Beef Cattle Diseases and Herd Health Plan

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Preventative Herd Health Management Practices Are Critical To:

- Sustained profitable beef production
- Improved animal health
- Decreased costs and cull rates
- Reduced drug cost
- Reduced potential for meat residues and carcass blemishes
Herd Health Investments

- Investments in disease prevention are more cost effective than disease treatment.
- You cannot expect unhealthy cows to perform.
<table>
<thead>
<tr>
<th>Cattle Vital Statistics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectal Temperature</td>
<td>101.5° F (38.5° C)</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>60-70 Beats/Minute</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>30 Breaths/Minute</td>
</tr>
<tr>
<td>Estrous Cycle</td>
<td>18-23 Days</td>
</tr>
<tr>
<td>Estrus</td>
<td>12-18 Hours</td>
</tr>
<tr>
<td>Gestation Length</td>
<td>285 Days</td>
</tr>
</tbody>
</table>
Vaccination Recommended Annual Vaccines

- Cows and Bulls
  - Leptospirosis
  - Viral Vaccines: IBR, PI3, BVD, BRSV
- Calves
  - Preweaning: 7-way Viral Vac, Blackleg
  - Replacement Heifers: 7-way Viral Vac, Blackleg, Brucellosis, Lepto/Vibrio
    - Weaning: Boosters (Viral Vaccines, Blackleg, Lepto/Vibrio)
Stocker Health Program
## Texas Ranch to Rail Program
### 5 year summary -- McNeill, 1999

<table>
<thead>
<tr>
<th></th>
<th>Sick</th>
<th>Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>3,202</td>
<td>9,393</td>
</tr>
<tr>
<td>Death loss, %</td>
<td>3.4</td>
<td>0.5</td>
</tr>
<tr>
<td>ADG, kg</td>
<td>1.26</td>
<td>1.34</td>
</tr>
<tr>
<td>Medicine cost/calf, $</td>
<td>31.33</td>
<td>0</td>
</tr>
<tr>
<td>Net return/calf, $</td>
<td>-31.97</td>
<td>61.23</td>
</tr>
<tr>
<td>Quality grade, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>Select</td>
<td>63</td>
<td>56</td>
</tr>
<tr>
<td>Standard</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>
Important Steps

- Receiving Ration
- Good Receiving Protocol
- Prompt pulling
- Proper treatment protocol
Receiving Ration

- “Stress” reduces intake
- Palatable
- High roughage content
- Contain adequate levels of important vitamins and minerals
  - Copper – 15-20 ppm
  - Zinc – 75-100 ppm
  - Vitamin E – bet. 400-800 IU/day
  - Selenium – tends to be low in AR forages
- Ionophores- ↑efficiency, coccidiostat, ↓overeating
Best Time to Vaccinate?

- Before disease exposure occurs
  - Takes 5-7 days for protection with most modified-live vaccines
  - Killed vaccines require a booster within 2-4 weeks of initial vaccination to obtain adequate protection levels
- Don’t expect to vaccinate one day and get protection the next day
Points to Consider?

- What kind of vaccine?
  - Killed
  - Modified-Live
  - Autogenous

- Advantages vs. Disadvantages

- Injection sites
Modified-Live Vaccines

Advantages
- Usu. requires one injection
- Lower $$$, smaller dose
- Less irritation at injection site
- Longer immunity

Disadvantages
- May cause abortion in pregnant animals
- Shouldn’t be used on calves nursing preg. cows
- Stress from mild form of disease
Killed Vaccines

- Viruses, bacterins, toxoids
  - 1\textsuperscript{st} dose to sensitize
  - 2\textsuperscript{nd} dose to produce immunity
- Two doses required
Two Dose Response Curve

Amount of antibody in serum (titer)

Primary immune response

Secondary immune response

0 7 14 0 7 14 Days

Antigen administered

Second dose of antigen administered
Killed Vaccine

- **Advantages**
  - Does not replicate in the animal
  - Safer to use in pregnant animals

- **Disadvantages**
  - Most require boosters
  - Tissue irritation at vaccination site
Reasons for Vaccine Failure

