Enhanced Marketing Tool Kit Effect on Foodservice Buyers' Attitudes and Purchasing of Local Food Products

Christina Kirk Zdorovtsov, M.S.
Department of Nutrition, Food Science, and Hospitality
South Dakota State University

Gary "Lee" Frantz, Ph.D., FMP
Department of Nutrition, Food Science, and Hospitality
South Dakota State University

Weiming Ke, Ph. D.
Department of Mathematics and Statistics
South Dakota State University

ABSTRACT

Efforts to increase the food producers' share of the food dollar have focused on markets such as the local hotel, restaurant and institutional industry (Strohbehn & Gregoire, 2002). Strohbehn and Gregoire determined foodservice operators were willing to work with additional local suppliers, but found there was less commitment to local purchasing at the end of the project. Their findings suggested "….that provision of information to food service buyers will increase their awareness of potential to purchase from local sources."

The marketing tool kit (MTK) was created as an attempt to better connect local producers and foodservice buyers and encourage the purchasing of local food products. The MTK did not have an effect on attitudes and purchasing practices of local foodservice buyers, but may have had an effect on attitudes among local producers in regard to selling local products to foodservice operations.

Key Words: Local food, local food procurement, local food purchasing, foodservice purchasing, farm to restaurant, marketing tool kit

INTRODUCTION

Food purchased today by American consumers is part of a complex multinational food system and travels great distances before reaching its final destination (Pirog, Van Pelt, Enshayan, & Cook, 2001). In Iowa, it is estimated that as much as 90% of the fresh produce consumed was produced out of state or country (Jones & Zacharakis-Jutz, 2003). As of 2004, U.S. farmers earned an average of 20 cents of every dollar spent on food, while various services and materials required for marketing and selling food, such as labor, packaging, transportation, and energy, utilized the remaining portion (Economic Research Service (ERS), 2006). A second ERS report indicated, the farm share is actually 23.5% for vegetables and 26.6% for fruit. However, the report still concluded that the farm share has decreased from 34% for vegetables and 33% for fruit since 1982 (Stewart, 2006). Efforts to increase the food producers' share of the food dollar have focused on markets such as the local hotel, restaurant and institutional (HRI) industry (Strohbehn & Gregoire, 2002).

Strohbehn and Gregoire (2002) collected empirical data which indicated interest by Iowa foodservice buyers to support local producers, provide fresh produce and high quality food, to decrease the transportation costs associated with food, and to know the source of the food purchased. The Practical Farmers of Iowa (PFI) conducted industry interviews, representing more than 50% of the total HRI and supermarket volume, revealing interest among 'high-end' restaurants and hotels in local and Iowa foods (Huber, Karp, & Madsen, 2002). Researchers at The Food Processing Center of the University of Nebraska-Lincoln surveyed members of the Chefs Collaborative, a national culinary network that promotes sustainable cuisine and local and artisan ingredients (Chefs Collaborative, 2005). Of the respondents, 81% of the establishments purchased directly from a farmer (Zumwalt, 2003).

A project conducted by researchers at the Leopold Center for Sustainable Agriculture at Iowa State University worked to establish relationships between local farmers and foodservice buyers at locations including the University of Northern Iowa (UNI) in Cedar Falls and Allen Memorial Hospital in Waterloo. In 1997, food expenditures at the UNI Dining Services were nearly $2 million, and Allen Memorial Hospital spent over $725,000. "If even a portion of these food dollars stayed in the area, the economic impact would be considerable" (Enshayan, 2001, p. 1). The PFI estimated $1.7 billion as the potential grocery store and HRI market in Iowa for local products. This is the estimated amount these establishments spend annually on the produce and meat they sell to their customers (Huber et al., 2002). "If a farmer were to gain just 10% of this market, the income generated for these farm businesses would be around $171 million" (p. 7).

Though the interest of purchasing locally exists, there are challenges with this type of procurement. Research conducted by Strohbehn and Gregoire (2002) tracked nine commercial and institutional foodservice operations who purchased from local vendors between May, 2001 and November, 2001. They found foodservice operators were willing to work with additional local suppliers, but found there was less commitment to local food purchasing at the end of the project. Their findings suggested "….that provision of information to food service buyers will increase their awareness of (the) potential to purchase from local sources" (Strohbehn & Gregoire, 2002, p. 9). C. H. Strohbehn (personal communication, December 1, 2006) explained that foodservice buyers need information about local sources up front, since unless highly motivated, they will not take the time to seek out producers. If a satisfactory purchase exists and the information is presented in a user friendly format, it will spark awareness of the potential of local purchasing.

Many obstacles that make it difficult for a foodservice buyer to purchase locally. Barriers noted in research include time constraints, distribution channels, volume and seasonal availability, price, food safety requirements or concerns, purchasing policies, existing vendor contracts, liability insurance requirements, and service issues (Huber et al., 2002; Starr, Card, Benepe, Auld, Lamm, Smith, & Wilken, 2003; Sterbis, 2002; & Strohbehn & Gregoire, 2002). Strohbehn and Gregoire (2002) suggested developing a marketing program for producers to help overcome obstacles. "Growers and producers should…be aware of food service operators' need for convenience and consider ways to minimize obstacles..." (p. 11). C. H. Strohbehn (personal communication, October, 2005) suggested that developing a tool kit to mentor the producers and buyers could have an effect on the attitudes and purchasing of local foods. The development of a marketing tool kit (MTK) may provide the needed information to better connect local producers and foodservice operations.

Information collected from literature was used in the creation of the MTK. The enhanced MTK developed for this project included the (a) Participant Directory, (b) Business Summaries, (c) Inventory Website, (d) South Dakota Regulations on Local Purchasing, (e) Local Foods Selling to Restaurants Guide, (f) Local Foods Promotional Ideas for Foodservice Operations, and (g) Local Foods Benefits List. The primary research design consisted of a pre-test, post-test design of the two groups of participants, the foodservice buyers and local producers, to determine the effect of the MTK on attitudes and purchasing and selling practices.

