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Demographics and food waste trends of Common Ground Garden CSA members in Central Minnesota

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Demographics, Consumption, and Food Waste Trends of Common Ground Garden CSA Members: A Pilot Study

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Introduction to Community Supported Agriculture

-Community supported agriculture (CSA) has increased in popularity over the last few decades

-Over 4000 CSA programs in the US (Local Harvest, 2016)

-Produce consumption increases during CSA participation (Uribe et al., 2012)

-CSA programs increase produce consumption in underresourced communities (Quandt, 2013)

-30-40% of US food supply is wasted (USDA, 2017)

-Overall, limited research has been conducted on CSAs

CSA promotes healthy eating, but accessible to all?

- Fruit and vegetable consumption → related to decreased chance for chronic disease (Boeing et al., 2012)
- Existing research on CSA member profile (Uribe et al., 2012):
- White/Caucasian
- Well-educated
- Income well above poverty
- CSAs as an option for low-resource communities

Common Ground Garden

- 3 acre vegetable CSA in Saint Joseph, MN
- Founded 1991
- Strong community presence
- Outreach to low-resource community

Goal of Study at Common Ground Garden

Previously, the only data collected from this CSA comes from an end-of-year survey.

Survey inquires about CSA member satisfaction

Our study:

Goal 1: To investigate social and health demographics of CSA members

Goal 2: To investigate vegetable consumption of CSA shares

Goal 3: To investigate vegetable waste of CSA shares

Methods

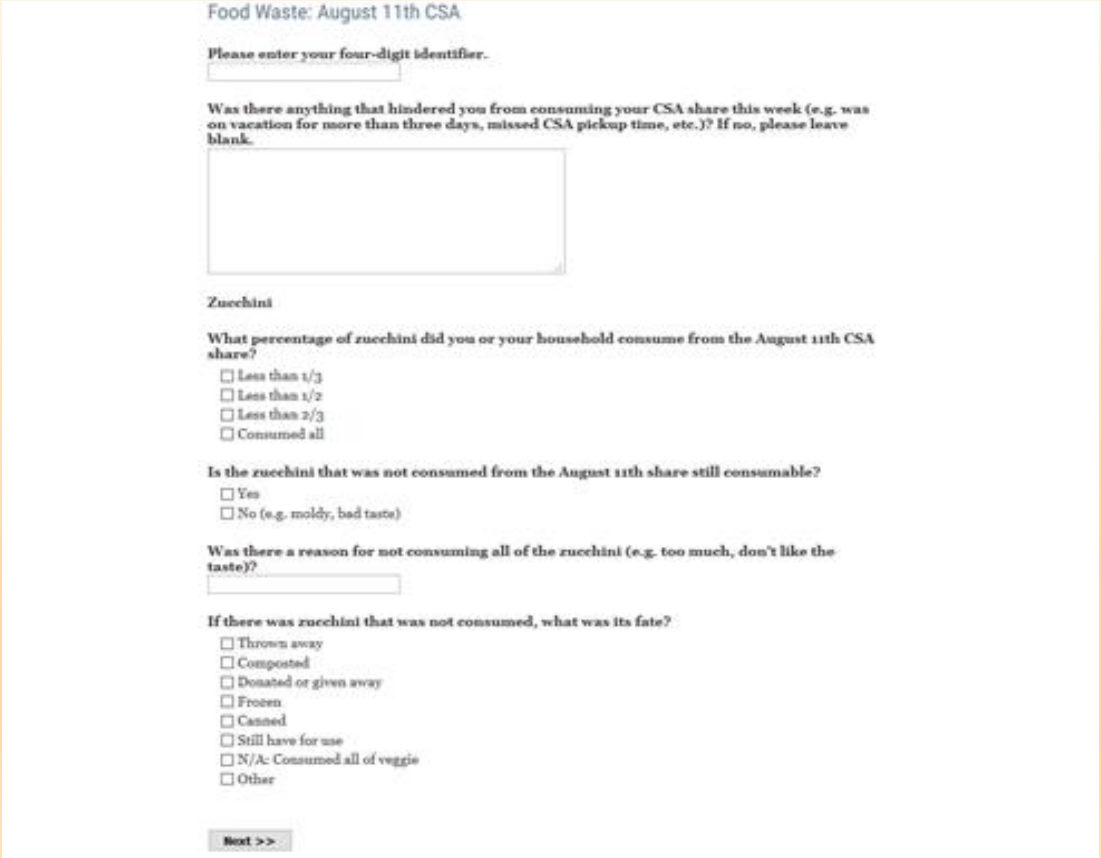
Recruitment: participants were recruited via flyers and email in May/June 2016

