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Farm to Fork or Farm to Landfill?

Barbara L. Goode Kansas State University

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Farm to Fork or Farm to Landfill

Barbara Goode, P.E.
Pollution Prevention Institute





PPI and Food? **Kansas State University** College of Engineering **Engineering Extension Pollution Prevention Institute (PPI)**





Overview

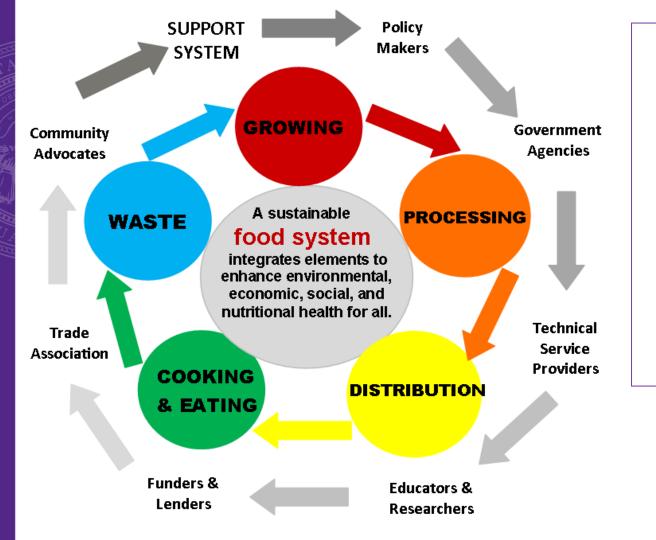
- Salina area food system assessment-USDA
- Food recovery & diversion
 - -SE rural Kansas-USDA
 - -Sedgwick County-KHF



Assessment of the Salina Area Food System

- Funded by USDA Agricultural Marketing Service's Local Food Promotion Program
- Identify stakeholders
- Identify food system's needs
- Find solutions to better connect local producers with consumers



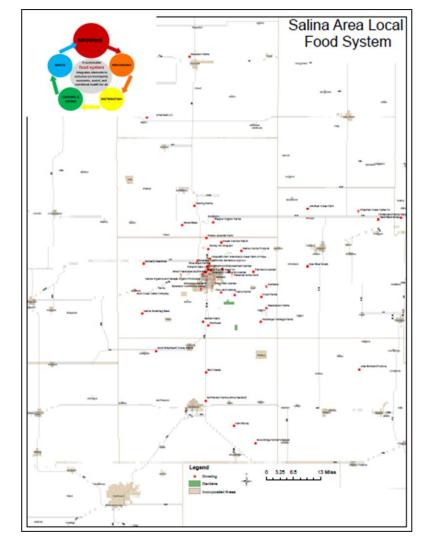


Food System

sum of all activities required to make food available to people







Appetizer Buffet

Cheese

Jason Weibe Dairy, Durham, KS

Sun-dried Tomato Dip

C&C High Tunnel Farms, Chris and Christi Janssen, Scandia, KS

Spaghetti Squash Fritters with Sriracha Mayonnaise

Squash from Saline County Produce, John Ratzlaff, New Cambria, KS
Onions from Lucy Alexander, Gypsum, KS

Eggs from Thelanders' Acme Farm, John and Kellie Thelander, Salina, KS

Butternut Squash Vichyssoise

Squash from Saline County Produce, John Ratzlaff, New Cambria, KS
Onions from Lucy Alexander, Gyasum, KS

Whole Wheat Crackers with Rosemary Whole Wheat Crackers with Za'atar

Whole wheat flour from Heartland Mill, Marienthal, KS

Lavender Iced Tea

Prairie Lavender Farm, Mike Neustrom, Bennington, KS Coffee

Iron Street Coffee Roaster, Carla Mahon, Salina, KS

Beverages to Purchase

Local Brewed Root Beer Big John's Brewery, Salina, KS Local Brewed Beer Big John's Brewery, Salina, KS Blue Skye Brewery, Salina, KS Local Wine Smoky Hill Vineyards & Winery, Salina, KS

Sincere thanks to the those who made the free local food appetizers possible:

- Squash was generously donated by Salina County Produce, John Ratzlaff.
 - Funding for food was provided by Kansas Alliance for Wellness.
 - Prairieland Market chefs and sous chefs:

Nancy Arnoldy, Ruth Cathcart-Rake, Claire, Ruby and Sarah Crews, Paula Fried, Amy, Hannah and Kate Hemmer, Martha Rhea, Donna Sandberg, Melanie Sanders. Heather Smith. and Allison Stuewe

Sacred Heart High School students who served and bussed tables

Program Agenda

Look over the maps and get a picture of our local food system.

