



Farm Performance During the Transition to Organic Production: Analysis and Planning Tools Based on Minnesota Farm Record Data

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For more information about the *Tools for Transition Project*, visit:
www.eorganic.info/toolsfortransition

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Research Questions

- Does farm production decline during organic transition? If so, how much?
- Does farm financial performance suffer during organic transition?
- How does a farm's organic performance compare to the farm's pre-transition conventional performance?



Project and Data Gathering

- “Tools for Transition” was a 5-year NIFA-funded project to build and analyze a database of farm records from transitioning farms.
 - Please find us on eOrganic → [Tools for Transition \[Reports\]](#) !!
- Previously there was no source of farm-level data from transitioning farms in the United States.
- Data from participating farms were collected through existing Minnesota Farm Business Management (FBM) Program.



Who Participated?

- Recruitment efforts focused on transitioning or recently certified crop and dairy farms in Minnesota.
 - Specialty crop farms were omitted due to extreme heterogeneity and lack of existing benchmarks.
- 46 farms were enrolled and provided scholarships to pay for FBM participation.
 - At enrollment this included roughly 4,500 acres in transition, 10,000 organic acres, 3,700 conventional acres
 - 700 dairy cows in transition, 1,500 organic cows, 130 conventional cows



What Information was Collected?

- Production metrics
 - Yield, acreage, transition status, lbs per cow, fairly detailed operating and ownership costs
- Financial performance and ratios
 - Net income, ROE/ROA, etc.
- Some farms were previously enrolled in FBM and thus had several years of data available.



Methods - Challenges

- The goal is to reveal performance changes as farms go from conventional, through transition, to certified organic management.
- We have means/medians for each transition status, but these are complicated by geography and annual weather outcomes.
- Solution: control for year and location effects by normalizing farm-level observations with county-level conventional averages.



Methods – Data Transformation

- Each farm-level observation is divided by the conventional county average, drawn from the FINBIN database.
- Example: A farm in Southwest MN observed organic corn yield of 120 bu/ac in 2014. The county average in that year was 170 bu/ac.

$$Ratio_{org,SW,2014} = \frac{120}{170} = 0.706$$



Results

- We report enterprise ratio medians, including production, expense, and financial ratios for corn, soybean, oat, alfalfa hay, alfalfa establishment, and dairy.
- We also report whole-farm financial ratios for crop and dairy farms during conventional, transitional, and organic management.
- We provide an editable spreadsheet tool populated with ratio results to assist farmers in forecasting outcomes during and after organic transition.



Result Highlights

- Before transition, participating farms were smaller but did not have significantly lower crop yields than their conventional neighbors.
- Before transition, dairy farms had lower production per cow and smaller herds, and also lower feed costs.
- Yields generally fell during transition and further still after certification.
 - Corn yields went from 0.95 to 0.78 to 0.69
 - Soybean yields went from 1.02 to 0.69 to 0.56



Result Highlights

- Whole-Farm Results for TFT Dairy Farms

| | Conventional | Transition | Organic |
|---------------------|--------------|------------|---------|
| Net Farm Income | 0.59 | 0.21 | 0.56 |
| ROA | 0.75 | 0.44 | 0.96 |
| Debt-to-Asset Ratio | 1.30 | 1.04 | 0.80 |



Conclusions

- Transition is costly and difficult to navigate. Post-certification returns do not always allow farms to recoup lost revenue during transition.
- However, we present medians. Some farms have become far more profitable than before transition. Others have not done as well.
- What we are seeing suggests that existing farm-level data from organic farmers is likely skewed by self-selection.
- This is by no means definitive. Commodity prices during data collection have certainly impacted relative profitability of these systems. Ex. Dairy in 2009 vs. 2014.



Project Partners



Minnesota
STATE COLLEGES
& UNIVERSITIES

Farm Business Management Program:
www.fbm.mnscu.edu



Dale Nordquist, Center for Farm Business Management:
<http://www.cfm.umn.edu>



Meg Moynihan, Minnesota Department of
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