

Common Bacterial Diseases of Dairy Cow

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ANTHRAX

Causative agent- *Bacillus anthracis*

Transmission - *Bacillus anthracis* spores remain viable for many years in soil, water and animal hides and products. The main routes of entry of endospores are by ingestion, from soil when grazing or in contaminated food and by infection of wounds.

Clinical signs & Symptoms

- In per-acute septicaemia death occurs within 2 hours after animal collapsing with convulsions, sudden death in animals that appeared normal is common.
- In acute septicaemia death occurs within 48 to 96 hours clinical signs include fever, anorexia, ruminal stasis, haematuria and blood-tinged diarrhoea.
- Pregnant animals may abort and milk production often abruptly decreases.
- Terminal signs include severe depression, respiratory distress and convulsions.

Prevention and Control

- Prevention of anthrax in animals is aided by active immunization.
- The organism is susceptible to penicillin-G, tetracyclines, erythromycin and chloramphenicol.

HAEMORRHAGIC SEPTICEMIA

Causative agent- *Pasteurella multocida*

Transmission- Ingestion or inhalation, either during direct contact or via fomites such as contaminated feed and water.

Clinical signs & Symptoms

- Fever, a sudden drop in milk yield, signs of abdominal pain, severe diarrhoea and dysentery, respiration becomes rapid and

shortly before death the mucous membranes appear cyanotic.

- In less acute cases there will be oedema development in the region of the head, neck and brisket. The nasal discharge may be blood stained or purulent.
- Death occurs within 2-4 days.

Treatment & Control

- Antibiotic therapy with Penicillin-G, streptomycin, chloramphenicol, chlortetracycline, sulpha and trimethoprim, enrofloxacin and oxytetracycline.
- Timely Vaccination

BLACK QUARTER

Causative agent- *Clostridium chauvoei*

Transmission- Soil-borne infection which generally occurs during rainy season.

Clinical signs & symptoms

- The disease usually occurs in young cattle of 6 months to about 2-3 years of age.
- Crepitating swelling in the hind or fore quarter, lameness, muscles show trembling with violent twitching.
- Death usually occurs within 24 hours.

Treatment & Control

- Hyper immune serum (HIS) is used to control explosive outbreaks.
- Penicillin along with HIS is used to treat the disease.
- Oxytetracycline & Chlortetracycline can also be employed effectively in early stages.

BOVINE TUBERCULOSIS

Causative agent- *Mycobacterium bovis*

Transmission- Directly by contact with infected animals or indirectly by ingestion of contaminated material.

Clinical signs & symptoms

General form

- Affected animals become docile, Progressive emaciation, Capricious appetite, fluctuating body temperature and rough / sleek hair coat, animal does not put-up weight.
- All these general signs are pronounced following calving.

Respiratory form

- Silent or paroxysmal cough especially during early morning and chilled weather.
- Chronic cough with dyspnoea, squeaking crackles, enlargement of retropharyngeal lymph node causes dysphagia and noisy breathing due to pharyngeal obstruction.

Reproductive form

- Metritis and inflammation of placenta leads to infertility, abortion and failure in conception.

Treatment & Control

- Treatment and vaccination are inappropriate in control programmes for cattle.
- In many countries, tuberculin testing followed by isolation and slaughter of reactors has been implemented as the basis of national eradication schemes.

BRUCELLOSIS

Causative agent- *Brucella abortus*

Transmission- by direct contact with infected blood, placentas, foetuses, or uterine secretions, or through the consumption of infected and raw animal products.

Clinical signs & symptoms

- The incubation period is usually from 30 to 60 days.
- After bacteraemia the infection localizes in the placentae, if the animal is not pregnant, the infection localizes in udder (interstitial mastitis).
- In the bull, orchitis and epididymitis.
- Abortion at 6 months and retained placentae are the cardinal signs.

Treatment & control

- The attenuated live vaccine is used in female calves 4 to 12 months of age.
- The adjuvant bacterins is used as booster vaccine.

MASTITIS

Mastitis is an inflammation of the mammary gland. In which the milk undergoes physical, chemical and microbiological changes whereas mammary glandular tissue undergoes physical and pathological changes. In which infected milk colour, consistency change and contains a greater number of leucocytes.

Causative agent- *Staphylococcus*, *Streptococcus* and coliform bacteria and sometimes other bacteria, viruses, and fungus.

Clinical signs & symptoms

- *Per acute form:* Pyrexia, anorexia, respiratory distress, swollen, hot and painful udder. Cessation of milk production. Exudate are often blood stained.
- *Acute form:* Swollen udder, changes in quality of milk. Milk become curd like, yellow, brown fluid with flakes and clots.
- *Subacute form:* No changes in the udder tissue.
- *Chronic form:* Udder is haemorrhagic, and fibrotic. Swollen and palpable supra mammary lymph node, Udder is thick, firm, nodular and atrophic, yellowish or white fluid with clots and flakes.

Treatment & control

- Stripping out the milk from the infected quarters.
- Cleaning of infected quarters with normal saline and distilled water.
- Infusion of antibiotic therapies immediately after the infection.
- Hygienic measures are important.
- Animals diagnosed positive should be milked at last.
- Milkers should wash their hands before milking and should use well washed white overalls.
- The first stream of milk from each quarter should not be allowed to drop on floor but collected in a separate container.