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Consumer Preferences and Willingness to Pay for Multi-Labeled Produce at Farmers' Markets

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Abstract

Differentiating products through labeling has been shown to be an effective strategy for increasing market share and pricing over undifferentiated products. This study examines consumer willingness to pay for multiple labeled (by both production type and origin) differentiated produce among farmers' market shoppers in Utah. Three primary differentiating claims are investigated, including conventionally grown of unknown origin, conventionally grown local (in state), and organically grown of unknown origin. Results indicate that consumer willingness to pay for products grown conventionally in Utah (locally) outweigh that for either organically or conventionally grown of unknown origin. Information on organic production practices increased the likelihood of purchasing products conventionally grown in Utah, while it had negative impacts on preferences for conventionally and organically grown of unknown origin. Results provide insight into the potential impact of certain labeling programs on grower revenues.

Keywords: Consumer willingness to pay, fresh produce, labeling, local, organic

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Introduction

Product differentiation is shown to be an effective strategy in increasing market share and pricing over undifferentiated products. Generally, product differentiation is revealed through labels. Labels convey specific information about attributes of products that otherwise look similar in the market place. Food labels, in particular, indicate production practices, origin, nutritional facts, etc. Examples of labels related to production practices include organic, grass-fed, natural, hormone or pesticide free, etc. Origin labels indicate a specific geographic area of production, such as region, state, or country.

Previous research suggests that consumers are willing to pay premiums for products exhibiting local origin and organic production labels. For example, Hu et al. (2012) find that consumers are willing to pay more for products labeled as produced in state or in a well-identified multi-state region. Carpio and Isengildina-Massa (2009) confirm this, finding that consumers in South Carolina are willing to pay premiums for locally produced foods. Several studies show consumers are willing to pay premiums for organic foods (Li et al. 2007; Govindasamy and Italia 1999; Huang 1996). Interestingly, Yiridoea, Bonti-Ankomah, and Martin (2005) report that consumer demand for organic produce depends on the price differential between the conventionally grown and organic product, rather than the price of the organic product alone. Curtis and Cowee (2011) suggest that the increased consumer demand for local and organic foods is a result of consumer food safety and health concerns. Environmental concerns have also been shown to motivate consumption of organic foods (Raab and Grobe 2005; Gifford and Bernard 2004).

While differentiation of foods by production method and origin is common at farmers' markets and in community supported agriculture (CSA) programs, consumer preferences for fresh produce with multiple labels sold through direct markets are not well documented (Howard and Allen 2010). A study by Onozaka and Thilmany-McFadden (2011), using web-based survey data of 1889 grocery store shoppers, found significant interactive effects between production practice and origin claims and concluded that consumers do differentiate some production claims if information on origin is provided, and vice versa. Hence, this study examines farmers' market consumer preferences and willingness to pay for labeled products by production method and origin. Results indicate that consumer willingness to pay and the probability of purchasing fresh produce grown conventionally in-state outweigh that for either organically or conventionally grown produce of unknown origin.

This study adds to the existing literature on consumer preferences for differentiated products, specifically the impact of combining origin and production labels. Results provide insight into the potential effectiveness of labeling programs and label combinations in securing price premiums for fresh produce. This information will assist produce growers who direct market their products to more effectively manage their production and pricing strategies.

Data Overview

Consumer preferences and willingness to pay for organically grown and conventionally grown local fresh produce were evaluated through in-person survey data collected from 819 consumers

at farmers' markets in Utah in the summer of 2011. The four farmers' markets were located on the Wasatch Front in Utah, resulting in a consumer sample from relatively highly populated urban areas. Table 1 provides an overview of the sample statistics and includes differences in consumer characteristics, attitudes, and concerns for those respondents who prefer conventional local and those who prefer organic produce of unknown origin.

Table 1. Survey Sample Statistics

Variables	Most Important Label		Overall Sample
	Conventional Local	Organic Unknown Origin	Mean
Primary shopper	77%	77%	76%
FM visits per season	4 to 7	4 to 7	4 to 7
Home garden	67%*	60%	63%
Join CSA	57%	54%	52%
Food safety concerns (1-5 scale)	4.31***	4.42	4.29
Diet/health concerns (1-5 scale)	4.32**	4.46	4.32
Family size (# people)	3	3	3
Age (years)	40*	36	42
Female	66%	60%	62%
Married	59%	56%	59%
Annual Income (\$USD)	\$70,451	\$76,771	\$70,000
FM presence attributes (1-5 scale)	3.57*	3.64	3.60
FM convenience attributes (1-5 scale)	3.66	3.67	3.66
Agriculture enthusiast (1-5 scale)	4.31	4.18	4.20
Environmental shopper (1-5 scale)	3.43**	3.62	3.52

Statistically significant differences between local and organic label importance at the 1% (***), 5% (**) and 10% (*) levels respectively.

