Fruit and Vegetable Consumption Among Urban Gardeners in Cleveland

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Community Gardening Movement

• Community gardening concept took root in the 1970’s
• Grew out of energy crisis
• Increased cost of fresh produce
Extension Community Garden

• U.S. Rep. Jamie Whitten appropriated funding

• 23 cities funded with federal dollars from USDA
  – Way for city people to grow their own food
  – Learn about agriculture
  – Exercise
Cleveland Urban Gardening

- To develop gardens on vacant inner-city lots
- To improve nutrition of low income families
Key Collaborators

• Ohio State University Extension
• City of Cleveland Summer Sprout Program
Funding Then … And Funding Now

- Ohio State University Extension (Federal $)
- Cleveland City Summer Sprout Program
- Cuyahoga County Juvenile Courts
- Cleveland Municipal School District
- Foundations
- Corporations
- Individuals in the Community
Making the Partnership Work

- OSU Extension provides educational outreach and volunteer training
- Summer Sprout provides plowing, plants, and soil amendments
Gardening Statistics

• 1 million households involved in community gardening in the U.S.

• 2500 community gardeners in Cleveland

• 50 acres of vacant land cultivated in Cleveland

• Annual harvest valued at more than $1.8 million
Other Benefits

- Leadership skills
- Self-esteem
- Neighborhood pride and development
- Community spirit
- Physical activity
Who Are The Gardeners?

Over 80% come from Cleveland’s poorest neighborhoods

Low income seniors

Court referred youth and school children
# Demographics of Urban Gardeners

<table>
<thead>
<tr>
<th>Income</th>
<th>Percentage</th>
<th>Race</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$&lt; 10,000</td>
<td>32%</td>
<td>Black</td>
<td>64%</td>
</tr>
<tr>
<td>$10-19,999</td>
<td>20%</td>
<td>White</td>
<td>27%</td>
</tr>
<tr>
<td>$20-29,999</td>
<td>9%</td>
<td>Other</td>
<td>9%</td>
</tr>
<tr>
<td>$30-39,999</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$40,000+</td>
<td>23%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Demographics

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>33-50 yrs</td>
<td>Male 48%</td>
</tr>
<tr>
<td>51-65 yrs</td>
<td>Female 52%</td>
</tr>
<tr>
<td>65-75 yrs</td>
<td></td>
</tr>
<tr>
<td>75+ yrs</td>
<td></td>
</tr>
</tbody>
</table>
### Demographics

<table>
<thead>
<tr>
<th>Birth State</th>
<th>Education</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern State</td>
<td>&lt;12 years</td>
<td>36%</td>
</tr>
<tr>
<td>Ohio</td>
<td>HS / GED</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>2 year college</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>4 year college</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>17%</td>
</tr>
</tbody>
</table>
More Demographics

Employment

Retired 56%
Unemployed 6%
Employed 38%
## Demographics

<table>
<thead>
<tr>
<th>Year Gardening</th>
<th>%</th>
<th>Years Gardening with Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 yrs</td>
<td>9%</td>
<td>&lt;2 yrs</td>
</tr>
<tr>
<td>5-9 yrs</td>
<td>8%</td>
<td>2-4 yrs</td>
</tr>
<tr>
<td>10-19 yrs</td>
<td>23%</td>
<td>5-9 yrs</td>
</tr>
<tr>
<td>≥ 20 yrs</td>
<td>60%</td>
<td>10 + yrs</td>
</tr>
</tbody>
</table>
Gardening and Fruit and Vegetable Intake

- National 5-A-Day campaign
- Some studies indicate higher intake of selected vegetables among gardeners
- No data available on overall consumption among gardeners
Objectives of the Study Phase I

• Assess fruit and vegetable consumption among urban community gardeners

• Compare consumption of fruits and vegetables with the 5-A-Day target

• Determine the extent of use of different types of fats in preparation of vegetables.
Methodology

• Telephone survey
• Data collected at
  – peak harvest time
  – lean season
• Modified Food Frequency instrument
• Two dimensional drawings of portion sizes
Methodology

• Interviews conducted by trained public health dietetic interns from CWRU

• 81 garden leaders completed the survey in both fall and spring

• Response rate between 67 - 75 %
From the Garden

- Produce obtained for 1-3 months by 35%
- Produce obtained for 4-6 months by 56%
- 74% preserve produce from the garden
  - freeze, canning, pickling, drying
- 95% share produce
  - neighbors, charity, other
### Vegetable, Fruit & Juice Intake
#### Fall

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Vegetable</th>
<th>Fruit</th>
<th>Juice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (SD)</strong></td>
<td>7.3 (3.1)</td>
<td>4.1 (2.2)</td>
<td>2.1 (1.3)</td>
<td>1.1 (0.7)</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>7.1</td>
<td>3.8</td>
<td>1.9</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>20th Percentile</strong></td>
<td>5.0</td>
<td>2.2</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>40th Percentile</strong></td>
<td>6.7</td>
<td>3.2</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>60th Percentile</strong></td>
<td>7.7</td>
<td>4.3</td>
<td>2.3</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>80th Percentile</strong></td>
<td>8.9</td>
<td>5.5</td>
<td>3.4</td>
<td>1.6</td>
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</tbody>
</table>
## Vegetable, Fruit & Juice Intake
### Spring

