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## Institutional and Commercial Food Service Buyers' Perceptions of Benefits and Obstacles to Purchase of Locally Grown and Processed Foods

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## SUMMARY

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### INTRODUCTION

A Leopold Center for Sustainable Agriculture funded project (2001-38), “Institutional and Commercial Food Service Buyers’ Perceptions of Benefits and Obstacles to Purchase of Locally Grown and Processed Foods” was recently completed. Catherine H. Strohbehn and Mary B. Gregoire from the Hotel, Restaurant and Institution Management Program (HRIM) of the Apparel, Educational Studies, and Hospitality Management (AESHM) Department at Iowa State University (ISU) were project investigators. They can be reached at 1055 LeBaron Hall, 515/294-7474, or [cstrohbe@iastate.edu](mailto:cstrohbe@iastate.edu). This project investigated procurement issues for institutional and commercial food services related to purchasing of locally grown and processed foods. There were three major project phases.

#### Phase One

The first phase was conducted July through December 2000. Empirical evidence from a random sample of institutional and independently owned restaurants in Iowa was gathered by mail survey. Perceptions of the food buyer as to benefits and obstacles of local food purchasing were determined, and the importance of food safety in selection of a vendor was assessed.

Responses from 15% of the 122 restaurants and 66 of the 170 institutions (39%) were received and analyzed. Results are shown in Table 1. Perceived benefits to purchasing food from local sources included fresher food, good public relations, retained value to local economies, higher quality food, and the ability to purchase food in small quantities. Each of these benefits received a mean rating of 3.8 or higher on a 5-point scale with 5 = strong benefit. Items with mean ratings of 3.1 or higher included: lower transportation costs, known product source, availability of special varieties, less expensive food, safer food, and less use of pesticides.

The perceived obstacle with the highest mean rating on the 5-point scale (5 = High Obstacle) was year round availability (3.9). Other identified obstacles included working with multiple vendors, consistent package size, safety issues, on-time delivery, and payment procedures. See Table 2. This evidence indicates operators are interested in purchasing foods from local sources and that coordination among growers to streamline order, delivery and payment processes might offset perceived obstacles.

Table 1. Iowa foodservice operators mean ratings of benefits to local food purchasing.<sup>1</sup>

	Restaurants n = 18	Institutions n = 66
Fresher food	4.4	4.0
Good public relations	4.1	4.2
Aid to local economy	3.9	4.0

Purchase small quantities	3.9	4.1
Higher quality food	3.8	3.7
Lower transportation costs	3.5	3.8
Known product source	3.5	3.8
Special varieties available	3.4	3.0
Less expensive food	3.3	3.4
Safer food	3.2	3.3
Less use of pesticides	3.1	3.3

<sup>1</sup> 5-point scale: 1 = no benefit; 5 = strong benefit

Table 2. Iowa foodservice operators mean ratings of obstacles to local food purchasing.<sup>1</sup>

	Restaurants n = 18	Institutions n = 66
Year around availability	3.9	3.9
Working with multiple vendors	3.2	3.6
Obtaining adequate supply	3.2	3.5
Consistent package size	3.1	3.0
Local and state regulations	3.1	3.7
Reliable food quantity	3.0	3.4
Order methods	2.9	3.3
Safety issues	2.9	3.3
On-time delivery	2.9	3.4
Labor time to prep food	2.6	3.2
Product cost	2.6	3.1
Payment procedures	2.6	2.9

<sup>1</sup> 5–point scale: 1 = no obstacle; 5 = high obstacle

## Phase Two

Nine food service sites located in four central Iowa towns (Ames, Colo, Nevada, and Story City) agreed to participate in the second phase of the study that began May 2001 and concluded November 2001. Food buyers for five restaurants, three schools and one nursing home in central Iowa completed this portion of the study. Pre-and post-assessments of food buyers’ attitudes and knowledge about local food purchasing were administered and information about purchasing practices was collected at the beginning and end of this phase. A list of local growers was compiled.

The first site visits were conducted in May 2001. Baseline information about current purchasing practices was gathered using a standard interview form and questionnaire. Pre-project knowledge and attitudes assessments were administered with the knowledge assessment then reviewed with correct information about purchasing regulations disseminated in verbal and written form. The menu was reviewed and items with potential to purchase locally were identified. A list of local suppliers, products, and estimated prices was reviewed. Other information sources were also left for the food service buyers.

Each food service buyer was frequently called or visited by the project researcher during the 6-month Phase Two period. Photographs were taken with a photo-journal of the project compiled and displayed at the retreat.

In November 2001, the final site visit included administration of the post-attitude and knowledge assessments and an interview. The standard interview questionnaire was used to determine if any increased purchasing from local sources had taken place. Participants were given an invitation to a final project gathering at the Scheman Center in Ames.

Results of the pre- and post-attitude and knowledge assessments are included in Table 3. Findings indicated awareness about purchasing from local sources and a willingness to work with local growers. Some concerns noted by buyers were uncertainty of product availability, quality and pricing information. Some buyers suggested growers develop a Fact Sheet to provide to food service operators throughout the season. Currently, most food service operators are satisfied with their purchasing practices and identified that length of the relationship with their vendor does influence continuation. Several buyers identified drawbacks to dealing with more vendors, arranging for timely delivery of product, or working within a set budget and organizational payment procedures.

