Calfhood Disease in California Dairies and Calf Ranches

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Diseases are age dependent

• 1-30 days of age
• 30 days to group pens
• Group pens

• Today: talk on important problems in 1-30 day old calves:
  • Diarrhea and dehydration
  • Bacteremia/septicemia
  • Respiratory disease
Diarrhea and Dehydration

<table>
<thead>
<tr>
<th>Causes</th>
<th>Age (days)</th>
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<tr>
<td></td>
<td>Average</td>
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<tr>
<td>Viral</td>
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<tr>
<td>Rotavirus</td>
<td>9</td>
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<td>Coronavirus</td>
<td>10</td>
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<td>Parasitic</td>
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<td>Cryptosporidium</td>
<td>10</td>
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<td>Bacterial</td>
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<td>K99 E. coli</td>
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<td>Attaching and Effacing E.</td>
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<td>Salmonella sp.</td>
<td>11</td>
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What Causes Diarrhea?

Hypersecretion
• K99 E. coli

Malabsorption
• Rota/Corona Virus
• Cryptosporidium
• Attaching Effacing E. coli
Rotavirus/Coronavirus/Cryptosporidium

- Watery diarrhea
- Fibrin ???
- Blood ???
- Severe dehydration
- Often seen with multiple viral pathogens and bacterial pathogens together
K-99 *E. coli*: Watery diarrhea
Attaching and Effacing *E. coli*: Watery diarrhea, occasionally fibrin
Salmonella sp.

- *Salmonella Typhimurium* and *S. Newport*: Affects mostly 5 to 20 days of age.
- Drinking unpasteurized milk
- *Salmonella Dublin*: most common in 30 to 90 days of age
The Agents of Bacterial Septicemia

- **Salmonella**: 183 cases (30%)
- **Staphylococcus sp**: 1 case (0%)
- **Streptococcus suis**: 4 cases (1%)
- **Bacterial**: 53 cases (9%)
- **Mannheimia haemolytica**: 1 case (0%)
- **Pasteurella multocida**: 3 cases (0%)
- **E. coli**: 367 cases (59%)
- **Actinobacillus equuli ssp. Haemolytica**: 6 cases (1%)
Bacterial Septicemia:

*E. coli* most common in calves less than 15 days of age
Salmonella Dublin septicemia: most common after 30 days of age
Respiratory disease

• Bacterial:
  - Pasteurella multocida
  - Mannheimia haemolytica
  - Bibersteinia trehalosi
  - Histophilus somni
  - Mycoplasma bovis
  - Arcanobacterium pyogenes
  - E.coli, Salmonella sp, and other bacteria due to improper intubation or aspiration
  - Streptococcus suis

• Viral:
  - Bovine respiratory syncytial virus (BRSV)
  - Bovine Viral Diarrhea Virus (BVDv)
  - Infectious bovine rhinotracheitis virus (IBR)
Pasteurella multocida, Bibersteinia trehalosi and Histophilus somni
Mannheimia haemolytica
Chronic Respiratory Disease: 
*Mycoplasma sp., Trueperella pyogenes*
Pneumonia and Septicemia can look very similar clinically

Clinical signs: depressed, fever, breathing fast

• Calves with pneumonia breath fast because they have reduced lung capacity

• Calves with septicemia breath fast because they tend to have acidosis

• Calves with septicemia often develop secondary pneumonia
Pathogens are everywhere and therefore prevention of infection and having a healthy calf capable of fighting infection are the keys to success. No magic bullets to prevent disease

- Good start to life - maternity pen, calving, colostrum(TP>5.6mg/dL)
- Environment – clean and dry
- Nutrition – digestible, metabolizable energy with few bacteria/fungi
- Sanitation – buckets, bottles, nipples, people
- Appropriate use and care of medications
- Appropriate use and care of vaccinations
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