Consumer Demand Trends and Issues in Quality and Safety

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University of California, Davis

for
UCD Postharvest Technology Short Course

June 19, 2015

Fresh Produce Consumption Trends
Factors affecting demand for fresh produce

- Commodity price, consumer income, prices of substitutes and complements, population growth rates, ethnicity, culture
- Quality: appearance, flavor, color, shape and size; more breeder emphasis on flavor
- Info on produce selection, ripening, recipes
- Convenience in prep, usage and consumption; packaging role
- Shelf-life, postharvest technology

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Factors affecting demand for fresh produce

- Consistent availability, year-round supply
- Retail has now gone beyond store, online, mobile, and tablets. Consumers are becoming channel and device-agnostic, making the provision of seamless shopping experiences across all channels and touch points imperative.
- Growing role of social media
- How, where and by whom products were grown
### Top 10 Fruit Sales and Pricing in Key US Food Retailers, 2014 vs. 2013

<table>
<thead>
<tr>
<th>Product</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2013</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2013</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berries</td>
<td>$4,019</td>
<td>4.7</td>
<td>1,342</td>
<td>3.0</td>
<td>$2.99</td>
<td>1.7</td>
</tr>
<tr>
<td>Apples</td>
<td>$3,070</td>
<td>-0.1</td>
<td>1,953</td>
<td>2.0</td>
<td>$1.57</td>
<td>-2.0</td>
</tr>
<tr>
<td>Citrus</td>
<td>$2,797</td>
<td>4.8</td>
<td>2,212</td>
<td>-2.6</td>
<td>$1.26</td>
<td>7.6</td>
</tr>
<tr>
<td>Grapes</td>
<td>$2,774</td>
<td>3.1</td>
<td>1,228</td>
<td>-3.6</td>
<td>$2.26</td>
<td>6.9</td>
</tr>
<tr>
<td>Bananas</td>
<td>$2,721</td>
<td>-1.2</td>
<td>4,762</td>
<td>-0.9</td>
<td>$0.57</td>
<td>-0.3</td>
</tr>
<tr>
<td>Melons</td>
<td>$1,216</td>
<td>3.7</td>
<td>2,187</td>
<td>7.8</td>
<td>$0.56</td>
<td>-3.9</td>
</tr>
<tr>
<td>Avocados</td>
<td>$1,197</td>
<td>11.8</td>
<td>1,071</td>
<td>2.7</td>
<td>$1.12</td>
<td>8.9</td>
</tr>
<tr>
<td>Stone Fruits</td>
<td>$987</td>
<td>2.4</td>
<td>515</td>
<td>-9.7</td>
<td>$1.91</td>
<td>13.3</td>
</tr>
<tr>
<td>Cherries</td>
<td>$623</td>
<td>-3.4</td>
<td>198</td>
<td>9.1</td>
<td>$3.15</td>
<td>-11.5</td>
</tr>
<tr>
<td>Specialty Fruits</td>
<td>$528</td>
<td>-2.7</td>
<td>491</td>
<td>-9.6</td>
<td>$1.08</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2014, United Fresh Produce Association and Nielsen, March 2015.

### Top 10 Vegetable Sales and Pricing in Key US Food Retailers, 2014 vs. 2013

<table>
<thead>
<tr>
<th>Product</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2013</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2013</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaged Salad</td>
<td>$3,553</td>
<td>7.8</td>
<td>1,301</td>
<td>5.0</td>
<td>$2.73</td>
<td>2.6</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>$2,590</td>
<td>1.8</td>
<td>1,165</td>
<td>-0.1</td>
<td>$2.22</td>
<td>1.9</td>
</tr>
<tr>
<td>Potatoes</td>
<td>$2,561</td>
<td>1.9</td>
<td>3,712</td>
<td>-2.8</td>
<td>$0.69</td>
<td>4.9</td>
</tr>
<tr>
<td>Cooking Vgs</td>
<td>$1,806</td>
<td>3.5</td>
<td>1,097</td>
<td>3.4</td>
<td>$1.65</td>
<td>0.1</td>
</tr>
<tr>
<td>Onions</td>
<td>$1,564</td>
<td>0.1</td>
<td>1,578</td>
<td>-0.3</td>
<td>$0.99</td>
<td>0.4</td>
</tr>
<tr>
<td>Peppers</td>
<td>$1,412</td>
<td>4.5</td>
<td>640</td>
<td>2.4</td>
<td>$2.21</td>
<td>2.0</td>
</tr>
<tr>
<td>Lettuce</td>
<td>$1,279</td>
<td>-3.6</td>
<td>714</td>
<td>-1.0</td>
<td>$1.79</td>
<td>-2.6</td>
</tr>
<tr>
<td>Carrots</td>
<td>$906</td>
<td>-0.8</td>
<td>536</td>
<td>-1.7</td>
<td>$1.69</td>
<td>1.0</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>$842</td>
<td>1.6</td>
<td>345</td>
<td>-0.6</td>
<td>$2.44</td>
<td>2.2</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>$744</td>
<td>4.3</td>
<td>750</td>
<td>2.1</td>
<td>$0.99</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2014, United Fresh Produce Association and Nielsen, March 2015.
### Fresh-cut, Organic and Total Fresh Fruit and Vegetable Sales in Key US Food Retailers, % Change 2014 vs 2013

