Health Management in the Cow-Calf Herd

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Simple management practices to improve...

Herd Immunity!
Cow-herd vaccination strategies

• Designed to:
  • Aid in the prevention of pregnancy and production losses
  • Protect from the development of persistently infected (PI) calves
  • ↑ colostral IgG production
Cow-herd vaccination strategies

• Essential vaccine components:
  • **BVD** – causes abortions, PI calves, and weak calves
  • **IBR** – causes abortions
  • **Clostridial** – major pathogen encountered by calves
Cow-herd vaccination strategies

• What is a PI calf?
  • Infected with BVD during gestation
  • Recognizes BVD virus as “self”
  • May appear normal and healthy
  • Sheds virus throughout lifetime

• ~0.6% of calves are PI (Fulton et al., 2009)

• Label claim for “FP” preferred

BVD PI calf with age-matched control
Proper timing and administration of vaccines are more important than type or brand!

Cow-herd vaccination strategies
Cow-herd vaccination strategies

• Scour vaccines are a SUPPLEMENT to good management

• Other vaccines:
  • Vibrio
  • Leptospirosis
  • Footrot
  • Pinkeye
  • Histophilus
  • Anthrax
Cow-herd vaccination strategies

- Follow recommendations on the label
  - ~ 12 months
  - ≥ 3 weeks pre-breeding

- Avoid Gram negative overload
  - E.coli (scours vaccine)
  - Lepto
  - Histophilus
  - Footrot
Vaccination protocol - Pre-breeding program

- Pre-breeding MLV-FP
- Fall processing Clostridial
- Pre-calving Scour
Vaccination protocol - Fall program

- Pre-calving
  - Scour
- Fall processing
  - MLV-FP or Killed Clostridial
Simple management practices to improve...

Newborn calf Immunity!
Assessing newborn beef calf vigor

• Good vigor promotes vital behaviours

• 1/3 of beef calves in AB and SK fail to acquire optimal passive immunity likely due to delayed colostrum consumption

↑ Pre-weaning morbidity and mortality
↓ Pre-weaning ADG

Dewell et al., 2006; Waldner and Rosengren, 2009
Assessing newborn beef calf vigor

Calves with suboptimal immunity  =  33%
- Assisted calving  =  7%

High risk UNASSISTED calves  =  26%!
University of Calgary research project

Objective: Generate a Beef Calf Vigor Assessment predictive of colostrum consumption by 4 h after birth

Study population:
- 800 head commercial ranch in Southern Alberta
- Enrolled 77 calves during March 2014

Homerosky, 2016 MSc Thesis
## Materials and methods

<table>
<thead>
<tr>
<th>Calving Ease</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unassisted</td>
<td>22 (29%)</td>
</tr>
<tr>
<td>Easy pulls</td>
<td>41 (53%)</td>
</tr>
<tr>
<td>Hard pulls</td>
<td>14 (18%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>77 (100%)</strong></td>
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</tbody>
</table>

- **Birth**
  - 10 min
- **Weaning**
Calving characteristics
• Parity, ambient temp., etc.

Clinical examination
• Temperature, HR, RR
• Appearance
• Muscle tonicity and reflexes

Materials and methods
Materials and methods

- Monitored for successful colostrum consumption
- Assisted calves that failed

Timeline:
- Birth
- 10 min
- 4 h
- Weaning
Materials and methods
Predicting colostrum consumption by 4 h

Calving ease

Failed to consume colostrum by 4 h

<table>
<thead>
<tr>
<th>Calving Ease</th>
<th>Not Consumed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unassisted (n=22)</td>
<td>13.6%</td>
</tr>
<tr>
<td>Easy pull (n=41)</td>
<td>11.7%</td>
</tr>
<tr>
<td>Hard pull (n=14)</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

Statistical significance: $P=0.008$
Predicting colostrum consumption by 4 h

Suckle Reflex

Calves with a weak suckle reflex were 42 x’s less likely to nurse on their own by 4 h vs. calves with a strong suckle reflex!
Predicting colostrum consumption by 4 h

- Strong suckle reflex
  - Calving Ease
    - Unassisted
    - Easy pull
    - Hard pull
  - Low risk
- Weak suckle reflex
  - High risk

$\$
Predicting colostrum consumption by 4 h

- Strong suckle reflex
- Weak suckle reflex

- Calving Ease
  - Unassisted
  - Easy pull
  - Hard pull

- Low risk
- High risk
Predicting colostrum consumption by 4 h

Calving Ease

- Unassisted
- Easy pull
- Hard pull

Strong suckle reflex

Weak suckle reflex

Low risk

High risk
Beef Calf Vigor Assessment

Calving Ease

- Unassisted
- Easy pull
- Hard pull

Strong suckle reflex
Weak suckle reflex

Low risk
High risk

Homerovsky, 2016 MSc Thesis
Assessing newborn beef calf vigor

- Calves that were hard pulls OR had a weak suckle reflex were more likely to be acidotic
  - ↓ oxygen uptake by brain
  - ↓ muscle tonicity and strength of reflexes

- Calves that failed to consume colostrum by 4 h:
  - ↓ odds of optimal passive immunity by 6.4 x’s
  - ↑ odds of morbidity by 2.8 x’s
  - ↓ ADG by ~0.2 lb/d
Veterinary Consultation

- Annual review
  - Vaccine program
  - Health concerns
  - Treatment protocol
  - Parasite control
  - Nutrition
    - Energy and Protein
    - Vitamins and Minerals
Take home messages

• Proper breeding female vaccination programs are the baseline for good herd immunity
• Regardless of calving ease, calves with a WEAK suckle reflex should be assisted in colostrum delivery
• Improving management and herd immunity will increase herd herd health and reduce AMU
• Develop a whole-herd preventive medicine strategy with your veterinarian
Thank you!

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