Presentation Preview

- Discuss cattle and feedstuff market projections for the next 10 to 12 months
- Share supply and margin expectations based on U.S. beef cowherd expansion
- Provide a detailed look into the current value of bred females and the opportunities that lie ahead
U.S. Heifer Slaughter % of Fed Slaughter

Source: USDA
Projected 2015-17

Beef Cow Inventory

Source: USDA
Projected 2016-2018
Per Capita Net Meat & Poultry Consumption

Source: USDA
Projected 2015-18

Course 81% Grind (CH,SE,NR)
to NE Jumbo Boneless, Skinless Breast

Source: Urner Barry
WEEKS
Fed Cattle Average $133
July to Dec 2015 Avg. was $136

- Factors to watch:
  - Continuation of Feeding Cattle to Heavier Out Weights
  - Leverage
  - Pork and Poultry Price Relationship to Beef
  - Exports of Beef and Hide and Offal
  - Ground Beef Demand
  - Weather
Yearling Feeder Steer Average $165

- Factors To Watch:
  - Cattle Feeder Crush Margin
  - Deferred Live Cattle Basis
  - Corn Value
  - Supply Outside of Feedlots
  - Margins negative winter/spring, challenged summer/fall

550-Pound Steer Calf Average $195

- Factors to Watch:
  - Stocker and cattle feeder margins red for 2016, how red?
  - Calf crop 1.5 million head larger in last two years.
  - Supply outside of feedlots
The Cattle Price Cycle

- 1974-76
- 1979
- 1985-1986
- 1990-1991
- 1996-1998
- 2014-2015
- 2019-2020

550 lb. Feeder Steer Premium to Fed Price

Source: CattleFax, 2016 Projected
U.S. Hay Production and Price
2001/02-2015/16 Market Year

Source: USDA, 2015/16 Price - CattleFax Proj.

Ethan Oberst
Analyst, CattleFax
Net Present Value

• NPV calculates or estimates the sum of all incoming and outgoing cash flows over a certain period of time.

• Takes into consideration; bred cow purchase price, calf prices, cash cow costs and market cow values over the productive life of the cow

• Can paint a picture, through assumptions, in order to evaluate the current value of a bred female

Assumptions

• The NPV is calculated using these assumptions

• 7 healthy calves

• Increasing cash cow costs

• Decreasing cull cow values

• 550lb steer price following a typical price pattern during expansion

• 10 percent discount rate
Change in Cash Cow Costs

Cull Cow Values: U.S. Avg. Utility Cow Price
<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Inflow</td>
<td>$1,072.50</td>
<td>$1,017.50</td>
<td>$962.50</td>
<td>$907.50</td>
<td>$907.50</td>
<td>$935.00</td>
<td>$990.00</td>
</tr>
<tr>
<td>Expenses</td>
<td>$800.00</td>
<td>$700.00</td>
<td>$670.00</td>
<td>$650.00</td>
<td>$650.00</td>
<td>$700.00</td>
<td>$700.00</td>
</tr>
<tr>
<td>Salvage Value</td>
<td>$650.00</td>
<td>$650.00</td>
<td>$656.50</td>
<td>$669.63</td>
<td>$689.72</td>
<td>$710.41</td>
<td>$731.72</td>
</tr>
<tr>
<td>Total Cash Inflow</td>
<td>$422.50</td>
<td>$367.50</td>
<td>$306.00</td>
<td>$237.87</td>
<td>$217.78</td>
<td>$224.59</td>
<td>$1,098.28</td>
</tr>
<tr>
<td>Present Value Factor</td>
<td>$349.17</td>
<td>$276.11</td>
<td>$209.00</td>
<td>$147.70</td>
<td>$122.93</td>
<td>$115.25</td>
<td>$123.35</td>
</tr>
<tr>
<td>Total PV of Cash Inflows</td>
<td>$1,732.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Investment</td>
<td>$1,200.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPV</td>
<td>$533</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NPV of Bred Cows Purchased in 2015/16 with Varying Calf Prices/Costs

Fed Steer Value minus Bred Cow Value, $/Head

Source: CattleFax
U.S. Annual Average Bred Cow Prices

Source: CattleFax, 2016-18 Projected

Brett Terhaar, DVM
Sr. Technical Consultant, Beef Business Unit
Elanco Animal Health
Preparation for Spring Calving & Branding

- Cows & first calf heifers
  - Body condition of cows & heifers
    - 5.5 to 6.0
    - Body condition at calving was the most important factor influencing early return to estrus & pregnancy\(^1\)
  - Early intervention of dystocia affects re-breeding rates\(^2\)
- Colostrum/vaccines
  - Vaccine given prior to calving increases colostrum quality\(^3\)

\(^2\) Doornbos, D., et al. 1984. "Effects of dam age, prepartum nutrition and duration of labor on productivity and postpartum reproduction in beef females." USDA and Montana Ag Experiment Station.
Cow/Heifer Vaccine Protocol

