Consumer Demand Trends and Issues in Quality and Safety

DR. ROBERTA COOK
Dept. of Ag and Resource Economics
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
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.
<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 Vets</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.
Weekly $ sales/store
Weekly quantity sold/store

Fresh-cut, Organic and Total Fresh Fruit and Vegetable Sales in Key US Food Retailers, % Change 2014 vs 2013

- All Fruit Veg*
  - Freshcutfruit**
    - 12.0
  - Salads
    - 7.8
  - Fresh cut Veg
    - 10.9
  - Organic Fruit
    - 17.3
  - Organic Veg
    - 17.2

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

Source: Calculations by Roberta Cook from the Food Institute’s Demographics of Consumer Food Spending, 2014.

- **<$15,000**: $594, 18% share of households
- **$15,000-$29,999**: $15,000-$29,999, 18% share of households
- **$30,000-$49,999**: $100,000+, 19% share of households
- **$50,000-$69,999**: $70,000-$99,999, 14% share of households
- **$70,000-$99,999**: $478, 14% share of households
- **$819**: $478, 14% share of households
- **$254**: $478, 14% share of households
- **$339**: $478, 14% share of households
- **$409**: $478, 14% share of households
- **$478**: $478, 14% share of households
- **$594**: $478, 14% share of households
- **$819**: $478, 14% share of households

$ = Average fresh produce expenditures per income group

% = Percent of total fresh produce expenditures contributed by each income group
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/vegetables, 2014

- Freshness: 68%
- Cost: 64%
- Taste: 55%
- Healthy: 31%
- Family Preferences: 21%
- Convenient to use: 17%
- Locally grown: 17%
- Seasonality: 13%
- Country of origin: 8%
- A specific brand: 4%
- Other: 2%

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
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

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

Pounds per capita

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

US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2014<sup>P</sup>)

Pounds per capita

Specialty and Greenhouse Tomatoes

Y.E.L.O. Youth, Energy, Life, Om...™
Specialty and Greenhouse Tomatoes
US Fresh Tomato Category Sales in Key Retailers: Shares in Quantity and Dollars, by Key Tomato Type, 2014

**Quantity**
- HH round: 13%
- TOV: 23%
- Field round: 14%
- Snacking: 20%
- Roma: 30%

**Dollars**
- HH round: 13%
- TOV: 26%
- Field round: 13%
- Roma: 17%
- Snacking: 31%

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
US Per Capita Disappearance/Consumption of Melons, 1985-2013 (watermelons have generic promotion)

Pounds per capita

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, 10-31-14
US Per Capita Consumption/Disappearance of Selected Fresh Fruit 1985-2013

