How Profitable Dairy Farms Make Money

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PRO-DAIRY

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Key Points

- Variability
- Know their numbers
- People
- Continuous Improvement
- Decision Making
Management Implications

- What is done during good years?
- What is done during poor years?
- How is the business positioned?
- Self insurance vs risk management plans
  - Working Capital
  - Debt Level
- Milk Marketing
Know Numbers

- Know numbers
- Understand profitability
- Question everything

- Will it work on this farm?
- How will you know?
- When will you know?
How is Progress Measured?

- What is the primary means many businesses measure success?
- What should they be measuring?
- Why are we concerned with profits?
  - Long term success
  - Net worth growth
Cash

What is in the check book

From many sources
- operations - milk sales etc.
- sale of assets
- off farm income
- new loans
- by not paying bills
- by not reinvesting or taking care of day to day operations
Cash

- Business necessity - no cash no business
- Management function
- Do sources of cash impact current profitability?
- Future profitability?
Profitability

- What is left over after all expenses are subtracted from all income.
- Cash and non-cash income and expenses
- Necessary for long-term success
- Will I be able to:
  - replace equipment?
  - maintain family lifestyle?
  - build net worth?
Unprofitable Business Paying its’ Bills

- Little or no debt
- Increasing AP’s
- Living off inventories
- Living off depreciation
- Lack of withdrawals
- Living off past earnings
- Non-farm income
- Sale of assets
Profitable Business Can’t Pay its’ Bills

- Growing business
- Rapid payment of debt
- Large withdrawals
- Unusual conditions such as
  - Increasing inventory prices
  - High crop production into inventory
Resources

- Cornell Dairy Farm Business Summary
- Farm Credit Dairy Farm Summary
- Farm Credit Large Dairy Benchmark
- Dehm & Associates Dairy Dashboard
- Accountants
- Lender evaluations
Profitability Equation

Profitability = Volume X Margin(Price - Cost)

Operations Management is focused on the top of the equation

Strategic Management is focus of the top and bottom of the equation
Decision Tool

- Only four areas to increase profits
  - Increase volume
  - Increase price
  - Decrease costs
  - Decrease investment

- Every decision impacts this equation
  - What is expected to change?
  - What does change?
PRODUCTION COST BY HERD SIZE

![Bar chart showing production costs by herd size for New York dairy farms in 2012. The chart compares the operating cost of production, depreciation, and value of family resources across different herd sizes.]
<table>
<thead>
<tr>
<th>Number of Cows</th>
<th>Number of Farms</th>
<th>Number of Cows</th>
<th>Average Number of Cows</th>
<th>Net Farm Income Without Appreciation</th>
<th>Net Farm Income Per Cow</th>
<th>Labor &amp; Management Income Per Operator</th>
<th>Return to All Capital Without Appreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 60</td>
<td>12</td>
<td>43</td>
<td>26,548</td>
<td>619</td>
<td>-9,517</td>
<td>2.5%</td>
<td>-2.5%</td>
</tr>
<tr>
<td>60 to 99</td>
<td>16</td>
<td>77</td>
<td>42,788</td>
<td>553</td>
<td>3,195</td>
<td>0.2%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>100 to 199</td>
<td>26</td>
<td>145</td>
<td>87,695</td>
<td>606</td>
<td>12,416</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>200 to 399</td>
<td>19</td>
<td>307</td>
<td>178,617</td>
<td>582</td>
<td>31,121</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>400 to 599</td>
<td>25</td>
<td>495</td>
<td>254,973</td>
<td>515</td>
<td>39,220</td>
<td>4.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>600 to 899</td>
<td>31</td>
<td>746</td>
<td>482,727</td>
<td>647</td>
<td>92,785</td>
<td>5.4%</td>
<td>5.4%</td>
</tr>
<tr>
<td>900 &amp; over</td>
<td>40</td>
<td>1,402</td>
<td>1,006,695</td>
<td>718</td>
<td>207,649</td>
<td>6.8%</td>
<td>6.8%</td>
</tr>
</tbody>
</table>
Looking at Inputs

- What is total cost of utilizing another unit of input?
  - Cost of the input
  - Change in costs of other inputs impacted?
    - Actual supplies
    - Management
    - Labor
Looking at Inputs