REVIEW OF LITERATURE

The Food System

"Food systems can include the following components: (a) production…and inputs; (b)… distribution; (c) …preparation and preservation; (d) …use and consumption; (e) …recycling and disposal…of wastes; and (f) …various support services…such as…marketing, transportation, distribution, storage, and governmental systems" (Goreham & Stofferahn, 2001, p. 21). According to Elizak (1997), in the 1940's through 1950's the farmer's share of the retail food dollar equaled or exceeded 40%, but that percentage began to slowly decrease to 30% in 1987 and 21% in 1997 (Starr et al., 2003). Before the 1950's, large quantities of food were purchased locally, though the diversity of available products was limited or seasonal. Post World War II, due to new technology and global food sourcing, a new food system took form. After the Vietnam War (mid 1970's) high inflation put more women and children in the work place. According to Allsup (1997), this made convenience and time saving higher priorities when purchasing food (Goreham & Stofferahn, 2001).

Farmers began to specialize in a few commodities that were centrally processed, distributed and marketed, then sold globally. This global food system "…provides abundant amounts of a wide variety of foods to feed a large population" (p. 25). "An increased number of critics are raising concerns about the impacts of (the global food system's) impact on the environment, farm households, consumers, food safety, and quality of life in rural communities" (Goreham & Stofferahn, 2001, p. 25). "Consumers are beginning to demand better quality and taste from their food and to recognize that what seems cheap actually comes at a price" (Murphy, 2001, p. 41). Pirog et al. (2001) stated that external environmental and community costs of the food system are unknown by consumers and are rarely included when determining the price of food. Examples of these types of costs include the increased fossil fuels used in transportation, increased greenhouse gas emissions from burning these fuels, and externalities and tax subsidies given to large production systems (Pirog et al., 2001; Goreham & Stofferahn, 2001).

Direct Marketing

Farmers have used methods of direct marketing to shorten the chain from production to consumption (Gregoire & Strohbehn, 2002). "Local farmers who sell direct to consumers receive a larger share of the profit of their food" (Food Routes Network, 2003b). Goreham & Stofferahn (2001) provide an example of the effect of local purchasing. "…if each household in a town of around 2,000 people, 670 households, purchased $225 (annually) of locally produced/processed food, 5.0% of their annual food bill….It would result in over $150,000 captured by the community" (p. 67). Americans spent approximately $1,082.5 billion in 2006 on food, with nearly 49% or $530.4 billion on food away from home (Economic Research Service, 2007). Strohbehn & Gregoire (2002) suggested the local HRI market is an advantage due to its size.

The Producer, Buyer & Consumer

Of Iowa fruit and vegetable growers, family meat producers, and PFI members, main marketing channels were direct sales to consumers (82%) and the farmers market (74%). Approximately one fourth sold or were selling their products to foodservice operations. These producers found foodservice buyers were not interested (17%) or they could not meet quantity or availability demand (17%) (Gregoire et al., 2005).

Huber et al. (2002) found fine dining restaurants were the most willing and able to pay more for local Iowa foods. They also found conference centers and hotels were willing to pay more for 'All-Iowa' meals at certain events. Most of these restaurants are independently owned and able to make their own purchasing decisions. They purchase in smaller quantities and are able to change menus to fit the seasonality of local products. They also have customers who are willing to pay more for high quality, locally grown products, though some clients are very price conscious and will expect much higher quality for a higher price (Scanlan & Associates, 2000). Chain restaurants tend not to have enough decision-making power to become involved in local purchasing (Starr et al., 2003).

Consumer actions demonstrate their interest in local products. Farmer's markets in the U.S. have doubled in the last decade (Peirce, 2006). Consumers indicated interest in local foods, with about half willing to pay more (Strohbehn and Gregoire, 2002). "Just over four out of ten adults say they will… make purchasing decisions with an understanding of the effect they will have on the health and sustainability of the world, its environment, and people" (Sloan, 2004, p. 26). The primary gourmet or specialty store shopper is a member of the Baby Boom generation, within their peak earning and spending years (Sloan, 2004). Americans age 15-24, "more culinary and health aware than any other generation in history, are likely to play in ensuring the long-term opportunity for specialty foods." Approximately one-third eat dinner at a restaurant three or more times per week.

Benefits & Obstacles of Local Purchasing

Perceived benefits and obstacles exist for both restaurant buyers and producers interested in the direct marketing of local foods.

Perceived Benefits

Strengthening Local Economies & Supporting Endangered Family Farm: The Food Routes Network (2003a) suggests that buying locally will keep money circulating in the community; the group also suggests that farms need support. According to the Food Routes Network (2003b), the U.S. has lost 4.7 million farms since 1935 with less than one million Americans claiming farming as their primary occupation in 2003. Seventy percent of Chefs Collaborative members continue to purchase locally because it is part of their philosophy to support local producers (Zumwalt, 2003). "The food buyer can make a positive contribution to the local economy and enhance the community relationship" (Enshayan, 2005). Stofferahn (2000) states, "One way to promote economic development is through the process of import substitution, using locally produced items rather than those purchased from out-of-state firms" (p. 1). The researcher mentioned that this will "end the capital leakage from the state…develop markets for farmers' alternative crops, and thereby reduce… the loss of small family farms; and…encourage…value-added processing of locally produced food and provide local employment in the food industry" (p. 1).

