



# Importance of Pricing Fresh Produce in Direct Markets: A Farmers' Market Example

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## Introduction

Price plays an important role in determining the quantity of goods and/or services a consumer is willing and capable of purchasing. As a product's price increases, the quantity demanded by consumers diminishes. In regards to fresh produce, previous studies find that consumer responsiveness to changes in product price for fresh fruit and vegetables is generally low, or the change in quantity demanded is lower than the change in price (You, Huang, and Epperson, 1997; Stegelin, 2012). However, these studies examined produce prices at the retail level, i.e., in grocery stores, rather than those at direct markets. Increased consumer demand for local foods has boosted the number of local direct markets in the U.S., and hence the importance of these direct markets for local growers has also increased. For example, the number of farmers' markets grew from 2,863 in 2000 to 7,175 by mid-2011, an increase of 151% in 10 years (USDA-AMS, 2011).

The purpose of this publication is to explore consumer demand and responsiveness to changes in the price of fresh produce sold through local direct markets in Utah, i.e., farmers' markets. It is important for local produce growers to understand the extent to which the quantity demanded responds to changes in price. This information will allow produce growers selling through direct markets to more effectively manage their pricing strategies, as well as assist growers in calculating the impact of price changes on their sales and total revenues.

## Survey and Data Overview

Survey data was collected from a total of 819 consumers at four urban farmers' markets in Western Utah (Logan, Kaysville, Salt Lake City, and Park City) and may not be applicable to farmers' market consumers in rural areas. The in-person surveys were completed during the 2011 summer season. Table 1 provides sample statistics for all survey respondents.

On average, respondents visit farmers' markets 4 to 7 times each season. A representative respondent is 39 years old with a 4-year college degree and an annual income of \$70,000. Family size among respondents is roughly 2.6 people. The majority (76%) is the primary shopper for the household, 63% have home gardens, 62% are female, and 59% are married. Our respondents are agriculture enthusiasts in that they value agricultural open space and support local farmers (rated very important, 4.2 on a scale of 1 to 5). They are also very



concerned about their diet/health and have food safety concerns (rated a 4.32 and 4.29 respectively, on a scale of 1 to 5). The farmers' market shoppers in this study have a higher annual household income, slightly smaller family size, are more likely to be female, and older than the average Utah resident (See US Census, 2011).

**Table 1: Survey Sample Statistics**

Consumer Characteristics	Mean
Primary shopper	76%
Number of visits per season	4 to 7
Home gardener	63%
Join CSA	52%
Food safety concerns	4.29
Diet/health concerns	4.32
Family size	2.64
Age	39
Female	62%
Married	59%
Annual household income	\$70,000
FM presence attributes	3.60
FM convenience attributes	3.66
Agriculture enthusiast	4.20
Income above mean	26%
Spent above mean at FM	49%
Observations	819

**Fresh Produce Demand**

Survey respondents were presented with a range of prices for each produce item and were asked to indicate the quantity (in pounds) they would be willing to purchase at each price level. Table 2 shows the results for the entire market (all respondents) for each of the three fresh produce items, green peppers, cucumbers, and yellow squash.

The results in Table 2 show consistency with the law of demand. For each produce type, the quantities that consumers stated they would buy decreased as price increased. For instance, at \$1.00, the market demands 590 pounds of green peppers, 581 pounds of cucumbers, and 562 pounds of yellow squash. When the price is \$4.00 pound, only 62 pounds of green peppers, 56 pounds of cucumbers, and 48 pounds of yellow squash are demanded (assuming the 819 survey respondents are the only buyers).

Figures 1 through 3 are demand curves reflecting the data in Table 2 for a representative consumer (average of all respondents). These demand curves, show a negative

relationship between quantity demanded and price. As prices go up, the stated quantity demanded decreases.

**Table 2: Stated Demand Schedules by Type**

Price/lb	Stated Market Demand (pounds)		
	Green Peppers	Cucumbers	Yellow Squash
\$1.00	589.58	581.50	561.50
\$1.50	415.37	397.50	400.50
\$2.00	250.90	214.17	216.50
\$3.00	110.00	95.25	94.00
\$4.00	62.00	55.75	48.00

**Consumer Response to Price Changes**

Demand functions for green peppers, cucumbers, and yellow squash were estimated using an ordinary least squares model. The products' price was the only variable considered to determine the quantity demanded. Other factors, such as income, tastes and preferences were assumed to be given. The results indicate that farmers' market consumers do not react strongly to price changes, as a given percentage change in the price results in a smaller percentage change in the quantity demanded. These findings show that farmers' market shoppers are less responsive to price changes for the three fresh produce items examined. Hence, produce growers selling at local direct markets could increase prices to specific limits and still observe increases in revenues, when serving urban consumers at farmers' markets (McConnell, Brue, and Flynn, 2012). As shown in Table 3, producer revenues are maxed at \$1.50/pound for each of the three items. Growers observing changes in consumer purchases due to incremental price changes between \$1.00 and \$2.00 will find the price at which revenues are maximized.

