Understanding Organic Pricing and Costs of Production

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This publication provides resources to compare organic and conventional agricultural prices, discusses organic production costs, and offers tips on how to set organic crop prices. There are also several case studies included that summarize insights gained from successful organic farmers and ranchers.

Introduction

In recent years, growth in organic food sales in the United States outpaced growth in overall food sales despite the economic downturn (Nutrition Business Journal, 2010). Organic food sales grew 53% in the United States between 2005 and 2008, from $13.8 billion to $21.1 billion (Richards, 2011). Increased demand is motivating some farmers to transition to organic production. Financial, health, and environmental benefits can be gained from transitioning to organic farming. These benefits are due to possible price premiums, growing value-added markets, and a reduction of the use of synthetic chemicals and fertilizers, which can reduce toxic chemical exposure and possibly reduce input costs.

The key to profitable organic farming is to set prices for organic crops that exceed production costs, while being competitive in the market. This publication explores what is known and not known about organic pricing and the costs of organic production. The goal is to provide farmers and ranchers who are exploring organic production, transitioning to organic production, or are already organic producers with a better understanding of the economic and market potential and challenges of organic farming.

Organic Price Premiums and Production Costs

There are several factors that motivate farmers to certify crops as organic: environmental stewardship,
lifestyle, family and personal health, as well as price premiums, all influence farmers to grow organically (Peterson et al., 2012). Although growing organically provides for certain lifestyle benefits and fosters environmental stewardship, farmers still need to know if organic price premiums are enough of an incentive to motivate organic certification. Of secondary importance is understanding how production costs compare between organic and nonorganic growing, in order to better evaluate the economic potential of both systems.

Price Premiums

In recent years, several sources of information have been established that begin to compare organic and nonorganic crop prices within similar regions of production and markets, allowing suppliers and consumers to better gauge price premiums, if any. The Agricultural Marketing Service, Maine Organic Farmers and Gardeners Association, the Northeast Organic Farming Association of New Hampshire, the Organic Farmers’ Agency for Relationship Marketing (OFARM), Inc., and the Rodale Institute all provide organic price data in some form. A description of each price index appears below. These tools can be used to compare organic prices in your area or to look at markets in other areas of the country.

Agricultural Marketing Service (AMS) Market News Reports

The United States Department of Agriculture AMS has posted current prices and sales information on nonorganic farm commodities for the past 90 years and its postings now include some organic price data. Price data is available for terminal markets and retail outlets. The retail price data comes from advertised prices and is averaged nationally and by region. Many commodity prices can be found by state. http://1.usa.gov/Og5PB

Below is an example of price data that can be found in AMS reports. The table shows national price premium data for dairy products during the week of July 26, 2012.

### Table 1. AMS Weekly Retail Report for Conventional and Organic Dairy Products

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Pack size</th>
<th>Weighted Ave*</th>
<th>Weighted Ave*</th>
<th>Price premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter</td>
<td>1 lb</td>
<td>$2.34</td>
<td>$4.32</td>
<td>85%</td>
</tr>
<tr>
<td>Cheese (natural varieties)</td>
<td>8 oz block</td>
<td>$2.20</td>
<td>$3.00</td>
<td>36%</td>
</tr>
<tr>
<td>Cheese (natural varieties)</td>
<td>8 oz shredded</td>
<td>$2.16</td>
<td>$2.50</td>
<td>16%</td>
</tr>
<tr>
<td>Milk</td>
<td>half gallon</td>
<td>$1.82</td>
<td>$3.64</td>
<td>100%</td>
</tr>
<tr>
<td>Milk</td>
<td>gallon</td>
<td>$2.82</td>
<td>$5.99</td>
<td>112%</td>
</tr>
<tr>
<td>Sour cream</td>
<td>16 oz</td>
<td>$1.45</td>
<td>$4.49</td>
<td>210%</td>
</tr>
<tr>
<td>Yogurt</td>
<td>32 oz</td>
<td>$2.15</td>
<td>$2.99</td>
<td>39%</td>
</tr>
</tbody>
</table>

*Based on retail store advertising throughout the country

Average premium 85%

Maine Organic Farmers and Gardeners Association (MOFGA) Organic Price Reports

MOFGA has been tracking organic prices for products sold in Maine since 2006. It reports on price surveys for direct sales and wholesale sales from certified organic farmers in Maine. The reports are published monthly.