5:30 pm Begin Meet, Greet, and Eat

Enjoy food, beverages, and socializing.
Verify or mark your organization's name and location
on one of the maps. Who else should be added?
Map facilitators can help you find the right map.
Write detailed comments on your card.

6:10-6:40 pm Food System Panel

Welcome

Jamie Bremen, Kansas Department of Health and Environment, Bureau of Health Promotion

Facilitator

Myles Alexander, K-State Center for Engagement and Community Development

Panelists

GROWING: Don Wagner, Wagner Organic Farms
PROCESSING: Danny Williamson, Krehbiel's Specialty Meats
DISTRIBUTION: Mike Soetaert, Prairieland Market
COOKING/EATING: Cindy Foley, USD 305
WASTE: Ron Rouse. City of Salina

6:40 -7:00 pm Wrap Up

Turn in your completed card at the registration table to have your name included in the drawing for the gift basket.



Workshop



#foodinsecurity

Barbara Goode, P.E.

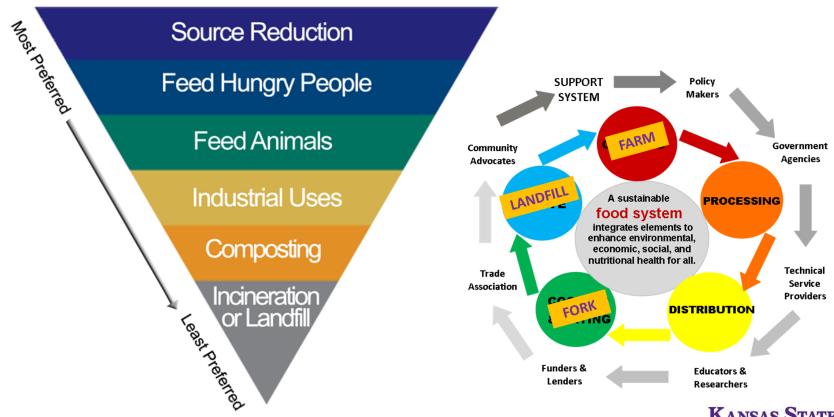
KANSAS STATE

Salina Area Food System Assessment Results

- Need for a food advisory board (food policy council)
- Need for a food hub or similar
- Need for education
- Need for changes to current Salina's farmers market

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Food Recovery Hierarchy



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Rural Kansas Project

- Funded by USDA solid waste management grant
- One-year project
- SE KS communities with <5,500 pop.
- Worked with nine schools, institutions, and businesses



Rural Kansas Project





Track food waste. Without tracking, it's impossible to know how much food is being wasted and to notice ongoing trends or measurable improvements. Tracking can be done on the pre-consumer side (preparation) and post-consumer (what students throw away).

Plan ahead. Pre-plan secondary uses for menu items in case of overproduction

"Offer versus serve." Allow students to decline some of the food offered in a school lunch or breakfast program while still meeting federal nutritional standards. This strategy reduces food waste by not making students take food they don't like or won't eat.1

Schedule recess before lunch. "When kids come back from recess, all their energy's out, and they actually eat their lunch instead of throwing their lunch away, and then they're ready to learn after they eat."2 One study showed a decrease in plate waste from 40.7% to 27.2%.

Eliminate vending machines. The availability of competitive foods contributes to food waste in the school cafeteria. Students may pass over the healthier lunch. options and go for the chips, candy, and other junk food in

Take more time for lunch. Kids make it to lunch and want to socialize. Adding a few minutes to their lunch time can increase the amount of food eaten.

Gardening and culinary education. This strategy increases students' nutrition knowledge and broadens their taste for and consumption of fruits and vegetables." Involve students. Consider taste testing, where students can sample the items and provide feedback.