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>Cosmopolitan Centers</th>
<th>Affluent Suburban Spreads</th>
<th>Comfortable Country</th>
<th>Struggling Urban Cores</th>
<th>Working Towns</th>
<th>Plain Rural Living</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start-up Families</td>
<td>143</td>
<td>219</td>
<td>101</td>
<td>29</td>
<td>41</td>
<td>11</td>
<td>108</td>
<td>9.30%</td>
</tr>
<tr>
<td>HHs with young children only &lt;6</td>
<td>130</td>
<td>205</td>
<td>90</td>
<td>26</td>
<td>37</td>
<td>9</td>
<td>97</td>
<td>8.90%</td>
</tr>
<tr>
<td>Small Scale Families</td>
<td>120</td>
<td>199</td>
<td>82</td>
<td>27</td>
<td>36</td>
<td>8</td>
<td>86</td>
<td>5.90%</td>
</tr>
<tr>
<td>Small HHs with older children 6+</td>
<td>147</td>
<td>223</td>
<td>106</td>
<td>33</td>
<td>46</td>
<td>10</td>
<td>127</td>
<td>13.90%</td>
</tr>
<tr>
<td>Younger Bustling Families</td>
<td>147</td>
<td>207</td>
<td>100</td>
<td>33</td>
<td>41</td>
<td>12</td>
<td>90</td>
<td>9.60%</td>
</tr>
<tr>
<td>Large HHs with children (6+), HOH &lt;40</td>
<td>147</td>
<td>207</td>
<td>100</td>
<td>33</td>
<td>41</td>
<td>11</td>
<td>93</td>
<td>11.60%</td>
</tr>
<tr>
<td>Older Bustling Families</td>
<td>131</td>
<td>196</td>
<td>91</td>
<td>31</td>
<td>42</td>
<td>10</td>
<td>82</td>
<td>7.40%</td>
</tr>
<tr>
<td>Larger HHs with children (6+), HOH 40+</td>
<td>139</td>
<td>204</td>
<td>96</td>
<td>29</td>
<td>39</td>
<td>9</td>
<td>102</td>
<td>11.20%</td>
</tr>
<tr>
<td>Young Transitionals</td>
<td>139</td>
<td>210</td>
<td>99</td>
<td>28</td>
<td>39</td>
<td>8</td>
<td>112</td>
<td>11.50%</td>
</tr>
<tr>
<td>Any size HHs, no children, &lt;35</td>
<td>131</td>
<td>196</td>
<td>91</td>
<td>31</td>
<td>42</td>
<td>10</td>
<td>82</td>
<td>7.40%</td>
</tr>
<tr>
<td>Independent Singles</td>
<td>143</td>
<td>203</td>
<td>100</td>
<td>30</td>
<td>41</td>
<td>11</td>
<td>93</td>
<td>11.60%</td>
</tr>
<tr>
<td>1 person HHs, no children, 35-64</td>
<td>139</td>
<td>204</td>
<td>96</td>
<td>29</td>
<td>39</td>
<td>9</td>
<td>102</td>
<td>11.20%</td>
</tr>
<tr>
<td>Senior Singles</td>
<td>132</td>
<td>202</td>
<td>91</td>
<td>28</td>
<td>38</td>
<td>8</td>
<td>97</td>
<td>10.80%</td>
</tr>
<tr>
<td>1 person HHs, no children, 65+</td>
<td>139</td>
<td>210</td>
<td>99</td>
<td>28</td>
<td>39</td>
<td>8</td>
<td>112</td>
<td>11.50%</td>
</tr>
<tr>
<td>Established Couples</td>
<td>139</td>
<td>204</td>
<td>96</td>
<td>29</td>
<td>39</td>
<td>9</td>
<td>102</td>
<td>11.20%</td>
</tr>
<tr>
<td>2+ person HHs, no children, 35-54</td>
<td>139</td>
<td>210</td>
<td>99</td>
<td>28</td>
<td>39</td>
<td>8</td>
<td>112</td>
<td>11.50%</td>
</tr>
<tr>
<td>Empty Nest Couples</td>
<td>139</td>
<td>204</td>
<td>96</td>
<td>30</td>
<td>40</td>
<td>9</td>
<td>100</td>
<td>10.80%</td>
</tr>
<tr>
<td>2+ person HHs, no children, 55-64</td>
<td>132</td>
<td>202</td>
<td>91</td>
<td>28</td>
<td>38</td>
<td>8</td>
<td>97</td>
<td>10.80%</td>
</tr>
<tr>
<td>Senior Couples</td>
<td>139</td>
<td>208</td>
<td>96</td>
<td>30</td>
<td>40</td>
<td>9</td>
<td>100</td>
<td>10.80%</td>
</tr>
<tr>
<td>2+ person HHs, no children, 65+</td>
<td>139</td>
<td>208</td>
<td>96</td>
<td>30</td>
<td>40</td>
<td>9</td>
<td>100</td>
<td>10.80%</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>208</td>
<td>96</td>
<td>30</td>
<td>40</td>
<td>9</td>
<td>100</td>
<td>10.80%</td>
</tr>
</tbody>
</table>

Percent Volume: 20.80% 49.60% 17.20% 3.10% 8.00% 1.20%

Source: Perishables Group FreshFacts® Powered by Nielsen.
Plant Varieties and Flavor

Cotton Candy

“These Cotton Candy grapes really do taste like cotton candy! What a fun, healthy way to enjoy everyone’s favorite flavor from the fair. Let me know if you agree.”

Jack Pandol
3rd Generation California Grape Grower
email: jackpandol@grapery.biz
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.
WE'VE RAISED TABLE GRAPES WITH WORLD CLASS FLAVOR

Welcome. Grapery® grows and develops the most flavorful, all-natural, highest quality table grapes in the world—flavor no other brand can match.