Northeast Organic Farming Association of New Hampshire Organic Price Index
www.nofanh.org/opx

The Northeast Organic Farming Association of New Hampshire (NOFA-NH) created an index that lists current organic prices for vegetables, fruits, herbs, meats, eggs, and dairy. The pricing data is collected from several local farms and posted weekly. The index helps producers and market managers set fair market prices and gives consumers current information on what they must pay for local organic crops.
Nonorganic prices for grains are collected by AMS. Organic grain prices are collected from large elevators or handlers. Nonorganic and organic price information is collected from the same geographic areas, making the prices more comparable.

Price data for organic and nonorganic fruit, herbs, vegetables, and grains is available for the following markets: Boston, Massachusetts; Los Angeles, California; Philadelphia, Pennsylvania; San Francisco, California; and Seattle, Washington. Detroit, Fargo, and Minneapolis market prices include only grains.

**Price Premiums at Different Markets**

Generally, organic products cost more than nonorganic versions in most sales venues and most markets. It is important to know which market venues to target to get the highest price premium available.

In January of 2011, the Northeast Organic Farming Association of Vermont (NOFA-Vermont) published a price comparison study between conventional and organic produce at farmers markets and grocery stores (Claro). Aside from cantaloupe, squash, and head lettuce, organic produce was more expensive than conventional produce at farmers markets in Vermont. At grocery stores, organic cantaloupe was the only item less expensive than the conventionally grown counterpart. Figure 1 and Figure 2 illustrate a price premium for organics in farmers markets and grocery stores.

**Figure 1. Organic Price Premiums Received by Farmers at Farmers Markets in Vermont, 2010 Data.**

Source: Created from Vermont Farmers’ Markets and Grocery Stores: A Price Comparison. NOFA-VT.
Production Costs

There have been several studies looking into production costs of organic versus nonorganic crops, and some findings do show higher production costs for certain organic crops and livestock products. However, other studies have found very similar production costs when comparing organic and nonorganic production systems. Butler (2002) estimated 10% higher production costs in a California organic dairy operation than for similar nonorganic producers. In contrast, Dalton et al. (2005, 2008) compared organic and nonorganic dairies in Maine and Vermont and found production costs to be similar. Barham, Brock, and Foltz (2006) found organic and nonorganic dairy operating characteristics in Wisconsin to be similar, and the organic operators expressed more satisfaction and optimism about their future in the dairy business.

Researchers from Purdue University found that costs for organic soybeans and corn are lower than nonorganic costs for the same crops, although not all labor costs were considered. They found that yields for organic soybeans and corn were lower than nonorganic but that the organic price premium makes up for the lower yield (Clark and Alexander, 2010).

UC Davis publishes “cost and return” studies for a variety of nonorganic and organic crops grown in California. A farmer can look at sample cost

Figure 2. Organic Price Premiums at Grocery Stores in Vermont, 2010 Data. Source: Created from Vermont Farmers’ Markets and Grocery Stores: A Price Comparison. NOFA-VT.
above the total operating costs were $41,418 for the organic blueberry crop and $30,035 for the nonorganic crop, an $11,383 profit difference (Takele et al., 2007). Typically, organic farmers replace purchased inputs with a higher degree of planning and management that anticipates weed, pest, disease, and fertility issues.

The Rutgers New Jersey Agricultural Experiment Station has prepared several organic and conventional crop budgets to be used as references to plan personal crop budgets, http://aesop.rutgers.edu/~farmmgmt/ne-budgets/nebudgets.html. The costs used in each comparison were estimated from average labor costs, average input costs, averaged land costs, etc. The budget does not reveal individual farm data. Budgets are posted for field crops, fruits, vegetables, and livestock. These budgets provide cost information for one acre of production and include variable and fixed costs such as:

- Soil amendments
- Pest management
- Labor
- Irrigation
- Machinery repair and fuel

reports for pears, for example, and compare production costs for both organic and conventional fruit. http://coststudies.ucdavis.edu/current.php

