Organic Acreage Profitable?

- Growing interest among producers and consumers in organic crop production as an alternative to conventional crop production
- Experimental research suggests a potential for similar yields, lower production costs, and higher returns to organic crop production
- The relative costs and returns of conventional and organic crop production on commercial farms is less known

Organic Corn Acreage Up the Most

- Organic producer surveys in 2011 and 2014 show:
  - Organic corn acreage up 24%
  - Organic wheat acreage down 3%
  - Organic soybean acreage up 3%

Objective to Evaluate Profitability

- Determine the difference in organic and conventional field crop production costs that is due to being organic
- Examine how the difference in production costs compares with the price premiums received for organic field crops during 2011-14

Organic Producer Data

- Agricultural Resource Management Survey (ARMS)
  - Corn Producers: 2010
  - Wheat Producers: 2009
  - Soybean Producers: 2006
- Targets producers in States with more than 90 percent of U.S. planted (commodity) acreage
- Includes a sub-sample targeting organic (commodity) producers from lists provided by organic certifiers
- Includes the information to compute total economic production costs for each surveyed farm

Measuring Production Costs

- Total economic production costs (operating plus allocated overhead) are computed using USDA methods, recommended by the AAEA
- Operating costs: seed, fertilizer, chemicals, custom operations, fuel (including lube & elec.), repairs, purchased irrigation water, operating capital
- Allocated overhead: hired labor, opportunity cost of unpaid labor, capital recovery, opportunity cost of land, taxes and insurance, general farm overhead
Production Cost Differences

- Difference between Mean costs: baseline
- Difference between Matched Samples: most similar conventional farm matched with each organic farm
- Regression with treatment-effects: cost regressed on farm and operator characteristics, production practices, organic indicator, and sample selection correction

Organic Farms Smaller

- Organic Farms Smaller

Organic Farms Located in the North
Organic Crop Rotations More Diverse


Organic Yields Lower


Similar Production Costs Per-Acre

### Organic Costs More Per-Bushel

<table>
<thead>
<tr>
<th>Crop</th>
<th>Mean Difference</th>
<th>Matched Samples</th>
<th>Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>1.50</td>
<td>1.92</td>
<td>2.27</td>
</tr>
<tr>
<td>Wheat</td>
<td>3.53</td>
<td>3.90</td>
<td>4.46</td>
</tr>
<tr>
<td>Soybeans</td>
<td>6.13</td>
<td>6.62</td>
<td>7.81</td>
</tr>
</tbody>
</table>

*Source: USDA, Economic Research Service calculations using Agricultural Resource Management Survey data and include production cost differences plus organic transition and certification costs.*

### Organic Corn Profitable

![Graph showing Organic Corn Profitability over 2011 to 2014 with price premiums and cost differences highlighted.]

**Average price premium**
- Food-Grade = $7.90
- Feed-Grade = $6.62

**Cost difference**
- $1.92 - $2.27

*Source: Organic prices from USDA, Agricultural Marketing Service; conventional prices from USDA, National Agricultural Statistics Service.*

### Organic Wheat Less Profitable

![Graph showing Organic Wheat Profitability over 2011 to 2014 with price premiums and cost differences highlighted.]

**Average price premium**
- Food-Grade = $4.44
- Feed-Grade = $2.75

**Cost difference**
- $3.90 - $4.40

*Source: Organic prices from USDA, Agricultural Marketing Service; conventional prices from USDA, National Agricultural Statistics Service.*
The views expressed are those of the author and should not be attributed to the Economic Research Service or USDA.

**Organic Soybeans Profitable**

<table>
<thead>
<tr>
<th>Year</th>
<th>Organic Soybeans</th>
<th>Conventional Soybeans</th>
<th>Cost Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$22.30</td>
<td>$14.69</td>
<td>$7.61</td>
</tr>
<tr>
<td>2012</td>
<td>$24.00</td>
<td>$15.80</td>
<td>$8.20</td>
</tr>
<tr>
<td>2013</td>
<td>$26.50</td>
<td>$17.20</td>
<td>$9.30</td>
</tr>
<tr>
<td>2014</td>
<td>$28.00</td>
<td>$18.70</td>
<td>$9.30</td>
</tr>
</tbody>
</table>

Source: Organic prices from USDA, Agricultural Marketing Service; conventional prices from USDA, National Agricultural Statistics Service.

**Organic Corn Most Profitable**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Economic Costs</th>
<th>Economic Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$83 to $98</td>
<td>$51 to $66</td>
</tr>
<tr>
<td>Wheat</td>
<td>$55 to $62</td>
<td>-$9 to $2</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$106 to $125</td>
<td>$22 to $41</td>
</tr>
</tbody>
</table>

Source: USDA, Economic Research Service calculations using Agricultural Resource Management Survey data and include production cost differences plus organic transition and certification costs. The range of costs and returns were generated from alternative statistical methods. Prices and yields used to compute per-acre costs and returns are those from the survey year of each crop.

**Organic Acreage Profitable**

- Organic corn and soybeans were profitable during 2011-14 primarily due to significant price premiums offsetting the additional economic costs
- Organic wheat was less profitable, but profitability improved during 2013-14 due to greater price premiums
- Despite profit potential organic field crop adoption has been slow—less than 1% of field crop acreage
  - challenges of achieving yields
  - climatic and market factors
  - management and risk issues
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ERS Organic Farming Research

• Economic Research Report:

• Amber Waves article:

• Infographic:

• Webinar:
  http://cc.readytalk.com/play?id=6jc1cn