**Table 3. Total Revenues by Type**

Price/lb	Total Revenues		
	Green Peppers	Cucumbers	Yellow Squash
\$1.00	\$589.58	\$581.50	\$561.50
\$1.50	\$623.06	\$596.25	\$600.75
\$2.00	\$501.80	\$428.34	\$433.00
\$3.00	\$330.00	\$285.75	\$282.00
\$4.00	\$248.00	\$223.00	\$192.00



When the farmers' market consumers in this study were provided with the option to purchase the same three fresh produce items with a locally-produced label such as Utah's Own, the mean willingness to pay per pound across all respondents was \$4.00 for green peppers, \$2.21 for cucumbers, and \$2.25 for yellow squash. Premiums could increase total revenues substantially given market demand. Producers should weight the cost of local labeling program participation against anticipated revenues.

## Conclusions

This publication presents the results of a farmers' market consumer study conducted in the summer of 2011 at urban farmers' markets in Utah. Consumer stated demand functions and responsiveness to price changes for three fresh produce items were presented to illustrate the pricing growers can expect to receive for their fresh produce at local direct markets, as well as consumer responsiveness, in terms of quantity demanded, to changes in pricing.

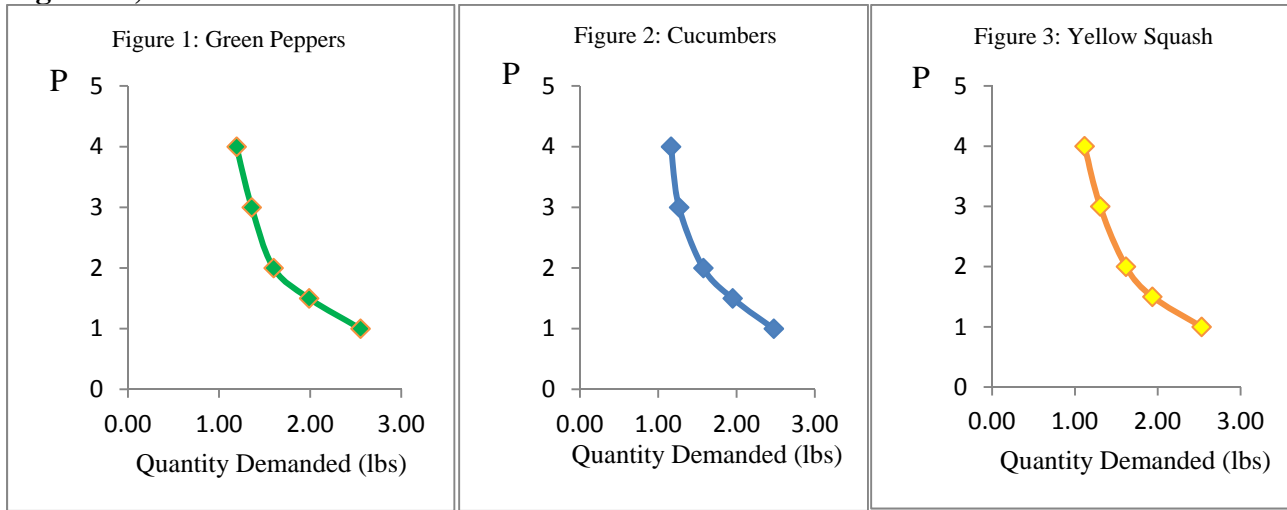
Results indicate that the quantities farmers' market consumers would purchase decreases as the price increases. But, consumer demand did not react strong to price changes, meaning that a percentage change in the

product price led to a smaller percentage change in the quantity demanded. Consumer stated demands show the potential for growers to price these produce items between \$1.50 and \$2.00/pound without decreasing revenues. Additionally, consumers were willing to pay a premium for produce labeled as locally grown.

## References

- McConnell, C., Brue, S., and Flynn, S. (2012). Principles of Microeconomics 19th edition. McGraw-Hill
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**Figures 1, 2 and 3: Stated Demand Curves.**



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