As an example, the 2007 reports on sample costs to establish and produce organic and nonorganic blueberries in San Luis Obispo, Santa Barbara, and Ventura Counties can help producers understand costs and, ultimately, pricing differences (Takele et al., 2007). To estimate sample costs for both organic and nonorganic blueberries, the authors used the same locations in California, same acreage, same harvesting mechanism, and the same year. The main difference in production cost was in the pesticides, herbicides, and fungicides used. The study found overall costs to be slightly higher for organic blueberry production: $63,582 for 10 organic acres versus $61,665 for 10 conventional acres, a $1,917 difference. The main cost increase in the organic production was for organically approved fungicides, wood waste, acidification, and fertilizers; these were double the price of nonorganic fertilizers and pesticides. The other cost difference was higher fees for marketing and brokerage, with an organic certification fee of $300. No labor difference was recorded between the two methods of production. The net returns

Figure 3. Organic Price Premiums in Different Vermont Markets, 2010 Data. Source: Created from Vermont Farmers’ Markets and Grocery Stores: A Price Comparison. NOFA-VT.
Understanding Organic Pricing and Costs of Production

Comparing the organic and nonorganic grain corn production costs in these budgets shows that organic variable costs are more than twice as much as the nonorganic variable costs, $526.01 compared with $266.45. The variable costs compared include fertilizers, soil amendments, pest management, labor, irrigation, machinery repair and fuel, and marketing. The total cost of one acre of organic corn for grain production was estimated at $619.19, while one acre of nonorganic corn for grain production cost $378.74 (Brumfield and Brennan, 1996).

Another study that has some of the best data over five years from actual organic and nonorganic farms is provided by the Minnesota Department of Agriculture (MDA, 2011). From 2006 to 2010 the average cash expense for the 44 to 54 organic farms sampled was $523 per acre, while the much larger sample of between 2,317 and 2,503 nonorganic farms showed expenses of $634 per acre. Operating profit margins for the organic farms ranged from -2.9% to 20% for this period, while those for nonorganic farms ranged from 7.9% to 27.5%, suggesting a greater profitability for nonorganic farms. However, the data also show that some organic farms are clearly as profitable as, or more profitable than, some conventional farms. Finally, the study also suggested that nonorganic farmers must make at least 20% margins to stay profitable and that organic farmers need to make slightly higher 25% to 30% profit margins to account for lower sales volumes (MDA, 2011). The important point is that profitability is not easily guaranteed in either organic or nonorganic production systems.

Karen Klonsky, a Cooperative Extension agent with the Department of Agriculture and Resource Economics at the University of California, Davis, recently did a comparison of production costs and resource use for organic and nonorganic production systems in California (2012). She modeled the cost of production and resource use for individual farms and applied the costs to hypothetical commercial organic and nonorganic farms. She looked at field crops (alfalfa, processing tomatoes, and corn), vegetables (broccoli and lettuce), fruit (raisin grapes and strawberries), and tree nuts (almonds and walnuts) and compared the differences in fertility and pest- and weed-control costs, which include materials, labor, fuel, lube, and repairs on used equipment.

The study found that fertilizer costs are higher for organic production for all crops except alfalfa. Organic broccoli and organic lettuce had the highest cost difference at $632 and $910 for organic broccoli and lettuce compared to nonorganic versions at $260 and $382, respectively. Because organic production doesn’t allow herbicides, weed control costs were higher for all organically grown crops dependent on hand weeding, and lower for corn and alfalfa that don’t require hand weeding.

Overall, production costs for fertility, weed control, and pest and disease control for organic production systems are more than costs for nonorganic systems, with strawberries and lettuce being the exceptions due to fumigation costs of strawberries and the use of synthetic pesticides in lettuce.

The similarity between these studies was that the cost for organic pest control is higher than nonorganic methods because the allowed substances used in organic production are generally more costly. However, many organic farmers are trying very hard to move away from costly inputs that are mere substitutes for nonapproved and generally more toxic nonorganic pest-control methods. Utilizing cultural practices such as crop rotations and improving beneficial- and predator-insect habitat can ultimately lower the costs of inputs in organic production.

