Uncommon Mastitis
The Uncommon

- Bacillus cereus
- Clost. Perfringens
- Nocardia spp.
- Mycoplasma spp.
- Moulds and yeasts
- Pseudomonas spp.
Mastitis caused by *Mycoplasma*
Mastitis caused by *Mycoplasma*

- Highly contagious
- Results in milk loss and culling of the infected cows
- First reported in the US in 1961, mastitis caused by *M. bovis*
- *M. bovis* is the most frequent
Mastitis caused by *Mycoplasma*

- Mastitis causing mycoplasmas: Commonly found in the mucous membrane of respiratory and urogenital tracts of healthy cows
- All ages and at any lactational stages
Mastitis caused by *Mycoplasma*

- **Species involved**
  - *M. bovis*  
  - *M. bovihirnis*  
  - *M. californicum*  
  - *M. dispar*  
  - *M. canadense*  
  - *F-38*
Mastitis caused by *Mycoplasma*

- **Species involved**
  - *M. bovigenitalium*
  - *M. alkalescens*
  - *M. arginini*
  - *Bovine group 7*
Mastitis caused by *Mycoplasma*

- **Clinical findings**
  - More than one qtr affected, sometimes all four
  - Marked drop in milk yield of the affected cows
Mastitis caused by *Mycoplasma*

- Clinical findings
  - Abnormal udder secretions varies from *watery with a few clots* to a *colostrum-like material*
  - The chronic affected shows *tannish secretion with sandy or flaky sediments*
Mastitis caused by *Mycoplasma*

- Clinical findings
  - Udder secretion becomes purulent and last for several weeks
Mastitis caused by *Mycoplasma*

- **Clinical findings**
  - May continue lactating with normal appearance but high SCC and less yield than expected
Mastitis caused by *Mycoplasma*

- Clinical findings
  - May return to the expected yield
  - May shed the organism intermittently for variable periods
Mastitis caused by *Mycoplasma*

- Clinical findings
  - Severity and recovery vary within herds and between herds depending on the involved mycoplasma species and susceptibility of the cows
Mastitis caused by *Mycoplasma*

- Clinical findings
  - Lameness due to arthritis in the hocks and fetlocks is frequently seen in the mastitic and non-mastitic cows in the infected herds
Mastitis caused by *Mycoplasma*

- **Diagnosis**
  - Samples from the clinical: Large numbers of pathogens
  - Samples from chronic or carrier cows: Only a few organisms
Mastitis caused by *Mycoplasma*

- **Diagnosis**
  - Bulk tank milk isolation: May be useful for determination of existing of the pathogens in a herd
Mastitis caused by *Mycoplasma*

- **Diagnosis**
  - Most mycoplasmas isolated from bulk tank milk and cow milk samples are pathogenic
Mastitis caused by Mycoplasma

- Diagnosis
  - But for Acholesplasma laidlawii, a common nonpathogenic saprophytic contaminant frequently found in dairy environment and teat skin
Mastitis caused by *Mycoplasma*

- **Epizootiology**
  - Transfer within herds occurs at milking time by means of formites
  - New herd infections occurs from new replacements with infected udders
M. bovis
In
Respiratory tract

hematogenous

M. bovis
Infection
In the udder

Spreading during milking

Infected udder
Infected udder
Infected udder
Mastitis caused by *Mycoplasma*

- **Control**
  - Bio-security
  - No treatment
  - Treating the clinical....any benefits???
Mastitis caused by *B. cereus*
Mastitis caused by Bacillus species and Other Gram + Bacilli

• Primary source
  – Soil, water, air, feces, vegetation, wounds, abscesses
Mastitis caused by Bacillus species and Other Gram + Bacilli

• Means of spread
  – Contaminated treatment
  – Treatment devices
  – Improper teat sanitation prior to treatment
Mastitis caused by Bacillus species and Other Gram + Bacilli

• **Severity**
  - *B. cereus* causes acute fatal gangrenous mastitis
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis from *B. cereus*
Mastitis caused by Nocardia
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis from Nocardia
Mastitis from *Nocardia*
Mastitis from *Nocardia*
Mastitis caused by *Pseudomonas*

- Epizootiology
- Clinical findings
- Treatment ??
Mastitis caused by moulds & yeast
Mycotic Mastitis

- The most common pathogens
- Less common
  - *Pichia*, *Torulopsis*
Mycotic Mastitis

• Means of Transmission
  – Home-made udder infusion products
  – Multi-dose commercial products
  – Re-used syringes or teat canula
  – Poor aseptic technique for infusion
Mycotic Mastitis

• Diagnosis
  – Animals with history of unsuccessful antibiotic treatment
  – Animals with intensification of clinical signs following antibiotic treatment
Diagnosis
The suspected: Direct smear of the milk and stained
Mycotic Mastitis

• Treatment
  – No FDA approved therapeutic agents available
  – Most naturally infected by *Candida* spp. Or *Trichosporon* spp.: spontaneously regress
Mycotic Mastitis

• Treatment
  – Some trials and reports of treatment: Niconazole 50-100mg (imi), Clotrimazole 100-200mg (imi); Thiabendazole 45gm (po)
End of this topic