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COOL AND CONSUMERS' WILLINGNESS TO PAY IN THE FRESH PRODUCE INDUSTRY – SOME INITIAL IMPRESSIONS FROM THE FIELD

By

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Abstract

The debate about Country-of-Origin labeling (COOL) has centered on the projected benefits and costs of its implementation. This study uses data from a Vickery auction (n=320) to estimate willingness to pay for COOL. Preliminary findings suggest, on average, consumers value COOL, are not homogenous, and prefer fresh produce grown in the U.S.

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A Selected Paper for presentation at the Southern Ag. Econ. Association Meetings
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Introduction

The 2002 Farm Bill includes provisions for Country of Origin Labeling (COOL), which will require retailers to inform consumers of the country of origin for several fresh commodities. The debate on these provisions has centered on the potential benefits as they relate to the anticipated costs of implementing this legislation. In order to help inform this debate, the authors of this paper initiated a research project on consumer preferences for COOL. More specifically, the research project's primary objective is to measure the degree to which consumers are willing to pay for fresh produce with labeling that identifies products by their country of origin, and/or if this willingness is affected by the particular country of origin.

As this research is on going, this paper offers limited insights and no conclusive findings. However, an initial review of the data collected to date does suggest that there may be price differentials (i.e., differing levels of willingness to pay) based on information about the country of origin of fresh produce.

Background

With the public debate about the costs and benefits of COOL continuing both in the trade press and in the halls of the U.S. Congress, researchers are beginning to publish findings on consumer demand and willingness to pay for COOL products. However, to date, this literature is still rather limited, particularly for the fresh produce industry.

There have been a number of symposia and sponsored workshops on topics closely related to COOL. Examples are the FAMPS-coordinated workshops in January 2002, *The Economics of Assurance and Traceability in the US Food System,* and in March 2003, *Emerging Roles for Food Labels: Inform, Protect, Persuade,* and the ERS/Farm Foundation sponsored conference in January 2003, *Product Differentiation and Market Segmentation in Grains and Oilseeds: Implications for an industry in transition.* Specific published studies that have researched COOL include a comprehensive background report by the General Accounting Office, a consumer survey that interviewed consumers at grocery stores in Colorado in order to assess preferences for COOL with beef products (Loureiro and Umberger), and a mail survey of Louisiana households that estimated consumers' support for mandatory COOL (Schupp and Gillespie). Other studies have examined the potential structural and economic impacts of COOL (Carter and Zwane; Grier and Kohl).

Although all of this literature helps inform the debate about COOL, definitive conclusions about the full costs and benefits of COOL remain elusive. This paper and the research from which it is drawn are intended to contribute to this end goal.

Data and methods

This paper reports preliminary data from personal interviews and an experimental auction conducted in three different markets to estimate the willingness of consumers to pay for labeling for country of origin. The three markets were Gainesville, Florida, Lansing, Michigan, and Atlanta, Georgia. A total of 360 observations were collected, 148 in Gainesville, 77 in Lansing, and 135 in Atlanta. Twenty-one observations from the Gainesville data, fifteen from Atlanta, and four from the Lansing data were deleted due to

missing data or respondents not meeting the necessary conditions of age between 25 and 65 years and being the primary shopper. The total usable observations are 320. Table 1 shows the demographic profile of the 320 respondents and compares this to U.S. Census data. The participants were older, had higher incomes, had lower minority representation and were more educated than the average U.S. citizen. A high proportion of the sample was female (88.6%), which was expected as the research protocol requested that only primary shoppers be included in the sample population. Since there are clear discrepancies between the demographic profiles of the 320 respondents relative to the U.S. census profiles for all consumers, the observations reported in this paper must be treated with caution.

Table 1: Demographic summary of respondents

Category	U.S. Census Average (%)	Sample Average (%)
Age		
25-34	27	10.0
35-44	31	42.2
45-54	26	36.6
55-65	16	11.3
Race		
White	75	86.9
Black or African American	12	7.8
Asian	4	1.9
Other	9	3.4
Ethnicity		
Hispanic	12	3.4
Income		
<$15,000	15.2	2.9
$15,000 - $24,999	13.2	6.4
$25,000 - $34,999	12.3	8.7
$35,000 - $49,999	15.1	11.9
$50,000 - $74,999	18.3	25.0
$75,000 - $99,999	11.0	17.6
$100,000 or above	14.1	27.6
Education		
Bachelors Degree or higher	24	63.8

Some College	27	26.0
High School Degree (or equivalent)	29	9.3
Less than High School	20	0.9

The respondents were recruited through local civic organizations, and these organizations were compensated for these efforts and for supplying meeting facilities in which to conduct the studies. During a two-hour session, each respondent participated in two auctions, and then completed a questionnaire about his/her produce buying habits and stated preferences for fresh produce and labeling.