Product Characteristics: Over 40,000 products bred to store well, grow quickly, resist diseases, and appear uniform are available in grocery stores, but the diversity of the products is limited. Traits such as taste or texture may be lost (Goreham & Stofferahn, 2001). Initially, 3% of Chefs Collaborative members mentioned unique or specialty products as a reason for first purchasing locally, while 12% listed it as a reason they continued to purchase (Zumwalt, 2003). Information from the Local Food Project (University of Northern Iowa, n.d.) mentions that local produce is often harvested within 24 hours of being purchased, at peak ripeness, while imported products cannot be picked and shipped that fresh. Chefs Collaborative members ranked the attributes of quality and taste as the most important characteristics with each having a mean rating of 9.7 out of 10 when considering selection of food products (Zumwalt, 2003). Strohnbehn and Gregoire (2002) found freshness as the top reason Iowa foodservice operators purchased locally.

Protecting the Environment: The industrial food system requires vast amounts of energy, from fuel to machinery to refrigeration to transportation (Peirce, 2006). Pirog et al. (2001) of Iowa State University estimated that conventional products travel an estimated 1,546 miles to reach their final destination, while local foods travel an average of 44.6 miles. Additionally, conventional distribution system used 4-17 times more fuel and released 5-17 times more CO_2 than a local system.

Safety & Security: The Food Route Network (2003a) stated that knowing the food's source allows you to choose safe products from farmers you trust. The network mentioned consumers can avoid or limit their exposure to pesticides, hormones, antibiotics or genetically modified products though local purchasing. The E-coli contamination of U.S. spinach in 2006 is an example of "a single instance of contamination wiping…a popular vegetable off the grocery shelves in 50 states" (Peirce, 2006). Peirce questions why three-fourths of all U.S. spinach is grown in California when in the fall it could be grown successfully nationwide. The Local Food Project (University of Northern Iowa, n.d) describes dependence on distant food sources as a homeland security risk that reduces accountability and leaves consumers vulnerable to supply disruptions.

Personalized Service: Buyers indicated that they liked the local growers and the face-to-face interaction when asked what works about local purchasing (Starr et al., 2003). It was important for producers to build relationships with the foodservice buyers through offering higher quality products and exceptional customer service (Zumwalt, 2003). Local purchasing may give buyers the ability to purchase smaller quantities, receive irregular combinations of products, or request that the producer grow the product in a specific manner or harvest the product at a precise size.

Perceived Obstacles

Time Constraints: "Purchasing foods…is frequently only one of many job responsibilities of the manager" (Strohbehn & Gregoire, 2002). Managers look for ways to save time on ordering, processing payments, or deliveries in order to devote more time to customers and employee needs (Sterbis, 2002). One time saver is limiting the use of multiple vendors and establishing a set-up of one-stop shopping. Large distributors can usually provide pre-processed forms of food. The time required for kitchen staff to prepare local products may discourage local purchasing. Though buyers may prefer the convenience of one distributor, only a few will actually insist on it (Starr et al., 2003).

The Distribution Channel: The number one obstacle to local purchasing mentioned by the Chefs Collaborative members was issues of distribution and delivery (Zumwalt, 2003). Key concerns included how a product was delivered as well as the time of day and day of the week the product was delivered. Other factors include lack of standard industry packaging, less than optimal deliveries, absence by producers of efficient ways to transport product, and inconsistencies in the quality of the products delivered (Huber et al., 2002). Zumwalt (2003) reported that "Small local farms are not always reliable for sourcing. They do not realize the impact on the restaurant if they do not show up with product they have promised."

Availability: Local foods may be limited in their availability due to low volume or seasonal production schedules. Chefs Collaborative members stated they would buy more local products if there was a greater quantity available (38%) or larger variety of products available (32%) (Zumwalt, 2003). South Dakota, like Iowa, has a limited number of food processors, which could limit local food purchasing (Enshayan, 2001). Strohbehn and Gregoire (2002) found that a lack of year-round availability was the top obstacle in local purchasing among Iowa foodservice operators; however, only 11% of Chefs Collaborative members felt seasonality was a problem. Iowa HRI market representatives indicated that they could source foods elsewhere during off seasons (Huber, 2002).

Price: The second most significant obstacle mentioned by the Chefs Collaborative members was the issue of competitive pricing (Zumwalt, 2003). Iowa HRI market representatives stated that competitive pricing is the biggest barrier to local purchasing (Huber, 2002). However, Starr et al. (2003) found that only 18% of foodservice buyers ranked price alone as their top priority. They also did not find price as a significant factor in tests. "Price is only one of many considerations when calculating total expenses. Local products often may be higher quality, fresher and more likely to satisfy the customer" (Enshayan, 2001). Enshayan (2005) found local products that were competitive when compared to large suppliers. Premium beef cuts such as ribeye or T-bone were significantly cheaper per pound, local pork, pre whole hog was $50 cheaper, a whole cow had comparable prices, and local (free range and organically fed) chicken was higher per pound than the Tyson product, but had better meat quality and higher yield.

Food Safety Requirements: Some establishments are concerned about the safety of purchasing locally. Strohbehn and Gregoire (2002) analyzed pathogen levels on four frequently purchased food items from both local and national sources to compare differences in food safety. All samples were within normal and safe limits, and no difference was seen between national and local sources. Another obstacle is the requirement of vendors to have commercial liability insurance by foodservice establishments (Huber et al., 2002). "ARAMARK requires that all vendors carry comprehensive general liability insurance of $5 million and (an) automobile liability policy of $1 million from a financially responsible insurance company" (Sterbis, 2002, p. 21).

Purchasing Policies: Many foodservice operations, especially institutions, have a prime vendor who supplies the majority of their food supplies. Contracts may require the operation to purchase a large percentage of their suppliers from one or more distributors (Enshayan, 2001). Other purchasing policies established by a foodservice operation such as pricing structures, payment terms, bid processes, and return policies are additional challenges for local producers (Sterbis, 2002).