Design: participants completed surveys throughout the CSA season:

1. Initial Survey (demographics, anthropometrics)
2. Four vegetable consumption and food waste surveys (every other week)
3. End of Season Survey

Example Survey: Vegetable Consumption/Waste

https://www.csbsju.edu/forms/YC0JB14Y70.aspx



Food Waste: August 11th CSA

Please enter your four-digit identifier.

Was there anything that hindered you from consuming your CSA share this week (e.g. was on vacation for more than three days, missed CSA pickup time, etc.)? If no, please leave blank.

Zucchini

What percentage of zucchini did you or your household consume from the August 11th CSA share?

- ☐ Less than 1/3
- ☐ Less than 1/2
- ☐ Less than 2/3
- ☐ Consumed all

Is the zucchini that was not consumed from the August 11th share still consumable?

- ☐ Yes
- ☐ No (e.g. moldy, bad taste)

Was there a reason for not consuming all of the zucchini (e.g. too much, don't like the taste)?

If there was zucchini that was not consumed, what was its fate?

- ☐ Thrown away
- ☐ Composted
- ☐ Donated or given away
- ☐ Frozen
- ☐ Canned
- ☐ Still have for use
- ☐ N/A: Consumed all of veggie
- ☐ Other

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Study Participant Demographics (n = 36 total adults, 19 half shares)

Majority of respondents were women.

Race: 94% White/Caucasian

BMI (kg/m^2) was normal to overweight:

Average Male: 26.6

Average Female: 25.7

Education:

- AA (2)
- BA (21)
- MA (11)
- PHD (12)

	July 14		Jul 28		Aug 11		Aug 25	
Vegetable	**Full**	**Half**	**Full**	**Half**	**Full**	**Half**	**Full**	**Half**
Zucchini	2	1	1		1		CC, kale or uc	CC, kale or zuc
Salad Greens	Small bag	Small bag						
Broccoli	2 heads	1 head			2 heads (1 lb)	(broc or kale)		
Cabbage	"larger"	"smaller"	1				CC, kale or uc	CC, kale or zuc
Chinese Cabbage	1 head	1 head					CC, kale or uc	CC, kale or zuc
Cucumbers			3		4	2		
Beans (G/T/DT)			2 lb	1 lb	2 lb	1 lb		
Kohlrabi								
Kale						(broc or kale)		
Eggplant			1					
Tomatoes					6	3	12	6
Sweet Peppers					6	3	6	3
Sweet Potato Leaves					1 bag	1 bag		
Salad Turnips							6	3
Potatoes							3 lb	1.75 lb

How much of each vegetable was not consumed?

	July 14th (n = 19)	**July 28th (n = 17)**	**August 11th (n = 14)**	**August 25th (n =19)**
Most Consumed	Zucchini (5)	Cucumber (3)	Sweet Pepper (3)	Zucchini (4)
Least Consumed	Cabbage (9)	Chinese Cabbage (11)	Sweet Potato Leaves (8)	Potatoes* (15)

Not enough participants or vegetables to assess change over time, statistically.

Differences in Vegetable Waste: Knowledge or Preference?

Sweet Potato Leaves

- 10/14 didn’t consume all
- 8/10 threw away

Broccoli

- 4/14 didn’t consume all
- 3/4 threw away

Differences in Vegetable Waste: Timing Issue?

