Discussion Outline

- Cow Ownership Costs
- Cow Longevity
- Culling Reasons and Rates
- Depreciation-Replacement Cost
- Replacement Strategies
- Raising or Buying Replacements
- Heifer Selection and Management
- Maternal Trait Economic Value
COW COSTS

**Ownership**  $160

- Interest
  - Finance or return on investment
  - 3% of $1500 = $45
- Death loss
  - 1.5% of $1000 = $15
- Depreciation
  - $1500 – $780 = $720/7yrs = $100

**Operating**  $550

- Feed and pasture  $400
  - 6 bales @ $40 = $240
  - 8 acres @ $16 = $130
  - 50 lbs salt & mineral = $30
- Health & Breeding  $50
- Labor/Equipment/Fuel  $100
Cow Longevity

- ND CHAPS
  - Avg cow age 5.6 yrs – herd growth
  - Culling rate 14%, Replacement Rate 17%
  - Keep as long as productive and not likely to die or become problem and sell in time frame of high value cull price
Culling Cows (4 “Os”)

- Aborted or Lost Calf 1+4%
- Didn’t Breed or Very Late 5+3%
- Bad Udder 1-2%
- Structurally Unsound 1-2% eyes, hips, feet, jaw, …
- Bad Temperament 1-2%
- Low Producing ?????
### Udder Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Example</th>
<th>Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>9</td>
<td>Very Tight</td>
<td><img src="example1.png" alt="Example" /></td>
<td>9</td>
<td>Very small</td>
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<tr>
<td>7</td>
<td>Tight</td>
<td><img src="example2.png" alt="Example" /></td>
<td>7</td>
<td>Small</td>
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<tr>
<td>5</td>
<td>Intermediate/mild</td>
<td><img src="example3.png" alt="Example" /></td>
<td>5</td>
<td>Intermediate/mild</td>
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<tr>
<td>3</td>
<td>Pendulous</td>
<td><img src="example4.png" alt="Example" /></td>
<td>3</td>
<td>Large</td>
</tr>
<tr>
<td>1</td>
<td>Very pendulous, broken floor</td>
<td><img src="example5.png" alt="Example" /></td>
<td>1</td>
<td>Very large, balloon-shaped</td>
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# Cull and Replacement Prices 2016

<table>
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<tr>
<th>Location</th>
<th>Quantity</th>
<th>Color</th>
<th>Price</th>
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<tr>
<td>Keene</td>
<td>3</td>
<td>black</td>
<td>1298</td>
</tr>
<tr>
<td>Keene</td>
<td>2</td>
<td>black</td>
<td>1298</td>
</tr>
<tr>
<td>Richardton</td>
<td>1</td>
<td>black</td>
<td>1305</td>
</tr>
<tr>
<td>manning</td>
<td>1</td>
<td>red</td>
<td>1310</td>
</tr>
<tr>
<td>Belfield</td>
<td>1</td>
<td>black</td>
<td>1320</td>
</tr>
<tr>
<td>Belfield</td>
<td>1</td>
<td>black</td>
<td>1325</td>
</tr>
<tr>
<td>Keene</td>
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<td>1335</td>
</tr>
<tr>
<td>New England</td>
<td>2</td>
<td>black</td>
<td>1345</td>
</tr>
<tr>
<td>New England</td>
<td>2</td>
<td>blkbwf</td>
<td>1363</td>
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<tr>
<td>Hebron</td>
<td>20</td>
<td>F1 Bwf</td>
<td>1099</td>
</tr>
<tr>
<td>Baker, MT</td>
<td>50</td>
<td>Black</td>
<td>1017</td>
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<tr>
<td>Sidney, MT</td>
<td>5</td>
<td>RdBldy</td>
<td>1086</td>
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<tr>
<td>Sidney, MT</td>
<td>6</td>
<td>Bwf</td>
<td>1198</td>
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<tr>
<td>Glen Ullin</td>
<td>9</td>
<td>Bwf</td>
<td>1051</td>
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<tr>
<td>Baker, MT</td>
<td>4</td>
<td>Black</td>
<td>1137</td>
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<tr>
<td>Glen Ullin</td>
<td>19</td>
<td>Bwf</td>
<td>1027</td>
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<tr>
<td>Glendive, MT</td>
<td>15</td>
<td>Black</td>
<td>977</td>
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<tr>
<td>Glendive, MT</td>
<td>8</td>
<td>Black</td>
<td>996</td>
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Managing Replacement Cost