Service Issues: When foodservice operators were asked why they do not purchase more products locally the most common response was related to service issues such as dependability, reliability, or convenience (Starr et al. 2003). "The lack of dependability, often expressed as promises made but not kept, is an issue. Buyers appreciate getting what they are promised" (Huber, 2002). Chefs Collaborative members responded that "small farms are not always reliable for sourcing (p.19)…If a restaurant operation is going to feature a locally grown item on the menu, he or she needs a guarantee of consistent/reliable supply of the item" (Zumwalt, 2003 p. 22).

METHODOLOGY

Research Design

This research used convenience sampling of local producers and local foodservice operations in a pre-test, post-test design. The study evaluated the effect of the enhanced MTK on attitudes and purchasing practices of foodservice buyers in regard to local food purchasing. Descriptive data attempted to profile these participants. Information was collected to assess the usage, value, effectiveness and ease of use of the MTK. The data analysis occurred to determine:

1. What is the effect of the MTK on foodservice buyers' attitudes towards the purchasing of local food products?
2. What was the effect of the MTK on local producers' attitudes towards the selling of local food products to foodservice buyers?
3. What is the effect of the MTK on foodservice buyers' purchasing practices of local food products?
4. What was the effect of the MTK on local producers' selling practices of local food products to foodservice buyers?
5. Does the purchasing of local food products by foodservice operations lead to economic growth in this market?
6. What local food products were purchased by foodservice buyers?
7. How many purchasing relationships were formed and are expected to continue post-project between foodservice buyers and local producers as a result of the MTK?

Hypothesis

The following null hypotheses were tested:

H_o1: There is no significant difference in local foodservice buyers' attitudes in regard to local food purchasing following the implementation of the MTK.

H_o2: There is no significant difference in the amount of local foods purchased by foodservice buyers following the implementation of the MTK.

Boundaries

The term 'local' was defined as the direct marketing region of the producer (M. Redlin, personal communication, November 21, 2005). This local region includes locations where a producer could physically travel to profitably, without using methods of direct marketing such as mail delivery. C. Gritzner (Personal communication, November, 15, 2005) of South Dakota State University's Department of Geography, described the area as a scatter pattern of many restaurants and producers forming micro regions. Eastern South Dakota was the region used to pool participants. Foodservice buyers who chose to participate in the project were located in Aberdeen, SD and Sioux Falls, SD, forming two micro regions.

Limitations

Volunteer bias was not measured. Only local producers and local foodservice operations interested in selling and purchasing local products took part in the study. The intervention period was limited to three months, May 14-August 10, 2007. Findings may be different for research conducted during different times of the year. Internet usage by the local producers and foodservice buyers was a requirement for the study. Interaction of foodservice buyers and local producers outside of the study was an additional limitation. It cannot be assumed that all change was due to the effect of the MTK since a control group did not exist.

Procedures

Pre-Study Phase: The pre-study phase began in October, 2006. The phase involved the identification and recruitment of participants and development of the MTK.

Study Phase 1: Producers and buyers were mailed a three section survey in April, 2007. This instrument collected: (a) pre-project selling practices in regard to foodservice and pre-project purchasing practices of local foods, (b) demographic information, and (c) pre-project attitudes of selling local food products to foodservice and pre-project attitudes of purchasing local foods.

Study Phase 2: The intervention phase occurred over a 13-week period from May 14 to August 10, 2007. The participants received the printed components of the MTK by mail on May 14, which enabled producer and buyer interaction. Access to the *http://farmtorestaurantsd.com* website was granted for use of the on-line MTK components. Producers were urged to keep up-to-date inventories on the website during the intervention period.

Study Phase 3: Producers and buyers received the four section post-test survey on August 12, 2007. This instrument collected: (a) post-project selling practices in regard to foodservice and post-project purchasing practices of local foods, (b) views on the MTK, (c) post-project attitudes on selling local food products to foodservice and post-project attitudes on purchasing local foods, and (d) open-ended comments on the project. Post-surveys collection ended October 18, 2007.

Subjects

Nine foodservice buyers completed the pre-test survey and received the MTK, while six buyers returned the post-test survey. Twenty-two producers completed the pre-test survey and received the MTK, while 12 producers returned the post-test survey.

Recruitment

Foodservice operations were recruited from central and eastern South Dakota population centers including Aberdeen, Brookings, Huron, Madison, Mitchell, Pierre, Sioux Falls, Watertown and Yankton using publicly available sources. Only independently owned restaurants, caterers, country clubs, or resorts were candidates for this study since chain restaurants are less likely to buy locally (Starr et al., 2003). Recruitment from East River South Dakota included food producers of specialty products such as vegetables, herbs, honey, baked goods, meat, fruit and wine. The research entailed selecting food producers who desired involvement and expressed commitment to the project to participate.

Recruitment methods for producers, including a direct mailing, a conference booth, and newsletter article, resulted in a 26% (29/110 subjects) response rate, though only 20% (22 subjects) followed through and completed the pre-test survey. Fifty-five percent returned the post-test survey. Recruitment methods for foodservice operations, including a direct mailing, a follow-up postcard, a press release and to eastern South Dakota newspapers, direct phone calls, and follow-up emails and faxes, resulted in a 7.1% (9/126 subjects) response rate. The nine participants completed the pre-test survey, while six (66.7%) returned the post-test survey.

Descriptive Data

The producers came from 18 eastern South Dakota counties with estimated populations ranging from 2,675 to 148,281 people with a mean population of 19,223. Two purchasing hubs, Aberdeen, SD, and Sioux Falls, SD, evolved due to the participating foodservice buyers' locations.

