

Bacterial Diseases

- *Histophilus somni* (*Haemophilus somnus*)
- *Mannheimia haemolytica* (*Pasteurella haemolytica*)
- *Pasteurella Multocida*
- Salmonella
- Clostridial Diseases
- Leptospirosis
- Brucellosis

Bacteria commonly associated with shipping fever

- *Mannheimia Haemolytica* (*Pasteurella Haemolytica*)
Usually in Acute cases
- *Pasteurella Multocida*
Usually in older cases of respiratory disease.
Some diagnostic labs are starting to indicate this organism is shifting it's pathogenesis and starting to be identified with more cases of acute pneumonia in cattle
- *Histophilus Somni*
- *Corynebacterium*
Cultured from chronic cases, abscess within lung fields.

Mannheimia Haemolytica (*Pasteurella Haemolytica*)

- Bacterium most frequently isolated from the lungs of cattle with BRD.
- normal inhabitant of the nasopharynx of cattle
- causes a severe, acute fibrinous pneumonia or fibrinonecrotic pneumonia

Pasteurella Multocida

- Although less frequently cultured than *M haemolytica* , *P multocida* is also an important cause of bacterial pneumonia
- AIP??????????????

Histophilus Somni

- *Haemophilus somnus*
- Associated with purulent bronchopneumonia that may be followed by septicemia and infection of multiple organs
 - Severe pleuritis
 - Encephalitis (TEME)
 - Laryngitis
 - Joint Infections
 - Cardiac Abscesses
 - Abortions

Salmonella

- Many possible serotypes
- Adult cattle can cause acute diarrhea

- foul smelling,
 - may contain blood clots,
 - fibrin,
 - cattle often have febrile response and are off feed
- Young calves
 - Septicemia,
 - diarrhea,
 - pneumonia,
 - Death

Salmonella is a zoonotic disease which means the organism found in cattle can cause disease in people this is an important point to consider when handling animals or being around animals infected with salmonella. Feces contains large numbers of organisms.

Diagnosis of Bacterial Disease

- Histopathology
- Culture and identification of the organism
 - Gold standard
 - Culture and sensitivity to identify efficacious antibiotics for treatment

Venereal Disease of Cattle

Two Classical Agents

1. *Campylobacter fetus* (bacteria)
 - obligate parasite of reproductive tract
 - Vibriosis
2. *Tritrichomonas foetus* (protozoan)
 - Obligate parasite of reproductive tract
 - Trichomoniasis
 - Trichomonosis

Infection with *Campylobacter* or *Tritrichomonas*

- Occurs only at coitus
 - Both organisms susceptible to desiccation and ultraviolet light so longevity on hair of bull is short.
 - For both organisms the bulk of pregnancy loss is technically fetal (>42 days of gestation) and not embryonic.
 - Conceptus deaths peak at 50 to 70 days.

Clinical Signs Vibriosis and Trichomonas

- Increased time between Estrus Cycles
- Increased services per conception
- Abortions occurring between 4-7 months of gestation

- Infected bulls show no clinical signs and remain as asymptomatic shedding carriers

Pathology

- In male no observable gross pathology with histological changes subtle, accumulation of Neutrophils below the epithelium.
- Female Inflammation from the vagina to the oviducts
- Campylobacter clearance about the same amount of time as Trichomoniasis (6-12 weeks)
- however females can remain vaginally infected for several months and be a risk to the herd

Consequences of infection with either campylobacter and Trichomoniasis

- Abortion
- Pyometra (uterus filled with pus)
- Diagnosis
 - Usually at pregnancy check time.
 - When have a lower overall pregnancy rate
- Physical findings in the females essentially none
- Physical findings in male – none bulls are in apparent carriers.

Carrier States and Clearance

1. Tritrichomonas clearance

- Tritrichomonas Usually cleared between 6 and 12 weeks following infection. There is less than 1% of infected cows that will maintain infection throughout pregnancy and into the next breeding season thus a carrier animal.

2. Campylobacter clearance about the same amount of time as Tritrichomonas however females can remain vaginally infected for several months and be a risk to the herd, susceptible bulls become infected and transmit the organism to other females in the herd.

Diagnosis: Trichomoniasis or Campylobacter

1. Female

- Campylobacter culture from vaginal mucous.
 - PCR
- Trichomoniasis, vaginal aspirate
 - Culture and identify if organism is present
 - PCR for a definitive diagnosis

2. Male

- Aspirate smegma from prepuce and culture. Use a scraping technique.
- Lavage the prepuce
- PCR of cultured trichomonads.
 - Utilize history and Clinical signs

Herd Treatment for Campylobacter and Trichomoniasis

- Tritrichomonas
 - Vaccination program, cull open cows, BSE evaluate all bulls
 - Eliminate natural service, sell all bull in bull battery
 - Implement artificial insemination with heat detection
 - With Trichomoniasis can go back to natural service after 6 months but must replace the bull battery with virgin bulls.
- Campylobacter
 - Vaccination two injections one month apart
 - Both females and males, very effective
 - Immunity thought to be short lived

Other agents sexually transmitted

- Haemophilus somnus
- Ureaplasma
- Other Mycoplasmas
- Leptospira
- Brucella abortus.
- BVD/IBR

Zoonotic Diseases from Cattle

- Actinomyces pyogenes
- Anthrax
- Brucellosis
- Campylobacteriosis
- Cowpox
- Cryptosporidiosis
- Escherichia coli O157:H7
- European tick-borne encephalitis
- Foot and mouth disease
- Giardiasis
- Leptospirosis
- Mycobacterium bovis
- Pseudocowpox
- Q-fever
- Rabies
- Salmonellosis
- Slow virus variant (?!? controversial)
- Streptococcus zooepidemicus
- Taenia saginata
- Yersinia enterocolitica