<table>
<thead>
<tr>
<th></th>
<th>Organic Fruit</th>
<th>Organic Veg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly $ sales/store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly quantity sold/store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshcut Fruit**</td>
<td>12.0</td>
<td>17.3</td>
</tr>
<tr>
<td>Salads</td>
<td>9.7</td>
<td>17.2</td>
</tr>
<tr>
<td>Fresh Cut Veg</td>
<td>10.9</td>
<td>10.7</td>
</tr>
<tr>
<td>Fresh Cut Veg</td>
<td>7.8</td>
<td>12.5</td>
</tr>
</tbody>
</table>

*Excludes other produce (such as salad dressings, toppings, etc.), which is 10% of produce dept sales dollars and 5% of quantity.

**Excludes overwrap.

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2014, United Fresh Produce Association and Nielsen, March 2015. Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. It includes UPC, random weight and retailer assigned codes.

### Organic Fruit and Vegetable Sales and Pricing in Key US Food Retailers, 2014 vs. 2013

<table>
<thead>
<tr>
<th>Organic Product</th>
<th>Weekly $ Sales per Store</th>
<th>Percent Change vs. 2013</th>
<th>Weekly Vol. per Store</th>
<th>Percent Change vs. 2013</th>
<th>Avg Retail Price</th>
<th>Percent Change vs. 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veg</td>
<td>$2,110</td>
<td>17.2</td>
<td>757</td>
<td>17.2</td>
<td>$2.79</td>
<td>0</td>
</tr>
<tr>
<td>Fruit</td>
<td>$1,103</td>
<td>17.3</td>
<td>532</td>
<td>12.5</td>
<td>$2.07</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Organic fresh produce account for <10% of produce dept. sales.

30% of households purchase organic fruits in supermarkets on 2 trips/yr.

51% of households purchase organic veggies in supermarkets on 4 trips/yr.

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2014, United Fresh Produce Association and Nielsen, March 2015.
### Consumer Behavior

- Higher income and socially conscious foodies are driving demand; their preferences lean to organic, convenience (fresh-cut), flavor, local.
- For mainstream consumers, positive attitudes about wellness benefits of fresh produce not translating into purchases. Improved flavor might help.
- Perception that produce costs more and may be wasted. Better shelf-life might help.
- 46.5 million people on food stamps (SNAP) in FY2014 (vs 17.3 in 2000) for cost of $73.9B.
- Economic growth will stimulate demand.
- Produce consumption is positively correlated with income.

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**Distribution of U.S. Households by Income Level, Share of Total Fresh Produce Expenditures/Income Level & Ave. Fresh Produce Expenditures/Income Level, 2012**

- **<$15,000**
  - 15%
  - 8%
- **$15,000-$29,999**
  - 18%
  - 13%
- **$30,000-$49,999**
  - 20%
  - 14%
- **$50,000-$69,999**
  - 14%
  - 14%
- **$70,000-$99,999**
  - 14%
  - 18%
- **$100,000+**
  - 19%
  - 19%

Source: Calculations by Roberta Cook from the Food Institute’s Demographics of Consumer Food Spending, 2014.
Forces Stimulating Fresh Produce Consumption

- More forces are in play to educate consumers about the benefits of fresh produce (MyPlate, salad bars in schools, PBH, govt and private efforts to increase awareness of the health benefits of fruits and veg, etc).
- Culinary Institute of America and Harvard School of Public Health Dept of Nutrition Initiative: Menus of Change, The Business of Healthy, Sustainable, Delicious Food Choices. This is designed to introduce more fresh produce on foodservice menus.
- Stealth health trend in foodservice.

