Agricultural Production and Food Systems

P1 Evaluating Food Waste Knowledge, Attitudes and Behaviors in College Students at a Midwestern University

Gretchen Feldpausch, RDN, glh95@iastate.edu, Iowa State University, 220 MacKay 2302 Osborn Dr, Ames, IA, 50011; Christina Campbell, PhD, RDN, Iowa State University

Background: An estimated 40% of food produced in the United States is wasted, and approximately 90 billion pounds are discarded by consumers annually. Food waste threatens the environment and contributes to food insecurity. Identifying methods to reduce personal food waste represents a potential strategy to actively engage in behaviors that positively impact the food system and environment.

Objective: Explore current knowledge, attitudes, and behaviors related to food waste in college students. Results will provide details to assist in developing interventions to mitigate consumer food waste.

Study Design, Setting, Participants: A survey was released to 30,773 undergraduate and graduate students enrolled in a midwestern university. Questions addressed knowledge and attitudes associated with food waste, concern for environmental consequences, transtheoretical model stage, and application of mitigation behaviors.

Measurable Outcome/Analysis: A response rate of 6.3% provided a total of 1,931 responses for analysis. Recruitment was done via email, and data were collected via Qualtrics. A descriptive analysis was conducted to identify initial characteristics of this population.

Results: Evaluating the stage of change for reducing personal food waste showed 8% of respondents in precontemplation, 30% in contemplation, 4% in preparation, 57% in action and maintenance, and 1% in relapse. However, on a 5-point Likert scale from not at all knowledgeable (1) to very knowledgeable (5), 64% designated they were only slightly (2) or somewhat knowledgeable (3) about ways to reduce food waste.

Conclusion: Evidence suggests that this audience is open to change, yet do not have sufficient knowledge regarding ways to reduce food waste. Thus, guidance may be warranted to help them acquire the information and skills to be successful. Understanding these barriers and attitudes will allow for the development of specific, tailored approaches to waste reduction that acknowledge where students are and carve a path toward a more sustainable food behavior.

Funding: None.

P2 Farmers Feeding Utah: An Innovative Approach to Increasing Healthy Food Access and Supporting Local Agriculture

Casey Coombs, MS, RDN, casey.coombs@usu.edu, Utah State University Extension, 8749 Old Main Hill, Logan, UT; LaCee Jimenez, BS, Utah State University Extension;

Mateja Savoie-Roskos, PhD, MPH, RDN, Utah State University; Heidi LeBlanc, MS, Utah State University Extension

Objective: Farmers Feeding Utah (FFU) aims to help Utah farmers and families who have been impacted by COVID-19. FFU temporarily improves participants' food security, increases the availability of fresh, local food in pantries, and provides product outlets for farmers.

Use of Theory or Research: Utah has seen a 300% increase in the need for food assistance since the onset of COVID-19 in March 2020. Additionally, processing shortages and market losses have left many Utah farmers without a market for their products. FFU provides a food system change that connects families in need to fresh, local food.

Target Audience: FFU is targeted towards food insecure families and struggling farmers. Families experiencing intergenerational poverty are given priority at the food distribution events. Locations for FFU events are identified by need, based on increases in unemployment and SNAP enrollment.

Program Description: FFU is a partnership between the Miracle of Agriculture Foundation, Utah Farm Bureau, and Utah's SNAP-Ed program, Create Better Health. Individual and corporate donations are collected to purchase nutrient-dense, locally produced foods to distribute to those in need.

Evaluation Methods: FFU collects outcome data at the distribution events, including the household size of those reached and effective marketing strategies. Additionally, the number of farmers and food pantries supported by the program and pounds of food donated are collected.

Results: To date, FFU has held 8 food distributions across the state of Utah, including in the Navajo Nation. Over 1.1 million pounds of food, including produce, meat, poultry, eggs, nuts, and live sheep, have been distributed to over 21,000 families and 25 food pantries. The program has supported 27 Utah farmers.

Conclusion: While FFU was developed in response to COVID-19, the need for food system changes to better connect individuals experiencing food insecurity with local products will remain beyond the pandemic. FFU is dedicated to finding sustainable solutions towards a more equitable regional food system.

Funding: Supplemental Nutrition Assistance Program - Education.

