

## **Price Comparisons of Food at Lehigh Valley Farmers' Markets vs. Grocery Stores**

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### **Abstract**

A popular perception of farmers' markets is that their food is more expensive than food in grocery stores. This study looks to test the truth of that perception through the analysis of price data collected from Lehigh Valley, Pennsylvania farmers' markets and grocery stores in the fall of 2012. When the price of a shopping bag of farmers' market food grown/raised using organic methods is compared to the price of a shopping bag of grocery store certified organic food, no statistically significant difference is found. There is also no statistically significant price difference between a bag of farmers' market conventional and grocery store conventional food. Nor is there a statistically significant difference between the farmers' market and grocery store bags of combination (organic methods/ certified organic & conventional) food.

### **Introduction**

Farmers' markets contribute to fresh (whole and unprocessed) food access by increasing the fresh food available in the areas they serve. We have seen extraordinary growth in the numbers of farmers' markets in the Lehigh Valley over the last ten years. According to information gathered by Buy Fresh Buy Local of the Greater Lehigh Valley (BFBL-GLV), the number of producer-only farmers' markets in the Lehigh Valley is currently 13; up from 0 in 2002. Two of these farmers' markets opened in 2003, one in 2006, four in 2007, two in 2008, one in 2009, and two in 2011. Another market introduced producer-only restrictions in 2005. This is an average increase of 1.3 producer-only farmers' markets per year in the Lehigh Valley. [Producer-only farmers' markets consist only of vendors that grow, raise, or produce the products that they sell. Some of these markets allow vendors to sell products from other identified local farms under certain conditions.]

A few of these markets have taken fresh food access a step further by accepting EBT (electronic benefits transfer) from their lower income patrons. This allows these patrons to use their SNAP (Supplemental Nutrition Assistance Program) benefits to buy food at the farmers' markets. Four Lehigh Valley farmers' markets currently accept EBT: Easton Farmers' Market began accepting EBT in 2010, while Boyertown, SteelStacks, and the Penn St. Farmers' Markets all began accepting EBT in 2011. There are also individual vendors that accept EBT at some of the other markets. It has been noticed, however, that many patrons are surprised to find that they can use their SNAP benefits at the farmers' market.<sup>1</sup> There are on-going efforts to promote the EBT/SNAP program: advertising on farmers' market and BFBL-GLV websites, flyers and promotional efforts within low-income neighborhoods, signs and banners at the farmers' markets themselves, and buttons worn on the shirts of farmers' market

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<sup>1</sup> BFBL-GLV 2012

vendors. Promotional efforts at Lehigh Valley farmers' markets have been commendable, and knowledge of the program is spreading.

Perceptions may also play a role in fresh food access, such as consumer perceptions about pricing at farmers' markets. One such perception is that it is more expensive to shop at farmers' markets than at grocery stores. As Politics of the Plate blogger and author Barry Estabrook points out, "Most people think farmers' markets are more expensive than supermarkets - but studies don't always support that conclusion. In fact, they're often cheaper."<sup>2</sup> Producers at several of the Lehigh Valley's farmers' markets, spoke about customers who complained that their prices were too high. They were very familiar with the perception that farmers' market prices are higher than grocery store prices. The purpose of this study was to determine the truth of this perception.

Based on studies performed in other areas of the United States, Vermont<sup>3</sup>, in particular, it was hypothesized that, in the Lehigh Valley, Pennsylvania, conventionally grown food sold at farmers' markets would be competitive in price to conventionally grown food sold at grocery stores, while food grown using organic methods and sold at farmers' markets would be lower in price than certified organic food sold in grocery stores.

## **Materials and Methods**

*Materials:* clipboard, digital food scale, calculator

*Methods:* Price data was collected for a period of just over three weeks: September 27th through October 14th, 2012. Within this time, each of four Lehigh Valley Farmers' Markets was visited three times. The farmers' markets included in this study were chosen because of timing and location convenience, as the data was collected by only one person. On Thursdays, two markets in Bethlehem were visited: the Bethlehem Farmers' Market at Campus Square and the SteelStacks Farmers' Market. On Sundays, two markets in relatively close proximity to each other were visited: the Saucon Valley Farmers' Market and the Emmaus Farmers' Market. Price data was also collected twice from two grocery stores (Wegmans and Giant) for this study. Giant was chosen to represent more economically priced groceries. Wegmans was chosen to represent a grocery store with premium goods and prices. [Other (possibly lower-priced) grocery stores were not chosen because of the lack of freshness of their produce. The freshness of produce at grocery stores needed to be somewhat comparable to that at farmers' markets.] Price comparisons were limited to nine seasonal items: kale, butternut squash, spaghetti squash, red potatoes, yellow potatoes (several varieties), apples (several varieties), Bosc pears, eggs, and ground beef. At all locations, price per pound data was collected (except for eggs, for which price per dozen data was collected). If the product was priced per item, a food scale and calculator were used to determine a price per pound. When weighing products, what appeared to be the largest and smallest of each was weighed and then that weight was averaged in an attempt to get as accurate a price per pound as possible. When recording data, not only prices of products were noted but also the methods used to grow or raise the product, such as conventional, certified organic, organic methods, pastured, and cage free. (Definitions for these methods may be found in

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<sup>2</sup> Estabrook 2011

<sup>3</sup> Claro 2011

Appendix A.) Then, using charts and graphs, the price ranges of each type of product at the Farmers' Markets were compared to those at the grocery stores, as well as price ranges across growing methods. The names of the farmers' market producers have not been included in this study; they are instead referred to by letter in the tables of Appendix B. Also, although data was collected for three weeks, each producer's price for a product was only listed once in the tables, unless the price changed.