### Important factors when shopping for fruit/veg, 2014

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent of primary shoppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshness</td>
<td>68</td>
</tr>
<tr>
<td>Cost</td>
<td>64</td>
</tr>
<tr>
<td>Taste</td>
<td>55</td>
</tr>
<tr>
<td>Healthy</td>
<td>31</td>
</tr>
<tr>
<td>Family Preferences</td>
<td>21</td>
</tr>
<tr>
<td>Convenient to use</td>
<td>17</td>
</tr>
<tr>
<td>Locally grown</td>
<td>17</td>
</tr>
<tr>
<td>Seasonality</td>
<td>13</td>
</tr>
<tr>
<td>Country of origin</td>
<td>8</td>
</tr>
<tr>
<td>A specific brand</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Primary Shoppers' Attitudes and Beliefs Related to Fruit and Vegetable Consumption, 2012 vs 2014. Produce for Better Health Foundation
Comparison of Purchase Barriers Among Consumers that Report Buying More vs. the Same/Less Fresh Vegetables

- Perishability
- Cost
- Seasonality
- Location grown
- Use of pesticides
- Appearance
- Preparation time needed
- Family won’t eat them
- Unpredictable taste
- Genetic modification
- Fear of food safety outbreak
- Health-related diet
- Do not know how to prepare
- Negative media attention


Per Capita Consumption of Fruits and Vegetables, All Product Forms

- Changes in total consumption mask significant changes in:
  - product form
  - product mix
  - diversity within product segments
**U.S. Per Capita Vegetable Utilization/Consumption, Excluding Melons, 1976-2014\(^P\), (all channels, foodservice and retail, includes freshcut), pounds**

- **Processed Veg, Excl. Potatoes**: 379
- **Processed Potatoes**: 119
- **Fresh Potatoes**: 77
- **Fresh Veg, Excl Melon and Potato**: 34

Sources: USDA/ERS, Vegetables and Melons Situation and Outlook Yearbook, May 30, 2014 through 2007; and for 2008-2014 USDA/ERS, Vegetables and Pulses Yearbook Tables, posted online March 20, 2015. Figures compiled by Dr. Roberta Cook, UC Davis, fresh and processed sweet potato share of total sweet potatoes is estimated; processed vegetables includes lentils and dry peas, and excludes dry beans.

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**US Per Capita Consumption of Select Fresh Vegetables, 1985-2014\(^P\) (includes fresh-cut and bulk, all marketing channels - foodservice and retail)**

- **Carrots**
- **Bell pepper**
- **Broccoli**
- **Sweet corn**
- **Cucumber**

US Per Capita Utilization/Consumption of Lettuce, by Type, 1985-2014\textsuperscript{p} (includes fresh-cut and bulk, foodservice and retail)

![Graph showing US Per Capita Utilization/Consumption of Lettuce, by Type, 1985-2014\textsuperscript{p}](graph)


US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2014\textsuperscript{p})

![Graph showing US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2014\textsuperscript{p})](graph)

\textsuperscript{P}=Preliminary
Specialty and Greenhouse Tomatoes

Y.E.L.O. Youth, Energy, Life, Om...™

Specialty and Greenhouse Tomatoes

true rebel mix™ tomatoes | tomatoes |

Village Farms

A revolution in flavor

eco flavor system

A TASTE OF SUNSHINE™

splendo ZIMA.

true rebel mix™

53g | ODO FREE

Postharvest Technology Center, UC Regents
US Fresh Tomato Category Sales in Key Retailers: Shares in Quantity and Dollars, by Key Tomato Type, 2014

Source: Nielsen Perishables Group FreshFacts®, Historical 2010-2014. Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. It includes UPC, random weight and retailer assigned codes.

US Per Capita Total Fruit Disappearance/Consumption, Including Melons, Pounds 1976-2013, (all channels, foodservice and retail)

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, October 31, 2014.
U.S. Per Capita Consumption of Selected Fresh Fruit
1985-2013 (all have positive health messages, and all but kiwis have generic promotion*)

Pounds per capita

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, October 31, 2014

*Kiwis slashed generic promotion in the late 90’s and were unable to sustain growth and capitalize on a positive health message.