- **Vira Shield® 6 VL5 HB**
  - Safe at any stage of gestation
  - Broad spectrum coverage for BVD, IBR, Lepto (Big 3)
  - Common choice for vaccination of pregnant cows based on safety profile
- **Scour Bos® 9**
  - Only scours vaccine that delivers powerful protection & a 16-week vaccination window* gives you the flexibility to administer at preg-check
- **Titanium® 5 L5 HB**
  - Use when cows are vaccinated at least 30 days before bull turnout
  - Broad spectrum coverage for BVD, IBR, Lepto
  - Common choice when vaccinating cows in the spring before bull turnout

*16-week vaccination window for initial vaccination. In subsequent years, administer up to 10 weeks pre-calving.

Preparation for Calves at Branding

- Calves at branding/turn out to grass
  - Respiratory vaccines start the preconditioning program for a successful summer, weaning & beyond

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Calf Vaccine Protocol

- Titanium 5 + PH-M
  - Aids in the prevention of BRD in calves
  - Viral agents: BVD 1, BVD 2, IBR, PI3, BRSV
  - Bacterial agents: *Mannheimia haemolytica* & *Pasteurella multocida*

- NUPLURA® PH
  - The first-ever pneumonia vaccine developed for cattle in the U.S. market using recombinant technology, leading to the purest antigen form available

Benefits of Grazing-phase Implants

- One of the most profitable management tools available to stocker producers\(^1\)
- Implants improve weight gain by 15-40 lbs\(^1\)
- Grazing implants provide a substantial return on investment — as much as 17:1\(^2\)

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Lifetime Implanting Performance Benefits

Implanting increases rate of weight gain, live weight & market value in each phase of beef production.¹

<table>
<thead>
<tr>
<th>Lifetime Implanting Performance Benefits</th>
<th>Increase in ADG, %</th>
<th>Increase in live weight, lbs.</th>
<th>Increase in value, $/animal*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suckling steer calf</td>
<td>5</td>
<td>18</td>
<td>$16.32</td>
</tr>
<tr>
<td>Stocker steer</td>
<td>15</td>
<td>33</td>
<td>$25.20</td>
</tr>
<tr>
<td>Feedlot steer</td>
<td>20</td>
<td>75</td>
<td>$51.34</td>
</tr>
<tr>
<td>All phases</td>
<td>126</td>
<td>276</td>
<td>$92.86</td>
</tr>
</tbody>
</table>

¹Average market price (1985-1994; CattleFax, 1995) = $2.04/lb for 500-lb steer calves, $1.68/lb for 802-lb steers, $2.49/lb for Choice, and $2.38/lb for Select carcasses (assuming a 15% reduction in percentage Choice with implanting from a base of 75% Choice for unimplanted cattle and a 62% dressing percentage).

Stocker steer calves implanted with Component E-C with Tylan/Synovex-C or Ralgro at 2 mo of age.

Stocker steers implanted with Ralgro, Component E-S with Tylan/Synovex S or Component TE-G with Tylan/Revalor-G at the start of the grazing season.

Feedlot steers implanted with implants containing estrogenic hormones only or both estrogenic and androgenic hormones (EA) at the start or midpoint of the finishing period. Implanted in each phase (suckling, stocker and feedlot).

Implant-site Histology

A healthy implant site provides optimum blood flow to deliver the active ingredients in the implant to the animal.

A capsule surrounding the infected implant site contains the implant and abscess.
Impact of Component® TE-S with and without Tylan®¹

Implant evaluation

<table>
<thead>
<tr>
<th>Variable</th>
<th>No Tylan</th>
<th>Tylan</th>
<th>Improvement, %</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper, % 14-day*</td>
<td>54.2</td>
<td>83.3</td>
<td>53.7</td>
<td>0.001</td>
</tr>
<tr>
<td>Abscessed, % 14-day*</td>
<td>19.1</td>
<td>13.6</td>
<td>-28.8</td>
<td>0.30</td>
</tr>
<tr>
<td>Ruptured, % 14-day*</td>
<td>24.8</td>
<td>5.3</td>
<td>-78.6</td>
<td>0.004</td>
</tr>
</tbody>
</table>

¹Least squares means.

For all products: The label contains complete use information, including cautions and warnings. Always read, understand and follow label and use directions.

Implants

Administer one dose in the ear subcutaneously according to label directions.

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Questions?

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CattleFax Seminars

Risk Management Seminar
– June 22nd and 23rd, 2016
– September 14th and 15th, 2016

Corporate College
– July 20th and 21st, 2016

Outlook & Strategies Seminar
– November 29th, 2016
Next Trends+ Webinar
Wednesday, May 25th, 2016

Archive of this webinar will be accessible for 30 days at www.cattlefax.com