Four (44.4%) of the foodservice participants considered themselves fine dining operations. Caterers represented the next largest at 22.2%, followed by a limited service operation, country club, and café/catering type of operation each at 11.1%. The average check size for the operations was $10.00 to $19.99 for 33.3%, with 22.2% each having an average check size at $9.99 or less, $20.00-29.99, and $30.00 or more. The majority 66.7% of the establishments have trained chefs running the kitchen. One-third of the operations considered American cuisine the main menu offering. The remaining six establishments had varied menu offerings including steak and seafood; Middle Eastern; continental and fusion; deli, steak and French; international with South Dakotan influences; and mixed offerings. One-third of the operations changed menu items semi-annually. Two operations (22.2%) changed their menu annually. The percentage of raw ingredients used ranged from 50% to 100% with a mean of 81.6% (N=9) for the establishments.

The owner purchased the food for 55.6% of the establishments while the head chef or cook purchased for the remaining 44.4%. In 88.9% of the operations this is the same person who plans the menu. One-third of the buyers used written specifications for food products. Five buyers listed the product offering as the main factor used to select suppliers, followed by service at 33.3% and company at 11.1%. Six foodservice buyers used a prime vendor. The total number of vendors used ranged from 2.5 to 12 vendors with a mean of 4.7. For 77.8% of the buyers the majority of food orders were placed in person with a sales representative. The average amount of lead time required between order placement and delivery by the foodservice buyer's suppliers was one day for 55.6% and less than 1 day for 33.3% of buyers. The buyers received an average of 1.4 deliveries per week.

Table 1 indicated the product offerings and mean percentage of sales for the 22 participating local producers. When describing their operation 18.2% stated they operated a non-certified organic farm or a conventional farm, and 9.1% stated a certified organic farm, conservation (sustainable) farm, certified kitchen or processing facility, natural production farm, or winery or vineyard. The participating growers (n=13) farmed an average of 653.1 acres, with a range from ½ acre to 3,500 acres. The participating processors (n=9) utilized an average of 4,339.6 ft² for their processing facility, with a range from 384 ft² to 20,000 ft². The percentage of products processed by the local producers was 50.2%.

Table 1.
Local Producer Product Types.

Product Type	n	Percentage of Producers	Mean Percentage of Sales
Meat	10	45.5	91.4
Vegetables	6	27.3	45.3
Processed Products	4	18.2	62.5
Eggs	4	18.2	10.3
Beverage or Wine	2	9.1	100.0
Honey	2	9.1	95.0
Fruit	2	9.1	40.0
Corn or Grain	1	4.5	60.0
Dairy	1	4.5	100.0
Herbs	1	4.5	10.3

Table 2 indicates the market channels for the producers. The majority of the local producers, 59.1%, took most of their orders over the phone. Others took the majority of their orders in person (22.7%), by email (4.5%), and by mail order form (4.5%). The majority of the producers' customers, 50%, received their products through personal delivery. Others received the producers' products through buyer pickup at market stands or retail sites (18.2%), buyer pickup at farm or facility (13.6%), a middleman or broker delivery (9.1%), and mail order (9.1%). Eight (36%) producers, required four days or more in lead time from buyers between order placement and delivery of foods.

Table 2.
Local Producer Marketing Channels.

Market Type	n	Percentage of Producers	Mean Percentage of Sales
Retail/grocery store	14	63.6	41.4
Direct to consumers/CSA	8	36.4	54.4
Farmer's market	8	36.4	48.1
On-farm sales/retail	8	36.4	24.3
Direct to restaurants	5	22.7	29.0
Wholesale broker or market	5	22.7	58.3
Cooperative	4	18.2	14.3
Internet Sales	1	4.5	100.0
Direct to institution	1	4.5	5.0

Intervention Instrument

The project's intervention instrument, the MTK, provided research-based information to local foodservice buyers and local food producers to encourage the purchasing of local food products. Tools were used in other research, including Strohbehn & Gregoire's (2002) study, where information on food purchasing regulations and local food sources were given to participants. For this study, enhancements were made to previously used tools, and new tools were developed to promote relationships between the buyers and sellers. The marketing tool kit (MTK) included:

Participant Directory: A brief overview of the participants which identified local food sources and foodservice operations using local foods. Twenty-one percent of Chefs Collaborative members cited product availability or knowing product sources in their area as an obstacle (Zumwalt, 2003). "The food service manager does not typically have time to seek out the producer; the producers need to come to the food service managers" (Sterbis, 2002, p. 38). Zumwalt (2003) noted the importance of foodservice buyers' awareness of the full range of available local foods and suggested that lists of producers who direct market their product would be a valuable asset. Researchers suggested developing a directory of local food producers (Jones & Zacharakis-Jutz, 2003; Sterbis, 2002; Zumwalt, 2003). The Participant Directory and Business Summaries provided sources for purchasing and selling while hedging time constraint obstacles.

Business Summaries: An on-line tool that presented the producer and their products, growing methodology, certifications, ordering policies, delivery methods, and estimated availability to foodservice buyers. Zumwalt (2003) stressed that foodservice operations felt that when purchasing it was extremely important to know product quality, taste and freshness, the production methods of the product, what products are available and how to use the products. Additionally, it was important that the producer could guarantee consistent quality and adherence to food safety. "Producers must address these attributes when marketing their products to foodservice establishments," (Zumwalt, 2003, pg 3). The Business Summaries of the MTK provided a way for producers to present the desired information to buyers to answer sought after questions as well as promote their operation.

This tool was incorporated into the project website *http://farmtorestaurantsd.com.* A template allowed producers to enter in their business name, contact information, business overview, production methodology, certifications and memberships, ordering process, delivery schedule, products and estimated availability.

