Internal Herd Growth

Generating Profits through Management
What is Internal Herd Growth

- Generating more dairy replacements than you need to maintain herd size.
- Interaction of two components:
  - How many replacements do you need to maintain herd size?
  - How many replacements are you generating?
- Many different areas of farm operations impact these two components.
How Many Replacements do You Need?

- Centered in the milking herd.
  - How many cows have to be replaced?
  - Why do they have to be replaced?
    - Died
    - Mastitis
    - Reproduction
    - Low milk production
    - Etc.
  - What could be done to decrease the number that need to be replaced?
Economics

By requiring fewer replacements to maintain herd size, you minimize expenses associated with maintaining herd size.

- If paying $1,500 per replacement with a replacement rate of 50%, you will spend $150,000 per year to maintain a 200 cow dairy.
- If you can lower replacement rate to 30%, you will spend $90,000 to maintain same 200 cow dairy.
### Total Cost per Year to Maintain Herd Size

**Purchasing All Replacements**

**Herd Size**: 200 Cows

<table>
<thead>
<tr>
<th>Cow Replacement Rate</th>
<th>Price of Dairy Replacements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,300</td>
</tr>
<tr>
<td>22%</td>
<td>57,200</td>
</tr>
<tr>
<td>26%</td>
<td>67,600</td>
</tr>
<tr>
<td>30%</td>
<td>78,000</td>
</tr>
<tr>
<td>34%</td>
<td>88,400</td>
</tr>
<tr>
<td>38%</td>
<td>98,800</td>
</tr>
<tr>
<td>42%</td>
<td>109,200</td>
</tr>
<tr>
<td>46%</td>
<td>119,600</td>
</tr>
<tr>
<td>50%</td>
<td>130,000</td>
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</tbody>
</table>

Prepared by: Jason Karszes, Senior Extension Associate, PRO-DAIRY, Cornell University

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Department of Applied Economics and Management
Lower or little financial gain from internal herd growth if:

- Attain IHG by keeping unprofitable and/or low profit cows in the herd.
- Costs associated with preventing cows from leaving the herd too high.
How Many Replacements are You Generating?

- Combination of milking herd and replacement program.
  - How many calves born per year?
    - Calving interval
  - Ratio of heifer calves to bull calves.
  - How many heifer calves born dead?
    - DOA
  - How many calves don’t complete replacement program?
    - Non-Completion percent – or “heifer cull rate”
How Many Replacements are You Generating?

- If all four in your favor, you can generate many replacements.

- If 3 in your favor, may still be able to generate more heifers than needed.

- If 2 in your favor, will be difficult to generate excess heifers.

- If only one factor in your favor, may be difficult to maintain herd size.
### Required Number of Heifer Calves per Year to Maintain Herd Size For Various Non-Completion Rates and Dairy Replacement Rates

<table>
<thead>
<tr>
<th>Herd Size</th>
<th>200</th>
<th>DOA Rate^</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Completion Rate</strong>, Percentage</td>
<td>Cow Replacement Rate, Percentage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>23</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>44.0</td>
<td>57.1</td>
<td>63.7</td>
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<tr>
<td>6</td>
<td>44.9</td>
<td>58.4</td>
<td>65.2</td>
</tr>
<tr>
<td>8</td>
<td>46.0</td>
<td>52.9</td>
<td>66.7</td>
</tr>
<tr>
<td>10</td>
<td>47.1</td>
<td>54.1</td>
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<tr>
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<td>14</td>
<td>49.4</td>
<td>56.8</td>
<td>64.2</td>
</tr>
<tr>
<td>16</td>
<td>50.6</td>
<td>58.2</td>
<td>65.8</td>
</tr>
<tr>
<td>18</td>
<td>51.9</td>
<td>59.7</td>
<td>67.5</td>
</tr>
</tbody>
</table>

* Non completion rate represents the percent of heifers that start the replacement system that don't enter the dairy herd.

^ DOA Rate represents the percent of heifer calves that are born dead.

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Economics

By generating more heifers than needs, you have the ability to generate additional earnings:

- If need 50 replacements and only generate 50, no gain.
- If generate 60, have 10 more than needed.
- If generate 40, have to purchase 10 to maintain herd size.
Economics

- Lower or little financial gain from internal growth if:
  - The cost to raise the heifers is high.
    - Labor
    - Feed
    - Inventory – older calving age
  - If the quality of the replacement is low.
    - Less profitable animal in the herd: i.e. stunted or fat
Capturing the Value of Internal Growth

- Internal growth is having more animals than you need.
- Capturing value becomes a management decision.
- Many different ways to capture value.
- Mission, vision, values, goals of family and business important when evaluating.
Growing Herd Size

- The extra animals generated enter the dairy herd.
- Grow herd size without purchasing outside animals.
- Have the ability to handle increased numbers or can easily add the capacity.
- Increase profits through increased utilization of assets.
- If not full or not at maximum size for site, may be best means to capture value.
Key Factors

- Control genetics and quality of replacements.
- Slow steady growth over time.
- Can grow with closed herd.
- Operating expenses (feed, labor, etc.) used to build balance sheet assets (cattle).
- Has to be economical to grow.
Selling Milking Cows

- All replacements enter the herd.
- Sell the least profitable dairy cows in the herd.
- Market them for dairy purposes.
- Average a higher price than beef price.
Key Factors

- Stable herd size.
- Keep replacements – may be better genetics.
- Keep calf that replacement heifer is carrying.
- Improve dairy herd by replacing less profitable cows.
- Increase value of animals sold through higher price for dairy vs beef.
- Capturing most of the calf crop.
Selling Springing Heifers

- Raise heifers.
- Sell excess animals at calving for replacements purposes.
Key Factors

• Stable herd size.
• Pick which animals enter herd vs are sold.
• For animals sold – no risk if they don’t make it through calving.
• Possible loss of genetic progress: replacement and calf she’s carrying.
• Possible fewer calves entering system.
Selling Calves

- Sell excess heifers early in age.
- Only raise enough that are needed to maintain herd size.
Key Factors

- Stable herd size.
- Limited replacement program capacity.
- Pick which calves to raise.
- Minimized replacement expense.
- Increased calf sales.
- Limited number of heifers if unusual event in dairy or replacement program.
Leasing Animals

- Keep all animals.
- Lease out excess milking animals.
Key Factors

- Building herd size – increasing assets.
- No investment in buildings/land, etc.
- Keep all genetics and calves.
- If animals come home – no longer closed herd.
- Make return on investment in cattle.
- Return may be negative!
Take Home Points

- Internal herd growth is a profit source under control of management.
- Interaction among many areas of the business.
- Operational costs building assets on the balance sheet, not just maintaining assets.
- Means of capturing value is a management choice.