The majority of the respondents are married females in their early 40's who shop at farmers' markets often and serve as the primary shopper for their household. More than half of the respondents have a home garden and indicate they would join a CSA program. A representative average respondent is 42 years old with a 4-year college degree, with an annual household income of \$70,000. The average household size is roughly 3 people. In general, respondents had strong food safety and diet/health concerns, rated at 4.29 and 4.32 out of a possible 5. This result is consistent with previous studies finding similar concerns among farmers' market shoppers (Curtis and Cowee 2011). Respondents also rated agricultural open space and supporting local farmers as very important (agriculture enthusiast). Purchasing items with low environmental impact (environmental shopper) and farmers' market convenience (location, parking, hours, etc.) and presence (events, activities, arts and crafts) attributes were rated as at least important (rated 3.52, 3.66 and 3.6 respectively)

Respondents that prefer organic produce are younger, higher income individuals with strong food safety and diet/health concerns. They are less supportive of local agriculture, but place a higher importance on purchasing products with low environmental impact. Those that prefer local origin are more often home gardeners, more likely to join a CSA program and place a higher importance on agricultural open space and supporting local farmers. They are also more

likely to be female and married. They are less interested in the additional activities at farmers' markets such as concerts/music, family activities, and food vending (FM presence attributes).

Preferred Label Results

Respondents were asked to indicate their preferences between organically grown of unknown origin, conventionally grown local and conventionally grown of unknown origin for three produce items. Figure 1 illustrates respondent preferences for green peppers, cucumbers, and yellow squash. As shown, the majority of respondents prefer locally grown produce followed by organically grown produce. For example, 61% of all respondents would purchase conventionally grown local green peppers, 26% would buy organically grown of unknown origin, while only 13% would purchase conventionally grown of unknown origin. For cucumbers, 66% of all respondents would purchase conventionally grown local, 25% would buy organically grown of unknown origin, while only 9% would buy conventionally grown of unknown origin. Results for yellow squash follow the same trend. Differences are statistically significant at the 10% level or better.

