

**Department of Agricultural Economics**  
**University of Kentucky Food Systems Innovation Center**

**Impact of the “Farms to Food Banks”  
 Produce Sourcing Project**

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**Introduction**

The Kentucky Association of Food Banks (KAFB) received a Specialty Crop Block Grant from the Kentucky Department of Agriculture in 2011 for the “Farms to Food Banks” program. This program was designed to increase consumption and awareness of fruits and vegetables among low-income consumers through a targeted local fresh produce distribution program. The University of Kentucky Food Systems Innovation Center (FSIC) assisted with an evaluation of the “Farms to Food Banks” program toward the end of the 2012 marketing season. The primary objective of the evaluation was to determine how impactful the program was for food bank consumers. This report summarizes the results of food bank client intercept surveys by examining fresh produce consumption barriers and changes in consumption behavior.

**Background**

The mission of the KAFB is to provide food and services to increase the capacity of Kentucky’s Feeding America food banks to end hunger. The Association itself coordinates buying and distribution programming for the affiliated food banks. The members of KAFB served 84% more individuals in 2010 than in 2006. The Association is comprised of seven food banks that reach 620,100 people annually, or 1 in 7 Kentuckians, in all 120 counties (KAFB, 2010). Through the “Farms to Food Banks” program, KAFB purchases Kentucky-grown surplus and Number 2-grade produce (fresh and edible but not usually saleable on the retail market) for distribution, free of charge, to low-income Kentuckians across the state. This program allowed KAFB to purchase produce from local Kentucky farmers, either directly or aggregated through various produce auctions throughout the state. The additional revenue therefore increased the amount of marketable product for local growers beyond what they would have otherwise received.

The competitiveness of Kentucky’s specialty crop market was also enhanced through increased awareness of and familiarity with specialty crops, increased consumption of specialty crops, and increased intent to purchase specialty crops in the future among low-income consumers, a market segment that is traditionally underserved. Specialty crops included in the program are apples, beans, beets, broccoli, cabbage, cucumber, lettuce (romaine and assorted greens), okra, onion, peaches, peas, peppers, potatoes, squash (yellow and winter), sweet corn, sweet potatoes, tomatoes, turnips, watermelon, and zucchini.

The project covered two production seasons. During the 2011 grant funded program, \$136,920 was spent on fresh produce and 109 counties received 18 different types of fresh produce. Less than 1% of the fresh produce was lost to spoilage. The producer impact was widely spread with 202 producers supplying the produce from 48 counties across the Commonwealth. In the 2012 growing season, \$218,866 was raised to purchase (or was donated) 1,000,495 pounds of fresh produce from 217 producers—some of which it was donated. The 2012 funding came from the Walmart Foundation, Tobacco Settlement Phase II Funds, the Kentucky Agricultural Development Fund, the Kentucky Department of Agriculture Specialty Crop Block Grant, and the Cralle Foundation.

## Procurement and Distribution of Fresh Produce

There are some important distinctions between food banks and food pantries. In Kentucky, food banks are large (50,000 -100,000 square foot) distribution centers. Food banks solicit, collect, re-package and store millions of pounds of food per year. The food is distributed directly to consumers through a network of over 1,000 partner distribution agencies, which are considered "food pantries"-- these can be soup kitchens, shelters, pantries, etc. Food banks gather food in large warehouses, and food pantries are the agencies through which the food is distributed to the actual consumers.

The managers of produce auctions and individual producers committed prior to the 2012 growing season to sell surplus and number 2-grade Kentucky-grown produce to food banks within the KAFB. Four produce auctions sold produce to KAFB: Capstone Produce Market, Casey County Produce Auction, Hart County Produce Auction, and Lincoln County Produce Auction. A produce auction is a wholesale marketing aggregator for locally produced products. Fresh produce is one of the biggest sellers. Producers deliver products, to the auction location packaged according to standards, and products are arranged in wholesale lots for viewing by buyers. Lots are offered for sale to the highest bidder. The auction charges the seller a commission, usually a percent of sales, to cover the auction's operating expenses. Prices fluctuate from auction to auction because buyer demand and producer supply and quality also fluctuates. KAFB also sourced produce from other grower associations in Kentucky: Perrytown Produce, Grower's Pride, and Grow Farms. Produce was sold to KAFB by 217 producers and most have expressed an interest in continuing with this program.