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Vegetable</th>
<th>Fruit</th>
<th>Juice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean (SD)</strong></td>
<td>6.5 (2.9)</td>
<td>3.4 (2.0)</td>
<td>1.9 (1.1)</td>
<td>1.2 (0.7)</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>5.9</td>
<td>2.9</td>
<td>1.8</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>20th Percentile</strong></td>
<td>.24</td>
<td>2.0</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>40th Percentile</strong></td>
<td>5.4</td>
<td>2.7</td>
<td>1.5</td>
<td>1.0</td>
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<td>4.7</td>
<td>2.6</td>
<td>1.6</td>
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Are We Meeting the 5-A-Day Target?

<table>
<thead>
<tr>
<th>Percent of sample</th>
<th>&lt; 5/day</th>
<th>5-8/day</th>
<th>8+/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>20</td>
<td>63</td>
<td>17</td>
</tr>
<tr>
<td>Spring</td>
<td>32</td>
<td>51</td>
<td>16</td>
</tr>
</tbody>
</table>

Legend:
- **Fall**
- **Spring**
Fruit and Vegetable Consumption

Gender

- Fall:
  - Male: 7.1
  - Female: 7.5
- Spring:
  - Male: 5.9
  - Female: 6.9

Servings per day
Fruit and Vegetable Consumption

Age

Fall
Spring

33-50 yrs
51-65 yrs
65-75 yrs
75+ yrs

Servings per day

- 33-50 yrs
- 51-65 yrs
- 65-75 yrs
- 75+ yrs

- Fall
- Spring
Fruit and Vegetable Consumption

Income

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$10,000</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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</tbody>
</table>

Servings per day
Comparing Results with Other Studies

<table>
<thead>
<tr>
<th>Season</th>
<th>Servings per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>7.5</td>
</tr>
<tr>
<td>Spring</td>
<td>6.3</td>
</tr>
<tr>
<td>5-A day baseline *</td>
<td>3.4</td>
</tr>
<tr>
<td>Healthy People 2000 baseline#</td>
<td>4.3</td>
</tr>
</tbody>
</table>

* AJHP, 1995
# AJPH, 1995
Top Five Vegetables

**Fall**
- Tomato
- Potato (no french fries)
- Greens (Collard, Kale, Mustard etc.)
- Salad
- Peas / Beans

**Spring**
- Tomato
- Potato (no french fries)
- Greens (Collard, Kale, Mustard etc.)
- Salad
- Carrots
# Types of Fat Used in Preparing Vegetables

<table>
<thead>
<tr>
<th>Fat Type</th>
<th>Percentage</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter Oil Margarine</td>
<td>99%</td>
<td>1-21 times Mean: 9.8</td>
</tr>
<tr>
<td>Salty High Fat Meats</td>
<td>53%</td>
<td>1-11 times Mean: 1.8</td>
</tr>
<tr>
<td>Mayo/ Salad Dressing</td>
<td>93%</td>
<td>1-9 times Mean: 3.2</td>
</tr>
<tr>
<td>Low Fat Meats</td>
<td>33%</td>
<td>1-19 times Mean: 5.5</td>
</tr>
</tbody>
</table>
Conclusions Phase I

• Urban community gardeners in Cleveland consume higher amounts of fruits and vegetables.

• 70 - 80 % of the gardeners consume at least 5 servings of fruits and vegetables per day.

• A large proportion of gardeners use high fat / high salt ingredients to season.
Objectives of the Study Phase II

To design an intervention to:

- inform the gardeners of the results
- reinforce the benefits of consuming fruits and vegetables
- promote healthy ways of preparing fruits and vegetables
- promote growing a variety of nutrient dense vegetables
INTERVENTION

Workshops for gardeners

• Congratulations for meeting the Healthy People 2000 goal
• Why are fruits and vegetables important?
• How does gardening help the gardener?
• Benefits to the community
• Seasoning options - Make it Healthy
• How to eat more fruits and vegetables
INTERVENTION

• Recipe book with low salt, low fat recipes
• Suggestions for growing nutrient dense garden
• Monthly feature in Common Ground Newsletter - focus on low salt, low fat recipes using what is available from the garden
• Recipe contests – encourage gardeners to submit their favorite low-fat, low-salt recipes
EVALUATION

• Gardening for Better Health workshops offered at six different neighborhood sites - 149 community gardeners participated.

• 43 % of the gardeners were using healthy seasonings to prepare their vegetables and greens before the intervention.

• After the intervention, an additional 27% said they plan to use healthy seasonings for vegetables and, an additional 16% for greens.
Highlights Of The Study

- Collaborative effort between
  - EFNEP
  - FCS
  - Urban Gardening program
A Full Circle
Bringing Research to Benefit the Community

Program/Services

Research / Evaluation

Intervention Design

Assessing Needs of the Group
Plans for the Future

• Extend programming to include workshops on healthy lifestyles

• Continue efforts in the monthly newsletter

• Use the results of the study for advocacy purposes