Management and Supplementation Strategies to Improve Reproduction of Beef Cattle on Fescue

John B. Hall
Extension Beef Specialist
Virginia Tech
Effects of Endophyte Infected Fescue on Reproduction in Cattle

Decreased pregnancy rates
  • Cleavage failure
    • Compromised sperm physiology
  • Early embryonic mortality
  • Reduced follicular growth
  • Decreased progesterone production

Reduced or limited milk production
Strategies to Combat Effects of Fescue

Supplementing Nutrients
  • Energy
  • Protein
  • Minerals

Mitigating Effects of Toxins
  • Blocking physiological actions
  • Changing calving seasons

Reducing Exposure
  • Grazing other forages
  • Dilution of fescue with other forages or feeds
  • Feeding adsorbents or detoxifying agents
Supplementing nutrients

Consumption of E+ fescue decreases forage intake

Energy is the limiting nutrient, but protein may also be needed

Exacerbated by high environmental temperatures
Supplementing nutrients

By-pass protein may or may not increase cow performance

- Effective level of by-pass protein depended on source of energy - corn vs soyhulls (MO)
- By-pass protein did not affect performance (U of IL)
Effect of Supplement Type on Heifer Pregnancy Rate

Heifers developed on E+ fescue

Received 1.0% of BW in supplement

Equal amounts of protein and energy

Gained 1.5 to 1.7 lbs/day
Impact of High Fat Supplementation on Pregnancy Rates of Cows Grazing E+ Fescue

Adapted from Myers et al., 2004
Mineral Supplementation

Mineral requirements of cattle are dependent on physiological status

- Lactating vs. dry
- Growing vs. mature

Mineral content of forage is dependent on:

- Soil fertility
- Forage type and maturity
Mineral Supplementation

Animals consuming fescue
- Have decreased immune function
- May have impaired absorption of phosphorus

There appears to be no magic fescue mineral but…
- Increasing levels of trace minerals related to immune function may be beneficial
- Mineral intake needs to be monitored closely
<table>
<thead>
<tr>
<th>Mineral</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt</td>
<td>15-30</td>
</tr>
<tr>
<td>Calcium</td>
<td>0-12</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0-12</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0-4 (8-14)</td>
</tr>
<tr>
<td>Sulfur</td>
<td>0-3</td>
</tr>
<tr>
<td>Mineral</td>
<td>Amount</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Zinc</td>
<td>0.18 - 0.36 %</td>
</tr>
<tr>
<td>Copper</td>
<td>0.10 - 0.25 %</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.18 - 0.36 %</td>
</tr>
<tr>
<td>Iodine</td>
<td>2.6 ppm</td>
</tr>
<tr>
<td>Selenium</td>
<td>52+ ppm</td>
</tr>
</tbody>
</table>
Pregnancy Rates in Spring or Fall Calving VA DOC Herds

- 2003
- 2004
- 2005
- 2006

Compared:
- Fall
- Spring

Yearly variation in pregnancy rates between spring and fall calving seasons.
Comparison of Pregnancy Rates in Spring and Fall Calving Herds – Fall Line Operation

Spring had an 8.75% lower pregnancy rate. That’s over 87 calves!
Stockpiled Fescue

- Graze off field
- 60 units of N - Aug.
- Don’t graze ‘til after frost
- Grazing from Nov-Feb
- High quality -
  - 60+ % TDN
  - 10 - 12 % CP
- Low Cost - High Value
- Use strip grazing
Utilizing Stockpiled Forage

- Always utilize grass-legume mixture first
- Strip graze
  - maximizes utilization
  - only enough forage for 7-14 d
  - no back fence needed
Cattle selection for fescue

Using a “fescue tolerant” bull did not affect performance of calves (VPI&SU)

Brahman and Brahman X cattle had increased milk production and weaning weights on fescue than Angus (UARK)
Impacts of selection

There are tolerant cattle – eliminate fescue queens

Care in selecting bulls from non-fescue regions

Breed used must not only perform on fescue, but needs to perform in feedlot and meet regional market
Impact of TASCO mineral on Pregnancy Rates in Cows Grazing E+ Fescue
Effect of Supplement on Cow/Calf Performance on E+ Fescue

![Graph showing the effect of supplements on cow/calf performance. The graph compares weaning weight and weight gain with different supplements. The legend indicates the following categories:
- FEB-200
- Control
- Corn Supplement]
Effects on Cow-Calf Pairs - OH
Summary

Fall calving is the most powerful management tool
Supplementation with fiber based feeds can offset some of the effects of E+ fescue
Increasing amounts of Cu, Se, Zn appears to be important
No “magic bullets” but some interesting possibilities