The Executive Director of KAFB was responsible for arranging produce purchases and distribution to the various regional food bank sites. Upon delivery of the produce he operations staff took charge, and produce was weighed and entered into a tracking system. The produce was then made available at no cost to the food bank's partner distribution agencies/pantries, such as soup kitchens and shelters. Each food bank has a system for fairly, safely and efficiently disbursing food to its partner agencies and for tracking the amount of food distributed in each county. Nutrition education experts and other operations staff at each food pantry distributed nutritional information and recipe cards along with the fresh produce. Food bank staffs were also able to conduct food preparation demonstrations on how to prepare the produce at several distribution sites.

## Research Methods

Surveys were distributed to three food banks supporting nine food pantries participating in the region where produce had been acquired and distributed. These clients tend to be fairly fluid, so traditional pre-test/post-test methods using a panel-type data collection would be especially difficult. We determined that the most effective experimental design would be a 1-time, in-person intercept survey targeting 25-50 clients at each site. The survey asked clients to recount pre-test and post-test observations along a number of variables including changes in awareness of fresh produce, consumption of fresh produce, and identification of barriers to consuming more fresh produce. A total of 213 useable surveys were collected from individuals sourcing food from one of nine regional pantries.

Food pantries that were surveyed, grouped with their primary food bank, are listed below.

Primary Food Bank	Service Area	Food Pantries surveyed
Dare to Care Food Bank	8 counties in North Central Kentucky & 5 counties in Southeastern Indiana	Shively Area Ministries, Bethlehem Baptist, Eastern Area Community Ministries
Feeding America, Kentucky's Heartland	42 counties in Central and South Central Kentucky	Grayson County Alliance, Glad Tidings, WJCR Food Bank
God's Food Pantry	50 counties in Central and Eastern Kentucky	Fleming County Food for Counties, God's Outreach Richmond, Morgan County

## Results—Discussion and Implications

### Shopping and Cooking

The vast majority of responses came from persons primarily responsible for the grocery shopping (94%) and preparing the main meals at home (92%). The average respondent prepared 13.2 meals at home per week – equivalent to approximately 52 meals per month. This compares to an average of 11.0 meals per month prepared at home by the average Kentucky food consumer (Woods, 2012). This striking difference in food preparation behavior suggests fresh produce access through the food banks can significantly impact the food bank consumers overall produce intake through produce access and preparation assistance.

### Fresh Produce Awareness & Consumption

Another goal of the project was to increase fresh produce awareness and consumption among food bank clients. Awareness and familiarity with fresh produce *increased some* for 25.2% of the respondents and *increased by a lot* for 26.2% compared to a year earlier. Figures 1 and 2 display the results by showing the changes (increased some/increased by a lot) in both awareness and familiarity by age group and by household size.

Figure 1

Changes in Awareness and Familiarity with Fresh Produce by Age Group

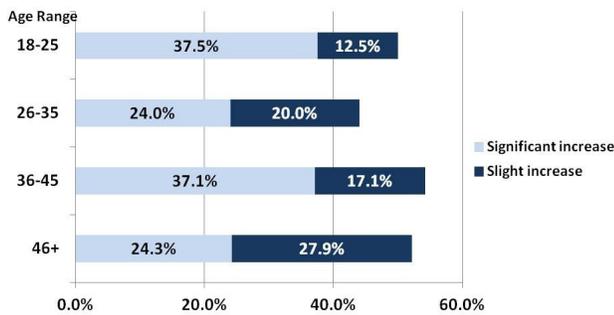
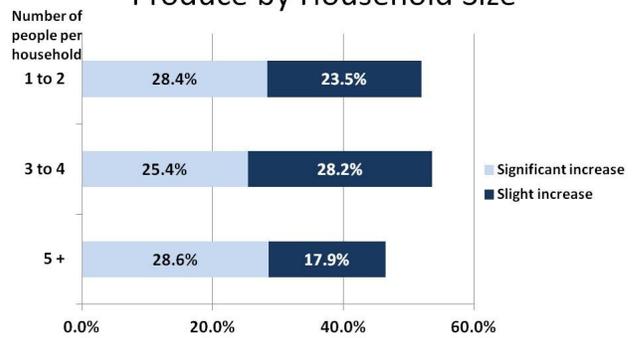


Figure 2

Changes in Awareness of Fresh Produce by Household Size



Consumption of fresh produce *increased some* for 29.3% of the clients and *increased by a lot* for 30.3% compared to 1 year ago. Figures 3 and 4 represent the differences in consumption by age group and by household size.