Another issue is whether the cost of labor is higher in organic production systems. Most of the studies reviewed did not note higher labor inputs, despite the fact that the extra recordkeeping required for organic certification may be a source of cost difference.

Another cost difference found in the comparison studies arose from the marketing and distribution or brokerage fees. Because a more-developed infrastructure exists for sales of nonorganic products, farmers can more easily bring their products to existing markets. In contrast, organic producers often spend extra time to market and distribute their products.
Organic Pricing Strategy: How to Set Organic Prices

A frequently asked question is how to price organic crops and livestock. Does pricing depend on production costs, market prices, or putting a price premium on top of nonorganic crop and livestock prices? Does it depend on debt capital, what commodity you’re selling, volume, or a combination of these factors? After interviewing experts in the field and successful farmers, the number-one factor in effective pricing is quantifying your costs and selling above those costs. It can be difficult to quantify production costs accurately and estimate profits from sales, but knowing production costs is key to staying in business. You must make sure that you’re making more than you’re spending and also know whether your investment in time and money is providing an adequate return.

Organic pricing strategies vary between farmers. Some farmers quantify production costs and add a price margin to assure a reasonable profit margin. Some price according to local market prices. Most farmers likely use a combination of both approaches. Pricing also depends on what market outlet you use—whether you’re selling directly at a farmers market or to a retailer like a grocery store or restaurant.

Several factors should be considered when developing your pricing strategy (Acorn Organics.org, 2007):

- Operations, overhead, equipment, depreciation, and marketing costs
- Labor wages
- Profit desired
- Competitors’ production costs and prices
- Demand, customer motivation, and priorities
- Brand, image, quality, and reputation of your products

Don Hofstrand, the co-director for the Ag Marketing Resource Center at Iowa State University Extension, stresses three factors to consider when deciding on a pricing strategy. First, consider the cost of producing and marketing your product, which is the minimum price you should set for your product. Second, consider what the buyer is willing to pay. For instance, if you’re direct-marketing sides of beef or CSA shares, talk to consumers about what they’re getting and what they will pay, while explaining your costs. Try and negotiate what is reasonable for both parties. Finally, consider competitors’ prices by looking at market prices at venues similar to those you’ll use.

Mary Peabody, from the University of Vermont Extension and Director of the Women’s Agricultural Network, recently presented a webinar titled Direct Markets, Pricing for Profit (www.uvm.edu/newfarmer/?Page=webinars/webinar_recordings.php&SM=webinars/sub-menu.html#management). The webinar offers information on identifying costs, factors that affect pricing, and pricing survival tips.

Peabody’s advice is to record costs consistently over time so that you know your expenses and how they change, and also to record all time put in by keeping a labor log. Peabody feels that operating expenses and overhead should be the biggest determinant of pricing if you want to be successful. “Don’t set prices based on others’ prices!” Peabody says. Thinking you have to price competitively with, for example, the price in a co-op isn’t realistic; a small, beginning farmer cannot compete with large producers who have paid off start-up costs. Instead, find different markets or find ways to capture greater value for your products using marketing tactics that aren’t obvious. One example is to use different packaging or bundling.

Production Costs Recordkeeping

Good recordkeeping is the best way to determine good pricing. If you know how much it costs to produce each item and each item’s corresponding sales price, you can determine which products you should continue to produce and which don’t make sense to sell because you lose money on them. It is important to calculate expenses frequently so you can keep track of how costs change over time. Don’t be afraid to adjust your prices halfway through the season if costs go up significantly. If you don’t, you’re doing a disservice to your customers because you won’t be in business long-term.

Operating costs (labor, seeds, irrigation, fertilizers, cover crops, etc.), fixed costs (land, equipment), and return on investment are considered when evaluating a farming business. See the ATTRA publication Evaluating a Farming Enterprise.

