Economics of Organic Farming
What Do We Know?
Corinne Alexander
Department of Agricultural Economics
Purdue University
November 15, 2007
Program for Beginning Organic Farming

Outline
• Comparison of returns between organic and conventional
  – Field Crops
  – Dairy
  – Vegetables
• Transition

Comparison to Conventional Returns
• Need to look at returns for production system
  – Whole rotation for field crops, i.e. 3 to 4 years (SD budget)
  – Whole farm for vegetables, dairy, livestock
• Need to update budgets with your information
  – SD budget assumes yields are 75% conventional, which may not be accurate
• Returns= Revenue – Cost
Cost Comparison for Field Crops
(per acre variable costs, includes labor but not land rent)

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conv (IA, 2007)</td>
<td>$317*</td>
<td>$181*</td>
</tr>
<tr>
<td>Organic (IA, 2006)</td>
<td>$229</td>
<td>$147</td>
</tr>
<tr>
<td>Organic (SD, 2007)</td>
<td>$200</td>
<td>$140</td>
</tr>
<tr>
<td>Organic (IL, NAN)</td>
<td>$399</td>
<td>$266</td>
</tr>
</tbody>
</table>

*Includes grain storage, drying and hauling

Revenue Comparison for Field Crops

<table>
<thead>
<tr>
<th></th>
<th>Organic</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn prices</td>
<td>$6.83-$11.00</td>
<td>$3.35-$3.50</td>
</tr>
<tr>
<td>Corn yields</td>
<td>61-171</td>
<td>160</td>
</tr>
<tr>
<td><strong>Corn Revenues</strong></td>
<td><strong>$416-$1,881</strong></td>
<td><strong>$536-$560</strong></td>
</tr>
<tr>
<td>Soybean prices (feed)</td>
<td>$13-$15</td>
<td>$9-$9.70</td>
</tr>
<tr>
<td>Soybean yields</td>
<td>35-40</td>
<td>50</td>
</tr>
<tr>
<td><strong>Soybean Revenues</strong></td>
<td><strong>$455-$600</strong></td>
<td><strong>$450-$485</strong></td>
</tr>
</tbody>
</table>

*Prices from www.newfarm.org (11/07) and corn yields from IA and OH, bean yields from IL

Organic Dairy

- In 2005, certified organic cows accounted for about 1 percent of total cows (ERS-USDA).
- In July 2007, organic milk sales accounted for 2.7% of total milk sales, up from 1.7% in January 2006 (AMS-USDA).
- 2005 ARMS survey
  - 1462 conventional, 325 organic, 18 transition, 9 mixed
Organic Dairy--2005

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Organic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk Production (lbs per cow)</td>
<td>18,983</td>
<td>13,601</td>
</tr>
<tr>
<td>Price in 2005 (per cwt)</td>
<td>$15.19</td>
<td>$21.88</td>
</tr>
<tr>
<td>Pasture based feeding</td>
<td>18%</td>
<td>63%</td>
</tr>
</tbody>
</table>

- Organic production costs ranged from $5 to $7 per cwt higher than conventional, not including transition costs
- Higher feed costs largest share
- Also more labor per cwt

Organic Dairy—Who?

- Smaller dairy farms more likely to convert
  - Smaller scale may make it easier to source inputs
  - Larger conventional farms are heavily invested in their technology
- Farms in Northeast and Upper Midwest
  - High quality pasture more available
  - Longer history of small dairy operations
  - Access to affluent, “socially aware” consumers

Organic Vegetables

- Case study of 19 organic vegetable operations in Wisconsin, 2005
Organic Vegetables

<table>
<thead>
<tr>
<th>Market Gardens (&lt; 3 acres)</th>
<th>Market Farms (3-12 acres)</th>
<th>Vegetable Farms (13 to &gt; 70 ac.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.229-4.972</td>
<td>3.004-8.646</td>
<td>9.697-37.879</td>
</tr>
<tr>
<td>Avg: 2,464</td>
<td>Avg: 5,045</td>
<td>Avg: 19,450</td>
</tr>
<tr>
<td>Total Farm Gross Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg: $19,947</td>
<td>Avg: $71,203</td>
<td>Avg: $337,096</td>
</tr>
<tr>
<td>Total Farm Net Cash Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$3,103-$6,686</td>
<td>$5,597-$53,513</td>
<td>$38,110-$187,713</td>
</tr>
<tr>
<td>Avg: $6,026</td>
<td>Avg: $29,080</td>
<td>Avg: $108,713</td>
</tr>
<tr>
<td>Net Cash to Gross Ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-57%</td>
<td>16-57%</td>
<td>16-51%</td>
</tr>
<tr>
<td>Avg: 33%</td>
<td>Avg: 40%</td>
<td>Avg: 31%</td>
</tr>
</tbody>
</table>

**Organic Vegetables**

- Strive for **net cash to gross ratio** of at least 40%
  - For smaller farms, managing payroll important
  - CSAs had higher net cash to gross ratios
  - More stable gross sales
  - Unpaid volunteer labor or have members who barter for vegetable share by working
    - Newer or expanding farms have lower ratios

**Organic Vegetables**

- Most sell direct to consumers
  - Use multiple marketing outlets, generally with one primary outlet
  - Farmers markets, CSAs, direct to restaurants and direct to retailers most common
  - Pick-your-own and other on-farm sales less common
  - With direct sales, can get higher prices in transition years for “chemical free”
Organic Vegetables

  - Broccoli, Kale, Tomatoes, Sweet Corn, Salad Mix, Lettuce, Peppers, Summer Squash
  - Most profitable were tomatoes, lettuce, salad mix and sweet corn

Transition

- Transitioning is tough
  - Lower yields
    - Dairy Cows less productive
    - For vegetables and field crops, yields often increase over time
  - May be initial cost increase
    - Retooling/new equipment purchases
    - Additional labor
  - Learning Curve

Strategies for Successful Transition

- Don’t need to convert the whole farm at once
  - Start small and learn, then convert more
- CRP land that is documented without pesticides can be organic tomorrow
- For vegetables and livestock, direct sales can yield a price premium during transition
  - Field crops and dairy must be certified to get price premium
More Information

• New Ag Network
  – Crop budget catalogue
• SARE publication on transition