The 2016 and 2036 Cowherd

Beef Improvement Federation
June 16, 2016
Manhattan, KS

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What we do and opportunities for 2036

Post-weaning Perspective

Produce cattle with tremendous capacity for post-weaning growth and carcass weight

Finished Cattle Weights

Finished cattle weights increasing at rate of 9.4 lb per year
Carcass weights increasing at rate of 5.7 lb per year

Post-weaning Perspective

Produce cattle with tremendous capacity for marbling
### Livestock Marketing Information Center, 2016

#### Beef quality

% Cattle Grading USDA Choice and Above

- 1995
- 2006
- 2009
- 2015

#### Post-weaning Perspective

Cutability has declined marginally

#### Cutability

% of Federally Inspected

<table>
<thead>
<tr>
<th>Yield Grade</th>
<th>1995</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12.6</td>
<td>6.7</td>
</tr>
<tr>
<td>2</td>
<td>45.3</td>
<td>33.8</td>
</tr>
<tr>
<td>3</td>
<td>34.2</td>
<td>46.7</td>
</tr>
<tr>
<td>4</td>
<td>7.1</td>
<td>11.1</td>
</tr>
<tr>
<td>5</td>
<td>0.8</td>
<td>1.8</td>
</tr>
</tbody>
</table>

#### Cow/Calf Enterprise through Weaning

- Kansas: Kansas Farm Management Association (KFMA)  
  - Kevin Herbel
- North Dakota: Cow Herd Appraisal Performance Software (CHAPS)  
  - Dr. Kris Ringwall
- New Mexico, Oklahoma, Texas: Standardized Performance Analysis (SPA)  
  - Dr. Stan Bevers
- Upper Midwest (FINBIN), Center for Farm Financial Management, University of Minnesota

#### Profitability and Performance Data

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**Cost vs Price Over Time, $ / Cwt**

![Graph showing cost vs price over time, $ / Cwt](Image)

- **Calf Price**
- **Cost per**

$y = 5.25x + 44.5$

$y = 5.0x + 57.2$

**Profitability Differences**

Pendell et al., 2015 (KFMA data)

- 79 operations with data from 2010 through 2014
- High profit 1/3 averaged $415 more net return per cow compared to low profit 1/3
- 32.2% difference due to gross income
  - Weaning weight
  - Weaning rate
  - Calf price
  - Cull cow income
- 67.8% difference due to reduced cost

**Value vs Cost of Added Weaning Weight**

Pendell et al., 2015 (KFMA data)

- 1 lb of added weaning weight = $0.86 added cost per cow
- If weaning rate = 86%, average cost per lb of added weaning weight = $1.00
- 234 weekly sale reports (2010 – 2014) from Oklahoma National Stockyards for 550 to 650 lb calves indicated average value of added weight = $85.90 ± 33.20

**Reproduction**

![Image of cow and calf](Image)

**Weaning Rate in Commercial Cow/ Calf Operations**

![Graph showing weaning rate in commercial cow/calf operations](Image)

**Reproductive Losses**

<table>
<thead>
<tr>
<th>Item</th>
<th>Upper Midwest (FINBIN)</th>
<th>Southern Plains (SPA)</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>96.1</td>
<td>90.5</td>
<td>95.6</td>
</tr>
<tr>
<td>Pregnancy loss</td>
<td>2.2</td>
<td>3.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Calf death loss</td>
<td>6.0</td>
<td>4.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Weaning rate</td>
<td>87.9</td>
<td>83.4</td>
<td>85.7</td>
</tr>
</tbody>
</table>

*Five-year average from 2009 through 2013
Hay Acres Per Beef Cow: Oklahoma

<table>
<thead>
<tr>
<th>Year</th>
<th>Hay Acres Per Beef Cow</th>
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</thead>
<tbody>
<tr>
<td>1960</td>
<td>0.00</td>
</tr>
<tr>
<td>1965</td>
<td>0.50</td>
</tr>
<tr>
<td>1970</td>
<td>1.00</td>
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<tr>
<td>1975</td>
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</tr>
<tr>
<td>1980</td>
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Hay Production: Oklahoma

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<td>2.00</td>
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Caution: Cattle are Changing!

Efficiency and Milk
Bayliff, 2016

<table>
<thead>
<tr>
<th>Diet Fed, lb (DM) / d</th>
<th>Kcal NE M (kg BW 0.75) -1 ·hd -1 ·d -1</th>
<th>% NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.6</td>
<td>118</td>
<td>67</td>
</tr>
<tr>
<td>21.8</td>
<td>138</td>
<td>82</td>
</tr>
<tr>
<td>26.0</td>
<td>154</td>
<td>96</td>
</tr>
<tr>
<td>29.3</td>
<td>172</td>
<td>107</td>
</tr>
<tr>
<td>31.7</td>
<td>187</td>
<td>112</td>
</tr>
</tbody>
</table>

Energy required for maternal maintenance plus milk

Figure 2. Cow BCS

Energy required for maternal maintenance plus milk

\[
P < 0.006 \\
Y = 0.003X - 2.85
\]
Summary

- Commercial cow/calf segment has contributed immensely to dramatic improvement in post-weaning performance.
- In the meantime, there is no evidence that commercial cow efficiency has improved in a “sell at weaning” context.
- More data is needed to determine if genetic capacity for weaning weight is limited by the environment on commercial operations (do indexes need to be adjusted?)
- More milk is not the answer.
- Over the next 20 years, the commercial cow/calf segment should shift focus more toward minimizing cost rather than increasing production.
  - Forage utilization efficiency
  - Improvement in fertility (especially in the South)
  - Reduced calf death loss (especially in the North)
Increasing risk/frequency of cases where:

a) forage resources limit the expression of genetic potential for milk

b) production costs have increased because the “environment” has been artificially modified to fit the cows

The Sustained Cow Fertility (SCF) results, reported in percentage units, are oriented such that larger breeding values reflect sires whose daughters calve annually for more years.