The results were first analyzed by product type; however, due to limited price points for certain products (both organic and conventional), data was also analyzed as "shopping bags": multiple products, comparing shopping bags of farmers' market products to shopping bags of grocery store products. For the price of each product in a shopping bag, the average of all price points collected for that product was used. For example, for kale in the farmers' market organic methods shopping bag, the average price of all farmers' market kale grown using organic methods was used. A product was only included in a shopping bag when there was a corresponding product to include in the opposite shopping bag. For example: kale grown using organic methods in the farmers' market shopping bag corresponded to certified organic kale in the grocery store shopping bag. The difference in prices of these shopping bags was analyzed using t tests to check for statistical significance. Price differences of individual products were not tested for statistical significance because data was limited

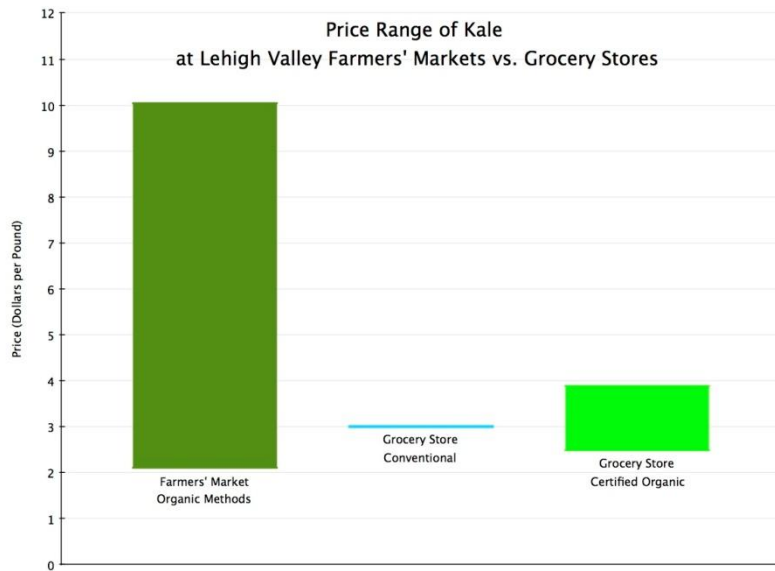
## **Results**

Results for individual products are listed first and followed by shopping bag results. Corresponding tables for all graphs may be found in Appendix B. It is interesting to note that the broad price ranges displayed by some of the products at the farmers' markets

are due to the amount of product included in each priced unit. For example, kale at farmers' markets was priced per bunch or bag and ranged from \$2.50 to \$4.00. When converted to price per pound, the price of kale spanned from \$2.11 to \$10.04, a much greater range, due to the varying amounts of kale the farmers placed in each bunch or bag.

## *Kale*

Kale prices were collected from seven producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. There was no conventional kale available for pricing at the farmers' markets; all of the farmers' market producers used organic methods. Kale varieties included in price collection were Winterbore, Dinosaur, Curly, Red Russian, White Russian, and Tuscan. Farmers' market kale produced using organic methods had a wide price range: \$2.11/lb to \$10.04/lb. Grocery store conventional kale had a small price range: \$2.99/lb to \$3.02/lb. Grocery store certified organic kale had a price range of \$2.49/lb to \$3.89/lb. This data shows that although some kale at the farmers' markets was more expensive than at the grocery stores, it was also possible to find less expensive kale at farmers' markets. It is also interesting to note that some of the farmers' market kale, which was grown using organic methods, was also less expensive than the conventional kale at the grocery stores.



### *Butternut Squash*

Butternut squash prices were collected from seven producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. Two of the farmers' market producers grew their butternut squash conventionally, while the other five used organic methods. Farmers' market conventional butternut squash prices ranged from \$0.40/lb to \$0.88/lb, while farmers' market organic methods prices ranged from \$0.55/lb to \$2.00/lb. Only one grocery store price (\$1.29/lb) was collected for conventional butternut squash, as Wegmans did not have any conventional Butternut Squash for sale during the study period, and the price at Giant did not change over the three-week period.

Only Wegmans had organic butternut squash available, and it was priced at \$1.69/lb. This data shows that although some butternut squash (organic methods) at the farmers' markets was more expensive than at the grocery stores, it was possible to find butternut squash (organic methods) at farmers' markets that was less expensive than both certified organic and conventional butternut squash at grocery stores. It was always less expensive to buy conventional butternut squash at the farmers' market than both conventional and certified organic grocery store butternut squash.



## Spaghetti Squash

Spaghetti squash prices were collected from five producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. One of the farmers' market producers grew their spaghetti squash conventionally, while the other four used organic methods. The price for farmers' market conventional spaghetti squash was \$1.07/lb, while farmers' market organic methods prices ranged from \$0.70/lb to \$2.01/lb. Grocery store conventional spaghetti squash prices ranged from \$0.99/lb to \$1.29/lb. Only Wegmans had organic spaghetti squash available and it was priced at \$1.69/lb.



This data shows that although some organic methods spaghetti squash at the farmers' markets was more expensive than at the grocery stores, it was possible to find less expensive organic methods spaghetti squash at farmers' markets than both certified organic and conventional spaghetti squash at grocery stores. Conventional spaghetti squash prices at the farmers' market were in range and thus competitive with conventional grocery store spaghetti squash prices.

