Effects of Summer Supplement Feeding Frequency on Performance of Grazing Beef Replacement Females

Dan Shike and Blake E Lehman

Introduction

- Heifer Development
  - Graze standing forage
    - Cheapest Option
- Potential Needs of Supplement
  - Protein and/or Energy
Midwestern Pastures

- Cool Season Grasses
- Growth Pattern “slumps off” in summer
- Heifer Performance can be hindered

![Growth Pattern of Cool Season Grasses](image)

Corn Co-products

- Corn Gluten Feed (CGF)
- Distillers Grains with Solubles (DGS)
  - Protein, Energy, and Phosphorus
  - Beneficial if
    - Quality is poor
    - Quantity is limited
Composition of Common Co-products

<table>
<thead>
<tr>
<th>Nutrient composition of corn and common co-products (% of DM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Corn</td>
</tr>
<tr>
<td>DDGS</td>
</tr>
<tr>
<td>CGF</td>
</tr>
<tr>
<td>Soybean Hulls</td>
</tr>
</tbody>
</table>

NRC, 1996

Supplementation

- **Protein**
  - Infrequent feeding comparable to daily
    - Recycle Nitrogen

- **Energy**
  - Infrequent Feeding has shown negative results
    - Primarily done with corn
Co-products

- Fiber based feed
  - May reduce negative associative effects
  - May allow lower feeding frequency
    - Higher rates

Stalker et al., 2005

- Low Frequency feeding of DGS
  - Energy source (> 15% of diet)
  - Poor performance compared to daily feeding
  - Decline in performance due to fat levels?
Hypothesis

- Infrequent supplementation of low fat co-products to developing heifers will result in comparable performance to daily supplementation and thus reduce labor costs.

Materials & Methods

- 64 bred Angus heifers (17 mo.)
- Graze cool season grass pasture for 55 days
  - June 24<sup>th</sup> - August 20<sup>th</sup>
- 1 of 2 treatments
  - High Frequency
  - Low Frequency
- Weighed and assigned BCS
Treatments

- High Frequency
  - Fed 6 days/wk
  - 5 lbs./hd CGF/Soybean Hulls

- Low Frequency
  - Fed 3 days/wk
  - 10 lbs/hd CGF/SBH

- BOTH treatments received 30 lbs/hd/wk

Feed Analysis

- 11 paddocks
  - Orchard grass / clover
  - Orchard grass / clover / fescue
  - Max Q / Clover

<table>
<thead>
<tr>
<th>Item</th>
<th>7/11</th>
<th>8/15</th>
<th>7/11</th>
<th>8/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM (%)</td>
<td>88.5</td>
<td>86.3</td>
<td>26.9</td>
<td>24.0</td>
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<tr>
<td>Protein</td>
<td>18.4</td>
<td>20.7</td>
<td>17.2</td>
<td>17.7</td>
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<tr>
<td>ADF</td>
<td>22.6</td>
<td>19.7</td>
<td>38.7</td>
<td>37.4</td>
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<tr>
<td>NDF</td>
<td>48.5</td>
<td>38.6</td>
<td>64.5</td>
<td>65.9</td>
</tr>
<tr>
<td>TDN</td>
<td>70.6</td>
<td>71.9</td>
<td>57.3</td>
<td>59.0</td>
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<tr>
<td>RFV</td>
<td>-</td>
<td>-</td>
<td>86.1</td>
<td>85.1</td>
</tr>
<tr>
<td>Fat</td>
<td>1.84</td>
<td>3.25</td>
<td>-</td>
<td>-</td>
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</table>
## Statistical Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Low</th>
<th>High</th>
<th>SE</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Initial BW, lbs.</td>
<td>1016</td>
<td>1017</td>
<td>2.7</td>
<td>0.82</td>
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<tr>
<td>Initial BCS</td>
<td>5.9</td>
<td>5.8</td>
<td>0.1</td>
<td>0.16</td>
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<tr>
<td>Final BW, lbs.</td>
<td>1095</td>
<td>1085</td>
<td>2.0</td>
<td>0.08</td>
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<tr>
<td>Final BCS</td>
<td>5.8</td>
<td>5.7</td>
<td>0.1</td>
<td>0.41</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Heifer BW Change</th>
<th></th>
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</thead>
</table>
| Low                | 79 lbs.
| High               | 69 lbs.

*P = 0.21*
Economics

- Labor
  - $10/hr – Save $240
- Other Factors to consider.....
  - Location of pasture/mileage
  - Feeding method
    - Hand vs. feed truck/wagon
  - Weather Conditions