Chinese Cabbage

11/17 didn’t consume all

2/11 threw away

Zucchini

9/17 didn’t consume all

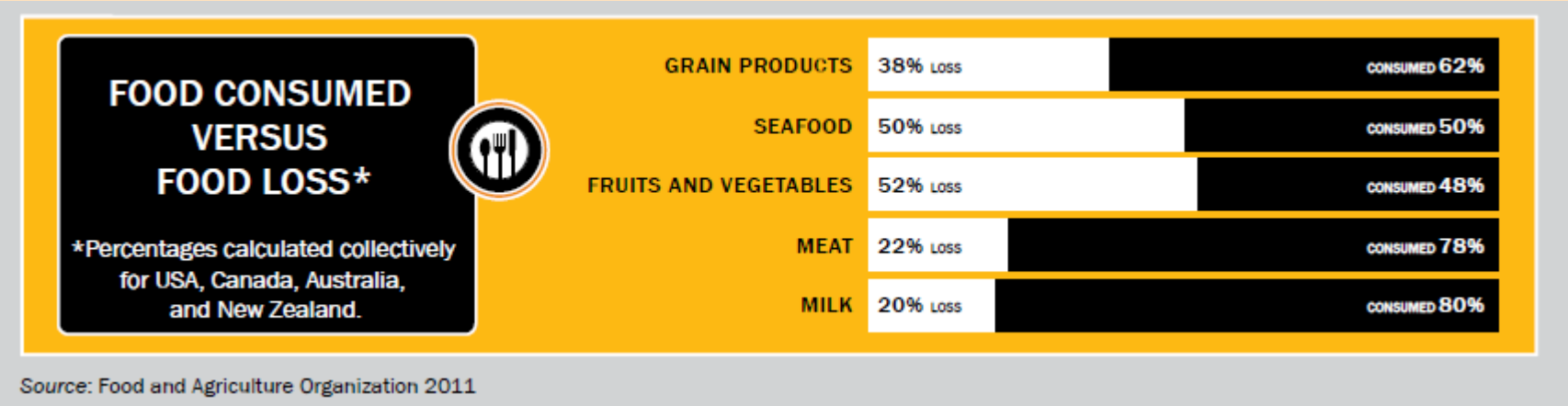
3/9 threw away

Overall vegetable waste was lower than national average

24 total vegetable options

Average person had 9 vegetable options not completely consumed (36% ± 16%)

Average person had 3 vegetables options thrown away (12.5% ± 6%)



BMI	n	Percentage of Vegetable Options Not Consumed	Percentage not consumed thrown away
Underweight/Healthy	9	36.2% ± 20.5%	35.7% ± 37.8%
Overweight	5	36.3% ± 13.9%	31.8% ± 27.9%
Obese	5	36.3% ± 14.1%	15.8% ± 10.3%
Salary			
<$100K	10	38.3% ± 11.9%	19.1% ± 13.9%
$100-150K	6	30.8% ± 21.9%	53.7% ± 43.1%
>$151K	3	39.7% ± 22.0%	15.3% ± 5.7%
Education			
BA/BS	8	40.7 % ± 17.7%	19.7 % ± 24.0%
MA	7	33.7% ± 14.5%	32.4% ± 30.7%
PhD/MFA	4	31.3% ± 19.9%	43.5% ± 40.5%
ANOVA revealed no significant differences			

Participant Perception of Food Waste

True/False: My vegetable consumption increases during the CSA season.

16/19 True

3/19 False

True/False: My food waste awareness increased while participating in the study this CSA season.

16/19 True

3/19 False

Efficacy vs. Behavior - No Significant Differences

Participants were asked on the end of season survey:

True/False This year I wasted less of my CSA share than previous years.

Answer: True (n = 8)

- 7.5 out of 24 Vegetables Options weren't completely consumed (SD: 4.5)
- 5 Vegetable Options were thrown away (SD: 8)

Answer: False (n = 11)

- 9.5 out of 24 Vegetables Options weren't completely consumed (SD: 3.5)
- 5 Vegetables Options were thrown away (SD: 5)

Discussion

Small sample size

Member Profile and Demographics are similar to existing data

No trends in vegetable consumption or food waste from this study

CSA outreach to the community (churches, EBT) → what can we do to make more feasible?

Limitations To Study

Pilot Study

Small, homogeneous population

Timing of Surveys vs. Freshness of CSA components

Future Research

Surveying CSA members every week→ does repetition of vegetable impact consumption?

Determining amount of time allowed for consumption to best assess food waste

Including FFQ to better understand dietary habits

More participants!

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Common Ground Garden

Questions?

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