Recordkeeping Resources

AgSquared software is a great resource to help with financial recordkeeping, crop-rotation planning, and farm management (www.agsqured.com).
There are other factors that Peabody says impact pricing:
- Harvesting costs
- Quality and selection of products
- Location and market
- Customer income/demographic
- Sales volume offered
- Supply and demand in your market
- Market price in your area

Your pricing strategy speaks volumes about your business. You will quickly earn a reputation as fair and ethical if you have a good pricing strategy. The alternative is to be known as cheap, dishonest, and desperate among consumers and competitors. Your pricing strategy should be consistent, accurate, and reliable. Many people want farmers to have a good quality of life and are willing to pay a fair price for quality products, so price according to what you are spending and add a reasonable markup.

There are some pricing strategies that may help if you are charging a fair price but not making enough profit:
- Produce more
- Focus on the products that are generating the most profit
- Decrease expenses
- Redefine your niche, customers, or marketing (repackage products in different sizes or by the bunch to get away from the same volume as competitors)

Case Studies

**Chinook Farms**

*Snohomish, Washington*

Chinook Farms produces organic vegetables and grains, as well as grass-finished beef and poultry.

Eric Fritch, owner of Chinook Farms, records all costs to know how he should set prices. He has two full-time employees who must be paid salaries, but some costs of labor can’t easily be planned—for instance, 38 hours of labor spent in response to elk-herd damage. Fritch doesn’t set prices based on farmers market prices per se but says there is etiquette involved in being aware of them. “It’s frowned upon if someone comes in and undercuts others. Not good for that farmer either because buyers become suspicious of the produce, wondering what are they doing to sell so cheap,” Fritch says. He says you don’t have to be the lowest guy on the block if your product has some kind of higher value, but also that the value of a local, sustainable farm only goes so far, so you have to take care to price with value and quality in mind.

For meat and grain sales, Fritch first finds interested customers and then the price is determined based on what the customer is willing to pay and what he’s willing to accept. Fritch sells directly to end-consumers to maximize profit. “There’s not enough margin to sell to a wholesaler who then sells to a retailer.”

**Kalon Farm**

*Ashburnham, Massachusetts*

Kalon Farm is a small farm a few miles south of the New Hampshire state line that raises grass-finished beef, lamb, and pork. They also sell cage-free eggs and seasonal vegetables and berries. This is their fifth year in operation. The farm is not certified organic but they use antibiotic-free feed for chickens and pigs and do not use growth hormones. The cattle and sheep are grass-based and are only fed hay and grass, with no grain. Kalon Farm avoids the use of any type of insecticide, herbicide, or fungicide on the gardens and pastures and relies on crop rotation, on-site composting, cover cropping, and rotational grazing to build soil health.

Keith Kopley breeds, raises, and butchers most of the animals so he really pays attention to prices.
企业要获得银行贷款。银行家通常习惯于常规操作，并认为风险较小。

因为成本较高，Sandwisch 说最好的定价建议是以成本量化，使你知道哪些项目你在赚钱，哪些你不在，然后你就可以相应地行动。

**Summary**

维持有利可图的农业耕作并不容易，无论是在有机耕作还是在非有机耕作时。虽然有机耕作的生产成本并不总是比相似的非有机农场高，但产量差异和有机产品的市场尚未充分发展，都可能使盈利能力更具挑战性。有机农产品的价格溢价确实存在于许多作物和活畜产品中，但重要的是要认识到有机价格可能波动较大。另外——尽管不常如此——对于某些有机产品，价格可能会低于非有机产品。例如，从2010年4月到2011年3月，有机软红冬小麦的价格要么与非有机同类价格相同，甚至低于非有机同类价格（Hayes, 2011）。这主要是由于非有机小麦的异常价格，受到许多市场因素的影响。

最后，重要的是要记住，在有机市场，供需驱动因素不一定是非有机市场的相同驱动因素。有机市场的定价并不总是简单地将价格提高非有机产品价格的某一固定百分比。许多未充分发展的有机市场是经济学家所谓的“薄”市场，这意味着市场中的买家和卖家数量较少，交易量相对较低（与非有机市场相比），从而导致市场价格的波动性较高。如果有机价格波动性很大，那么很难对最终的市场价格有很高的确定性。然而，确实有机农户和更好的市场进入对更大市场来说，有机市场正在变得不那么薄，价格更加稳定。最后，随着有限但正在改善的全国有机价格和生产成本信息的可用性，有机生产的风险可能会降低。
References


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