Missouri Dairy Industry Revitalization Study

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MU Commercial Agriculture Program
Roadmap to Dairy Revitalization

Sustain Existing Producers
- Benchmark competitiveness
- Identify tactics to improve profitability

Grow from Within
- Identify barriers to growth
- Needs of next generation

Attract New Producers
- Understand comparative dairy business environment
- Target prospects where Missouri has advantages
Missouri Dairy Revitalization Study
A comprehensive MU study completed in January 2015 providing insight for revitalization efforts.

• Section 1: Historical Perspective
  An in-depth discussion of Missouri's dairy industry historical trends

• Section 2: Economic Contribution
  Economic contribution of Missouri dairy farms and industries.

• Section 3: Needs Assessment
  Survey of all Missouri Grade A dairy farms and select industry stakeholders.

• Section 4: Value Chain, Marketing and Processing
  Discussion of dairy product demand and opportunities in the value chain.

• Section 5: Comparative Analysis to Identify Gaps
  Creates a common understanding of the Missouri’s competitive position.

http://dairy.missouri.edu/revitalization/

Funding provided by the Missouri Agricultural and Small Business Development Authority (MASBDA).
Missouri Livestock Cash Receipts, 1990-2013

Thousand Dollars

- Cattle and calves
- Hogs
- Dairy products, milk
- Poultry and eggs
Does Dairy Matter?
Dairy Farm Jobs by County, 2013
<table>
<thead>
<tr>
<th>Impact Type</th>
<th>Employment (Jobs)</th>
<th>Value-Added (Dollars)</th>
<th>Output (Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct effect</td>
<td>5,452</td>
<td>$656,581,450</td>
<td>$5,091,058,527</td>
</tr>
<tr>
<td>Indirect effect</td>
<td>11,496</td>
<td>$876,683,534</td>
<td>$1,715,051,609</td>
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<tr>
<td>Induced effect</td>
<td>6,101</td>
<td>$430,942,493</td>
<td>$754,675,618</td>
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<tr>
<td>Total effect</td>
<td>23,049</td>
<td>$1,964,207,477</td>
<td>$7,560,785,754</td>
</tr>
</tbody>
</table>
Dairy Farming Trends
Milk Cows – Change in Inventory - 2007 to 2012

Commercial Dairy Operations in Missouri

Number of Operations

- Grade A dairy farms
- Manufacturing-grade dairy farms
Missouri Milk Cow Inventory, 1990-2014

Number of Cows
U.S. and Missouri Milk Yield per Cow Trends, 1924 to 2013
Rolling Herd Averages, DHIA, October 2014

<table>
<thead>
<tr>
<th>Location</th>
<th>Pounds per Cow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missouri</td>
<td>17,105</td>
</tr>
<tr>
<td>Southeast U.S.</td>
<td>18,588</td>
</tr>
<tr>
<td>Surrounding States</td>
<td>20,793</td>
</tr>
<tr>
<td>U.S.</td>
<td>21,116</td>
</tr>
<tr>
<td>Missouri (Top 20%)</td>
<td>23,179</td>
</tr>
</tbody>
</table>
Missouri DHIA Rolling Herd Average, 2004 & 2014
Missouri’s Evolution toward a Fluid Market

- Cows needed for all dairy needs
- Cows needed for fluid needs
- Cows in Missouri
Producer Needs Survey
Number of Respondents by Missouri Agricultural Statistics District

Total 276
Age Distribution of Survey Respondents

Number of responses

Age in Years
What is Your Greatest Challenge on Your Dairy Farm?

Number of Responses

- Labor: 45
- Animal health: 17
- Forage issues: 17
- Weather: 16
- Input costs: 13
- Time management: 11
- Profit margins: 10
- Other production issues: 9
- Access to land & capital: 7
- Farm infrastructure needs: 6
What Do Dairy Producers in Your Area Need to be More Successful?

- Higher milk prices & profit margins: 55 responses
- More dairy infrastructure: 25 responses
- More competitive milk markets: 20 responses
- Manage heat stress & other production issues: 15 responses
- Quality forages: 10 responses
- Increased labor: 5 responses
- More available capital: 5 responses
- Less regulation: 5 responses
- Favorable weather: 5 responses
- Better business management: 5 responses
## Rate the Quality of Dairy Infrastructure in Your Area