The auctions were modeled as random 5th price auctions (Vickery) such that each respondent bid on identical products that differed only in the information provided by labels on some of the available products. This type of experimental method for valuation of consumer demand is used because it provides robust measures of consumer willingness-to-pay in a non-hypothetical market. This method has advantages over typical survey methods when attempting to elicit willingness-to-pay measures (Fox et al.). With experimental methods, as opposed to survey techniques, the incentive structure is designed such that participants will reveal their true valuation of a good (Shogren et al.).

The first phase of the initial auction involved endowing the participants with one pound of either apples or tomatoes and $10 cash and then having the participants bid on how much they would be willing to pay to exchange their unlabeled fresh produce (either apples or tomatoes) for an equal amount of apples or tomatoes labeled “Grown in the United States.” Considerable efforts were made to closely match all other visible attributes between the fruit that was endowed to the participants and the labeled fruit (e.g., size, degree of coloring and blemishes, variety).

152 participants were given one pound of apples and the average bid to exchange one pound of unlabeled apples for one pound of apples labeled “Grown in the United States” was $0.47. Thirty-three of the respondents (i.e., 21.7%) were not willing to pay anything to exchange their apples. Figure 1 shows the frequency of willingness to pay to exchange apples.

In the second phase of this auction, respondents were then informed where their pound of apples was grown and asked to bid again to trade their apples (location now known) for the pound of apples labeled “Grown in the U.S.” Participants were either told their apples were from Chile (67 participants: 21 each in Gainesville and Lansing, and 25 in Atlanta), China (42 participants: 17 in Gainesville, 25 in Atlanta), or New Zealand (43 participants: 21 in Gainesville, 22 in Atlanta). Average willingness-to-pay declined in the cases of Chile ($0.40) and China ($0.46), but increased when the apples were from New Zealand ($0.86). However, there were differences between the cities. For the apples from Chile, the average willingness-to-pay to trade the Chilean apples for apples identified as Grown in the United States increased to $0.48 in Gainesville and $0.49 in Atlanta and decreased to $0.22 in Lansing. For the apples from China, the average willingness-to-pay to trade the Chinese apples for apples identified as Grown in the United States decreased to $0.20 in Gainesville and increased to $0.63 in Atlanta. For the apples from New Zealand, the average willingness-to-pay to trade the New Zealand apples for apples identified as Grown in the United States increased to $0.63 in Gainesville and increased to $1.07 in Atlanta. Willingness-to-pay to exchange apples when the source is known is shown in Figures 2, 3 and 4.