Start a "share table." A share table can be designated where children may return whole items they choose not to eat or take items other children have shared, provided this is in compliance with local and State health and safety codes. This can include items such as milk, packaged fruit and vegetable items, packaged snack or dessert items, whole fruit or pre-packaged cereal. For Kansas, review standard operating procedure (SOP) #23 (page 55) of the HACCP (Hazard Analysis Critical Control Points) Food Safety Plan available on the Kansas State Department of Education website

Donate food. Excess food that was not served or remains in packaging should either be served again for meals, or redistributed to hungry populations through donation to an eligible charitable organization. The USDA has published a guidance document that details food recovery and donation options. Although the guidance does not specifically address diverting food not suitable for human consumption to animal feed or for industrial uses, these types of donations only need approval from the school administration

Compost. Inedible food scraps from a food preparation or dining area can be composted on site or taken to a composting facility to avoid sending it to the landfill.

- www.cairecycle.ca.gov/reducewaste/schools/food/
- www.cpr.orginews/story/timing-recess-makes-difference#sthash.kRJl3t76.dpuf http://docs.schoolnutrition.orginewsroom/jcmmiD4fal/bergman/bergman1.asp http://voices.washingtonpost.com/all-we-can-eat/food-politics/edible-schoolyard-
- gets-passing.html www.kansas.com/2012/12/01/2587528/wasted-food-a-worry-for-schools.html

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ne) 785-532-6220; (TTY) 785-532-4807. Revised August 14, 2014

September 2014

Pollution Prevention Institute

www.sbeap.org/services-programs/food-recovery

Sedgwick County Project

- Funded by Kansas Health Foundation
- Two-year project
- Two summer student interns



Four Dillons (Kroger) food stores







Food Recovery & Diversion

Focus areas

Produce

Dairy

Bakery

– Meat &

Deli

Seafood

Goals

- Identify source reduction opportunities.
- Maximize food donations to the Kansas Food Bank.
- Increase food waste diversion options.





Large amounts of produce found in trash

Cornhusks account for a large amount of waste





Approximately 30% of waste was organics



Year 1 Results

Summary of 2013 intern recommendations for Dillons

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Grocery	2.7 tons	\$2,058	Planned
Produce	36 tons	\$2,863	Implemented
Bakery			
Bolilo Rolls	2.5 tons	\$14,202	Implemented
Donuts	2.1 tons	\$9,079	Partially Implemented
Deli	5.4 tons.	\$29,955	Recommended
Total savings *	48.7 tons	\$58,157	
GHG reductions *	33 metric tons CO2e		

Year 2 Results

Summary of 2014 P2 intern recommendations for Dillons Food Stores

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Deli BBQ Baked Chicken	0.5 tons	\$3,500	Recommended
Deli Baked Chicken	0.4 tons	\$2,300	Recommended
Deli Small Sides	1.4 tons	\$6,000	Implemented
Produce	26.6 tons	\$14,000	Implemented
Bakery	12.8 tons	\$1,000	Implemented
Water	1,300,000 gal	\$7,000	Implemented
Total savings	41.7 tons waste diverted 1.3 million gallons of water saved	\$33,800	
GHG reductions *	67.2 metric tons CO2e (MTCO₂E)		

Case Studies

2014 Case Study

Dillons Food Stores

Intern: Bintou Bayo Major: Engineering Technology School: Wichita State University





Dillons is a chain of grocery supermarkets owned and operated by the Kroger Company, an American retailer based in Cincinnati, Ohio. The Kroger Company owns more than 3,700 stores nationwide. In Kansas, Kroger operates more than 50 stores under the Dillons Division, in addition to two distribution centers.

An estimated 50 million Americans are food-insecure, yet food waste makes up the largest percentage (21%) of waste sent to the landfills. In an effort to address this issue, Dillons partnered with the Kansas State University Pollution Prevention Institute (PPI) for a second year. hosting a food-recovery intern. In 2013, Dillons implemented source-reduction recommendations across most stores, reducing production of bolilo rolls and rotisserie chicken, and increasing donations to the Kansas Food Bank (KFB). In late 2013, Dillons began contracting with Quest, a service that diverts food trimmings and wastes to animal feed programs.

The 2014 intern was assigned to work with two different stores in the Wichita area, studying and identifying sourcereduction and food redistribution opportunities. Through waste assessments, observations, and interviewing store associates, the intern was able to identify the following:

- + Source reduction opportunities for the deli, bakery, and produce departments of both stores;
- → A 95% increase in food donations to the Kansas Food Bank (KFB) from all perishable food departments; and
- Increased food trim and waste diversion from produce departments to Quest, an animal feed program.