Information gathered in Phase Two of the project was presented to participants and other relevant stakeholders at a retreat held December 11, 2001 at the Scheman Center in Ames, Iowa. Information presented is available on the HRIM Extension web site at [www.iastate.edu/etc](http://www.iastate.edu/etc)

Table 3. Pre- and post-project attitudes of nine central Iowa foodservice operators about local food purchasing.<sup>1</sup>

	Pre	Post
<b>Greatest Threats to Food</b>		
Improper handling by staff	3.4	3.1
Micro-organisms	3.3	3.3
Improper handling by supplier	2.9	2.7
Improper handling by producer	2.7	2.9
Preservatives on food	2.1	2.3
Pesticides on food	1.9	2.3
<b>Factors Important in Supplier Selection</b>		
Timely delivery of orders	4.6	4.3
Time of day food delivered	4.2	3.6
Food safety	4.1	4.9
Concern for safe food	3.7	3.2
Convenience	3.7	3.8
How foods are packaged	2.8	3.1
<b>Current Purchasing Practices</b>		
Current suppliers deliver orders accurately and on time	4.1	4.3
I am satisfied with current purchasing practices	4.1	4.0
Length of relationship with vendor influences continuation	3.0	3.1
My operation has strict regulations about payment procedures	2.9	3.4
<b>Local Food Buying</b>		
I am willing to work with more suppliers to purchase locally	3.8	3.9
A drawback to local purchasing is reliable supply	3.8	3.9

I have back-up vendors available, if needed	3.7	3.6
Customer support for use of local foods would be high	3.7	3.3
I am committed to buying locally-grown/produced foods	3.3	3.1
I am willing to seek out local growers	3.0	2.9
My budget allows me to pay more for local, special/niche foods	2.9	3.3
I am willing to pay more for local foods	2.7	2.8

<sup>1</sup>5-point scale: 1 = strongly disagree; 5 = strongly agree

A pre- and post-knowledge assessment that consisted of 25 statements with response options of True, False and Don't Know was administered. At the beginning of the project period, most food service operators were knowledgeable about purchasing regulations, with 18 of 25 items answered correctly by over half of respondents. There was high awareness of the need for inspection and purchasing from licensed producers for potentially hazardous foods, and high awareness of the need to purchase baked items prepared in inspected kitchens. Five or more respondents answered two items incorrectly. Responses indicated lack of certainty about requirements for use of HACCP (Hazard Analysis Critical Control Points) by suppliers and the definition for "Taste of Iowa" foods.

Pre-project findings from the knowledge assessment also indicated not all participants were familiar with regulations pertaining to meats that cross state lines. Lack of knowledge about guidelines required for direct marketing by produce farmers to food services also was evident. Post project findings were similar.

### Phase Three

The final project phase was conducted in fall 2001. Four food items frequently purchased for use by buyers and pathogens most likely to occur in these foods were selected. Dr. William LaGrange, a food safety specialist recently retired from Iowa State University, worked with project researchers to develop the protocol for collection and analysis. Samples of each food item (ground beef, leaf lettuce/spring mix, dried pasta, and fresh shell eggs from pooled local and national sources) were analyzed at an independent laboratory for pathogens, respectively, of *E. Coli* O157:H7; *Listeria monocytogenes*; *Bacillus cereus*; and *Salmonella spp.*

Two collections were made. All samples were within normal and safe limits for the pathogens tested.

Table 4. Results of testing of selected foods from local and national sources for identified pathogens.

<b>Food Item and Pathogen</b>	<b>September</b>	<b>October</b>
	<b>Local/National</b>	<b>Local/National</b>
Leaf lettuce Listeria Monocytogenes (ELFA)	Normal*/Normal	Normal/Normal
Ground Beef <i>E. Coli</i> 0157:H7 (EIA)	Normal/Normal	Normal/Normal
Dried Pasta Bacillus Cereus (Presumptive)	Normal/Normal	Normal/Normal
Fresh Eggs Salmonella (ELFA)	Normal/Normal	Normal/Normal

\*Isolation of *Listeria Weishimeri*, a non-pathogenic sp. of *Listeria*.

## CONCLUSIONS

This study presented empirical evidence that there is strong interest by food buyers for commercial and institutional food services in Iowa to support local farmers, provide fresher and higher quality food and lower associated transportation costs. A desire to know the sources of foods purchased for operations was also identified. These data are consistent with a national survey administered by Gregoire and Strohbehn (2001).

The data from this study also suggests some action steps for producers. Because commercial food buyers typically serve fewer patrons than institutional settings, there is flexibility to adjust menus to fit seasonal harvests, and set prices accordingly. Institutional food service operators work with set, cycle menus and typically serve 100 or more meals at each meal period. Institutional food service buyers have concerns about product costs, labor time to prepare the food, safety of food served to patrons, working with multiple vendors, payment procedures and obtaining an adequate supply of food.