Day after day we walk the fields, paying close attention to our grapevines every step of the way. We’re more than meticulous. During harvest, our team picks only those grapes that are absolutely, positively ripe and ready to be carefully packed and shipped to your grocery store so you can share the juiciest, best tasting grapes in the world with your family and friends.

We invite you to learn more about our extraordinary products and discover where we are headed in the future.
Demographic Trends and Generational Differences in Attitudes
### Changing Structure of the Modern Family

<table>
<thead>
<tr>
<th>Description</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</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Projected US Population

2010: 310.233 million
2030: 373.504 million

Hispanic: 23%
Black: 13%
Asian: 7%
Other: 2%
Non-Hisp. Whites: 57%
Non-Hisp. Whites: 66%

Source: www.census.gov
Foodservice contributes to the evolution of food trends and ethnicity leads the way, Authentic and Fusion, benefiting fresh produce.
Average Annual Household Fresh Produce Expenditures in Food Stores, by Ethnicity, 2012

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

* Spending plan over the next 12 months

<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>

Source: Food Institute Report, September 15, 2014
Question: How important is each factor in deciding what to buy?

<table>
<thead>
<tr>
<th>Factor</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 Narrative</td>
<td>11%</td>
<td>19%</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

Source: Outlook on the Millennial Consumer 2014, a presentation for PMA from the Hartman Group
Question: When preparing meals at home, which BEST describes how the task is approached?

- Meals prep’d with variety of ingredients (fresh, frozen, pkgd)
- Use fresh prep’d food from local grocery or restaurant
- Meals prep’d mostly with fresh ingred’s bought same day
- Relies on frozen meals heated in microwave or oven
- Mostly prepare meals with all fresh ingred’s / from scratch
- Rely on pantry canned, pkgd, frozen (no fresh)

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: 59% (Millennial), 64% (Gen X), 65% (Boomer)
- Company values similar to mine: 40% (Millennial), 40% (Gen X), 39% (Boomer)
- Environmentally conscious company: 30% (Millennial), 27% (Gen X), 27% (Boomer)
- Company has hip / cool personality: 12% (Millennial), 18% (Gen X), 25% (Boomer)
- Have no interest in connecting with a product / brand: 6% (Millennial), 11% (Gen X), 18% (Boomer)

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: 41%

- No GMOs
  - Millennials: 51%
  - Gen X: 44%
  - Boomers: 36%

- No allergens
  - Millennials: 41%
  - Gen X: 37%
  - Boomers: 29%

- Made with organic ingredients
  - Millennials: 39%
  - Gen X: 33%
  - Boomers: 26%

- Grown locally
  - Millennials: 39%
  - Gen X: 39%
  - Boomers: 31%

- Manufactured locally
  - Millennials: 36%
  - Gen X: 32%
  - Boomers: 31%

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 transportation: 31%
- Appearance: 30%
- Long term personal health effects: 24%

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

- Occasionally: 79%
- Always: 11%
- Never: 10%

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)

Important: 27%
Neutral: 36%
Not Important: 37%

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

![Bar chart showing the factors most associated with produce brands.]

- **Quality**: 77% (Brand Is Important), 45% (Brand Is Not Important)
- **Higher price**: 60% (Brand Is Important), 50% (Brand Is Not Important)
- **Better tasting**: 60% (Brand Is Important), 26% (Brand Is Not Important)
- **Value**: 50% (Brand Is Important), 25% (Brand Is Not Important)
- **Higher level of food safety**: 43% (Brand Is Important), 20% (Brand Is Not Important)
- **Less expensive**: 13% (Brand Is Important), 9% (Brand Is Not Important)
- **Community**: 13% (Brand Is Important), 4% (Brand Is Not Important)

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Confidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>'97</td>
<td>84%</td>
</tr>
<tr>
<td>'99</td>
<td>66%</td>
</tr>
<tr>
<td>'02</td>
<td>89%</td>
</tr>
<tr>
<td>'04</td>
<td>83%</td>
</tr>
</tbody>
</table>

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>Category</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 Percentage</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>Eating food past &quot;use by&quot; 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.
• 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.