Investing in supplement feeding systems

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Cow/calf operators will garner the bulk of the profit margin in 2015-2016.
Beef Cow Inventory

Source: USDA
Projected 2015-2018

F2015 +300,000 hd
F2016 +750,000 hd
F2017 +800,000 hd
F2018 +400,000 hd
1980 – 2000 average P/L of $2.04 per head
Not sustainable!

Green grass and profitability will drive herd expansion.
Take home message #1

Beef herd expansion in the US is a fact
North Florida (Winter) Feeding Systems

Hay or haylage only

Winter grazing only

Hay or haylage plus free-choice supplementation

Hay or haylage plus strategic supplementation
Storage losses

The bales are net-wrapped, so they should be OK!
Hay storage: an investment worth considering?

“Some folks pay for a barn they have never built”
**Effect of hay placement and processing on waste**  
*Univ. of MN data*

<table>
<thead>
<tr>
<th>Daily hay DM</th>
<th>Placement</th>
<th>Processing</th>
<th><em>P</em>-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pen surface</td>
<td>Structure</td>
<td>Whole</td>
</tr>
<tr>
<td>Offered, lb/cow</td>
<td>29.3</td>
<td>27.4</td>
<td>29.1</td>
</tr>
<tr>
<td>Waste, lb/cow</td>
<td>1.2</td>
<td>4.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Waste cow</td>
<td>4.6%</td>
<td>19.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Intake, lb/cow</td>
<td>26.2</td>
<td>24.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Intake cow BW</td>
<td>2.0%</td>
<td>1.9%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Waste due to hay placement and processing

Summary

- Placing hay in a structure can save 14.5% of hay DMI needs
  - A 100-cow herd needing 3,150 lb DM/cow in 120 d can save 45,675 lb DM
  - $1,881 annually
- Cumulative losses
  - Storage = 9%
  - No feeder = 14.5%
  - Total = 23.5%

http://advantagefeeders.com.au
Is hay the most expensive feed in the operation?

$100/ton @ 25\% \text{ waste} = \$133/ton$

$0.12/lb \text{ of TDN @ 55\% TDN}$

50:50 CGF:SH

$0.14/lb \text{ of TDN @ 78\% TDN}$
### Feeder Type and Hay Waste

*(Buskirk et al., 2003)*

<table>
<thead>
<tr>
<th>Daily hay DM</th>
<th>Cone (a)</th>
<th>Ring (b)</th>
<th>Trailer (c)</th>
<th>Cradle (d)</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offered, lb/cow</td>
<td>26.5</td>
<td>26.7</td>
<td>30.6</td>
<td>28.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Waste, lb/cow</td>
<td>0.9</td>
<td>1.5</td>
<td>3.5</td>
<td>4.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Waste</td>
<td>3%</td>
<td>6%</td>
<td>13%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Intake, lb/cow</td>
<td>25.4</td>
<td>25.1</td>
<td>27.1</td>
<td>24.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Intake/cow BW</td>
<td>1.8%</td>
<td>1.8%</td>
<td>2.0%</td>
<td>1.8%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Waste differs: cone < ring < trailer = cradle (*P* < 0.05)

Waste % differs for cone and ring vs trailer and cradle (*P* < 0.05)
NFREC data on hay intake by cows

*T85 hay fed over 56 d at the FEF*

Reduction in pair DMI by weaning = 32%
Reduction in cow DMI by weaning = 15%

<table>
<thead>
<tr>
<th></th>
<th>Suckled</th>
<th>Weaned</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMI, lb/d</td>
<td>21.2</td>
<td>18.1</td>
</tr>
</tbody>
</table>

1.7% of BW

1.4% of BW

Suckled vs. weaned Cow DMI, *P* < 0.01
Hay waste and feeder type

Summary

- Expected loss using ring or cone type feeder = 5%
- Loss with cradle or trailer type feeder = 15%
- Simply using a ring or cone feeder = 10% savings
- Using wrong feeder feed loss = 10% vs using no feeder = 14.5%
Logistics of hay storage and handling
A little cowboy math

- **Simple depreciation**
  - $45,000 hay barn for 100 cows
  - 1,200 square feet (30’ x 40’)
    - Fully depreciated for 20 yr
      - $2,250/yr
        - $22.50/cow/yr
  - 3,150 lb DM/cow in 120 d
    - $0.18/day/cow ($22.5/120 d)
  - In 2013, feed cost was $167.42
    - Depreciation cost = 13% of feed cost
      - Barn will be there for more than 20 yr

- **Variable loss**
  - 100 cows, 3,150 lb DM
  - Storage loss = 9%
    - 28,350 lb hay DM/feeding season
    - $1,167.35/year or $11.67/cow/yr
      - Loss will continue for more than 20 yr

Half of the hay barn cost on a per cow basis already paid by waste savings!

DiCostanzo and Jaderborg, 2015
If nothing else, consider investing in hay feeding structures
Commodity barn to take advantage of price seasonality in feeds?

Corn prices vs. gluten feed and soy hulls
Winter grazing in North FL
NFREC data

Supplemented Control  |  Rye + ryegrass  |  Triticale + ryegrass

<table>
<thead>
<tr>
<th>Total cost of gain $/lb</th>
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</thead>
<tbody>
<tr>
<td>1.84</td>
</tr>
<tr>
<td>1.99</td>
</tr>
<tr>
<td>1.06</td>
</tr>
</tbody>
</table>

Means without common superscripts differ (P < 0.05)
Feed as an investment

T85 hay ad lib + a 50:50 glycerol:molasses liquid feed

Treatment

CTRL  SUP1  SUP3  SUP5

2.88  3.01  3.06  3.43

ADG, lb

3.3  3  2.7  2.4  2.1  1.8  1.5  1.2  0.9  0.6  0.3  0

Linear, $P = 0.02$

Ciriaco et al, 2014 – NFREC data
Economics of supplementation
Glycerol:molasses blends example

@ $220/ton of glyc:mol blend and $100/ton of hay, 12 lb of hay DMI (AF)/d

Cost of supplementation for 5 lb/d = $0.55/d

CTL treatment FCOG = 0.60/2.88 = $0.21/lb

5 lb/d treatment FCOG = 1.15/3.43 = $0.33/lb

In 90 d = $10.8/hd added feed costs

Added wt gain in 90 d = 49.5 lb/hd
49.5 lb x $2.20/lb = $109/hd extra
Take home message # 3

When it comes to winter supplementation...

Always have a plan!
Conclusions

• U.S. beef herd in phase of reconstruction
• No better time than this to look at feed as an investment and not just as a cost
• Waste can turn hay into the most expensive feed
• Zero waste in hay feeding is impossible
  ✓ 9% hay waste during storage (more in FL?)
  ✓ 5 to 19% during feeding, depending on feeder type
• Winter grazing systems are an attractive option for NW Florida
Cost effective options exist to reduce waste in feeding systems. There is no better time than now to consider those investments because as we rebuild the herd, cattle prices will drop.

Always plan ahead! not doing anything is already a plan.
For up to date information on:

• Beef cattle outlooks
• Marketing
• Production information

www.secattleadvisor.com
I leave you with something to chew on for a while...

Questions?