## Red Potatoes

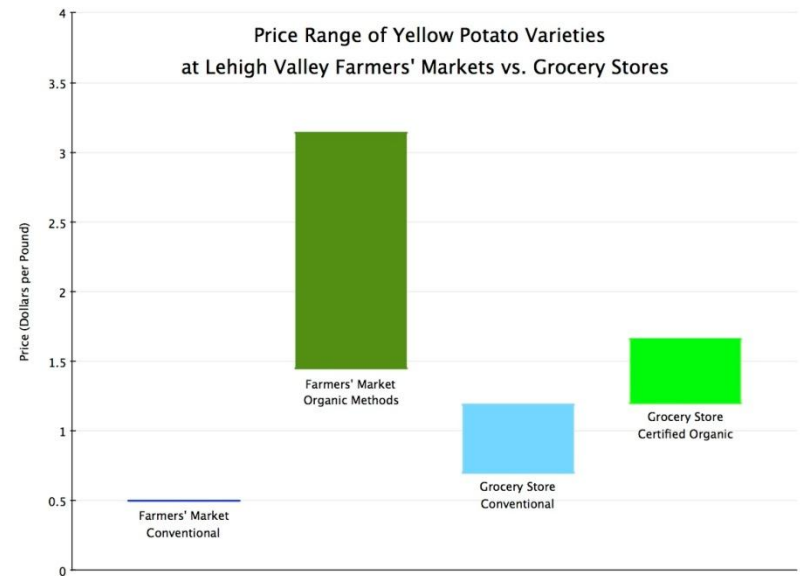
Red potato prices were collected from six producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. One of the farmers' market producers grew their red potatoes conventionally, while the other five used organic methods. The price for farmers' market conventional red potatoes was \$0.60/lb, while farmers' market organic methods prices ranged from \$0.98/lb to \$2.19/lb. Grocery store conventional red potato prices ranged from \$0.60/lb to \$1.00/lb. Only Wegmans had organic red potatoes available, and they were priced at \$1.66/lb. This data shows that although some organic methods red potatoes at the farmers' markets were more expensive than at the grocery stores, it was possible to find organic methods red potatoes at farmers' markets that were less expensive than both certified organic and conventional red potatoes at grocery stores. Conventional red potato prices at the farmers' market were less than conventional grocery store red potato prices.



farmers' market organic methods prices ranged from \$1.45/lb to \$3.14/lb. Grocery store conventional yellow potato variety prices ranged from \$0.70/lb to \$1.19/lb. Grocery store certified organic yellow potato variety prices ranged from \$1.20/lb to \$1.66/lb. This data shows that although some organic methods yellow potato varieties at the farmers' markets were more expensive than certified organic yellow potato varieties at the grocery stores, it was possible to find organic methods yellow potato varieties at farmers' markets that were less expensive than both certified organic and conventional yellow potato varieties at grocery stores. Conventional yellow potato variety prices at the farmers' market were less than conventional grocery store yellow potato variety prices.

### *Yellow Potato Varieties*

Yellow potato prices were collected from five producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. One of the farmers' market producers was selling three varieties of yellow potatoes conventionally, while the other 4 producers each were selling one variety of yellow potato and had used organic methods to grow them. Yellow potato varieties included in price collection at both the farmers' markets and grocery stores were Lehigh, Baking, Yukon Gold, Russet, and Golden potatoes. The price for farmers' market conventional yellow potato varieties was \$0.50/lb, while



## Apples

Apple prices were collected from four producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. All of the farmers' market producers grew their apples conventionally. Apple varieties included in price collection were Cortland, Yellow Delicious, Golden Delicious, Red Delicious, Liberty, Royalty, Snow Sweet, Sugar Snap, Florina, Mutsu, Gala, McIntosh, Ida Red, Fuji, Granny Smith, and Ginger Gold. The prices for farmers' market conventional apples ranged from \$0.51/lb to \$1.93/lb. Grocery store conventional apple prices ranged from \$1.00/lb to \$2.49/lb.

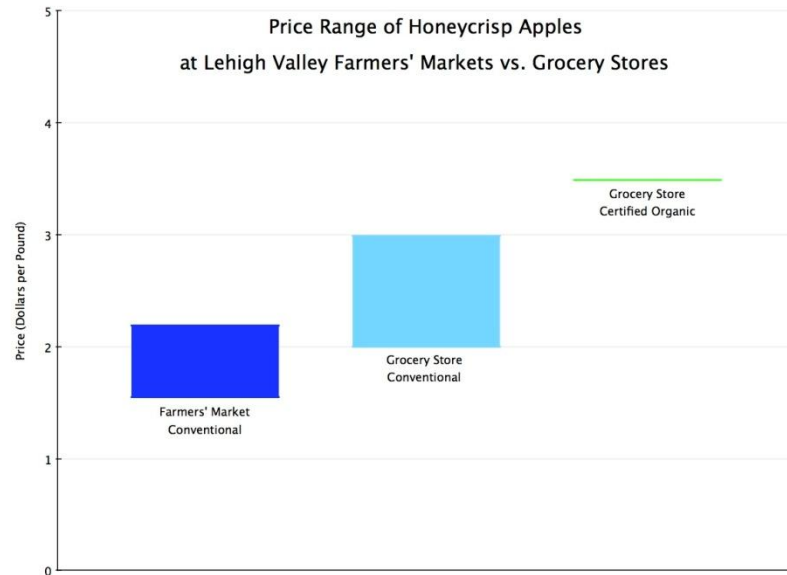


Grocery store certified organic apple prices ranged from \$1.56/lb to \$2.99/lb. Both grocery stores also had regional/conventional apples available, which ranged in price from \$0.99/lb to \$1.99/lb. This data shows that although price ranges of apples at farmers' markets and grocery stores overlap, it was possible to find conventional apples at farmers' markets that were less expensive than certified organic, conventional and regional/conventional apples at grocery stores. Farmers' market conventional apples had the lowest price range, followed by grocery store regional/conventional, grocery store conventional, and then grocery store certified organic apples.