Figure 1

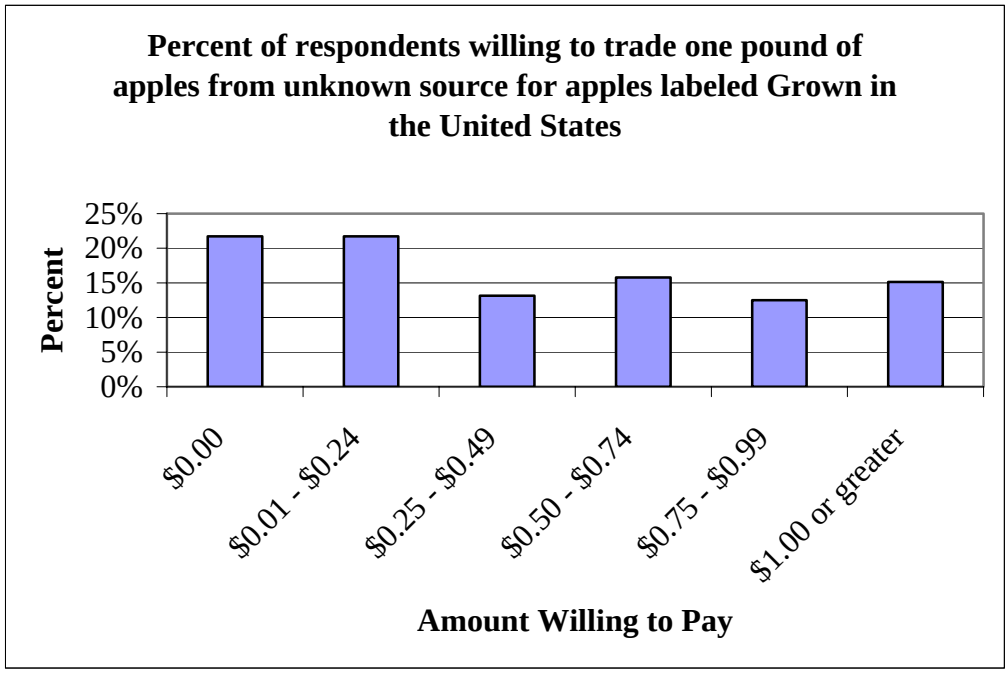


Figure 2

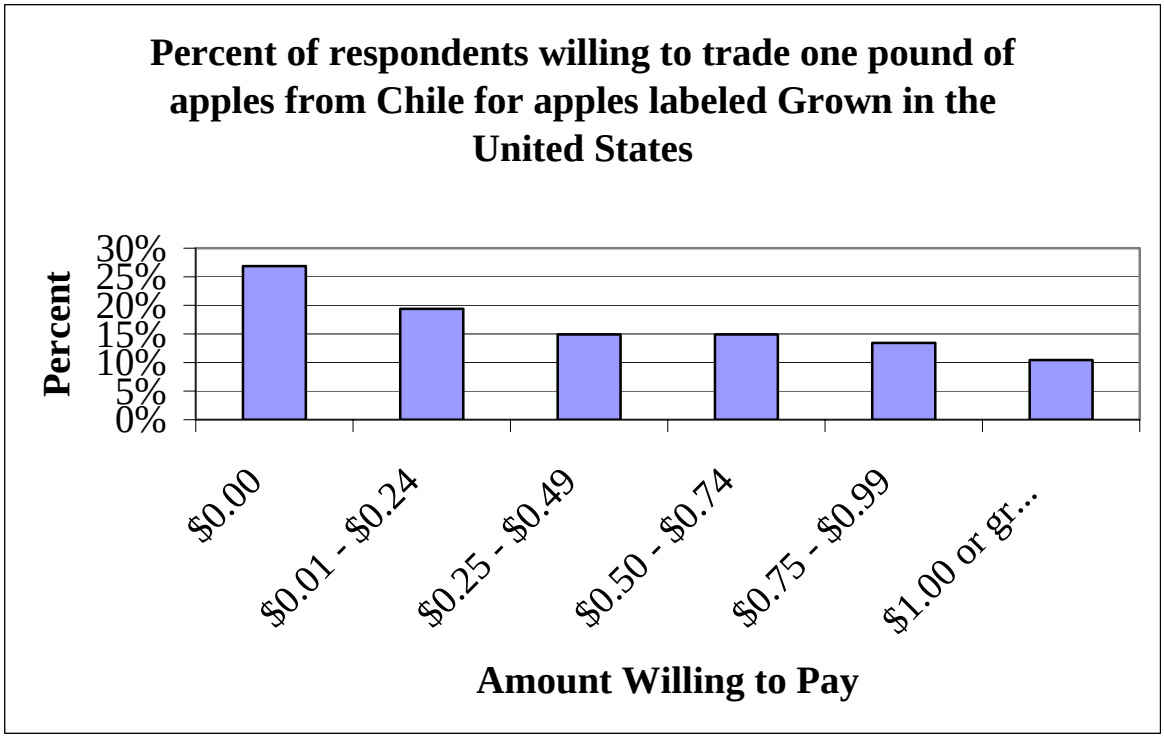


Figure 3

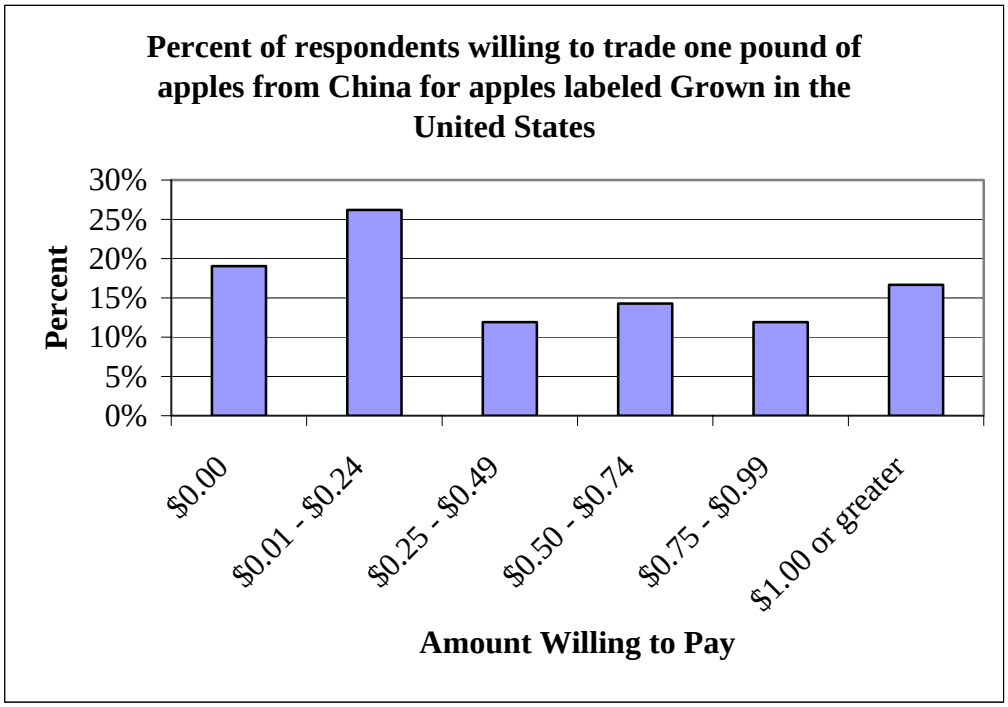
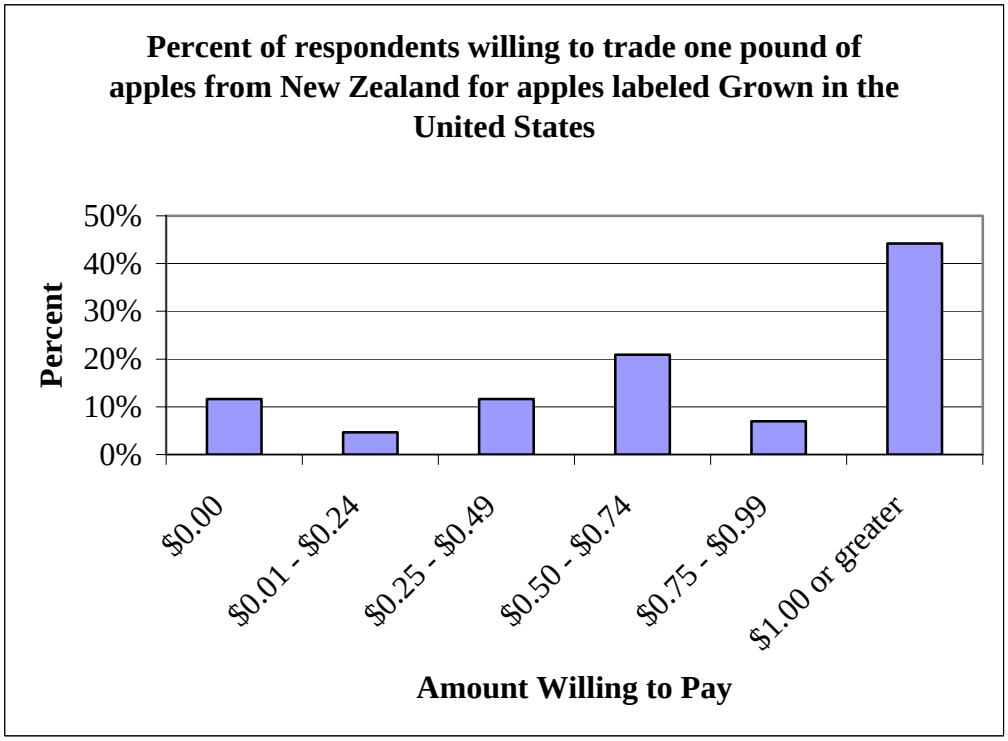


Figure 4



Similarly, 168 participants were given one pound of tomatoes and the average bid to exchange one pound of unlabeled tomatoes for one pound of tomatoes labeled "Grown in the United States" was $0.52. Fifty-three, or 31.5%, of the respondents were not willing to pay anything to exchange their tomatoes. Figure 5 shows the frequency of willingness-to-pay to exchange tomatoes.