US Per Capita Consumption/Utilization of Selected Fresh Fruit 1985-2013, (all channels, foodservice and retail)

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, 10-31-14
### Why Retailers Love Berry Consumers? They Spend Money

<table>
<thead>
<tr>
<th>Behavior / Stage</th>
<th>Very High 150+</th>
<th>High 120-150</th>
<th>Low 1-50</th>
<th>LIFESTYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban Cores</td>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Cosmopolitan</td>
<td>Affluent</td>
<td>Comfortable</td>
<td>Struggling</td>
</tr>
<tr>
<td>Start-up Families</td>
<td>143</td>
<td>219</td>
<td>101</td>
<td>29</td>
</tr>
<tr>
<td>Small Scale Families</td>
<td>130</td>
<td>205</td>
<td>90</td>
<td>26</td>
</tr>
<tr>
<td>Small HHs with older children 6+</td>
<td>120</td>
<td>199</td>
<td>82</td>
<td>27</td>
</tr>
<tr>
<td>Younger Bustling Families</td>
<td>147</td>
<td>223</td>
<td>106</td>
<td>33</td>
</tr>
<tr>
<td>Larger Bustling Families</td>
<td>147</td>
<td>207</td>
<td>100</td>
<td>33</td>
</tr>
<tr>
<td>Young Transitionals</td>
<td>143</td>
<td>203</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>Independent Singles</td>
<td>131</td>
<td>196</td>
<td>91</td>
<td>31</td>
</tr>
<tr>
<td>Established Couples</td>
<td>139</td>
<td>204</td>
<td>96</td>
<td>29</td>
</tr>
<tr>
<td>2+ person HHs, no children, 35-54</td>
<td>139</td>
<td>210</td>
<td>99</td>
<td>28</td>
</tr>
<tr>
<td>Empty Nest Couples</td>
<td>132</td>
<td>202</td>
<td>91</td>
<td>28</td>
</tr>
<tr>
<td>2+ person HHs, no children, 65+</td>
<td>139</td>
<td>203</td>
<td>96</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>208</td>
<td>96</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Perishables Group FreshFacts® Powered by Nielsen.
WITCH FINGERS:
SO DELICIOUS IT'S SCARY

Take a good, long look at these long and freaky-looking grapes. We admit that their shape is weird, but wait till you put these “fingers” in your mouth. Witch Fingers® are wickedly sweet and fun to eat. Kids just go bonkers for them. They make for a “scary good” after-school snack. But grownups are intrigued by them, too. Serve them at a party and check out the looks on people’s faces. They make a great conversation starter, and once people try them, they can’t stop eating or talking about them.

These are definitely not like any other grapes.
Demographic Trends and Generational Differences in Attitudes

<table>
<thead>
<tr>
<th>Changing Structure of the Modern Family</th>
<th>1970</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married-couple households are on the decline</td>
<td>81%</td>
<td>66%</td>
</tr>
<tr>
<td>Married-couple households with children are on the decline</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Households and families are becoming smaller</td>
<td>3.1 persons</td>
<td>2.6 persons</td>
</tr>
</tbody>
</table>

Projected US Population

- **2010**: 310.233 million
- **2030**: 373.504 million

Source: www.census.gov

Foodservice contributes to the evolution of food trends and ethnicity leads the way, Authentic and Fusion, benefiting fresh produce

- Oaxacan
- Brazilian Churrascaria
- Peruvian
- Argentine

- Fine Dining Chefs Creation
- Casual Theme Interpretation
- Family Dining Interpretation
- QSR Interpretation
- Non-Commercial Interpretation

Incorporated into Consumer Meal Mix

- Szechwan
- Thai
- Vietnamese
- Indonesian
- Taiwanese
- Cambodian
Average Annual Household Fresh Produce Expenditures in Food Stores, by Ethnicity, 2012

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Fresh Fruit</th>
<th>Fresh Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>All White and Other</td>
<td>261</td>
<td>226</td>
</tr>
<tr>
<td>Asian</td>
<td>409</td>
<td>386</td>
</tr>
<tr>
<td>Black</td>
<td>164</td>
<td>148</td>
</tr>
<tr>
<td>Hispanic</td>
<td>307</td>
<td>259</td>
</tr>
</tbody>
</table>

Source: The Food Institute, Demographics of Consumer Food Spending, 2014.

