Value-Added Dairy - 101

Hal Pepper

Value-Added Dairy Conference – Jan 14, 2019
What is value-added?

- Allow producers to earn a greater portion of consumer expenditures by processing, packaging or marketing crops, livestock or farm resources.
What is direct marketing?

• Any marketing method whereby farmers sell their products directly to consumers

• Examples of direct marketing channels include
  – Roadside Stands
  – On-farm Stands
  – U-Pick/Pick-Your-Own Operations
  – Community Supported Agriculture (CSA)
  – Farmers Markets
Agritourism is farm product purchases to ...
...farm fun!
Why?

• Opportunities to increase financial returns
  – Remove middlemen from supply chain
  – Take advantage of demand for fresh/local products and experiences
  – Market small quantities
### Direct Marketing is Growing

Census of Agriculture Data

<table>
<thead>
<tr>
<th>Change in Direct Sales from 2007 to 2012</th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>20.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td>3,712 to 4,475</td>
<td></td>
</tr>
<tr>
<td>Value of products sold</td>
<td>9.3%</td>
<td>8.1%</td>
</tr>
<tr>
<td></td>
<td>$29.1 m to $31.8 m</td>
<td></td>
</tr>
<tr>
<td>Average sales per farm</td>
<td>-9.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>$7,851 to $7,112</td>
<td></td>
</tr>
</tbody>
</table>
Number of Farms Adding Value Increasing

Census of Agriculture Data

<table>
<thead>
<tr>
<th>Change in Value-Added Products from 2007 to 2012</th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>79.1%</td>
<td>20.9%</td>
</tr>
<tr>
<td></td>
<td>1,429 to 2,559</td>
<td></td>
</tr>
</tbody>
</table>
## Agritourism is Growing

Census of Agriculture Data

<table>
<thead>
<tr>
<th>Change in Agritourism 2007 to 2012</th>
<th>North Carolina</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>88.5%</td>
<td>42.0%</td>
</tr>
<tr>
<td></td>
<td>602 to 1,135 farms</td>
<td></td>
</tr>
<tr>
<td>Agritourism and recreational sales</td>
<td>38.6%</td>
<td>24.23%</td>
</tr>
<tr>
<td></td>
<td>$12.7 m to $17.6 m</td>
<td></td>
</tr>
<tr>
<td>Average sales per farm</td>
<td>-26.2%</td>
<td>-12.5%</td>
</tr>
<tr>
<td></td>
<td>$21,031 to $15,528</td>
<td></td>
</tr>
</tbody>
</table>
Value-added, direct marketing and agritourism are in...

but they are not easy!
If we build (grow, produce, offer) it, will they come (and buy)? And will we be profitable?

It depends!
Successful Products
Unsuccessful Products
Product is only one piece of the puzzle.
How achieve profitability?
Profit/Loss = Income – Expenses

- Manage Costs
- Price for Profit
- Achieve Sales Volume
- Build Repeat Customers
- Manage Risk
- Manage Production Quality & Efficiency
Challenges to Value-Added

Production
• Input Selection and Purchase
• Soil Fertility
• Disease Control
• Weed/Insect/Wildlife Control
• Fertilization
• Irrigation
• Planting
• Cultivating
• Harvesting
• Field Sanitation
• Labor
• Records Keeping
• Farm Inspection/Certification
• Marketing
Challenges to Value-Added

Value-added enterprises add another dimension to management and operations

Direct Marketing/Value-Added

• All Production Issues
• Processing
• Packaging
• Storage
• Regulations
• Marketing
• Distribution
• Customer Service
• Additional labor
Why Businesses Fail (The 3 Ms)

Money
Capital & Cash Flow

Management
Skills & Experience

Marketing
Knowing & Accessing Customer
Why Businesses Fail (The 4th M)

Magic
Passion, Energy, Drive
Do you have what it takes?