Dillons implemented some of the 2014 intern's recommendations immediately, and the estimated annual environmental impact and cost savings can be found in a table at the end of this case study

Locally, Dillons stores are just as committed to reducing environmental impacts, especially in the area of food waste. In recent years, management has executed several pollution prevention (P2) initiatives to source reduce, feed hungry families, and divert food waste to animal feed. Source-reduction opportunities identified by the 2013 intern reduced over production and saved Dillons approximately \$50,000 at just two stores. In 2014, Dillons wanted to continue the food recovery work, with a goal to reduce excess food at the source and redistribute what could not be reduced, to hungry populations or animals.

Projects reviewed for P2 potential

The hot case at the deli in both stores was the area with the highest source-reduction opportunity. The intern identified possible areas of reduction with the BBQ baked chicken, baked chicken, and small sides.

The intern's audit revealed that more BBQ chicken was being discarded than sold. Chicken and a few other deli products are not eligible for redistribution to the KFB or Quest, so excess is landfilled. Reducing the production of BBQ baked chicken by 50% and baked chicken by 25% could prevent landfilling approximately 0.9 tons. saving the department \$5,800 annually.

Small sides at Dillons' deli have a shelf life of eight hours. The intern calculated that more small sides are discarded than sold. It was recommended the deli adjust the packaging time, reducing waste at the source. By delaying the initial packaging time by two hours, approximately 1.4 tons of waste would be avoided. Based on the sales price of these sides, Dillons could save about \$5,600 annually. The recommendation was implemented quickly.

The produce department was responsible for the largest portion of weight going to the landfill, generated through produce trimmings and food that was not

2013 Case Study

Dillons

Intern: Kara Hall Major: Civil Engineering School: University of Kansas





Company background

Dillons is a grocery chain owned and operated under Kroger, a national company based in Cincinnati, Ohio. The company operates 2,424 grocery retail stores, 791 convenience stores, and 348 jewelry stores in 31 states. Kroger employs 343,000 associates nationwide in its stores as well as 34 distribution centers, and 37 food processing plants. The Dillons division operates 88 stores in the Midwest region, 66 of which are located in communities across Kansas. Dillons strives to provide their customers with the freshest and highest quality products in its stores.

Project background

The objective of the summer 2013 internship was to reduce the amount of excess food and food-related product being sent to the landfill from two stores in Wichita. Through observation, data collection, and analysis areas of opportunity for both source reduction and food diversion were identified in each

Incentives to change

According to the EPA, "In 2011 alone, more than 36 million tons of food waste were generated, with only

and food diversion, they partnered with K-State's pollution prevention (P2) intern program to host a program titled "Food Recovery Challenge Feeds Sedgwick County Hungry." The project was modeled after The Food Recovery Challenge (FRC), a national EPA program aimed at reducing the amount of food being sent to landfills. Although the Wichita Dillons stores have not formally joined FRC, their parent

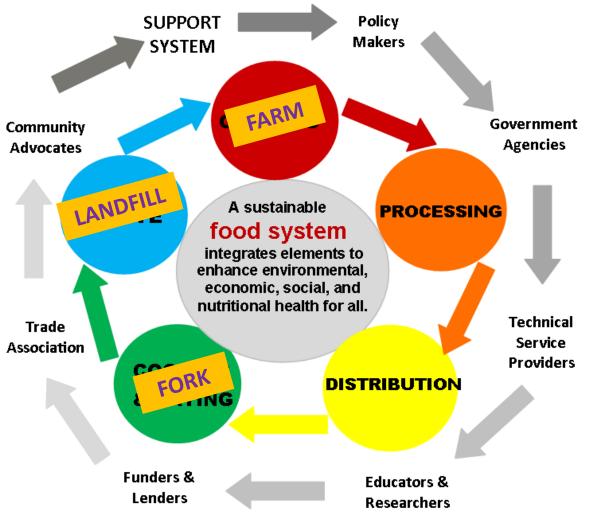
Projects reviewed for P2 potential

In the bakery departments, two sources of excess product were identified. In both stores, bulk case donuts that did not sell were being thrown away, creating large amounts of product being sent to the landfill. It was recommended the donuts in the bulk case be boxed up at night rather than left out, making them eligible to be sold at marked down prices. This process extended the opportunity for sales and made the product eligible for donation.

In both stores studied, bolilo rolls were produced in quantities to meet Dillons production standards; however, in one store approximately 40 percent of the bolilo rolls did not sell and were then donated. It was recommended that the store reduced this loss by adjusting their production numbers and times. This allowed the store to produce bolilos on demand,

www.sbeap.org/intern-program/past-summaries





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