Participants were then informed where their pound of tomatoes was grown and asked to bid again to trade their tomatoes (location now known) for the pound of tomatoes labeled "Grown in the U.S.". Participants were either told their tomatoes were from Mexico (93 participants: 47 in Gainesville, 25 in Lansing, and 21 in Atlanta) or Canada (75 participants: 22 in Gainesville, 26 in Lansing, and 27 in Atlanta).

Average willingness-to-pay increased in the case of Mexico ($0.90) and decreased in the case of Canada ($0.36). When comparing respondents among cities, the average willingness-to-pay to trade the Mexican tomatoes for tomatoes identified as Grown in the United States increased to $1.23 in Gainesville and $0.77 in Lansing, while it decreased to $0.41 in Atlanta. For the tomatoes identified as Grown in Canada, average willingness-to-pay to trade the Canadian tomatoes for the tomatoes labeled Grown in the U.S. increased to $0.57 in Gainesville and decreased to $0.21 in Lansing and $0.33 in Atlanta. Willingness-to-pay to exchange tomatoes when the source is known is shown in Figures 6 and 7.

Figure 5

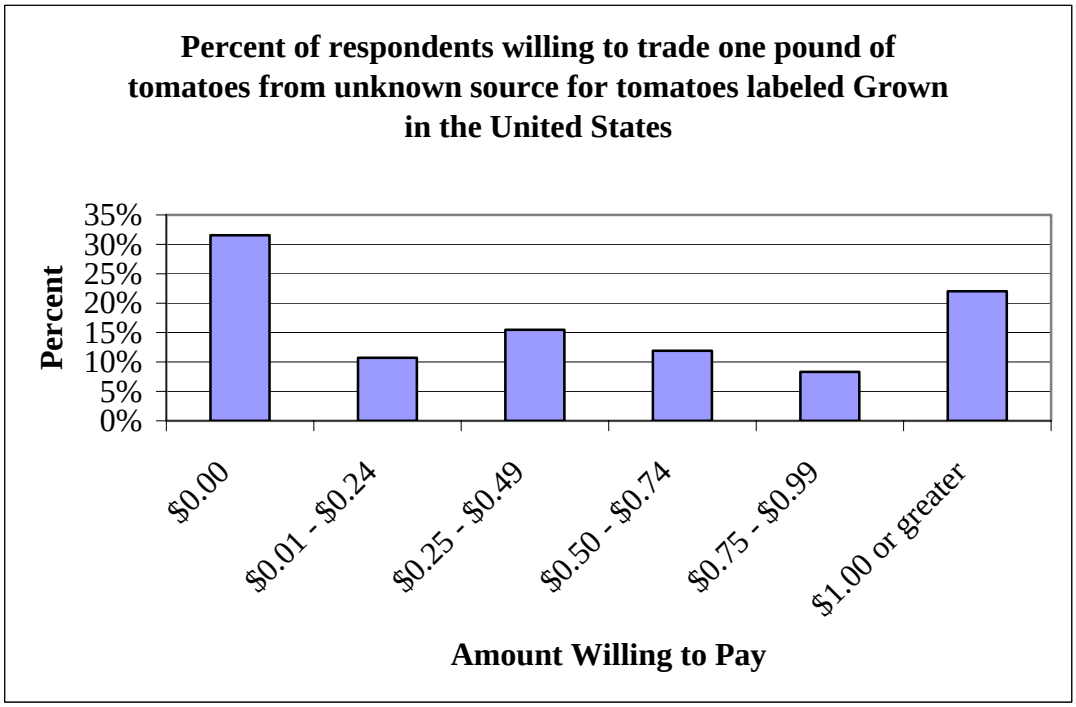


Figure 6

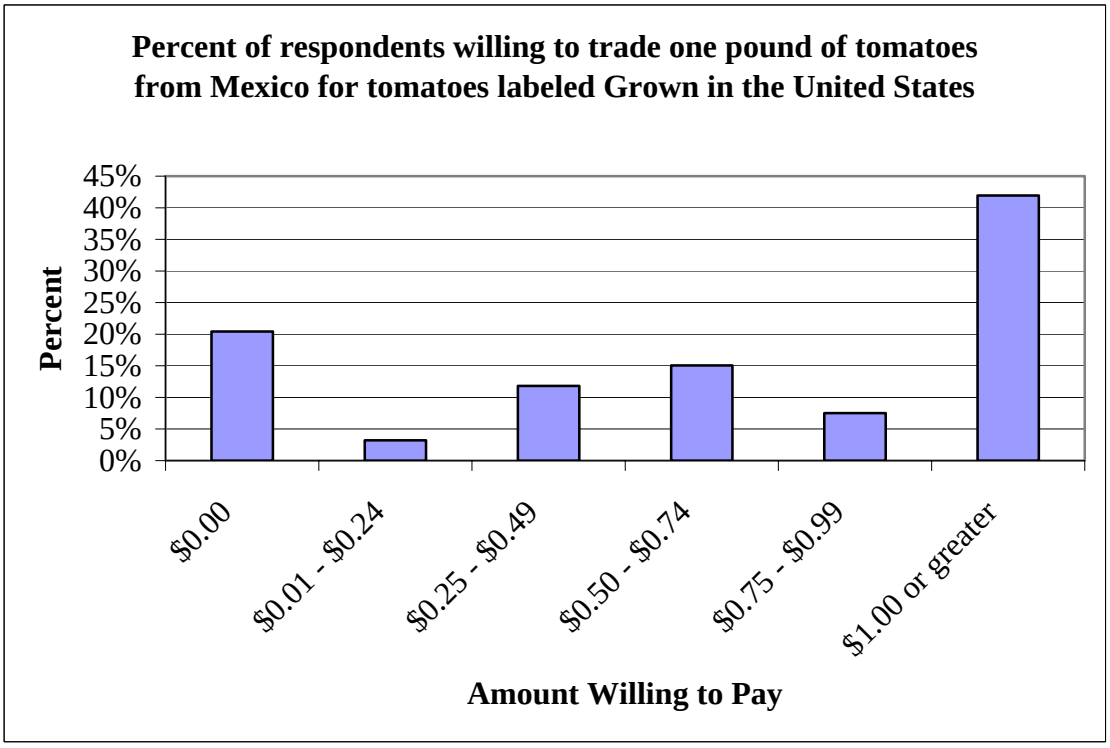
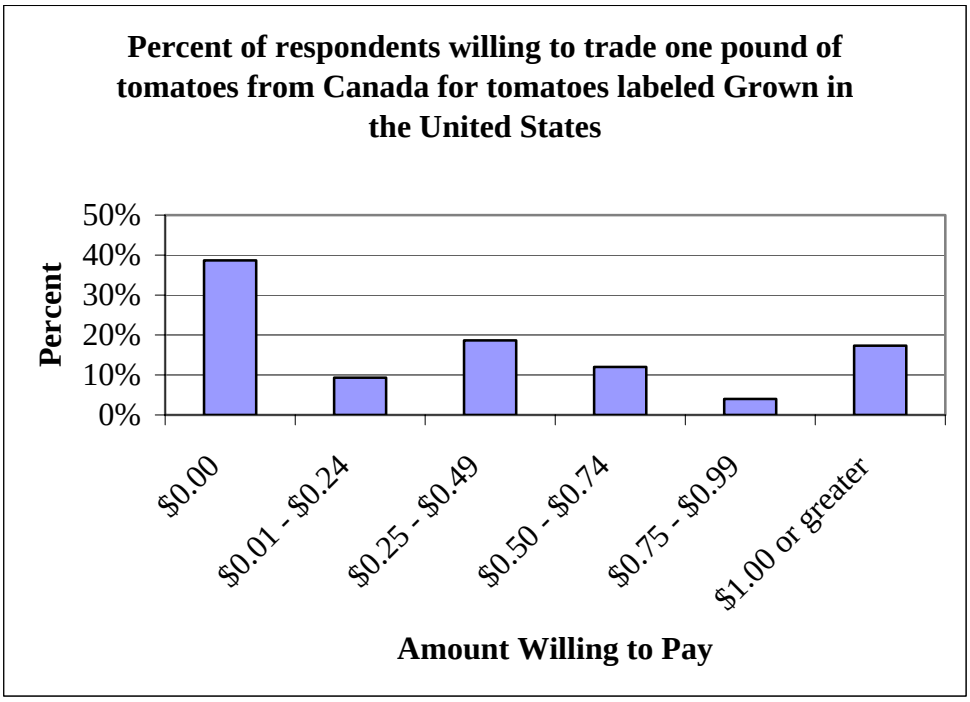