Inventory Website: An on-line inventory where producers could post up-to-date inventories and product information for foodservice buyers to view. "When food service operators have information provided to them that answers questions about package size, product costs, and availability for a set menu, then there is increased openness to purchasing locally" (Strohbehn & Gregoire, 2002, p. 10). The authors suggested growers develop weekly 'fact sheets' that would include information about products' availability, size, quality, quantity and price in order to provide foodservice buyers with factors necessary to make purchasing decisions. Zumwalt (2003) stated the need for a clearinghouse or database of local products for foodservice buyers that is simple and easy to access. This type of database would allow for easy sourcing and back-up sourcing of local products. The suggested 'fact sheet' and database became a web-based inventory tool updated by producers that foodservice buyers could access. The online presentation avoided the delivery of an overwhelming amount of emails or faxes from numerous vendors. The product template allowed producers to give description, availability, pricing, and packaging information.

South Dakota Regulations on Local Purchasing: A summary of regulations to consider when selling or purchasing local food products. Strohbehn and Gregoire (2002) found most foodservice operators knowledgeable about local food purchasing regulations. They suggested that producers be familiar with regulations for selling their products at the wholesale level. This tool covering South Dakota regulations on local food purchasing was included in the kit to highlight key considerations for sellers and buyers so that concerns about purchasing did not become a barrier. State and federal government department representatives worked to develop this tool. Discussion across departments ensured a cohesive interpretation of the statutes included within the tool.

Local Foods Selling to Restaurants Guide: A handout for producers with educational information on marketing to restaurants. Strohbehn and Gregoire (2002) recommended marketing education for producers interested in selling to foodservice buyers. "Awareness of some of the organizational demands would allow producers to better meet the needs of their clients" (p. 14). Suggested program material included education on the various types of foodservice, product usage, and foodservice buyer's obstacles to local purchasing. "Awareness of the attributes that foodservice establishments take into consideration when making food purchases will increase a producer's likelihood of success" (Zumwalt, 2003, p. 3). Program content included topics on types of foodservice operations, the restaurant market, benefits and obstacles of local purchasing, selling tips, product suggestions, and reference to other helpful publications.

Local Foods Promotional Ideas for Foodservice Operations: Promotional suggestions for foodservice operations with approaches to marketing local products to their customers. Ninety percent of foodservice establishments that are Chefs Collaborative members have promoted the use of local foods on their menus. "Forty-nine percent of those who had promoted considered the promotion to be very effective" (Zumwalt, 2003, p. 4). This tool discussed point of sale promotions, printed materials, website usage, advertising, promotional activities and publicity.

Local Foods Benefits List: A list of perceived benefits of purchasing of local foods. Knowing these benefits could be useful in the marketing of local foods. Pirog et al. (2001, p. 21) referenced Cone and Feldman (1997) stating "….price and quality being equal, 76% of customers would switch to a brand of product they considered to be supporting a good cause." "A survey of clients who had all-Iowa meals served at their event…found that they were willing to pay from 15-25% more for these meals if they knew the farmers providing the foods received fair prices" (Huber et al., 2002, p. 12). Benefits discussed included strengthening local economies, product characteristics, personalized service, protecting the environment, safety and security, and price.

Instruments & Analysis

Instrument Design

C. H. Strohbehn granted permission to modify instruments from Strohbehn & Gregoire (2002) and Gregoire et al. (2005) for use in this study. The four surveys developed included a pre-test and post-test for local producers and a pre-test and post-test for foodservice buyers. The surveys were peer reviewed by four South Dakota State University professors and one local food researcher formerly from Iowa State University.

The producers' pre-test survey included three sections: (a) nine questions on pre-project selling practices, (b) ten questions collecting demographic and descriptive information about their operations, and (c) 48 questions on pre-project attitudes of selling local food products to foodservice operations. For foodservice buyers the pre-test survey included three sections: (a) nine questions on pre-project purchasing practices, (b) 16 questions collecting demographic and descriptive information about their operations, and (c) 48 questions on pre-project attitudes of purchasing local food products. The four sections of the post-test survey for producers included: (a) 11 questions on post-project selling practices, (b) four questions assessing the MTK, (c) 48 questions on post-project attitudes of selling local food products to foodservice operations, and (d) one open-ended question for comments on the overall project. The four sections of the post-test survey for foodservice buyers included: (a) 11 questions on post-project purchasing practices, (b) four questions assessing the MTK, (c) 48 questions on post-project attitudes of purchasing local food products, and (d) one open-ended question for overall project comments.

The pre- and post-test selling and purchasing practices sections collected raw number and frequency data. Two questions collected descriptive data. The pre-test descriptive information section collected frequency data and raw number data. The post-test MTK assessment section collected frequency data on tool usage, ranking data on the value of each tool, and rating data using a Likert-type scale on the effectiveness and ease of use for each tool.

The pre-and post-test for attitudes used a Likert-type scale to rate a level of agreement or disagreement with each statement. A '1' indicated strong disagreement and a '5' indicated strong agreement. Statements remained the same from the pre-test to the post-test for all attitude items, though not all statements matched from the buyer to the seller survey. The written statements included both those of a positive and negative nature. A higher level of agreement reflected a pro-local food purchasing situation which was determined from reviewed literature. A recoding of the negatively worded statements changed a rating from a '5' to '1', '4' to '2', '2' to '4', and '1' to '5'.

The attitude statements fell under one of eleven categories of local purchasing including: (a) The Distribution Channel, (b) Time, (c) Availability, (d) Price, (e) Food Safety & Security, (f) Purchasing Policies, (g) Strengthening the Local Economy, (h) Support of Local Foods & Family Farms, (i) Product Characteristics, (j) Protecting the Environment, and (k) Service. Attitudes were analyzed by category to determine what areas are positively or negatively affecting local foods purchasing in foodservice operations.