Figure 3

Changes in Consumption of Fresh Produce by Age Group

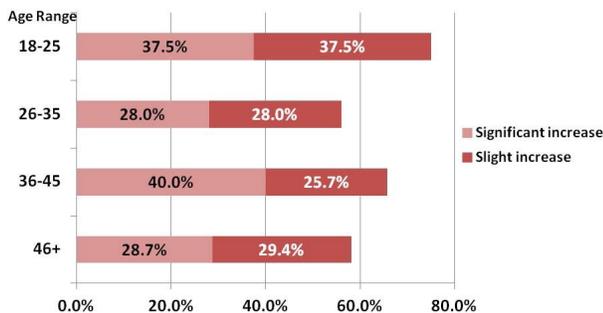
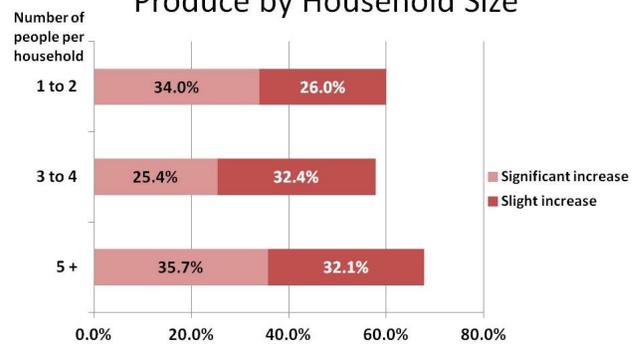


Figure 4

Changes in Consumption of Fresh Produce by Household Size



*Sourcing of Fresh Produce*

Overall intention to use fresh produce in 2012 compared to 2011 was measured. A total of 88.5% of the clients indicated an intention to use more fresh produce in 2012 compared to 2011. The grocery store had previously been the largest supplier to many respondents. Sourcing shifted slightly to heavier reliance on the food banks while shifting away from the grocery stores – but this only measures share of sourcing rather than measuring absolute consumption amounts. The change could also have to do with the availability of free fresh produce at the food banks, so clients chose not to spend limited grocery money on fresh produce (Figure 5).

Questions probing for more insights about fresh produce sourcing were asked. Clients were asked to respond to several questions with simple no/yes responses, shown in Table 1.

Figure 5

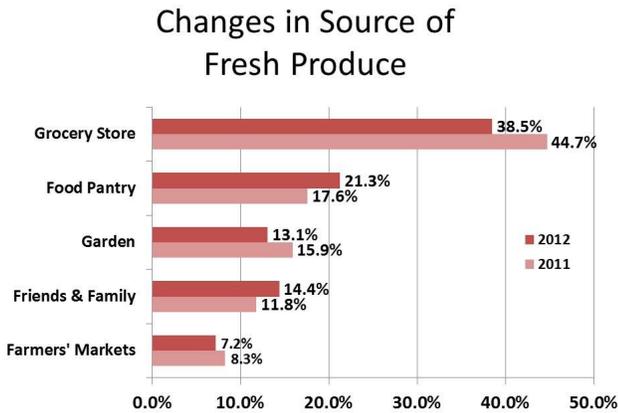


Table 1. Food Bank Consumer Experiences

Fresh Produce Experience	% "yes"
Consuming same amount, just switching sources	71.1%
Trying new fresh produce not tried before	77.0%
Feel like I'm eating healthier	87.4%
Greater awareness of seasons for fresh produce	84.3%

Table 1 shows us that 71.1% of respondents were still consuming the same amount of fresh produce compared to a year ago as a result of the food bank program—just from a different source, not particularly strong evidence of a change in consumption. Other self-reported behaviors, however, suggested a stronger impact—new trials, healthier eating, and greater awareness of produce seasonality.

There was a strong interest in seeing more fresh produce available through the food pantry – 21.7% of consumers indicated they would *like to see more of the same kinds of items currently being received* and 74.9% *wanting more of the same, but also additional produce offerings*. Table 2 below displays the favorite food items enjoyed by respondents.

Table 2. Food Bank Consumer Favorite Fresh Produce Items

Produce Item	%
Tomatoes	86%
Regular potatoes	86%
Fresh greens and lettuces	76%
Melons	76%
Cucumbers	70%
Beans	69%
Peppers	63%
Sweet potatoes	57%



*Barriers to Sourcing and Consuming Fresh Produce*

We employed a Likert scale using 1 = “less of a barrier” and 7 = “more of a barrier” to examine barriers to sourcing and consuming fresh produce. This rating scale provides interesting information and insight into how food bank consumers think about food. Figure 6 summarizes the results. Cost was identified most frequently as “more of a barrier” with an average weight of 5.42—well ahead of the other potential barriers. Family interest and home storage were rated at 3.09 and 3.07 respectively. Bulky transport (2.74), knowing how to prepare it (2.51) and no access to stores that sell it (2.50) were lesser barriers. With cost noted as the biggest barrier, it is important to note that lowering the cost of fresh produce increases the consumption of healthier foods.