## Honeycrisp Apples

Honeycrisp apple prices were collected from one producer at the four Lehigh Valley Farmers' Markets listed above, and from one additional producer that sells at the Easton Farmers' Market in order to increase the amount of Honeycrisp apple price data. Price data was also collected from the two grocery stores listed. Both farmers' market producers grew their Honeycrisp apples conventionally. The prices for farmers' market conventional Honeycrisp apples ranged from \$1.55/lb to \$2.19/lb. Grocery store conventional Honeycrisp apple prices ranged from \$2.00/lb to \$2.99/lb. Only Wegmans carried certified organic Honeycrisp apples and they were priced at \$3.49/lb. This data shows that although price ranges of Honeycrisp apples at farmers' markets and grocery stores overlap, it was possible to find conventional Honeycrisp apples at farmers' markets that were less expensive than both certified organic and conventional Honeycrisp apples at grocery stores. Farmers' market conventional Honeycrisp apples

had the lowest price range, followed by grocery store conventional, then grocery store certified organic Honeycrisp apples.



### *Bosc Pears*

Bosc pear prices were collected from two producers at the four Lehigh Valley Farmers' Markets listed above, as well as from the two grocery stores listed. Both farmers' market producers grew their Bosc pears conventionally. The prices for farmers' market conventional Bosc pears ranged from \$1.37/lb to \$1.82/lb. Grocery store conventional Bosc pear prices ranged from \$1.69/lb

to \$1.79/lb. Neither grocery store had certified organic Bosc pears for sale. This data shows that although price ranges of conventional Bosc pears at farmers' markets and grocery stores overlap, it was possible to find both less and more expensive Bosc pears at farmers' markets than at grocery stores.



It is also interesting to note that all farmers' market pears would have been less expensive than the grocery store pears, had one of the producers not priced their pears incorrectly: Producer J was selling Bosc pears for \$0.75 each or six pears for \$5.00, which converted to approximately \$0.83 per pear. This was the high price point (\$1.82/lb) in the farmers' market Bosc pear data. A



few weeks later, Producer J realized their mistake and changed their bulk price to seven pears for \$5.00 (approximately \$0.71/pear or \$1.56/lb). After Producer J changed their prices, the high price point for farmers' market Bosc pears was \$0.75/pear (\$1.64/lb).

### *Eggs*

Egg prices were collected from six producers at the four Lehigh Valley Farmers' Markets listed above, and from the two grocery stores listed. All farmers' market producers' eggs came from pastured chickens; the prices ranged from \$3.50/dozen to \$5.00/dozen. Grocery store conventional egg prices ranged from \$1.99/dozen to \$2.39/dozen. Grocery store cage free egg prices ranged from \$2.99/dozen to \$4.49/dozen. Grocery store certified organic egg prices ranged from \$3.49/dozen to \$4.99/dozen. This data shows that the price range of grocery store conventional eggs was the lowest. The price range of farmers' market pastured eggs overlaps with both grocery store cage free and certified organic egg price ranges. The price ranges of farmers' market pastured and grocery store certified organic eggs are the most similar to each other.



### *Ground Beef*

Ground beef prices were collected from three producers at the four Lehigh Valley Farmers' Markets listed above, and from one additional producer that sells at the Easton Farmers' Market in order to increase the amount of ground beef price data. Prices were also collected from the two grocery stores listed. All farmers' market producers' ground beef was from pastured cows. The prices for farmers' market pastured ground beef ranged from \$6.50/lb to \$8.00/lb. Grocery store conventional ground beef prices ranged from \$3.99/lb to \$5.49/lb. Grocery store certified organic ground beef prices ranged from \$5.49/lb to \$5.99/lb. This data shows that the price range of farmers' market pastured

ground beef was highest, while the price range of grocery store conventional ground beef was lowest.



### Shopping Bags

The tables that correspond to these shopping bag graphs can be found in the Appendix, and show which products are included in each bag, as well as their mean prices.

The shopping bags containing produce and animal products (eggs and ground beef), as well as all types of growing methods

(conventional, organic methods, pastured, and certified organic), appeared similar in price range. The farmers' market shopping bag range of mean product prices was \$0.50 to \$7.00. The grocery store shopping bag range of mean product prices was \$0.92 to \$5.74. A t test showed no significant price difference between the farmers' market shopping bag and the grocery store shopping bag.

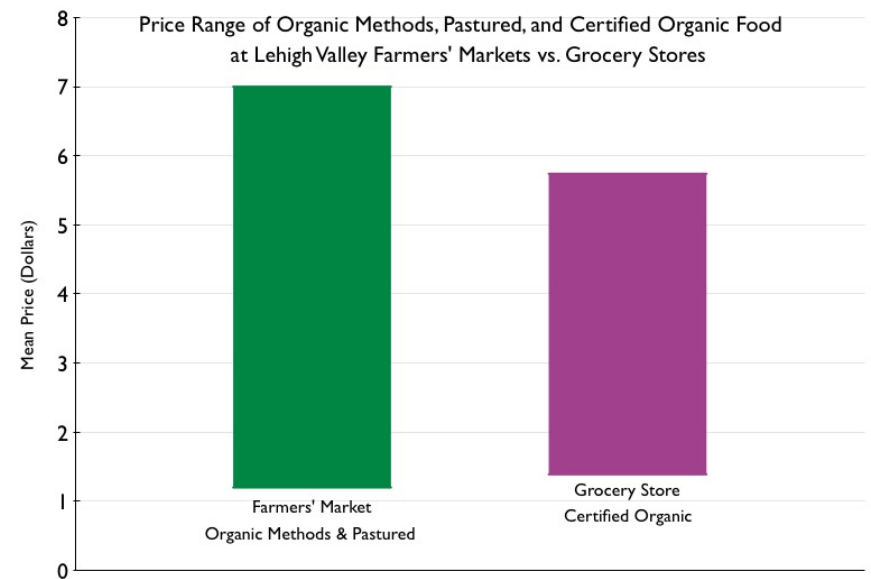


The shopping bags containing conventional produce, appeared slightly less similar in price range. (No conventional animal products were included in the shopping bags because there were no conventional animal products available at the farmers' markets.) The farmers' market shopping bag range of mean product prices was \$0.50 to \$1.96. The grocery store shopping