Statements under *The Distribution Channel* category included opinions on descriptions of product needs, order processing time, packaging quality, delivery frequency, and delivery accuracy. The *Time* category evaluated the time constraints of multiple vendors, increase processing, local ordering and local vendor sourcing. The *Availability* category measured the level of agreement in regard to limited supply, specific meat cuts, off-season sourcing, local food sourcing, and limited pre-processed choices. The *Price* category included opinions on affordability, fair pricing, and paying more for local foods. The category of *Food Safety* & *Security* evaluated opinions on HACCP requirements, local purchasing regulations, liability insurance coverage, homeland security compliance, chemical residues on products, and product safety. The *Purchasing Policies* category measured the level of agreement in regard to vendor contracts, vendor authorization, credit and return policies, and payment terms. The category *Strengthening the Local Economy* evaluated opinions on retention of revenue in the community, profits for local producers, and good public relations. The *Support of Local Foods* & *Family Farms* category measured the level of agreement in regard to commitment to local food purchasing, customer support of local foods, and support of family farms. The *Product Characteristics* category included opinions on product uniformity, flaws, quality, freshness, shelf-life, uniqueness and flavor. The category *Protecting the Environment* evaluated opinions on fuel usage, CO_2 emissions and production. The *Service* category measured the level of agreement in regard to purchasing relationships, flexibility, production preferences, and product requests.

The researcher also monitored participant utilization of the *http://farmtorestaurantsd.com* website to determine its use quantitatively. Collected data determined the number of times users accessed the site, the pages users viewed, and the number and type of entries posted.

Instrument Response

Twenty-nine producers received the pre-test survey, while 22 subjects (75.9%) completed the survey. Twelve pre-test surveys (54.5% of 22 participants) returned without follow-up. Emails and phone calls were used to request the return of the remaining pre-test survey at two, three and four and a half weeks after the initial mailing. Two surveys returned with one inquiry, five surveys returned with two inquiries, and three additional surveys returned with three inquiries.

The researcher mailed 22 producers the post-test survey. Ten post-test surveys (45.5% of 22 participants) returned without follow-up. Emails and phone contacts requested the return of the post-test survey at three, six and ten weeks after the initial mailing. No surveys returned with one inquiry, two surveys returned with two inquiries, and no additional surveys returned with three inquiries. The total return rate equaled 54.5% (12 of 22 post-test surveys).

Nine foodservice buyers received the pre-test survey, while nine subjects (100%) completed the survey. Four pre-test surveys (44.4% of 9 participants) were returned without follow-up. Emails and phone calls requested the return of the remaining pre-test survey at three and four weeks after the initial mailing. Four surveys were returned with one inquiry and the remaining survey was returned with two inquiries.

The researcher mailed nine foodservice buyers the post-test survey. One post-test survey (11.1% of 9 participants) returned without follow-up. Emails and phone contacts requested the return of the post-test survey at three, six, nine and ten weeks after the initial mailing. One survey returned with one inquiry, two surveys returned with two inquiries, one survey returned with three inquiries, and one survey returned with four inquiries. The total return rate was 66.7% (6 of 9 post-test surveys).

Data Analysis

The researcher used *SPSS 15.0 for Windows*® for data analysis to determine frequencies, means, and standard deviations. A statistician assisted with determining what tests could be used to analyze the data. Paired samples *t* tests compared mean significance. The majority of comparisons used a confidence interval of 95% (an alpha level of .05). The calculation $d = t/\sqrt{N}$ was conducted for all *t* tests to establish the effect size (Green, Salkind, & Akey, 2000). The effect size "expresses the difference between the groups in standard deviation units," with .2 considered a small effect, .5 a medium effect and .8 and above a large effect (Stevens, 1999, p. 124).

The project determined through quantitative analysis if the MTK has an effect on the attitudes and purchasing practices of the foodservice buyers in regard to local purchasing and if the null hypotheses will be rejected. Pre-test to post-test comparisons included only subjects that completed both surveys. The summary of the demographic data included all participants.

No tests for reliability could be conducted due to the small sample size for this research. Statistical inferences may be restricted due to the limited participation. Insights may be gained from the analysis, but the limited power resulting from the small population could have influenced significant and non-significant results.

ANALYSIS & INTERPRETATION OF DATA

H_o1: Buyers' Attitudes in Regard to Local Food Purchasing

The principal investigator failed to reject H_o1. The pre-test attitudes ($\underline{M}$ = 3.56, $\underline{SD}$ =.65) was not significantly different than the post-test attitudes ($\underline{M}$ = 3.64, $\underline{SD}$ =.69), p=.112 at a 0.05 alpha level for the population of N=6. The standard effect size index, $\underline{d}$, was -.24, a small value. This may be a result of the limited amount of participants. The overall post-mean of 3.64 indicates a neutral to slightly positive attitude in regard to local food purchasing.

A paired-samples *t* test was conducted to determine if there was a significant change in attitudes for local producers (N=10) following the intervention. The pre-test attitudes ($\underline{M}$ = 3.43, $\underline{SD}$ =.71) were significantly different than the post-test attitudes ($\underline{M}$ = 3.73, $\underline{SD}$ =.69), t(48)=-5.901, p=0.000 at a 0.05 alpha level. The standard effect size index, $\underline{d}$, was -.86, a large value. A slight increase in the mean occurred indicating a neutral to slightly positive attitude in regard to local food selling to foodservice operations. If the post-test survey would have included all participating producers the result may have been different, since several producers 'dropped-out' due to lack of foodservice buyer response.

Additionally, a paired-samples *t* test compared post-test attitudes of buyers (N=6) and sellers (N=10). Local producer post-attitudes (M = 3.73, SD =.69) were not significantly different from foodservice buyer post-test attitudes (M = 3.64, SD =.69), p=.487 at a 0.05 alpha level. The standard effect size index, d, was -.10, a small value.