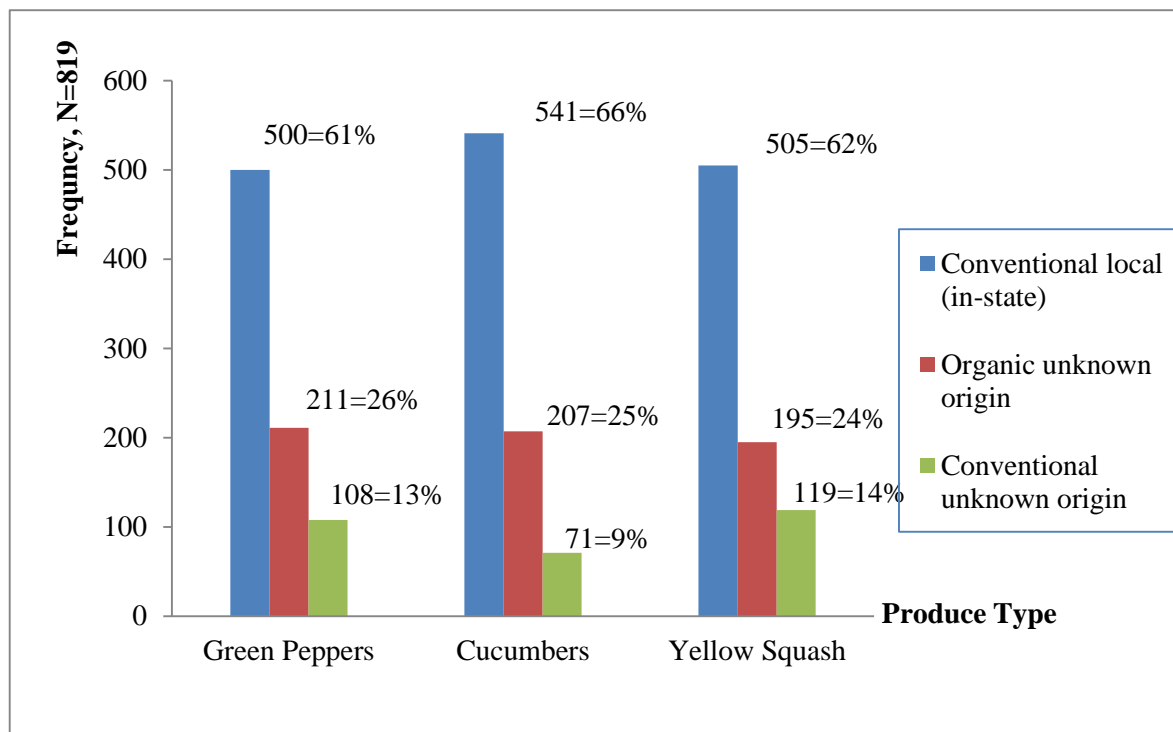


Figure 1. Consumer Preferences by Production Method/Origin

Additionally respondents were asked “When purchasing fresh produce, which label is most important?” An overview of their responses is given in Table 2. Sixty percent responded that they most preferred a product of Utah (in-state). The second most important label was “a product of USA” (20%) and 12% of the respondents preferred organic produce regardless of origin. Few respondents preferred foods from outside the US.

Table 2. Preferred Labels

Label	Frequency	Percentage
A product of UT (Local)	493	60%
A product of US (Domestic)	160	20%
A product from outside the US (Foreign)	17	2%
Organic regardless of origin	96	12%
Natural regardless of origin	38	5%
Other	15	1%
<i>Number of Observations</i>	819	100%

Willingness to Pay Results

For each fresh produce item, respondents were presented with differing prices for conventional of local origin and organic of unknown origin and asked to indicate which produce item they would choose. Twenty versions of the survey were distributed representing prices ranging from a 30% discount to a 100% premium over the current price of the conventional of unknown origin item. The price of the conventional of unknown origin item was identical across survey version. A random utility model, estimated via conditional logit (Greene 2008) was used to estimate preferences for each produce item and label combination. Table 3 provides average WTP results and associated imputed confidence intervals in terms of price per pound for green peppers, cucumbers, and yellow squash.

Results in Table 3 indicate that on average, consumers at farmers' markets are willing to pay more per pound for fresh produce conventionally produced in-state than organic or conventionally produced of unknown origin. Interestingly, consumer WTP for organic produce was lower than the price of conventionally grown of unknown origin produce in the case of green peppers and yellow squash, actually denoting the need for a price discount (\$2.49 for green peppers and \$1.89 for yellow squash). Specifically, consumers were willing to pay \$4.00 per pound for green peppers conventionally grown in Utah. They were willing to pay \$1.94 per pound green peppers that are organically grown of unknown origin. The WTP for a pound of local conventional cucumbers was \$2.21 while the WTP for a pound of organic cucumbers from an unknown location was \$1.25. Consumers at farmers' markets are willing to pay \$2.25 for a pound of conventionally grown local yellow squash and \$1.00 for those that are organically grown of unknown origin.

Table 3. Willingness to Pay Estimates by Produce Type (\$/Pound)

WTP & Confidence Intervals	Green Peppers		Cucumbers		Yellow Squash	
	Conventional Local	Organic Unknown Origin	Conventional Local	Organic Unknown Origin	Conventional Local	Organic Unknown Origin
WTP	\$4.00	\$1.94	\$2.21	\$1.25	\$2.25	\$1.00
Lower limit	\$3.02	\$1.29	\$1.47	\$.80	\$1.79	\$.69
Upper limit	\$5.73	\$2.86	\$4.50	\$2.38	\$3.00	\$1.36

Conclusions

Consumer survey data collected at attended farmers' markets in Utah in 2011 is used to assess consumer preferences and willingness to pay for differentiated fresh produce. The majority of respondents preferred locally grown produce followed by organically grown produce and conventionally grown of unknown origin. Consequently, willingness to pay for conventionally grown local produce is higher than organically grown of unknown origin. This study provides valuable information for local growers regarding the opportunity for price premiums when using origin labels alone or in conjunction with production labels, such as organic, although target consumers differ in some respects. For example, consumers with strong preferences for organic produce are younger, higher income individuals, with strong diet/health concerns and are less likely to have a home garden or join a CSA program.

The results suggest that there is a viable market for local produce growers who label their produce with origin information or use a state or regional designated labeling program. Consumer preferences and pricing estimates should be weighed against the cost of participation in labeling and/or certification programs.

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