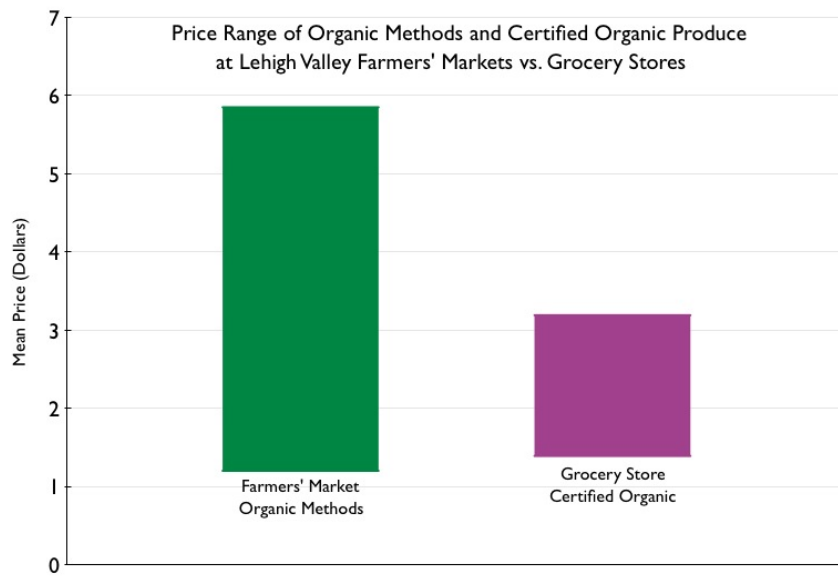
bag range of mean product prices was \$0.92 to \$2.66. A t test, however, showed no significant price difference between the farmers' market shopping bag and the grocery store shopping bag.



The shopping bags containing organic methods, pastured, and certified organic food (produce and animal products) also appeared similar in price range. The farmers' market shopping bag range of mean product prices was \$1.20 to \$7.00. The grocery store shopping bag range of mean product prices was \$1.39 to \$5.74. A t test showed no significant price difference between the farmers' market shopping bag and the grocery store shopping bag.



When excluding the higher priced animal products (eggs and ground beef), the shopping bags containing organic methods, and certified organic produce still appeared similar in price range. The farmers' market shopping bag range of mean product prices was \$1.20 to \$5.85. The grocery store shopping bag range of mean product prices was \$1.39 to \$3.19. A t test showed no significant price difference between the farmers' market shopping bag and the grocery store shopping bag.



## Discussion

The outcome expected was not what the results showed. Although it was expected that conventional product prices would be comparable between farmers' markets and grocery stores, and organic products would be less expensive at farmers' markets, my results showed no significant difference between farmers' markets and grocery stores for either production method, as well as no significant difference between farmers' markets and grocery stores for both methods combined. A significant difference was expected at least for organic food, because this was what the Vermont study<sup>4</sup> had showed. There were several differences

between this study and the Vermont study, which may account for the difference in results:

*Location* – The cost of food in the U.S. varies from state to state, and this may account for some of the difference in results between the Vermont study and this study, based in Pennsylvania.

*Time frame* – The Vermont study data was collected primarily in the months of July and August with a few additional collection dates occurring in September. The data collection for this study took place from late September to mid-October. This meant that different foods were in season for each of these studies, which may account for varying price differences between farmers' market and grocery store products.

*Organic Certification* – For this study, prices of foods grown/raised with organic methods from the farmers' markets were compared to prices of organically certified foods from the grocery store. It was not possible to compare certified organic prices between venues because none of the producers at any of the farmers' markets in the Lehigh Valley had organic certification, although many did use organic methods to grow their food. The Vermont study compared prices of farmers' market food grown with organic methods (not certified organic) as well as conventional farmers' market food to prices of conventional food in grocery stores. These distinctions as to what was compared in each study may also account for varying price differences between farmers' markets and grocery stores.

Study Limitations:

<sup>4</sup> Claro 2011

*Amount of price points collected* – With more price points, the results of this study would have been more significant. This would have not only strengthened the statistical results for the shopping bag comparisons, but would have also warranted statistical analysis of the individual product price comparisons. Number of price points could have been increased in two ways: by visiting more venues, and by including more products in the study. As there was only one person collecting data, it was only possible to collect data from four of the existing thirteen farmers’ markets in the Lehigh Valley and from only two grocery stores. Price data was also only collected on nine products.

*Time in which data was collected* – The products in this study were limited to what was in season from late September to mid-October. If this study had spanned more time, there would have been more and different produce on which to collect price data.

*Pastured Meat and Eggs Not Available in Grocery Stores* – Although pastured meat and eggs from farmers’ markets were compared in price to certified organic meat and eggs from grocery stores, it should be noted that these are different products. Pastured products are derived from animals that spend their days outdoors on open pastures, eating grass and other forages (depending on the animals and operation, feed may be supplemented with grain). These products have been associated with nutritional benefits. For example, meat from pasture-raised cattle contains less total fat and higher levels of certain beneficial fats than meat from conventionally raised animals.<sup>5</sup> For animal products that are certified organic by the USDA, the producers

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<sup>5</sup> Clancy 2006

have met animal health and welfare standards, did not use antibiotics or growth hormones, used 100% organic feed, and provided animals with access to the outdoors.<sup>6</sup> The predominant feed may be corn and grain. Animals are provided access to the outdoors; however, they may not actually go outside. Although certified organic and pastured products are very different, they were compared for the purposes of this study because certified organic meat and eggs were not available at the visited farmers’ market, and pastured meat and eggs were not available in grocery stores. In addition, these products were more similar to each other than either was to conventionally-raised meat and eggs. It should, however, be noted that this may not be a fair or accurate price comparison.