Distribution of U.S. Households by Age Group and Fresh Produce Expenditures in Food Stores, 2012

Source: The Food Institute, Demographics of Consumer Food Spending, 2014.
**Five Growing Categories in Millennial Spending**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Spending More*</th>
<th>Percent Spending Less*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh fruits and vegetables</td>
<td>37</td>
<td>8</td>
</tr>
<tr>
<td>Organic food</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Natural products</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>Environ. friendly home cleaning items</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Fresh meat</td>
<td>19</td>
<td>10</td>
</tr>
</tbody>
</table>

*Spending plan over the next 12 months

Source: Food Institute Report, September 15, 2014

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**Question: How important is each factor in deciding what to buy?**

<table>
<thead>
<tr>
<th></th>
<th>Percent in 2011</th>
<th>Percent in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Concerns</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millennials</td>
<td>22</td>
<td>34%</td>
</tr>
<tr>
<td>Gen X</td>
<td>21</td>
<td>26%</td>
</tr>
<tr>
<td>Boomers</td>
<td>22</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Social Justice and Well-being</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millennials</td>
<td>22</td>
<td>36%</td>
</tr>
<tr>
<td>Gen X</td>
<td>17</td>
<td>26%</td>
</tr>
<tr>
<td>Boomers</td>
<td>19</td>
<td>29%</td>
</tr>
</tbody>
</table>

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Millennials shop a variety of retailers to meet their in-the-moment needs

No. of Retailers Shopped for Groceries in the Past 90 Days

<table>
<thead>
<tr>
<th></th>
<th>Millennials</th>
<th>Gen X</th>
<th>Boomers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9.0</td>
<td>7.1</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Most Millennials spread their shopping across many channels and retailers

- Lack of planning results in more trips
- Higher use of all channels than older cohorts

Especially true for specialty channels – 46% of Millennials vs. 32% of Boomers

Myth Busting: Millennials don’t just shop at cool and unconventional retailers. While they love these stores, many shop at more mainstream retailers most of the time and reserve specialty channels for special occasions.

Question: What packaging information do you read or consider when deciding what to purchase?

<table>
<thead>
<tr>
<th></th>
<th>Boomers</th>
<th>Millennials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certifications</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>Organic Ingred’s</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Company / Product</td>
<td>11%</td>
<td>19%</td>
</tr>
<tr>
<td>Narrative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“I buy mostly organic, but my parents aren’t into it. My dad thinks organic is a big scam.”

– Katerina, 28
Question: When preparing meals at home, which BEST describes how the task is approached?

- Meals prep’d with variety of ingredients (fresh, frozen, pkgd)
  - Millennial: 31%
  - Gen X: 43%
  - Boomer: 44%
- Use fresh prep’d food from local grocery or restaurant
  - Millennial: 19%
  - Gen X: 8%
  - Boomer: 14%
- Meals prep’d mostly with fresh ingred’s bought same day
  - Millennial: 12%
  - Gen X: 18%
  - Boomer: 6%
- Relies on frozen meals heated in microwave or oven
  - Millennial: 6%
  - Gen X: 15%
  - Boomer: 10%
- Mostly prepare meals with all fresh ingred’s/from scratch
  - Millennial: 13%
  - Gen X: 12%
  - Boomer: 17%
- Rely on pantry canned, pkgd, frozen (no fresh)
  - Millennial: 4%
  - Gen X: 5%
  - Boomer: 7%

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group

Question: Which considerations are important when deciding whether you want to connect with a specific product or brand?

- Products have best prices
  - Millennial: 59%
  - Gen X: 40%
  - Boomer: 39%
- Company values similar to mine
  - Millennial: 40%
  - Gen X: 40%
  - Boomer: 39%
- Environmentally conscious company
  - Millennial: 30%
  - Gen X: 27%
  - Boomer: 27%
- Company has hip/cool personality
  - Millennial: 12%
  - Gen X: 6%
  - Boomer: 27%
- Have no interest in connecting with a product/brand
  - Millennial: 11%
  - Gen X: 18%
  - Boomer: 25%

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Question: How important is each factor in deciding what food you eat?

- Made with natural ingredients: Millennials 52%, Gen X 45%, Boomers 39%
- No GMOs: Millennials 44%, Gen X 36%, Boomers 29%
- No allergens: Millennials 41%, Gen X 37%, Boomers 29%
- Made with organic ingredients: Millennials 29%, Gen X 19%, Boomers 39%
- Grown locally: Millennials 33%, Gen X 31%, Boomers 36%
- Manufactured locally: Millennials 36%, Gen X 26%, Boomers 32%

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group

Reasons for Buying Locally Grown at Retail, 2014

- Freshness: 86%
- Support local economy: 75%
- Taste: 61%
- Like knowing source/how produced: 56%
- Nutritional value: 39%
- Price: 39%
- Enviro impact of long distance: 31%
- Appearance: 30%
- Long term personal health effects: 24%

Source: FMI U.S. Grocery Shopper Trends 2014
Frequency of Purchases of Locally Grown Products

Source: FMI U.S. Grocery Shopper Trends 2014

Definition of “Locally Grown” Products according to Shoppers, 2011

Source: US Grocery Shopper Trends 2011, FMI.
Maximum Distance a Food Item Can Travel from Source to Store to Be Called “Local”

Source: US Grocery Shopper Trends 2011, FMI.