Figure 7



After completing the first auction, participants were then introduced to a second auction. In this second auction, participants were shown one-pound sets of apples or tomatoes, with each pound from a different country. In the case of apples, participants were shown five one-pound sets of apples, one pound each from the United States, Chile, China, New Zealand, and Canada. In the case of tomatoes, participants were shown four one-pound sets of tomatoes, one each from the United States, Mexico, Canada, and the Netherlands. Participants were then asked to bid how much they would be willing to pay for each individual pound of apples (or tomatoes) as if they were in the grocery store and that was the pound of apples (or tomatoes) that was available for purchase. It should be noted that participants who bid on apples in the first auction, were presented with choices

for tomatoes in the second auction, while those who bid on tomatoes in the first auction were presented with choices for apples in the second auction.

Average willingness-to-pay (n=168) for a pound of apples was highest for U.S. apples ($1.19/pound) compared to $0.92 from Canada, $0.86 from New Zealand, $0.58 from Chile, and $0.44 from China. Willingness-to-pay did differ between Gainesville (n=69), Lansing (n=51) and Atlanta (n=48) participants as shown in Figure 8.

When given a choice of tomatoes from four different countries, average willingness-to-pay (n=152) for a pound of tomatoes was highest for U.S. tomatoes ($1.31/pound), compared to $0.96 from the Netherlands, $0.91 from Canada, and $0.81 from Mexico. Willingness-to-pay did differ between Gainesville (n=59), Lansing (n=21), and Atlanta (n=72) participants as shown in Figure 9.

Figure 8:

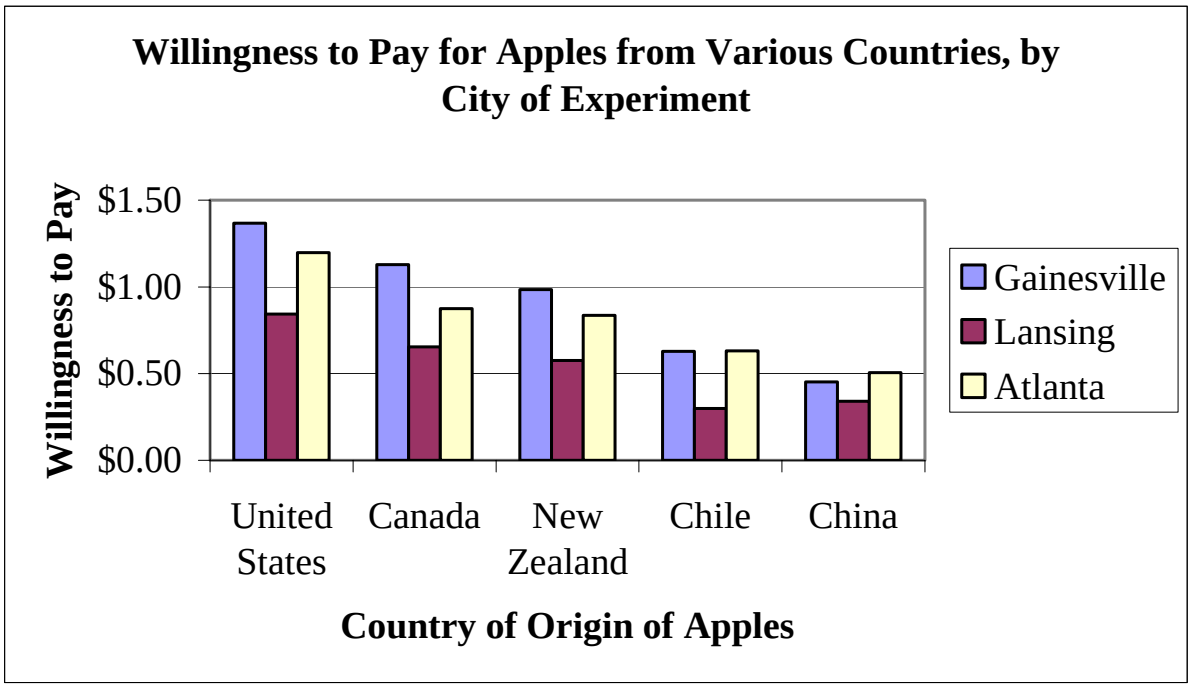
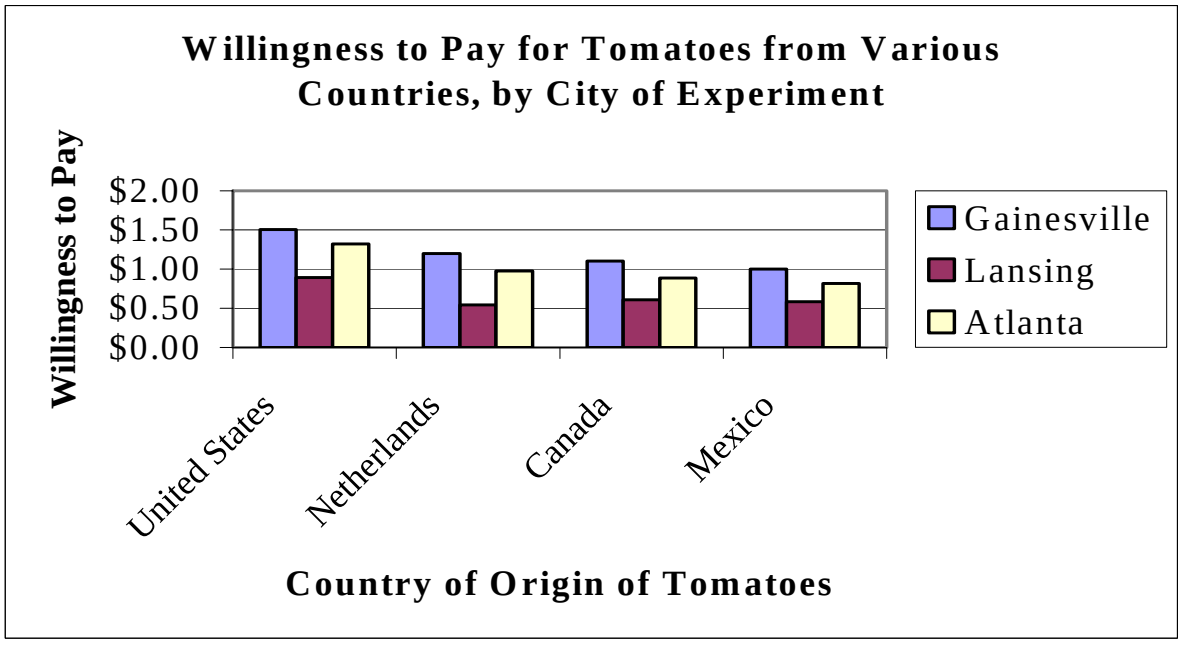


Figure 9:



Impressions and Observations to Guide Further Research

As has been noted already, these data are preliminary and possibly non-representative of all U.S. consumers. Once the research is complete, a more comprehensive set of conclusions will be drawn. But from this initial research, several impressions and observations are that:

- Consumers appear to respond to more information, but there appears to be heterogeneous preferences among consumers, and hence, not all consumers react to the same information in the same manner.

- Consumer perceptions about fresh produce from different countries of origin may vary by U.S. geographic regions.

- Consumer perceptions about fresh produce from different countries of origin may vary by type of produce (e.g., a tomato from a particular country may merit a price premium while an apple from the same country may be penalized in terms of the price a consumer is willing to pay for it).

- Previous exposure to COOL may increase consumer willingness-to-pay for US fresh produce (i.e., the respondents in Gainesville, generally were willing to pay more for U.S. grown produce, which may be a result of Florida's already well-established state-mandated COOL program and the absence of such a state-level program in Michigan and Georgia).

- On average, U.S. consumers likely favor U.S. grown fresh produce, and may even be willing to pay a price premium for it.

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