• Human Error:
  • Not following directions on the label!
  • Disinfectant used on syringes
  • Mixing several products together
  • Vaccinating at the wrong time – interval
  • NAHMS report found that less than 30% of producers were boosting according to manufacturer’s recommendations
More Reasons for Vaccine Failure

- **Vaccine Factors:**
  - Improper storage of vaccine
  - Use and restore
More Reasons for Vaccine Failure

- Host Factors:
  - Some animals don’t respond
More Reasons for Vaccine Failure

- Host Factors:
  - Severe challenge
Vaccination

• Remember:

Vaccinations are only tools, not 100%, and can be overrun by:

• Stress
• Poor nutrition
• Human errors
• Vaccine factors
Depression

- Lethargic
- Weakness
- Head down
- Laying down
- Stiff gait
Appetite
• Not coming to feed bunk
• Uninterested in feed wagon
• Gaunt on L paralumbar area
• Early on sick cattle will still eat
• Important to identify other signs
Respiratory signs

- Rapid, shallow breathing
- Nasal discharge
- Extended neck
- Soft cough
- Crusty muzzle
- Excessive salivation
- Flared nostrils at inspiration
- Increased inspiratory or expiratory effort
Temperature

- Treat calves with temperatures > 104°F
- Best time to check is early morning
Treatment

- **Approved Drugs**
- **Antibiotics**
  - Baytril 100®, Bayer (Enrofloxacin)
  - Excenel ®, Pharmacia (Ceftiofur)
  - Micotil ®, Elanco (Tilmicosin)
  - Nuflor ®, Schering (Florfenicol)
  - A-180 ®, Pfizer (Danofloxacin)
## Treatment Schedule

<table>
<thead>
<tr>
<th>Therapy 1</th>
<th>Recheck in 48 hours. If Clinical Illness Score &gt; time 0 score OR ≥ 1 and rectal temperature is ≥ 104°F, then Treatment Failure and go to Therapy 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy 2</td>
<td>Recheck in 48 hours. If Clinical Illness Score &gt; time 0 score OR ≥ 1 and rectal temperature is ≥ 104°F, then Treatment Failure and go to Therapy 3. Also for animals recovered from Therapy 1 and relapsed at a later date (&lt; 21 days since Therapy 1).</td>
</tr>
<tr>
<td>Therapy 3</td>
<td>Recheck in 48 hrs., if Clinical Illness Score &gt; time 0 score OR ≥ 1 and rectal temperature is ≥ 104°F, then this is a Treatment Failure and the calf is identified as a “Chronic”. Also for animals that recovered from therapy 2 and relapsed &lt; 21 days since Therapy 2.</td>
</tr>
</tbody>
</table>
Antibiotic Therapy

• All new classes of antibiotics work well
• Pick a drug that works for you, and use it first
• Goals
  • Approximately 80% (75-85%) response to first pull
  • 70% response rate on repulls
  • Less than a 6% case fatality rate
Remember:

1. Use approved drugs
2. Read the label
3. Keep good records
4. Withdrawal time
1. The vaccines for clostridial diseases are available in various combinations of from two to eight agents. These diseases are common and usually cause sudden death with little time for treatment, so vaccination is usually recommended.

- Blackleg Clostridium chauvoei
- Malignant edema Clostridium septicum
- Black’s disease Clostridium novyi; C. sordellii
- Enterotoxemia Clostridium perfringens Type C and D
- Redwater Clostridium haemolyticum
2. Four viral agents commonly cause respiratory or reproductive problems:

- IBR (infectious bovine rhinotracheitis)
- PI3 (parainfluenza type 3)
- BVD (bovine virus diarrhea)
- BRSV (bovine respiratory syncytial virus)
WEANING

- Castrate and dehorn (or tip) any calves previously missed.
- Continue vaccine programs as outlined below.
- Treat for internal and external parasites (including treatment for liver fluke, if needed).
- Adapt and adjust to water troughs.
- Adapt and adjust to feedbunks.
- Introduce and adapt to concentrate feeds.
- Provide coccidiostat for control of coccidiosis.
- Observe carefully for illness and treat early.
Vaccination Program – Modified Open Herd

Calves:
- 7 Way Clostridia
Vaccination Program – Open Herd

Calves:
- 7 Way Clostridia
- IBR-BVD-PI3-RSV
- Pasteurella-Hemophilus (optional)