- A. Replacement female Price (low cost heifer dev)
- B. Cull Cow Value (maximize salvage)
- C. % of Herd Replaced (minimize culling)

\[(A - B) \times C =\]
\[($1440 - 773) \times 14\% = \$94 \text{ per cow in herd}\]
\[($1200 - 850) \times 12\% = \$42 \text{ per cow in herd}\]
Culling is costly but failing to cull for fertility, structure, disposition, and productivity leads to creating greater problems in the future.
Strategies

• Purchase young bred females or pairs
• Retain pool of heifers that are developed and bred for herd replacements
• Maintain static herd size – replacing culls with a constant replacement rate
• Allow herd to reduce under high cattle prices – low replacement rate
• Expand herd under low cattle prices by retaining greater numbers for breeding
Raise vs Buy

**Raise**
- Greater opportunity for information
- More accurate selections for genetic merit
- Minimize unfavorable permanent non-genetic effects – better adapted
- Biosecurity

**Buy**
- Sires selected to maximize steer value
- Eliminates need for calving ease heifer bulls
- Maximize heterosis and complementarity
- Use all pasture and feed resources for income generating cows
## Raise vs Buy Economics

(1000 acres @ $15 - 600 bales @ $40 - $2500 supplement)

<table>
<thead>
<tr>
<th></th>
<th>BUY</th>
<th>Herd $</th>
<th>RAISE</th>
<th>Herd $</th>
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<tbody>
<tr>
<td>#cows</td>
<td>100</td>
<td></td>
<td>90</td>
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<tr>
<td>#cows culled</td>
<td>14</td>
<td></td>
<td>13</td>
<td></td>
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<tr>
<td>#cows die</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
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<tr>
<td>#bred heifers purchased &amp; $</td>
<td>15 * 1500</td>
<td>- 22500</td>
<td>0</td>
<td></td>
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<tr>
<td>#heifers retained as weaners</td>
<td>0</td>
<td></td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Cull weight &amp; price &amp; #</td>
<td>1300 <em>.55</em> 14</td>
<td>+ 10010</td>
<td>1300*.55 * 16</td>
<td>+ 11440</td>
</tr>
<tr>
<td>Calf weight &amp; price &amp; #</td>
<td>575 * 1.28* 96</td>
<td>+ 70656</td>
<td>550 * 1.35 * 69</td>
<td>+ 51233</td>
</tr>
<tr>
<td>Feed &amp; pasture &amp; supplement</td>
<td>- 41500</td>
<td></td>
<td>- 41500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$16666</td>
<td></td>
<td>$21173</td>
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Selecting Replacement Heifers

• Sired by right type bulls – from a herd that manages cows like you do
  • mature size, optimal milk, fleshing ability, fertility, stayability, soundness, docility
• Date of birth and age –
• Moderate birth weight and size –
• Adequate growth and fleshing on high roughage –
• Desired temperament –
• Bred early in limited season –
• Positive genomic profile -
• Sound older dam if identification and records -
Genomic Testing

- Replacement Heifer Tests
  - ZOETIS
    - GeneMax -feeder
    - GeneMax Advantage -cow, feeder, total
      - COW 1-100: CEM, WW, HP, MW outliers: Cost, Docility parentage
      - FEEDER 1-100: ADG, CAR WT, MARB, REA, FAT outliers: Tenderness
      - TOTAL 1-100
  - NEOGEN
    - Igenity Silver - 6 traits
    - Igenity Gold - 13 traits
      - Includes: BW, CE, Stay, HP, Milk, Doc, Tend, Marb, REA, Fat, ADG, RFI, parentage
Don’t overlook Heterosis

- Crossbred Cow Heterosis
  - Calving Rate  +6.6%
  - Calf survival  +2.0%
  - Birth Weight  +1.6%
  - Weaning Wt  +4.2%
  - Longevity  +38%