**Personal Assessment**

- Self-starter
- Responsible
- Leader
- Hard worker
- Effective communicator
- Adapt well to change
- Accepts risk
- Decision-maker
- Family support
- Healthy

- Ambitious
- Competitive
- Lifetime learner
- Goal-oriented
- Creative
- Patient
- Proactive

**Factors of SUCCESS**
Factors of SUCCESS

Management Skills
Labor Costs
Organizational

Strong Financial Position

Long-term Commitment

Marketing Savvy – Connect with Customers

Regulatory Acumen

People & Customer Service Skills

Produce Quality Products Consistently
Where to Start

1. Idea
2. Personal Assessment
3. Business Plan
4. Marketing Plan
5. Implement, Evaluate & Adjust
• 80% of Americans have no goals

• 16% have goals in mind but don’t write down

• 4% write them down and make 9x more money

Dr. David Kohl
Business Planning Lite
• Farm businesses that developed a business plan were 2x more profitable!

• Producers who communicate were 21% more profitable!

Dr. David Kohl
Business Planning Lite
Entrepreneurs often ask

• What to offer?
• What to add?
• When to offer?
• What to charge?
• How to promote?
• How to get new customers?
• How to keep existing customers?
Where to Start

1. Assess your resources, mission and goals

2. Take on a customer state of mind
Take a Market Driven Approach

Is there a need/want your business can fulfill?
• What and how much is needed or desired?, What is valued?, What competition exists?

Who is the target market?
• Demographics & Psychographics
• Customer Values (Customer Benefit, Cost, Convenience, Communication)

Does a profitable market exist?
• Is there adequate market size and potential share?, Able to produce at a cost low enough and sell at a price high enough to generate a profit?

How do I reach the target market?
• Develop, implement and evaluate marketing strategies. (Product, Positioning, Price, Place, Promotion, People)
Prospects for Value-Added Dairy Products

- Yogurt
- Milk
- Ice Cream
- Cheese
- Butter
Assess Feasibility

Potential Success of a Value-Added Dairy Enterprise

Technical Feasibility
- Facility needs
- Suitability of production technology
- Availability and suitability of site
- Raw materials
- Other inputs

Financial Feasibility
- Project total capital requirements
- Estimate equity and credit needs
- Budget expected costs and returns of various alternatives

Market Feasibility
- Industry description
- Industry competitiveness
- Market potential
- Access to market outlets
- Sales projection

Organizational Feasibility
- Business structure
- Management capabilities
- Lifestyles
Prospects for Value-Added Dairy Products

• Results from prior dairy products consumer survey studies:
  – Consumers with moderate to higher incomes, with higher education, and in their mid-30’s to early 50’s will be most interested in purchasing specialty dairy products (locally grown, organic, grass-fed, animal welfare).
  – Gender differences-male, locally grown, grass fed; female-organic, animal welfare.
Value-Added Considerations

• Require significant capital outlays
• Many additional regulations
• Extra management effort required
• Additional marketing costs
• Additional start-up and year-to-year costs
Costs Associated with On-Farm Milk Processing

• Start-up Costs
  – Land (cost not included in budget projections).
  – Buildings.
  – Equipment.

Consider the necessity of having money on hand to cover operating expenses, salaries and wages, and loan payments.

One of the leading causes of business failure is insufficient start-up capital.
Costs Associated with On-Farm Milk Processing

• Start-up Costs--Buildings
  – Cow Dairy  14,400 sq ft processing facility with room to expand ($1.5 million estimated).
  – Milk receiving bay, raw milk storage, raw milk blending, mixing and separation.
  – Pasteurized processing area.
  – Chemical storage.
  – Mechanical room.
  – Finished product storage cooler.
  – Casing area, empty jug storage, dry storage, loading docks, lab, locker rooms, break room, offices.
  – Sales room with public restrooms.
Costs Associated with On-Farm Milk Processing

• Start-up Costs--Buildings
  – Meet with local utility system to see how much power is in location of plant.
  – Plant will need 3 phase power and either 220 or 440 voltage.
  – 440 voltage is recommended so you will not be limited to only certain equipment.
  – Commercial hot water heater and boiler to generate steam that is used as a heating medium when heating the product are recommended.
  – Plant will need a chiller to cool the product as quickly as possible.
Costs Associated with On-Farm Milk Processing

• Start-up Costs--Buildings
  – Refer to the Pasteurized Milk Ordinance (PMO) and be aware of Good Manufacturing Practices (GMPs).
  – Dairy processing requires very specific valves.
  – The building process is detailed and must pass inspections.
  – Changes cost money (specialized welding @ $35-45/hr).
  – Consider hiring an engineering firm with experience in dairy processing plants to put your plant together. Some charge $100/hr for CAD drawing or $10,000 to put a plant together.
Costs Associated with On-Farm Milk Processing