P3 Midwestern Regional Grocery Store Chain Canned and Frozen Vegetable Sales

Stephanie DeBerry, MS, LDN, RDN, stephanie-deberry@ouhsc.edu, University of Oklahoma Health Sciences Center, College of Allied Health, Department of Nutritional Sciences, 801 NE 13th St Room 244, Oklahoma City, OK, 73104; Susan Sisson, PhD, LDN, CHES, RDN, University of Oklahoma Health Sciences Center, College of Allied Health, Department of Nutritional Sciences; Jonathan Baldwin, MS, CNMT, RT(CT), University of

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Oklahoma Health Sciences Center, College of Allied Health Sciences, Department of Medical Imaging & Radiation Sciences; *Karla Finnell, PhD, JD*, University of Oklahoma Health Sciences Center, College of Public Health, Department of Health Promotion Sciences; *Meredith Scott-Kaliki, CHES, MS*, University of Oklahoma Health Sciences Center, College of Public Health, Department of Health Promotion Sciences; *Robert John, PhD*, University of Oklahoma Health Sciences Center, College of Public Health, Department of Health Promotion Sciences

Background: Canned vegetables contain higher sodium, which is associated with chronic disease, and are less expensive. Understanding purchasing patterns of low-income Oklahomans will provide information to guide future health interventions.

Objective: To describe the overall canned and frozen vegetable sales and determine differences in canned and frozen sales by store's shopper income.

Study Design, Setting, Participants: This study was a cross-sectional, secondary analysis of canned and frozen vegetable sales from December 2012 through August 2015 of a Midwestern regional grocery chain ($n = 64$ stores). Weekly units sold of canned and frozen vegetables were pair-matched by preparation type and averaged across 144 weeks. Supplemental Nutrition Assistance Program (SNAP) sales were used as a proxy for the store's shopper socioeconomic status (SES; ie, high SNAP sales=lower shopper SES). High SES stores ($n = 16$, bottom quartile) had 5.7% SNAP sales and low SES stores ($n = 16$, top quartile) had 14.7% SNAP sales.

Measurable Outcome/Analysis: An independent t test was conducted to compare the percentage of canned to frozen units sold between high and low SES stores. All statistical tests were conducted assuming $P \leq 0.05$, using SAS 9.4.

Results: Across all stores, 78.7% of canned and frozen vegetable sales were canned and 21.3% were frozen. Green beans were the highest canned sales and mixed vegetables were the highest frozen sales. Canned vegetable sales accounted for significantly more (84%) of total canned and frozen vegetable sales in low SES stores compared to high SES stores (74%) ($P < 0.0001$, 95% CI: 0.06-0.13).

Conclusion: Low SES stores sell more canned vegetables compared to high SES stores in Oklahoma. These data are representative of Oklahoma sales data and are comparable to national trends. Findings demonstrate a need to understand how individuals living in low SES households make purchasing decisions to improve public health intervention strategies attempting to improve diet quality.

Funding: Supplemental Nutrition Assistance Program - Education.

P4 Nourish Dialogue Dinners Create Collaboration Among Stakeholders Across Food Systems to Advance Sustainable Food Systems

Dana Gerstein, MPH, RDN, Dana.Gerstein@dairy.org, National Dairy Council, 10255 W Higgins Rd, Ste 900, Rosemont, IL, 60018; *Katie Brown, EdD, RDN*, National Dairy Council; *Katie McKee, LD, RDN, MCN, DairyMAX*

Background: A sustainable food system ensures food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition of future generations are not compromised. No single sector of a food system can achieve this alone.

Objective: Nourish Dialogue Dinners (NDD) were designed to create a dialogue among diverse stakeholders from across all sectors of food systems around opportunities related to advancing agriculture, nutrition, health and sustainable food systems.

Study Design, Settings, Participants: In collaboration with state and regional dairy councils, National Dairy Council organized 25 NDD around the country. Stakeholders from the supply chain (farmers, processors and distributors) and those impacting food environments (retailers, schools, hospitals and food banks) and providing health and wellness guidance (physicians, nurses, dietitians, fitness professionals and culinary experts) were invited to participate. Each NDD followed a standardized methodology to facilitate an inclusive discussion around 6 questions posed by a moderator. Detailed notes were taken from each dinner table discussion.

Measurable Outcome/Analysis: A trained, custom-built machine learning model synthesized the dinner notes to identify discussion themes and topics. Descriptive statistics and Spearman's rank-order correlations were performed to generate frequencies for discussion topics and assess the degree to which topics were discussed together (significance level at $P < 0.05$).

Results: The model identified 19 discussion topics organized into 5 overarching themes from 242 stakeholders. While the topics discussed differed markedly across stakeholders from different sectors of the food system, the most frequently discussed topic was the need for youth experiential learning experiences around farming, food production and nutrition to inform future public health. The second most frequently discussed topic was farmers' efforts and progress toward environmental sustainability.

Conclusion: NDD brought stakeholders from across the food system together to realize their interconnections that can be leveraged to improve sustainability. NDD is a replicable model that supports advancing sustainable food systems.

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