hot, swollen, red and painful udder with changes in physical and chemical characteristics of milk.

About 95% of the mastitis cases are subclinical type where no signs are visible but result in lower milk production making it the most dangerous form.

Mastitic milk(left) and normal milk(right)

Causes

Mastitis is usually as a result of bacterial infection that arises due to break in proper milking technique and/or failure in observing proper hygiene and sanitation practise when milking and in the animals' environment.

Economic importance of mastitis

Mastitis inflicts heavy economic losses due to:

1. Reduced milk production
2. Treatment/veterinary costs
3. Milk withheld from the market following treatment
4. Rejection at milk collection points

5. Premature culling of milk producing animals often the high yielders

Detection of mastitis

- Use clinical signs e.g. swelling of the udder
- Use of strip cup or California Mastitis Test (CMT)

Strip cup

California Mastitis Test (CMT)

Prevention and control

- Proper milking technique, hygiene and sanitation
- Employ use of teat dip cups
- Ensuring the cow environment is as clean as possible
- Dry cow therapy to manage chronic cases
- Timely identification and treatment of teat and udder infections and/or wounds
- Culling of chronic cases that are unresponsive to treatment

Milk Fever

This refers to a condition in which the animal is unable to meet the high demand for calcium being produced through milk and metabolism from body reserves i.e the bones. It affects older, high producing cows.

Signs

- At first, cow experiences muscle tremors, lack of appetite and unsteadiness
- Later cow is unable to rise, body temperature falls, and constipation occurs
- Cows go down to a sitting position often with a twist of the neck
- Death can occur if the cow is not treated promptly

Prevention and control

Well achieved through dry cow management in which diets of low calcium are feed to the animal to stimulate the regulatory mechanism.

Treatment

Injection of calcium preparation as soon as possible.

Ketosis

During early lactation, the energy intake is insufficient to meet the energy output in milk and the animal is in a negative energy balance a factor that favours the forming of ketone bodies.

Cause

- The condition is likely a result of either under feeding and/or reduced feed intake.
- Reduced feed intake can be due to reduced appetite as a result of sudden change of feedquality.

Signs

- Sweet acetone smell in milk, urine and breath
- Sudden drop in milk production
- Gradual loss in body condition

Prevention and control

It may be prevented by management strategies that maintain a good appetite and supply adequate feed to meet this appetite during the late dry period and immediately after calving**.**

Treatment

- Administration of glucose

Acidosis

Acidosis is a syndrome related to a fermentative disorder of the rumen resulting in overproduction of acid which lowers rumen pH to below pH 5.5.The problem is related to feeding management, where the ration has high levels digestible carbohydrates and low effective fibre.

Causes

i) Diets very high in readily fermentable carbohydrates and low in roughage
ii) Very fast switch from high forage to high concentrate
iii) Unintended exposure to large quantities of grain or concentrates

Signs

- Diarrhoea yellow, sweet to sour smell, with feed particles
- Reduced milk production
- Laminitis in prolonged cases

Prevention

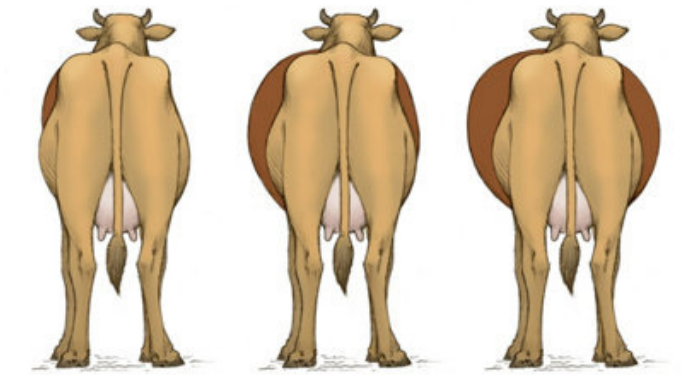
- Proper feed formulation.i.e feed formular with not more than 60% concentrates.

Treatment

- Rumen lavage and/or replacement of rumen contents.
- Administration of magnesium hydroxide mixed with warm water in less severe cases.
- Slaughter in chronic cases.

Bloat

Bloat is the abnormal accumulation of gas in the rumen. There are two categories of bloat:
i. Frothy bloat which occurs when the animal is fed with diets that lead to the formation of a stable froth or foam in the rumene.g. lush legumes like lucerne
ii. Free gas bloat caused by failure to eructate rumen gases leading to accumulation (e.g. oesophageal obstruction).



Signs

i) Animal stops grazing and is reluctant to walk
ii)The left side of abdomen (rumen) is distended
iii) The animal strains to urinate and defecate
iv) Rapid breathing — mouth may be open with tongue protruding

v) Staggering

Prevention and control

i) Pasture Management: Avoid cows grazing on new pastures by feeding them on other feeds before letting them out to graze.
ii) Preventative Medication: Detergents and anti-foaming agents can be drenched prior to grazing.

Treatment

i) Use of stop bloat

ii) Puncturing a whole into the rumen to release trapped air

iii) Removal of the obstructing mass

Foot Rot

Foot rot is an infection of the soft tissue between the claws (digits) of the feet caused by an anaerobic bacterium. Injury to the soft skin

acts as entry point for bacterial invasion to cause disease. Poor slurry management, inappropriate flooring accompanied with other poor hygienic conditions are the major predisposing factors.

Signs

- Sudden onset of lameness
- Exudation of bad smelling fluids
- Swelling of affected claw

Prevention and control

- Use of footbaths with 2% Formalin and/or 5% Copper Sulphate
- Proper slurry management and hygiene
- Prompt identification and management of foot wounds

Treatment

- Antibiotic therapy can be attempted
- Anti-inflammatory and pain management
- Claw amputation

Internal parasites

Worms are internal parasites found mostly in the respiratory and digestive systems of animals. Eggs from the adult worm are passed with the animal's faeces to the ground where they hatch into larvae. Worms cause several types of damage to the host: a) They suck the blood of animals and this may lead to death from anaemia

b) They consume nutrients causing deficiencies and leading to poor health, growth and production. This is the major negative effect of worms on farm animals
c) Some worms may block the intestines and small passages in the body interfering with movement of food and flow of digestive enzymes.
d) They cause damage to the cells lining the gut and interfere with production of enzymes and absorption of nutrients.
e) Irritation to cells of the gut may cause diarrhoea and loss of body fluids leading to dehydration, abdominal pain and loss of appetite.

Signs

- Poor hair coat.
- Diarrhoea.
- Pot belly and/or bottle neck
- Tape worm segments in faeces

Prevention and control

- Administration of de-wormers with advice from an animal health expert
- Prevention is by routine deworming at 3months intervals with advice from animal health expert

Control of external parasites under zero grazing unit

- Although zero gazing housing system offers protection to the animals, there is need to spray the animals to protect them against external parasites especially ticks
- Spraying should be done in a separately constructed crush to avoid mixing the spray chemicals with cattle manure
- Spray the animals once every 2 weeks for tick control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