• Start-up Costs--Equipment
  – Cow Dairy ($867,100 estimated)
  – 3A Sanitary Standards may be a plus.
  – New or used?
  – Match the proper equipment to the process.
  – Get the appropriate size of equipment for the amount of material to be processed over given period of processing time.
  – Make purchases subject to governing authority’s approval upon inspection.
Costs Associated with On-Farm Milk Processing

- Consider the cost of capital and cash flow requirements needed to cover operating expenses, salaries and wages, and loan payments.
- The following estimated cash flow requirements were derived from the handout “Table 1—Value-Added (Cow) Milk Production Estimated Costs and Returns.”

<table>
<thead>
<tr>
<th></th>
<th>Value-Added (Cow) Milk Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable Expenses</td>
<td>$1,006,940</td>
</tr>
<tr>
<td>Repairs-Equipment</td>
<td>27,715</td>
</tr>
<tr>
<td>Labor</td>
<td>148,720</td>
</tr>
<tr>
<td>Loan Payments for Start-Up Costs</td>
<td>175,290</td>
</tr>
<tr>
<td>Total Year One Cash Flow Requirements</td>
<td>$1,358,665</td>
</tr>
</tbody>
</table>
## Estimated Revenue from Value-Added (Cow) Milk Production

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk Sales</td>
<td>1 Year</td>
<td>Quart</td>
<td>255,813</td>
<td>$2.25</td>
<td>$575,579</td>
</tr>
<tr>
<td>Milk Sales</td>
<td>1 Year</td>
<td>½ Gallon</td>
<td>127,906</td>
<td>2.75</td>
<td>351,742</td>
</tr>
<tr>
<td>Milk Sales</td>
<td>1 Year</td>
<td>Gallon</td>
<td>63,953</td>
<td>3.75</td>
<td>239,824</td>
</tr>
<tr>
<td>Butter Sales</td>
<td>1 Year</td>
<td>Pound</td>
<td>36,094</td>
<td>4.25</td>
<td>153,400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Estimated</strong></td>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td>$1,320,544</td>
</tr>
</tbody>
</table>

Real. Life. Solutions.
Estimated Costs and Returns from Value-Added (Cow) Milk Production

<table>
<thead>
<tr>
<th>Revenue</th>
<th>$1,320,544</th>
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</thead>
<tbody>
<tr>
<td>Variable Expenses</td>
<td>(1,006,940)</td>
</tr>
<tr>
<td>Depreciation &amp; Repairs</td>
<td>( 116,925)</td>
</tr>
<tr>
<td>Interest</td>
<td>(  71,013)</td>
</tr>
<tr>
<td>Labor</td>
<td>( 148,720)</td>
</tr>
<tr>
<td>Return to Land, Management &amp; Risk</td>
<td>(  23,054)</td>
</tr>
</tbody>
</table>

To break even, you must either reduce expenses by $23,054 (1.7% of total expenses) or increase revenue by $23,054 (1.7% of total revenue).
Processing Considerations

• Considerations
  – Are you sure this is something you want to do?
  – Talk to other producers
    • Visit their facility
      – Would they change anything?
      – Keep in mind you may not be approved for the exact same set up.
    • Commitment to the dairy
    • Advantages and disadvantages
    • How hard and competitive is marketing the product?
    • If they had to do over would they begin processing?
    • What does it cost to process a gallon/pound of product?
Prospects for Value-Added Dairy Products

• Adding on-farm processing should build upon the strength of the dairy operation, not serve as an attempt to overcome weaknesses within the farming operation.
Additional Resources
CPA Staff Resources

- Rob Holland, Director
- Kim Giorgio, Administrative Assistant
- Hal Pepper, Financial Analysis Specialist (Value-Added Dairy)
- Megan Bruch Leffew, Marketing Specialist (Agritourism)
- Troy Dugger, Program Coordinator
Connect with us!

- ag.tennessee.edu/cpa
- facebook.com/ValueAddedAg
- E-news lists
  - Farmers markets
  - Value-added meats
  - Agritourism
  - Value-added dairy products
- Email request to join to cpa@utk.edu
Value-Added Dairy - 101

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