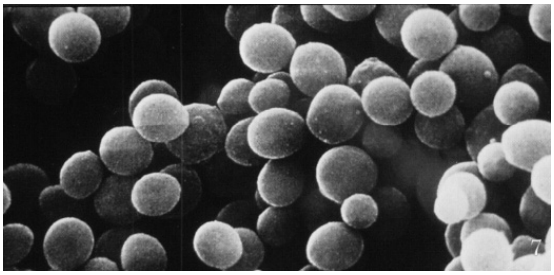
Staphylococcus Aureus Mastitis



http://textbookofbacteriology.net/staph.html

Staph Aureus Mastitis

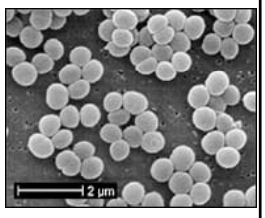
- Difficult to control by treatment alone
- Prevention of new infections and cow culling
- Colonize abnormal teat ends or teat lesions
- Infection: Milker's hands, wash cloths, teat cup liners, flies

Staph Aureus Mastitis

- Irregular vacuum fluctuations ⇒ Impact of milk droplets and bacteria against teat end ⇒ Teat canal penetration ⇒ New infection
- Infected cows:
  - Culled
  - Segregated and milked last
  - Milked with separate units
  - Teat cup liners rinsed and sanitized after milking infected cows

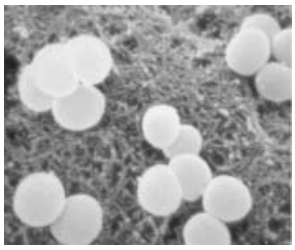
Staph Aureus Mastitis

- S. Aureus ⇒ toxins ⇒ destroy cell membranes and damage milk producing tissue
- Damage tissues lining teat and gland cistern
- Move up into duct system
- Deep seated pocket ⇒ walling-off ⇒ formation of abscesses
- Abcesses may become large and detected as lumps within udder



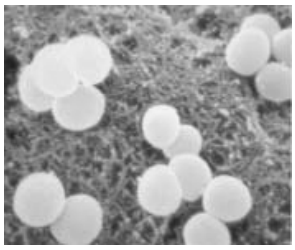
Staph Aureus Mastitis

- Symptoms:
  - Periodic episodes of mild to moderate abnormal milk (recurring) during the same lactation ⇒ Resolve with or without treatment
  - Milk off-colored with flakes and clots
  - Elevated bulk tank SCC (300,000 to 750,000 cells/ml)



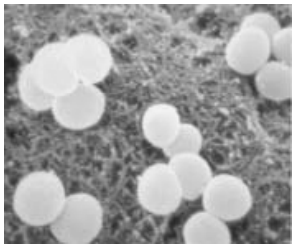
Staph Aureus Mastitis

- Symptoms:
  - Chronically infected cows ⇒ may have abscesses or knots felt when udder is milked out
  - High SCC
  - Rarely ⇒ gangrene or "blue bag"



Treatment

- Cure rates ⇒ around 25-30%
- More likely ⇒ new infections (less than 2 weeks), single quarter infections, first lactation, front quarters
- Therapy failures ⇒ abscesses, inactive in leukocytes, antibiotic resistance and L-forms



Control and prevention

- Regular bulk tank cultures
- Continual systematic culturing programs:
  - Culturing all fresh cows
  - Culturing clinical cases
  - Culturing of high SCC cows
- Milker training
- Use of latex or nitrile gloves
- Proper milking procedures

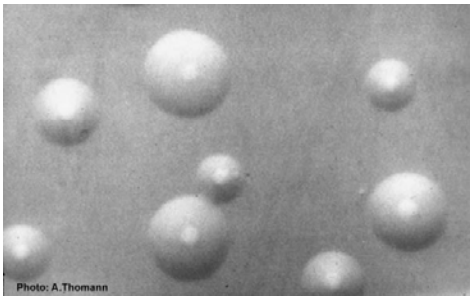
Control and prevention

- Milk first lactation cows first
- Culture milk of newly purchased cows
- Separating infected cows
- Separate milking units
- Backflush between cows
- Manually backflush and/or sanitize teatcup liners using iodine (25 ppm) or chlorine (100 ppm)
- Dry cow therapy
- Clean calving area
- Pasteurize waste milk fed to calves