Importance of Produce Brands to US Consumers, (both value-added and bulk produce)

Factors Most Associated with Produce Brands,
comparing attitudes of consumers who say brand is important with those that don’t

- **Brand Is Important**
  - Quality: 77%
  - Higher price: 34%
  - Better tasting: 26%
  - Value: 25%
  - Higher level of food safety: 20%
  - Less expensive: 13%
  - Community: 13%

- **Brand Is Not Important**
  - Quality: 45%
  - Higher price: 50%
  - Better tasting: 60%
  - Value: 50%
  - Higher level of food safety: 43%
  - Less expensive: 9%
  - Community: 4%


Food Safety Attitudes
How confident are you that the food in your supermarket is safe?

Completely or mostly confident

1997: 84%
2002: 66%
2004: 66%
2006: 89%
2008: 83%
2010: 89%
2012: 83%
2014: 83%

Source: FMI US Grocery Shopper Trends, various years

Specific Areas of the Store and Supply Chain: “I trust the products sold there are safe”

<table>
<thead>
<tr>
<th>Area</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh produce</td>
<td>58%</td>
<td>38%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Over-counter meds.</td>
<td>58%</td>
<td>34%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>54%</td>
<td>39%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Fresh meat, poultry &amp; fish</td>
<td>53%</td>
<td>41%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Prepared meals</td>
<td>41%</td>
<td>45%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Pet food</td>
<td>37%</td>
<td>24%</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: US Grocery Shopper Trends 2011, FMI, 1,026 shoppers
Which food-related items constitute a serious health risk (according to US shoppers)?

<table>
<thead>
<tr>
<th>Item</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria or germs</td>
<td>50%</td>
</tr>
<tr>
<td>Residues from pesticides</td>
<td>40%</td>
</tr>
<tr>
<td>Product tampering</td>
<td>39%</td>
</tr>
<tr>
<td>Terrorist tampering</td>
<td>36%</td>
</tr>
<tr>
<td>Food from China</td>
<td>28%</td>
</tr>
<tr>
<td>Antibiotics/hormones in livestock</td>
<td>27%</td>
</tr>
<tr>
<td>Expiry food past “use by” date</td>
<td>23%</td>
</tr>
<tr>
<td>Irradiated Foods</td>
<td>21%</td>
</tr>
<tr>
<td>Foods produced by biotechnology</td>
<td>17%</td>
</tr>
</tbody>
</table>

Source: US Grocery Shopper Trends 2011, FMI.

US Consumer Confidence in the Safety of Fresh Produce by Source, 2010

2010: How comfortable are you that food grown/produced outside the U.S. is safe?

- Very, 5%
- Somewhat, 44%
- Not Very, 34%
- Not at All, 16%

Source: U.S. Grocery Shopper Trends 2010, FMI.

Conclusions: Need for Shopper-Centrism

- Flavor is where it’s at!
- Creative marketing and merchandising that communicates a product’s benefits to consumers.
- Reaching consumers in multi-channels and utilizing mobile technology, especially for millennials, can stimulate purchases.
- Tell a story, increasingly growers are providing more marketing support and consumer messaging providing opportunities to link growers and your customers to the benefit of both.
Conclusions

- Unmet potential for fresh produce demand expansion in foodservice channels, potentially convenience stores, dollar stores, pharmacies, and online.
- Consumption gains in some items are at the expense of others, we need to understand more about the role of substitutes and complements.
- Firms need to better understand diverse consumer segments and their needs at the individual produce item level.
- Consumer research is exploding due to the internet.
- Social media is making it much more cost-effective and feasible to conduct micro marketing.

Conclusions

- Continuing reduction in the unemployment rate and economic growth will stimulate fresh produce demand.
- Changing public policy, industry-govt. partnerships, trade association and firm-level efforts may gain traction and change consumer behavior - not just attitudes; time will tell.
- To be healthy it must be safe, the fresh produce industry must not relinquish this positioning!
- Consumer expectations are growing for industry accountability, making traceability, sustainability, social responsibility and food safety standards ever more important.