- Improvement in weight weaned per cow exposed from crossbreeding
  - Sire breed rotation  +16%
  - 4-breed composite  +15%
  - 2-breed rotation  +16%
  - Terminal x F1  +28%
  - Terminal x composite  +22%
Heifer Development

“don’t under estimate the value of heifer selection and development on the profitability of the cowherd”

- Evaluate, identify, and develop heifers into cows that do their job
  - Breed and calve in season
  - Calve and raise calf to fall without problems
  - Wean a marketable high value calf
  - Flesh up in fall and winter on modest feed input

- Fairly easy to manage
  - Wean at 550 lb
  - Grow at 1.5 lb/da
  - YW 750 lb
  - Puberty 12-13 mon
  - Conceive 14-15 mon
  - Calve 1100 lb
Management from conception to weaning

• Nutritional insult in utero has lasting effects on fertility, health, and efficiency
• Best not to implant particularly at birth and weaning. One implant at 2-3 months minimal effects
• Fat deposition from creep feeding detrimental to future productivity and adds to cost
• Bigger heavier earlier born heifers will be easiest and cheapest to develop and are indicative of fertility and growth rate
• Retain more heifers than your replacement rate requires to allow for additional culling latter
• Do not retain heifers extreme in frame or type, with wild dispositions, or structurally unsound
• Preweaning vaccination (7-4-1)
Management from weaning to breeding

“Heifer weights are helpful to plan feeding and growth targets
• Heifers need to reach puberty by 12-13 months to breed at 14-15 months and calve at 2 yrs of age
• Puberty determined by age and weight with most heifers puberal by 1 year of age at weights 700-800 lbs. Breed and genetic variation with mod-high heritability
• Feeding an ionophore and deworming hastens puberty
• Booster and bangs vaccination, BVD testing
• Target weight concept of 60 - 65% estimated mature weight at breeding effectively achieves high breeding success
• Feed high forage ration supplemented to achieve gain (typically 1.25-1.75) to reach target weight
• Breeding affected little by pattern of growth but can relate to some feed savings
• Avoid ration changes at start of breeding

“Time spent in the heifer pen will gentle and can be used to teach low stress handling,”
Breeding Management

- Prebreeding vaccination
- Mating 20-30 days prior the main cow herd has advantages
  - Greater calving supervision, longer postpartum
- Limit breeding season to eliminate late bred heifers with high subsequent culling rate
- Estrus synchronization can enable three breeding opportunities in 45 day season
- Breed to bulls selected for calving ease
  - Breed is important, CE epd best tool
  - AI allows use of proven sires
- Early pregnancy testing to best market open heifers
Bred Heifer Management

- Feed to weigh 85% of expected mature weight at calving and BCS of 5.5-6.0
- Typically need to gain 1 lb/day over winter
- Id and keep calving record
- Separate from cowherd to facilitate special care or greater nutrition
- Check frequently through calving and assist as needed
- Feeding 2-4% added fat and by-pass protein may increase rebreeding rates under marginal forage
Value of Maternal Traits
- cows that last a long time
- high calf wt relative to feed

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Mature weight</td>
<td>1500</td>
<td>1300</td>
<td>1100</td>
<td>1500</td>
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<tr>
<td># of calves</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Calf weaning wt</td>
<td>640</td>
<td>610</td>
<td>550</td>
<td>640</td>
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<tr>
<td>Daily feed intake</td>
<td>42</td>
<td>36</td>
<td>32</td>
<td>42</td>
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<tr>
<td>Life feed cost</td>
<td>1840</td>
<td>2365</td>
<td>2803</td>
<td>3679</td>
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<tr>
<td>Annual non feed</td>
<td>150</td>
<td>150</td>
<td>150</td>
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<tr>
<td>Calf value per lb</td>
<td>1.35</td>
<td>1.39</td>
<td>1.44</td>
<td>1.35</td>
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<tr>
<td>Total calf value</td>
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<td>5082</td>
<td>6336</td>
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<tr>
<td>Salvage value</td>
<td>870</td>
<td>754</td>
<td>638</td>
<td>870</td>
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<tr>
<td>Value</td>
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<td>2511</td>
<td>2971</td>
<td>2903</td>
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Questions - Comments

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701-857-7682