Given its limitations, this study should be viewed as preliminary, and a larger, more expansive study should be conducted; nonetheless, this study still provides some insight into food prices in the Lehigh Valley.

### **Conclusion**

Prices at farmers’ markets and grocery stores in the Lehigh Valley were shown to be competitive with each other with no statistically significant differences between shopping bags from the two venues, whether the products included in the bags were conventional, organic, or a mix of the two. These results oppose the perception that farmers’ markets have higher prices than grocery stores. In fact, for all produce items studied, it was possible to find items at the farmers’ market that were less expensive than what could be purchased at the grocery stores. For

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<sup>6</sup> Agricultural Marketing Service 2012

the Lehigh Valley, Pennsylvania, the perception has been disproved: farmers' market prices are *not* higher than those in grocery stores.

This study contains limited data regarding the number of price points collected, the number of farmers' markets and grocery stores visited, and the time over which data was collected, which in turn, limited the products to those in season in early fall; however, it still provides value in anticipating what a more expansive study may reveal about Lehigh Valley food prices at farmers' markets as compared to grocery stores.

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# APPENDIX A

## Definitions



**Certified Organic** – A United States Department of Agriculture (USDA) certification. Certified organic food follows the definition by the USDA National Organic Standards Board (NOSB):

- “Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.
- “‘Organic’ is a labeling term that denotes products produced under the authority of the Organic Foods Production Act. The principal guidelines for organic production are to use materials and practices that enhance the ecological balance of natural systems and that integrate the parts of the farming system into an ecological whole.
- “Organic agriculture practices cannot ensure that products are completely free of residues; however, methods are used to minimize pollution from air, soil and water.
- “Organic food handlers, processors and retailers adhere to standards that maintain the integrity of organic agricultural products. The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.”<sup>7</sup>

**Organic Methods** – For the purposes of this study, food grown/raised using organic methods is food grown/raised without the input of synthetic substances.

**Conventional** – Conventional food is not grown/raised sustainably and may include the use of synthetic pesticides, herbicides, and/or fertilizers.

**Cage Free** – Cage free chickens are not raised in cages, but may still be raised indoors in overcrowded conditions.

**Pastured** – Animals raised outdoors on pasture. They are fed a diet of grass or other forage throughout their lives and have constant access to pasture or range. Pastured animals, because they are not overcrowded, do not require antibiotics as conventionally raised animals do. For the purposes of this study, pastured meat and eggs may also be defined as hormone- and antibiotic-free.

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<sup>7</sup> Gold 2007

# APPENDIX B

## Tables

<b>KALE</b>				
<b>Location</b>	<b>Producer/ Grocery Store</b>	<b>Method</b>	<b>Price/lb</b>	<b>Price/each</b>
Farmers' Markets	A	organic methods	\$5.26/lb	\$3/gal bag
	B	organic methods	\$10.04/lb	\$4/bag
	C	organic methods	\$2.11/lb	\$2.50/bunch
	D	organic methods	\$8/lb	\$3/bunch
	E	organic methods	\$7.11/lb	\$4/bag
	F	organic methods	\$4/lb	\$3/bunch
	A	organic methods	\$3.84/lb	\$3/gal bag
	H	organic methods	\$6.40/lb	\$3/bunch
Grocery Stores	W	conventional	\$3.02/lb	\$1.99/bunch
	G	conventional	\$2.99/lb	
	G	certified organic	\$2.49/lb	
	W	certified organic	\$3.89/lb	\$2.49/bunch

BUTTERNUT SQUASH				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	K	conventional	\$0.40/lb	\$1/each
	J	conventional	\$0.88/lb	\$2/each
	B	organic methods	\$2/lb	
	D	organic methods	\$1/lb	
	C	organic methods	\$1.60/lb	\$2/each
	I	organic methods	\$0.55/lb	\$1.50/each
	A	organic methods	\$0.86/lb	priced according to size (\$2-\$4)
Grocery Stores	G	conventional	\$1.29/lb	
	W	certified organic	\$1.69/lb	

SPAGHETTI SQUASH				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	J	conventional	\$1.07/lb	\$2/each
	A	organic methods	\$0.86/lb	priced according to size (\$2-\$4)
	B	organic methods	\$2.01/lb	priced according to size (\$5- \$6.50)
	F	organic methods	\$1.50/lb	
	I	organic methods	\$0.70/lb	\$1.50/each
	F	organic methods	\$0.96/lb	\$2/each small \$3/each large
	Grocery Stores	G	conventional	\$1.29/lb
W		conventional	\$0.99/lb	
W		certified organic	\$1.69/lb	

RED POTATOES				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	L	conventional	\$0.60/lb	\$3.00/5lb bag
	A	organic methods	\$2/lb	\$4/quart
	B	organic methods	\$2.19/lb	\$4.75/quart
	I	organic methods	\$1.35/lb	\$3/quart
	E	organic methods	\$0.98/lb	\$2.50/quart or \$2.50/pint
	E	organic methods	\$2.11/lb	\$2.50/quart or \$2.50/pint
	A	organic methods	\$1.86/lb	\$4/quart
	C	organic methods	\$1.39/lb	\$3/quart
Grocery Stores	W	conventional	\$0.80/lb	\$3.99/5lb bag
	G	conventional	\$1/lb	\$4.99/5lb bag
	G	conventional	\$1/lb	\$4.99/5lb bag
	W	certified organic	\$1.66/lb	\$4.99/3lb bag