In Iowa, year round availability also is perceived as a high obstacle. When food service operators have information provided to them that answer questions about package size, product cost, and availability for a set menu, then there is increased openness to purchasing locally. Local growers/producers should emphasize fresher foods and higher quality foods when communicating information about their products to buyers. Development of a weekly “Fact Sheet” that would include information about products available, size of food items, quality descriptions, estimated quantity and price per purchase unit, and other timely news would provide food service buyers with factors necessary to make good purchasing decisions. Growers and producers should also be aware of food service operators need for convenience and consider ways to minimize obstacles of multiple vendors, sufficient quantity, and payment procedures. Coordination among growers to create a “one-vendor” approach to ordering, deliver and payment for local food purchases may result in increased sales to area food services.

Findings from this study also indicate there is no difference in safety of food purchased from local or national suppliers, when specific pathogens were analyzed. Producers should be familiar with local codes and regulations for packaging and selling of their products at the wholesale level.

Future research could track effectiveness of coordination of producer services and identify supply and labor costs to provide these. Future research could investigate additional foods and analyze for harmful levels of other relevant pathogens, such as *campyobacter jejuni*.

Other future projects could include a marketing program for producers or formation of a cooperative. Producers should understand the various types of food service operations that exist, purchasing methods frequently used, and how the foods they produce are used. An awareness of some of the organizational demands would allow producers to better meet needs of their clients, the food service operation.

## **IMPACT OF THE RESULTS**

A summary of purchasing from local sources that was completed by one restaurant and one school is shown in Tables 5 and 6. Other participating foodservices also purchased locally. One school district bought about \$400 of apples from a local orchard during Fall 2001. An up-scale restaurant purchased about \$250 of potatoes, \$400 of spring salad mix, and \$650 of fresh baked pies for a total of over \$1300 to local food producers in a 3-month period. These preliminary estimates show there are potential markets for food producers in local areas.

Table 5. Summary of local food purchases by a local restaurant from September – December, 2001.

	<b>Amount Purchased</b>	<b>Price per unit</b>	<b>Total Price/Market Differential</b>
<b>Meat</b>			
Ground Beef*	75 lb	1.69	\$126.75
(Delivery Cost)			
<b>Total Meat = \$126.75</b>			
<b>Vegetables</b>			
Potatoes*	8 lb.	.75	\$6.00(-\$1.92)
Cucumbers	6 ct.	3 ct/1.00	\$2.00
Green Pepper	3 lb.	1.20	\$3.60
Cherry Tomatoes	5 pts.	.90	\$4.50
Zucchini+	25 lb.	1.25	\$31.00(+\$9.00)
Onions	5 lb.	.70	\$3.50
Carrots+	5 lb.	1.16	\$5.80 (NA)
<b>Total Vegetables = \$56.40</b>			
<b>Fruits</b>			
Apples*	80 lb.	.35	\$28.00(-\$8.00)
Apples*	80 lb.	.40	\$32.00(-\$13.00)
Watermelon	14 lb.	.40	\$5.60
Cantaloupe	1 count		\$4.25
Raspberries	4 pts.	3.50	\$14.00
<b>Total Food Purchased Locally = \$267.00</b>			
<b>Broker Fees</b>			
Three invoices (each \$10.00 fee)			\$30.00
<b>Total Local Purchasing Cost = \$297.00</b>			

Notes:

1. Restaurant typically purchases meats and fresh produce at retail level.
2. Items were delivered to restaurant with exception of apples (purchased at orchard), cucumbers, green peppers, and watermelon (purchased at Farmer's Market).
3. Items marked with a + were purchased at a **higher cost** than market prices.
4. Items marked with an \* were purchased at **lower cost** than market prices.
5. Broker services provided by Practical Farmers of Iowa Grower Network. Services included coordination of orders and delivery for fresh vegetables only. Separate payment was made to individual growers. Fee total of \$30 for \$56.40 food purchased represented a 53% surcharge.

Table 6. Summary of local food purchases by a school district from September to December, 2001.

	<b>Amount Purchased</b>	<b>Price per unit</b>	<b>Total Price</b>
<b>Fresh Fruits and Vegetables</b>			
Carrots	30 lb.	.70	\$21.00
Apples	60 lb.	.65	\$39.00
Apples	120 lb.	.62	\$75.00
Apples	50 lb.	.90	\$45.00
Sweet pepper	10 lb.	1.25	\$12.50
Pumpkins	2 count		\$3.00
Indian Corn	12 count		\$3.00
<b>Broker Fees</b>			
Sept. 20			\$10.40
Sept. 27			\$8.75
<b>Total Food Purchased Locally = \$198.50</b>			
<b>Total Cost = \$217.65</b>			

Notes:

1. Contacts were made with independent local growers in area, but produce was unavailable.
2. With exception of one order of apples, all fresh produce items purchased through Practical Farmers of Iowa Grower Network.
3. Broker services included ONLY placement and coordination of orders. Delivery was not included. School arranged for pick-up of foods in Ames, and made separate payments to producers. Total cost cited above does not include transportation costs.



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