Alternative Feedstuffs and Changing Coproducts for Cowherd

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Outline

• Introduction
• Alternative feedstuff considerations
  – Nutrient composition
  – Availability and consistency
  – Storage and feeding
  – Effects on performance
  – COST
• Changing coproducts
Introduction

• Changing dynamics in agriculture
  – Increasing population
  – Decreasing acres for grazing or crops
  – Increased utilization of grain for fuel
  – Increased input costs

Cow/Calf Profitability

• Graze as many days as possible
  – Varies from region to region
  – Varies year to year
    • Drought
    • Snow/ice

• Feed Costs!!!
  – 50-70% of the cost of production
  – Most of the costs are in stored feeds
  – Costs of traditional feeds (hay and corn)
Alternative Feedstuffs

• Alternative
  – Available as another possibility
• Varies from region to region

Alternative Feedstuffs

• Alternative feedstuff considerations
  – Nutrient composition
  – Availability and consistency
  – Storage and feeding
  – Effects on performance
  – COST
Nutrient Composition

- Nutrient composition
  - Get feed analyzed
  - Know the requirements of your cows
- Supplement considerations
  - Need calcium for corn coproducts
  - What about sulfur?

Availability and Consistency

- Availability
  - Google Missouri Byproduct
  - Drought affected corn coproduct availability
- Consistency
  - Plant to plant variation
  - Within plant variation
Storage Considerations

- Commodity shed
- Bunker
- Bag
- Bin
- Ground

Storage Considerations

- Wet vs. Dry
  - Feed Cost / trucking cost
  - Shelf-life of wet product
Feeding Method

- Product form poses challenges
- DDGS
  - Difficult to pellet
  - Meal
    - Wind
    - Mud
Equipment Considerations

Effects on Performance

Traditional

“Alternative”
Methods

- 164 Angus and Simmental Cows (16 pens)
- Trial started at calving
- Trial ended at time of AI
- Cow DM disappearance, BW change, milk production, calf ADG, and AI conception

Treatments

- **Ad Lib**: DDGS (~14.3 lbs DM/d) with ad libitum access to corn stalk residue bales
- **High Residue**: DDGS (~14.3 lbs DM/d) and ground corn stalk residue (~ 14.1 lbs DM/d)
- **Low Residue**: DDGS (~16.5 lbs DM/d) and ground corn stalk residue (~ 9.9 lbs DM/d)
- **Hay**: (Control) Ad libitum access to good quality mixed alfalfa hay bales
**Feed Analysis**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>% CP</th>
<th>%ADF</th>
<th>%NDF</th>
<th>%TDN</th>
<th>% Fat</th>
<th>%S</th>
<th>%K</th>
<th>%Ca</th>
<th>%P</th>
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</thead>
<tbody>
<tr>
<td>DDGS</td>
<td>27.38</td>
<td>14.17</td>
<td>29.82</td>
<td>74.44</td>
<td>7.87</td>
<td>0.62</td>
<td>1.33</td>
<td>0.11</td>
<td>0.89</td>
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<tr>
<td>Stalk Bale</td>
<td>3.05</td>
<td>48.69</td>
<td>77.07</td>
<td>52.71</td>
<td>0.07</td>
<td>1.34</td>
<td>0.63</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Alfalfa Bale</td>
<td>20.1</td>
<td>37.57</td>
<td>48.62</td>
<td>61.7</td>
<td>0.2</td>
<td>1.66</td>
<td>1.13</td>
<td>0.34</td>
<td></td>
</tr>
</tbody>
</table>

*DM Disappearance lbs/d*

- Ad Lib: 27.3
- High: 28.3
- Low: 26.5
- Hay: 32.3

*P≤0.01  **P≤0.05
**BW change, lbs**

- Ad Lib: -37.2 lbs
- High: -45.8 lbs
- Low: -24.2 lbs
- Hay: -60** lbs

*P≤0.01  **P≤0.05

**Milk Production, lbs/d**

- Ad Lib: 26.6 lbs
- High: 24.7 lbs
- Low: 22.7 lbs
- Hay: 22.2 lbs

*P≤0.01  **P≤0.05
Calf ADG, lbs/d

First AI Conception, %
Cost

- If nutrient requirements are met and performance is adequate, decisions can be made solely on COST.

Feed Costs, $/d

Prices: DDGS - $120/ton, Hay - $130/ton, Corn Residue - $55/ton

*P ≤ 0.01  **P ≤ 0.05
Feed Costs, $/d

Prices: DDGS - $275 / ton, Hay - $225 / ton, Corn Residue $75 / ton

- Ad Lib: 2.46
- High: 2.5
- Low: 2.64
- Hay: 3.63

Changing Coproducts

- Coproducts change
  - Different composition
Methods

• 136 Angus and Simmental Cows (16 pens)
• Trial started at calving
• Trial ended at time of AI
• Cow DM disappearance, BW change, milk production, calf ADG, and AI conception

Treatments

• **DDGS**: 14.3 lbs DM/d DDGS with ad libitum access to corn stalk residue bales
• **Bran/DDGS**: 9.7 lbs DM/d Bran and 4.8 lbs DM/d DDGS with ad libitum access to corn stalk residue
• **Bran/HP**: 11.2 lbs DM/d Bran and 3.3 lbs DM/d HP with ad libitum access to corn stalk residue
• **Hay**: (Control) Ad libitum access to good quality mixed alfalfa hay bales
## Feed Analysis

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<th>Ingredient</th>
<th>% CP</th>
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<th>% Fat</th>
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<th>%K</th>
<th>%Ca</th>
<th>%P</th>
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</thead>
<tbody>
<tr>
<td>Dakota Gold BPX DDGS</td>
<td>30.68</td>
<td>17.82</td>
<td>33.04</td>
<td>90</td>
<td>9.67</td>
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<tr>
<td>Dakota Gold HP</td>
<td>40.04</td>
<td>13.35</td>
<td>30.29</td>
<td>89</td>
<td>5.5</td>
<td>0.68</td>
<td>0.47</td>
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<td>0.41</td>
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<tr>
<td>Dakota Bran Corn Residue</td>
<td>13.34</td>
<td>5.34</td>
<td>22.01</td>
<td>89</td>
<td>9.89</td>
<td>0.69</td>
<td>1.06</td>
<td>0.11</td>
<td>0.65</td>
</tr>
<tr>
<td>Alfalfa Mixed Hay</td>
<td>3.37</td>
<td>46.11</td>
<td>71.63</td>
<td>54.52</td>
<td>-</td>
<td>0.05</td>
<td>1.03</td>
<td>0.61</td>
<td>0.05</td>
</tr>
</tbody>
</table>

## DM Disappearance lbs/d

![DM Disappearance lbs/d](chart)

*P≤0.01  **P≤0.05
Calf ADG, lbs/d

First AI Conception, %

*P≤0.01  **P≤0.05
Summary

- Alternative feeds vary from region to region
- Must consider availability and consistency
- Evaluate storage and feeding requirements
- If performance is comparable, costs dictate
- As coproducts change, producers will adapt
- KNOW ANALYSIS and COSTS