Figure 6

Average Effect of Barriers to Increasing Consumption of Fresh Produce

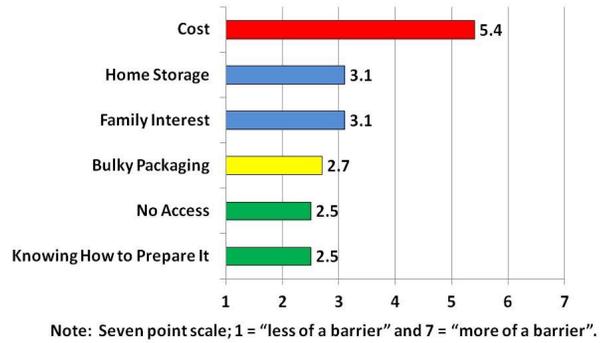


Table 3 summarizes the barriers across some of the demographics. Cost remains clearly the most important barrier regardless of age, having kids, or gender. Female consumers identified cost more strongly, but also noted family interest to be less of a barrier. The implication is that programs such as the KAFB local purchasing project can help these consumers overcome the high costs they associate with fresh produce can contribute significantly to greater consumption. Other factors commonly noted as barriers are much less significant.

Table 3. Barriers of Increasing Fresh Produce Consumption Among Groups

Rank #	Barrier	Age			Families with Kids			Gender			Overall Average Rank
		Below 50	Over 50	t-test	Yes	No	t-test	Female	Male	t-test	
—-average rank displayed—-											
1	Cost	5.56	5.33	-	5.24	5.55	-	<b>5.52</b>	<b>4.99</b>	*	5.42c
2	Family Interest	<b>3.33</b>	<b>2.94</b>	*	3.19	3.00	-	<b>2.89</b>	<b>3.85</b>	***	3.09b
3	Home Storage	<b>3.35</b>	<b>2.90</b>	*	3.14	3.02	-	<b>2.99</b>	<b>3.41</b>	*	3.07b
4	Bulky Packaging	2.79	2.70	-	2.72	2.75	-	2.68	2.94	-	2.73ab
5	Preparation	<b>2.72</b>	<b>2.39</b>	*	2.57	2.47	-	<b>2.42</b>	<b>2.89</b>	*	2.51a
6	Access to Stores	<b>2.77</b>	<b>2.33</b>	*	2.37	2.60	-	2.45	2.67	-	2.50a

Note: N = 213. Mean rankings are displayed here. Asterisks representing t-tests indicate significant differences: \* = 0.1, \*\* = 0.05, and \*\*\* = 0.01. Overall barrier frequency within column, followed by the same letter are not significantly different (Tukey’s test HSD P < 0.05). The question asked respondents to evaluate these barriers using a Likert scale where 1 = ‘less of a barrier’ and 7 = ‘more of a barrier’.

## Conclusions

There is strong evidence of expanded awareness and use of fresh produce among food bank clients during the period that the “Farms to Food Banks” program was being administered. Food bank clientele produce a significant amount of their food at home and lean heavily on groceries and food banks for their produce. There was strong interest in seeing the program expanded – both in volume and in the variety of items. Cost is clearly the major barrier for these individuals. The role of the food banks helping these consumers lower cost barriers is very significant and continued programming is necessary to increase produce consumption among this group of consumers. Results also highlight the continued need for cooking demonstrations, recipe availability, and nutritional information for food bank clientele.

Targeting low-income consumers of fruits and vegetables to increase the demand has often been overlooked. There is opportunity to significantly encourage consumption of fresh and local produce to the long-term benefit of both producers and consumers. The “Farms to Food Banks” program increased consumption of fresh, healthy produce among low-income Kentuckians, but it also resulted in increased farm revenues for Kentucky’s specialty crop producers by providing an expanded market for surplus and number-2 grade Kentucky-grown produce.

## Ideas for Further Extension Projects and Food Policies

Further questions and ideas that could be explored as a part of evaluating food bank and emergency food pantry programming are:

- Ask consumers about participation in other public assistance programs.
- Ask consumers what they like/dislike about all other food and products received at the food pantry.
- Explore relative cost by source.
- Once exposed to fresh produce through food pantries, do grocery store purchases rise?
- Does fresh produce help with dietary needs or restrictions?
- What is the “importance of the food bank as a source of food” for consumers?
- What is the long-term change in overall eating behavior?