YELLOW POTATO VARIETIES				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	L	conventional	\$0.50/lb	\$2.50/5lb bag
	L	conventional	\$0.50/lb	\$2.50/5lb bag
	L	conventional	\$0.50/lb	\$2.50/5lb bag
	A	organic methods	\$1.73/lb	\$4/quart
	B	organic methods	\$3.14/lb	\$6.50/quart
	I	organic methods	\$1.45/lb	\$3/quart
	C	organic methods	\$1.45/lb	\$3/quart
Grocery Stores	W	conventional	\$0.70/lb	\$3.49/5lb bag
	W	conventional	\$1.19/lb	
	G	conventional	\$1/lb	\$4.99/5lb bag
	G	conventional	\$0.80/lb	\$3.99/5lb bag
	W	certified organic	\$1.66/lb	\$4.99/3lb bag
	G	certified organic	\$1.20/lb	\$5.99/5lb bag
	G	certified organic	\$1.20/lb	\$5.99/5lb bag
	W	certified organic	\$1.50/lb	\$4.49/3lb bag

**APPLES**

APPLES					APPLES				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each	Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	J	conventional	\$0.98/lb	\$0.75 each	Grocery Stores	G	conventional	\$1.99/lb	
	J	conventional	\$0.92/lb	\$0.75 each		W	conventional	\$1.99/lb	
	L	conventional	\$1.14/lb	\$3.50/quart		W	conventional	\$1.00/lb	\$7.99/8lb bag
	L	conventional	\$1.19/lb	\$3.50/quart		W	conventional	\$1.19/lb	
	L	conventional	\$1.30/lb	\$3.50/quart		W	conventional	\$1.99/lb	
	N	conventional	\$2/lb			W	conventional	\$1.00/lb	\$7.99/8lb bag
	P	conventional	\$1.25/lb	\$4/quart		W	conventional	\$1.99/lb	
	P	conventional	\$1.26/lb	\$7/half peck		W	conventional	\$1.99/lb	
	P	conventional	\$1.08/lb	\$12/peck		W	conventional	\$1.99/lb	
	J	conventional	\$0.51/lb	\$0.75 each		W	certified organic	\$2.49/lb	
	J	conventional	\$1.64/lb	\$5/fourth peck		W	certified organic	\$1.56/lb	\$4.69/3lb bag
	J	conventional	\$1.93/lb	\$9/half peck		G	certified organic	\$1.83/lb	
	J	conventional	\$0.51/lb	\$0.75 each		G	certified organic	\$2.99/lb	
	J	conventional	\$1.64/lb	\$5/fourth peck		G	certified organic	\$2.99/lb	
	J	conventional	\$1.93/lb	\$9/half peck		G	certified organic	\$2.99/lb	
	J	conventional	\$0.51/lb	\$0.75 each		G	certified organic	\$2.99/lb	
	J	conventional	\$1.64/lb	\$5/fourth peck		W	certified organic	\$2.49/lb	
	J	conventional	\$1.93/lb	\$9/half peck		W	certified organic	\$2.49/lb	
Grocery Stores	J	conventional	\$0.51/lb	\$0.75 each	W	certified organic	\$1.66/lb	\$4.99/3lb bag	
	J	conventional	\$1.64/lb	\$5/fourth peck	W	certified organic	\$1.66/lb	\$4.99/3lb bag	
	J	conventional	\$1.93/lb	\$9/half peck	G	certified organic	\$2.49/lb		
	W	conventional	\$1.99/lb		G	certified organic	\$2.49/lb		
	G	conventional	\$1.89/lb		G	certified organic	\$2.49/lb		
	G	conventional	\$1.99/lb		G	certified organic	\$2.49/lb		
	G	conventional	\$1.99/lb		J	conventional	\$1.99/lb		
	G	conventional	\$1.99/lb		Q	conventional	\$1.49/lb		
				Q	conventional	\$0.99/lb			



<b>HONEYCRISP APPLES</b>				
<b>Location</b>	<b>Producer/ Grocery Store</b>	<b>Method</b>	<b>Price/lb</b>	<b>Price/each</b>
Farmers' Markets	J	conventional	\$2.13/lb	\$1 each
	M	conventional	\$2.19/lb half peck	\$8.50/half peck
	M	conventional	\$1.55/lb peck	\$12/peck
Grocery Stores	G	conventional	\$2.99/lb	
	W	conventional	\$2.99/lb	
	W	conventional	\$2.00/lb	\$5.99/3lb bag
	W	certified organic	\$3.49/lb	

<b>BOSC PEARS</b>				
<b>Location</b>	<b>Producer/ Grocery Store</b>	<b>Method</b>	<b>Price/lb</b>	<b>Price/each</b>
Farmers' Markets	J	conventional	\$1.64/lb	\$0.75 each
	J	conventional	\$1.82/lb	6 for \$5
	I	conventional	\$1.37/lb	\$3/quart
	J	conventional	\$1.56/lb	\$0.75 each or 7 for \$5
Grocery Stores	W	conventional	\$1.79/lb	
	G	conventional	\$1.69/lb	
	W	conventional	\$1.69/lb	

EGGS				
Location	Producer/ Grocery Store	Method	Price/lb	Price/each
Farmers' Markets	B	pastured		\$4/dozen
	R	pastured		\$4/dozen
	S	pastured		\$3.50/dozen
	T	pastured		\$4.50/dozen
	U	pastured		\$4.50/dozen
	V	pastured		\$3.75/dozen
	U	pastured		\$5/dozen
Grocery Stores	W	conventional		\$1.99/dozen
	G	conventional		\$2.39/dozen
	W	cage free		\$4.49/dozen
	G	cage free		\$2.99/dozen
	W	certified organic		\$3.99/dozen
	G	certified organic		\$3.49/dozen
	W	certified organic		\$4.99/dozen

<b>GROUND BEEF</b>				
<b>Location</b>	<b>Producer/ Grocery Store</b>	<b>Method</b>	<b>Price/lb</b>	<b>Price/each</b>
Farmers' Markets	B	organic methods	\$7/lb	
	R	organic methods	\$6.50/lb	
	U	organic methods	\$8/lb	
	X	organic methods	\$6.50/lb	
Grocery Stores	W	conventional	\$3.99/lb	
	G	conventional	\$5.49/lb	
	W	conventional	\$5.19/lb	
	W	certified organic	\$5.49/lb	
	G	certified organic	\$5.99/lb	

