Consumers’ Willingness to Pay for Local CEA Vegetables: The Case of Tomato & Lettuce

Irin Nishi, Neil Mattson, Miguel I. Gómez,
Cornell University
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Market for locally grown

• National market demand for “local food” has expanded from $1 billion to $7 billion in the last 9 years
• Consumer demand and sales for locally-sourced vegetables at Whole Foods have doubled since 2012
• *Locally grown* - top produce trend for 2015 – National Restaurant Association
## New York State Greenhouse Vegetables

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2007</th>
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</thead>
<tbody>
<tr>
<td>Production Operations</td>
<td>435</td>
<td>201</td>
</tr>
<tr>
<td>Wholesale Value (millions)</td>
<td>27.4</td>
<td>17.7</td>
</tr>
<tr>
<td>Acres of greenhouses</td>
<td>114</td>
<td>69</td>
</tr>
</tbody>
</table>

Growth in greenhouse vegetables, 54% increase in value in 5 years

Ranks 2\textsuperscript{nd} in U.S. for greenhouse vegetables

USDA NASS, Census of Agriculture
Consumers willingness to pay for local CEA vegetables: The case of tomato and lettuce

- To measure differences in consumer willingness to pay for lettuce and tomatoes with:
  - Different origins (New York State vs. Out-of-State) and
  - Grown under different production systems (CEA vs. field-grown)

- To examine whether more detailed information about origin and production system affects consumer willingness to pay
Controlled Experiment
Experimental Procedures

• Subjects were presented 4 categories of tomatoes and 4 categories of lettuce (CEA-NYS, field-NYS, CEA-out-of-state and field-out-of-state)

• Subjects indicated their maximum WTP for 8 ounces of each tomato and 8 ounces of each lettuce type

• They also completed a survey at the end of the experiment (demographic and behavior data)
Beefsteak Tomato and Baby Lettuce Mix
Tomato categories:

- A: Greenhouse NYS
- B: Field-NYS
- C: Greenhouse Out-of-State
- D: Field-Out-of-State
Experimental Procedures: Data

- Tomato: 428 observations from 107 subjects
- Lettuce: 444 observations from 111 subjects

- 6 experimental sessions in total:
  - Session 1, 2 & 3: subjects were informed about the production systems and origins of the tomatoes and lettuce
  - Session 4, 5 & 6: subjects received more information regarding the production systems and origins (availability, food miles and job opportunity) of tomatoes and lettuce
Sessions Without Information

**Tomato types**

**Tomato A:** Greenhouse-grown in New York State (NYS)

**Tomato B:** Field-grown in New York State (NYS)

**Tomato C:** Greenhouse-grown in Out-of-State

**Tomato D:** Field-grown in Out-of-State
Sessions With Information

**Greenhouse-grown in New York State (NYS)**

Greenhouses allow growers to control growing conditions to produce NYS-grown tomatoes available year-round.

Tomatoes produced within NYS travel on average 150 miles to market.

Generate NYS jobs year-round (1 job per 40 tons harvested)

**Field-grown in New York State (NYS)**

Less control over growing conditions, so NYS-grown tomatoes available five months of the year.

Tomatoes produced within NYS travel on average 150 miles to market.

Generate NYS jobs five months of the year (about 1 job per 40 tons harvested)
Average WTP: Beefsteak Tomato

- CEA NYS: $1.53
- Field NYS: $1.69
- CEA Out-of-state: $1.23
- Field Out-of-state: $1.28
Average WTP: Baby Lettuce Mix

<table>
<thead>
<tr>
<th></th>
<th>CEA NYS</th>
<th>Field NYS</th>
<th>CEA Out-of-state</th>
<th>Field Out-of-state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average WTP</td>
<td>$1.84</td>
<td>$1.84</td>
<td>$1.57</td>
<td>$1.52</td>
</tr>
</tbody>
</table>
## Results: Price Premiums

<table>
<thead>
<tr>
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<th>Tomato</th>
<th>Lettuce</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NYS vs. Out-of-state</strong></td>
<td>$0.36</td>
<td>$0.27</td>
</tr>
<tr>
<td><strong>CEA vs. Field</strong></td>
<td>No difference</td>
<td>No difference</td>
</tr>
<tr>
<td><strong>Info vs. No-info</strong></td>
<td>No difference</td>
<td>No difference</td>
</tr>
</tbody>
</table>
Conclusions

• Consumers are willing to pay 30% price premiums for New York State grown tomatoes and 18% price premium for New York State grown lettuce

• Consumers are indifferent about the production systems for both tomato and lettuce

• Providing detailed information about the production system/origin does not affect consumer WTP for both tomato and lettuce

• Locally grown vegetables have the potential to become a commercial success in the NYS
Thank you!

Questions, Comments?

mig7@cornell.edu