Also, how do we explore the bigger implication that emergency food pantries experience ongoing needs?

Food banks play an important role of increasing food access and nutrition for a consumer group that has traditionally been difficult to reach. This study suggests there are potentially important partnerships in both economic development for agricultural communities as well as community development for consumers.

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## References

KAFB, 2010. *Hunger in Kentucky 2010*. <http://www.kafb.org/wp-content/uploads/2011/10/HIK-2010.pdf>  
Accessed March 14, 2013.

Woods, T., based on data reported in the “Fresh Food and Health Food Consumer Survey”, May, 2011.

## Appendix A: Survey Instrument

We hope this example of our survey instrument is helpful to your program. Please let us know of any questions or comments you have for us—our contact information is on the last page of the survey.

**Attention – This survey is completely anonymous; you do not need to give your name or any other contact information. It is intended for people over the age of 18, and please only one survey per household. We sincerely appreciate your time!**

### Dear food pantry patron –

We are trying to collect some feedback from you regarding your recent experience in receiving fresh produce items through the food pantry. Please comment **honestly**. Your responses are completely **confidential**. However, we do want to thank you by sharing a small gift with you. After completing the survey, please turn it in to receive a gift bag.

### **Shopping and Cooking**

A1. Are you the person that normally does the grocery shopping?

- No             Yes

A2. Are you the person who prepares the main meals in your household?

- No             Yes

A3. How many meals do you prepare at home per week on average? \_\_\_\_\_

### **Fresh Produce Consumption**

B1. Would you say that your **awareness and familiarity with** fresh produce, compared to 1 year ago, has

- Remained relatively the same  
 Increased, but not too much  
 Increased, by a lot

B2. Would you say that your **consumption** of fresh produce compared to 1 year ago has

- Remained relatively the same  
 Increased, but not too much  
 Increased, by a lot

B3. Thinking about your average meals during a week, what **number of meals** do you estimate includes fresh produce compared to 1 year ago (2011)?

# of meals with fresh produce per week 1 year ago \_\_\_\_\_

# of meals with fresh produce per week today \_\_\_\_\_

B4. Where did you get most of your fresh produce last year? Has it changed?

	% Last year (2011)	% This year (2012)
Grocery store		
Food pantry		
Garden		
Friends & Family		
Farmers' Market		
Other		
<b>Total</b>	<b>100%</b>	<b>100%</b>

B5. Do you intend to use more fresh produce in 2012, compared to last year (2011)?

- No       Yes

**Barriers and Experience**

C1. What are the barriers to increasing your consumption of fresh produce? (circle one)

	<i>Less of a barrier</i>				<i>More of a barrier</i>			
Knowing how to prepare it	1	2	3	4	5	6	7	
Family interest	1	2	3	4	5	6	7	
Cost	1	2	3	4	5	6	7	
Home Storage	1	2	3	4	5	6	7	
Bulky packaging for transport	1	2	3	4	5	6	7	
No access to stores that sell it	1	2	3	4	5	6	7	
Other	1	2	3	4	5	6	7	

C2. What has been your experience with fresh produce at the food pantry?

- Consuming same amount, just switching sources       No       Yes  
 Trying new fresh produce not tried before       No       Yes  
 Feel like I'm eating healthier       No       Yes  
 Greater awareness of seasons for fresh produce       No       Yes

C3. Would you like to see even more fresh produce available through the food pantry?

- No, not interested  
 No, it's about right for our needs  
 Yes, more of the same kinds of produce we currently get  
 Yes, including additional items

C4. My favorite items are --- (please check all that apply)

- Beans
- Sweet potatoes
- Tomatoes
- Melons
- Other \_\_\_\_\_
- Fresh greens and lettuces
- Regular potatoes
- Peppers
- Cucumbers

***Lastly, we would like to know a bit about you.***

D1. What is your gender?       Female       Male

D2. What is your age?      \_\_\_\_\_ Years

D3. How many members live in your household, including yourself? \_\_\_\_\_

D4. How many children under 18 live in your household? \_\_\_\_\_

Additional Comments?

## **Please return your survey in exchange for a gift!**

Thank you for your time and participation. Our many thanks to the Kentucky Association of Food Banks. We hope you enjoy your gift bag. Your opinion means a lot!

For concerns or questions, please contact:

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