Control and prevention

- Cull infected cows with other problems
- Cull cows ⇒ clinical mastitis in same quarter 3 or more times
- Cull cow ⇒ milk withheld for more than 28 days during current lactation
- Do not breed list
- Fly control

Mycoplasma Mastitis



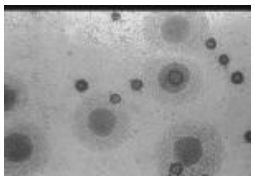
http://www.vetmed.unibe.ch/vbi/home_main.htm

Mycoplasma Mastitis

- Mycoplasma ⇒ Bacteria-like organisms
- Mycoplasma bovis most common specie to cause mastitis
- They lack a cell wall (enveloped in a membrane)
- Mastitis, arthritis, reproductive disease, ear infections, and respiratory disease
- Can spread via blood, lymph system

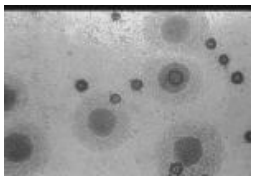
Mycoplasma Mastitis

- Symptoms:
  - Increase in mastitis that does not respond to treatment
  - New infections occurring after an outbreak of pneumonia
  - Abnormal milk: brown to tan, some samples have a sandy granular appearance when settled



Mycoplasma Mastitis

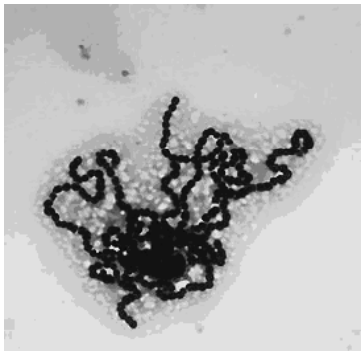
- Symptoms:
  - Dramatic drop in milk production



Control and prevention

- Bulk tank cultures (request mycoplasma testing)
- Sample pens (dilution effect)
- Proper milking procedure
- Properly ventilated barns
- Continual systematic culturing programs:
  - Culturing all fresh cows
  - Culturing clinical cases
  - Culturing clinical cases
- Pasteurize waste milk

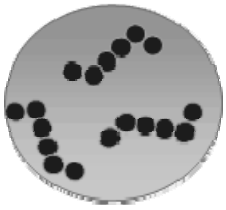
Streptococcus agalactiae



http://www.monografias.com/trabajos19/sepsis-neonatal/sepsis-neonatal.shtml

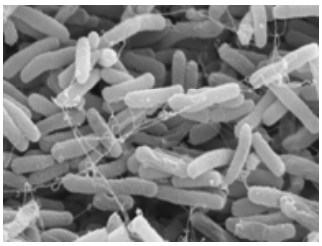
Strep ag Mastitis

- Symptoms:
  - Herds have consistently high bulk tank SCC (sometimes exceeding 700,000 cells/ml)
  - Multiple quarters infection
  - Heifers may freshen with "blind" quarters
  - Clinicals: Abnormal milk and udder swelling
  - High cure rates (90%) using penicillin type drugs



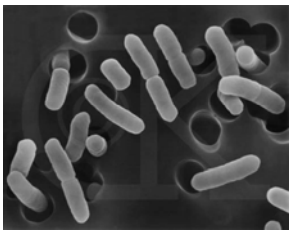
Coliform Mastitis

- Symptoms:
  - Clinical mastitis: 50% become clinical
  - Mild to moderate
  - Severe mastitis
  - Cow extremely ill
  - High fever
  - Off-feed
  - Diarrhea
  - Lethargic



Coliform Mastitis

- Symptoms:
  - Swollen udder
  - Sunken eyes
  - Dramatic decrease in milk production
  - Milk watery with clots
  - Usually one quarter per cow is infected
  - More than 40% of severely ill cows ⇒ bacteremia



Environmental mastitis

- Non-ag streps: Intramammary antibiotics
- Coliforms: Antibiotics not effective ??
  - Severe cases: Fluid therapy, anti-inflammatories, steroids, systemic-antibiotics with gram negative activities
  - Oxytocin, complete milk out??

Control and prevention

- Minimize exposure to dirty conditions (filthy or muddy environment)
- Calving area ⇒ clean and dry
- Dry cow therapy
- Immunization during dry period and early lactation
- Culture bulk tank
- Milk clean, dry, well-stimulated teats

Control and prevention

- Proper milking procedures
- Fly control
- Minimize liner slips
- Non-organic bedding