**Farmers' Market Food Prices vs. Grocery Store Food Prices**

Farmers' Market Shopping Bag		Grocery Store Shopping Bag	
Product	Mean Price	Product	Mean Price
Kale - organic methods	5.85	Kale - certified organic	3.19
Butternut Squash - conventional	0.64	Butternut Squash - conventional	1.29
Butternut Squash - organic methods	1.20	Butternut Squash - certified organic	1.69
Spaghetti Squash - conventional	1.07	Spaghetti Squash - conventional	1.14
Spaghetti Squash - organic methods	1.21	Spaghetti Squash - certified organic	1.69
Red Potatoes - conventional	0.60	Red Potatoes - conventional	0.93
Red Potatoes - organic methods	1.70	Red Potatoes - certified organic	1.66
Yellow Potato Varieties - conventional	0.50	Yellow Potato Varieties - conventional	0.92
Yellow Potato Varieties - organic methods	1.94	Yellow Potato Varieties - certified organic	1.39
Apples - conventional	1.31	Apples - conventional	1.83
Honeycrisp Apples - conventional	1.96	Apples - regional/conventional	1.49
Bosc Pears - conventional	1.60	Honeycrisp Apples - conventional	2.66
Eggs - pastured	4.18	Bosc Pears - conventional	1.72
Ground Beef - pastured	7.00	Eggs - certified organic	4.16
		Ground Beef - certified organic	5.74
N=	14		15
MEAN=	2.20		2.10
STDEV=	2.02		1.33
P Value =		0.8828	(NO SIGNIFICANT DIFFERENCE)

Notes: Price is in \$ per pound for produce and ground beef, in \$ per dozen for eggs.

Only values of products with comparable product in opposite shopping bag are used.

N = count of values

STDEV = Standard Deviation

When P Value > 0.05, there is no significant difference between the groups.

P Value obtained through T Test.

**Farmers' Market Conventional Produce Prices  
vs. Grocery Store Conventional Produce Prices**

Farmers' Market Shopping Bag		Grocery Store Shopping Bag	
Product	Mean Price	Product	Mean Price
Butternut Squash - conventional	0.64	Butternut Squash - conventional	1.29
Spaghetti Squash - conventional	1.07	Spaghetti Squash - conventional	1.14
Red Potatoes - conventional	0.60	Red Potatoes - conventional	0.93
Yellow Potato Varieties - conventional	0.50	Yellow Potato Varieties - conventional	0.92
Apples - conventional	1.31	Apples - conventional	1.83
Honeycrisp Apples - conventional	1.96	Apples - regional/conventional	1.49
Bosc Pears - conventional	1.60	Honeycrisp Apples - conventional	2.66
		Bosc Pears - conventional	1.72
N=	7		8
MEAN=	1.10		1.50
STDEV=	0.55		0.58
P Value =		0.1920	(NO SIGNIFICANT DIFFERENCE)

Notes: Price is in \$ per pound for produce and ground beef, in \$ per dozen for eggs.

Only values of products with comparable product in opposite shopping bag are used.

N = count of values

STDEV = Standard Deviation

When P Value > 0.05, there is no significant difference between the groups.

P Value obtained through T Test.

**Farmers' Market Organic Methods/Pastured Food Prices  
vs. Grocery Store Certified Organic Food Prices**

Farmers' Market Shopping Bag		Grocery Store Shopping Bag	
Product	Mean Price	Product	Mean Price
Kale - organic methods	5.85	Kale - certified organic	3.19
Butternut Squash - organic methods	1.20	Butternut Squash - certified organic	1.69
Spaghetti Squash - organic methods	1.21	Spaghetti Squash - certified organic	1.69
Red Potatoes - organic methods	1.70	Red Potatoes - certified organic	1.66
Yellow Potato Varieties - organic methods	1.94	Yellow Potato Varieties - certified organic	1.39
Eggs - pastured	4.18	Eggs - certified organic	4.16
Ground Beef - pastured	7.00	Ground Beef - certified organic	5.74
N=	7		7
MEAN=	3.30		2.79
STDEV=	2.39		1.65
P Value =		0.6527	(NO SIGNIFICANT DIFFERENCE)

Notes: Price is in \$ per pound for produce and ground beef, in \$ per dozen for eggs.  
 Only values of products with comparable product in opposite shopping bag are used.  
 N = count of values  
 STDEV = Standard Deviation  
 When P Value > 0.05, there is no significant difference between the groups.  
 P Value obtained through T Test.

**Farmers' Market Organic Methods Produce Prices  
vs. Grocery Store Certified Organic Produce Prices**

Farmers' Market Shopping Bag		Grocery Store Shopping Bag	
Product	Mean Price	Product	Mean Price
Kale - organic methods	5.85	Kale - certified organic	3.19
Butternut Squash - organic methods	1.20	Butternut Squash - certified organic	1.69
Spaghetti Squash - organic methods	1.21	Spaghetti Squash - certified organic	1.69
Red Potatoes - organic methods	1.70	Red Potatoes - certified organic	1.66
Yellow Potato Varieties - organic methods	1.94	Yellow Potato Varieties - certified organic	1.39
N=	5		5
MEAN=	2.38		1.92
STDEV=	1.96		0.72
P Value =		0.6473	(NO SIGNIFICANT DIFFERENCE)

Notes: Price is in \$ per pound for produce and ground beef, in \$ per dozen for eggs.

Only values of products with comparable product in opposite shopping bag are used.

N = count of values

STDEV = Standard Deviation

When P Value > 0.05, there is no significant difference between the groups.

P Value obtained through T Test.