<table>
<thead>
<tr>
<th>Service</th>
<th>Category</th>
<th>1- Excellent</th>
<th>2- Ok</th>
<th>3- Could be better</th>
<th>4- Worried about future</th>
<th>5- Big problem now</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure/lagoon spreading contractors</td>
<td></td>
<td>5%</td>
<td>30%</td>
<td>34%</td>
<td>14%</td>
<td>17%</td>
<td>3.06</td>
</tr>
<tr>
<td>Dairy equipment sales and service</td>
<td></td>
<td>16%</td>
<td>35%</td>
<td>28%</td>
<td>14%</td>
<td>7%</td>
<td>2.61</td>
</tr>
<tr>
<td>Dairy quality forage contractors</td>
<td></td>
<td>6%</td>
<td>31%</td>
<td>43%</td>
<td>8%</td>
<td>12%</td>
<td>2.88</td>
</tr>
<tr>
<td>Veterinary service with dairy expertise</td>
<td></td>
<td>37%</td>
<td>36%</td>
<td>17%</td>
<td>4%</td>
<td>6%</td>
<td>2.07</td>
</tr>
<tr>
<td>Dairy nutrition/ration consulting</td>
<td></td>
<td>19%</td>
<td>42%</td>
<td>29%</td>
<td>5%</td>
<td>5%</td>
<td>2.35</td>
</tr>
<tr>
<td>Extension dairy advice</td>
<td></td>
<td>21%</td>
<td>54%</td>
<td>16%</td>
<td>6%</td>
<td>3%</td>
<td>2.18</td>
</tr>
<tr>
<td>Milk hauling</td>
<td></td>
<td>41%</td>
<td>42%</td>
<td>8%</td>
<td>7%</td>
<td>1%</td>
<td>1.85</td>
</tr>
<tr>
<td>Cooperative field service</td>
<td></td>
<td>22%</td>
<td>49%</td>
<td>23%</td>
<td>3%</td>
<td>3%</td>
<td>2.16</td>
</tr>
<tr>
<td>General farm supplies and fertilizer</td>
<td></td>
<td>29%</td>
<td>56%</td>
<td>23%</td>
<td>10%</td>
<td>4%</td>
<td>1.93</td>
</tr>
</tbody>
</table>

- **1- Excellent**
- **2- Ok**
- **3- Could be better**
- **4- Worried about future**
- **5- Big problem now**
Growth & Recruitment
Counties with County Health Ordinances
Missouri Groundwater Production Regions/Aquifers

Production regions and aquifers

- **Missouri and Mississippi River alluvium**
  Yield is normally 1,000+ gallons per minute (gpm), water is suitable for irrigation. Softening and iron removal recommended for drinking water.

- **Glacial drift and alluvium**

- **Cretaceous and tertiary sands, and alluvium**
  Alluvium typically yields 1,000+ gpm. Tertiary sands, 500-1,000 gpm. Both contain high iron. Wells in Cretaceous sands typically produce 150-1,000 gpm, have lower iron, are softer, have higher temperature waters, and may be artesian.

- **Pennsylvanian and Mississippian limestones and sandstones**
  Yield 1-15 gpm to depth of about 400 feet. Aquifers below 400 feet yield mineralized water. Wells in shallow Mississippian limestones yield 1-10 gpm. Deeper high-yield aquifers yield mineralized water.

- **Mississippian limestones (southwest Missouri), ordovician and cambrian dolomites and sandstones**
  Yield 19-500 gpm, depending on depth and producing formations. Yields locally exceed 1,000 gpm in some areas including Springfield, Columbia and Rolla. Yields diminish substantially east of the St. Francois Mountains region. Highly-productive aquifers become mineralized north of freshwater-salinewater transition zone.

- **Cambrian and precambrian rocks**

  - **Freshwater-salinewater transition zone**
    North of this line, high-yielding aquifers contain water too mineralized to be used without extensive treatment.

Source: Missouri Department of Natural Resources
Missouri Farms with Irrigation

Future without Revitalization?
Sustain Existing Producers

Benchmark competitiveness
• Develop simple online benchmarking tool
• Annual benchmarking workshops

Grow from Within

Identify barriers to growth
• Lacking positive industry attitude
• Lack of forage, manure and dairy equipment contractors
• Missing next generation of producers, employees, managers
• Cost and availability of connecting new facilities to electrical supply

Identify tactics to improve profitability
• Margin Protection Program cost share
• Risk management workshops
• Business plan for dairy forage contractors
• Business plan for manure contractors
• Dairy business planning grants

Needs of next generation
• Dairy scholarships
• Wisconsin Dairy Short Course
• US Dairy Consortium
• Dairy Grazing Apprenticeship

Attract New Producers

Understand comparative dairy business environment
• Completed in 2015 Missouri Dairy Revitalization Study

Target prospects where Missouri has advantages
• Work with Missouri Department of Agriculture and Missouri Dairy Growth Council to segment and then target specific prospect groups that fit into Missouri environment based upon the 2015 Missouri Dairy Revitalization Study