- What output is generated?
- What is the income that is generated from the output?
  - After marketing costs - not gross income
- Look at volume and price portion of profit equation
NET FARM INCOME PER COW BY TOTAL COST OF PRODUCING MILK PER HUNDREDWEIGHT
190 New York Dairy Farms, 2011

\[ y = 4.6631x^2 - 333.74x + 5881.3 \]
\[ R^2 = 0.6418 \]
NET FARM INCOME PER COW BY TOTAL COST OF PRODUCING MILK PER HUNDREDWEIGHT

\[ y = 2.9085x^2 - 240.38x + 4313.3 \]

\[ R^2 = 0.5234 \]
## Same Farms, 2007-2012

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Cost to Produce Milk per Cwt.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top 20%</td>
<td>$12.92</td>
<td>$13.74</td>
<td>$12.57</td>
<td>$12.28</td>
<td>$14.33</td>
<td>$14.96</td>
</tr>
<tr>
<td>Remaining 80%</td>
<td>$13.87</td>
<td>$15.49</td>
<td>$13.86</td>
<td>$14.11</td>
<td>$15.99</td>
<td>$16.06</td>
</tr>
<tr>
<td><strong>Total Cost to Produce Milk per Cwt.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$15.81</td>
<td>$16.85</td>
<td>$15.56</td>
<td>$15.32</td>
<td>$17.74</td>
<td>$18.53</td>
</tr>
<tr>
<td></td>
<td>$17.25</td>
<td>$19.02</td>
<td>$17.23</td>
<td>$17.42</td>
<td>$19.58</td>
<td>$19.81</td>
</tr>
</tbody>
</table>
Purchased Feed Cost Control

- Single largest expense on dairy farms in New York
- What is the focus of the manager
  - Lowest cost per cow?
  - Lowest cost per cwt?
  - Lowest cost per pound of dry matter?
  - Less than 35% of gross milk sales?
  - Maximize income over feed costs
Purchased Grain Costs as Percent of Milk Sales
VS ROA w/o Apprec.
74 New York State DFBS, Raising No Grain, Not Grazing, 2011

R² = 0.1461
Purchased Grain Costs per Cwt.
VS ROA w/o Apprec.
74 New York State DFBS, Raising No Grain, Not Grazing, 2011

R² = 0.1024
Purchased Grain Costs per Cow per Day
VS ROA w/o Apprec.
74 New York State DFBS, Raising No Grain, Not Grazing, 2011

Rate Of Return on All Capital w/o Appreciation, Percent

$R^2 = 0.1349$
Net Milk Income over Purchased Grain per Cwt.
VS ROA w/o Apprec.
74 New York State DFBS, Raising No Grain, Not Grazing, 2011

R² = 0.2174
Net Milk Income over Purchased Grain per Cow, Annual vs ROA w/o Apprec.
74 New York State DFBS, Raising No Grain, Not Grazing, 2011

Rate Of Return on All Capital w/o Appreciation, Percent

R² = 0.5511
NET MILK INCOME OVER PURCHASED CONCENTRATE PER COW BY RETURN ON ASSETS
190 New York Dairy Farms, 2011

\[ y = -0.6661x^2 + 81.391x + 2720 \]
\[ R^2 = 0.536 \]
Cost Control

- Knowing costs important
- Looking at performance and output associated with cost even more so!
- What is the risk of focusing just on lowering costs?
People

- Labor effectiveness
  - How good a job are people doing?
  - How are they impacting output?
  - How are they impacting costs?

- Impact on slippage

- How to manage
People

- Not just employee’s
- Service providers
  - Part of the team
  - Ask for input
  - Evaluate advice
People

The Owners/Operators

- Interacting with others that are positive
- Surrounding themselves with others trying to accomplish similar things
- Setting the culture of the business
- Continuous professional development
Continuous Improvement

- Never complacent
- What to improve next
- Set goals
- Asking questions
  - What is new that we should be doing?
  - What is holding us back?
  - What are the next opportunities?
Decision Making

How are decisions made?
How fast is change made?
Type 1 error vs Type 2 error
What is done when a mistake was made?
Summary

- Over time, high profit farms
  - Know their numbers
  - Value people
  - Look at performance, not just cost
  - Always improve