Attitudes Data

What is the effect of the MTK on foodservice buyers' attitudes towards the purchasing of local food products? What was the effect of the MTK on local producers' attitudes towards the selling of local food products to foodservice buyers?

The mean rating for each attitude statement was ranked from the highest level of agreement to the highest level of disagreement for buyers (N=6) and sellers (N=10) that completed both the pre- and post-test attitude questions. Foodservice buyer statements, populations, means, and standard deviations are displayed for the pre-test in Table 3 and for the post-test in Table 4.

Table 3.
Foodservice Buyers Level of Agreement Pre-test Study.

	n	Mean [a]	Std Dev
Purchasing from local producers helps the local economy because the money stays in the community.	6	4.83	0.41
Vendor contracts or purchasing agreements will not allow me to purchase locally.*	6	4.83	0.41
Foodservice operations purchasing locally enhance profits for local producers.	6	4.50	0.84
Local and state regulations do not allow for local food purchasing.*	4	4.50	0.58
It is difficult for a local producer to become an authorized vendor in my operation.*	5	4.40	0.89
Local producers can make more than one delivery per week.	6	2.67	1.03
I am familiar with sources of local food products.	6	2.67	1.03
I have a good understanding of state and local regulations concerning local food purchasing.	5	2.60	1.52
Local products are more affordable than products from large distributors.	5	2.60	1.14
I prefer to work with a limited number of vendors due to convenience.*	6	2.50	1.38

[a] Scale: 5 = strongly agree, 1 = strongly disagree
* Question has been reversed coded.

Four out of five statements measuring the buyers' top level of agreement did not change from pre- to post-test. Buyers strongly agreed that purchasing locally enhances profits for local producers and helps the local economy because the money stays in the community. They also strongly agreed that it is not difficult for a local producer to become an authorized vendor or that vendor contracts or purchasing agreements do not prevent them from purchasing locally. Additionally, post-test the buyers strongly agreed that buying from a large supplier does not ensure better compliance with homeland security rules than buying locally grown food does. One out of five statements measuring the buyers' top level of disagreement did not change from pre-test to post-test. Buyers disagreed that local producers could make more than one delivery per week. Post-intervention buyers also disagreed that local producers have an unlimited supply of product.

Table 4.
Foodservice Buyers Level of Agreement Post-test Study.

	N	Mean [a]	Std Dev
Foodservice operations purchasing locally enhance profits for local producers.	6	4.67	0.82
Purchasing from local producers helps the local economy because the money stays in the community.	6	4.67	0.82
It is difficult for a local producer to become an authorized vendor in my operation.*	6	4.67	0.82
Vendor contracts or purchasing agreements will not allow me to purchase locally.*	6	4.67	0.82
Buying from a large supplier ensures better compliance with homeland security rules than buying locally grown food does.*	6	4.50	0.84
Local producers deliver ordered products that are uniform in size and shape.	6	2.67	0.33
I can easily use all cuts from an animal.	6	2.67	0.67
Local producers are efficient at handling credits and returns.	5	2.60	0.24
Local producers can make more than one delivery per week.	6	2.33	0.42
Local producers tend to have a limited supply of product.*	6	2.17	0.40

[a] Scale: 5 = strongly agree, 1 = strongly disagree
* Question has been reversed coded.

Local producer statements, populations, means, and standard deviations are displayed for the pre-test in Table 5 and for the post-test in Table 6. Like buyers, producers strongly agreed local purchasing helps the local economy. Producers strongly agreed that their local products have better flavor and a lower risk of chemical residue than products from large distributors. They also strongly agree that buying products from local farmers develop good public relations. Additionally, post-test the producers agreed that the products they produce are safer than products from large distributors.

Table 5.
Local Producer Level of Agreement Pre-test Study.

	N	Mean [a]	Std Dev
My local products have better flavor than products from large distributors.	10	5.00	0.00
Foodservice operations purchasing locally enhance profits for local producers.	10	4.82	0.18
Purchasing from local producers helps the local economy because the money stays in the community.	10	4.82	0.12
Buying products from local farmers develops good public relations.	10	4.73	0.14
There is a higher risk of chemical residues on my local products than on products from large distributors.*	10	4.73	0.19
A food supplier must have a HACCP program to be a foodservice vendor.	9	2.56	0.38
Foodservice buyers are committed to purchasing locally grown or processed foods.	10	2.55	0.31
Foodservice buyers are willing to take the time to seek out local food sources.	10	2.54	0.34
It is difficult for a local producer to become an authorized vendor at a foodservice operation.*	10	2.36	0.24
Foodservice buyers are familiar with sources of local food products.	10	2.27	0.41

[a] Scale: 5 = strongly agree, 1 = strongly disagree
* Question has been reversed coded.

In the pre- and post-test, producers disagreed that foodservice buyers are committed to purchasing locally, are familiar with sources of local food products, and are willing to take the time to seek out local food source. Post-intervention producers also disagreed that foodservice buyers were willing to pay more for local foods or that their product are more affordable than products from large distributors.

Table 6.
Local Producer Level of Agreement Post-test Study.

	N	Mean [a]	Std Dev
My local products have better flavor than products from large distributors.	10	4.60	0.40
There is a higher risk of chemical residues on my local products than on products from large distributors.*	10	4.50	0.40
Products purchased from a large distributor are safer than local products I produce.*	9	4.44	0.44
Purchasing from local producers helps the local economy because the money stays in the community.	10	4.40	0.40
Buying products from local farmers develops good public relations.	9	4.33	0.44
Foodservice buyers are not willing to pay more for local foods.*	8	2.38	0.46
My local products are more affordable than products from large distributors.	8	2.13	0.35
Foodservice buyers are willing to take the time to seek out local food sources.	9	2.00	0.29
Foodservice buyers are familiar with sources of local food products.	8	2.00	0.42
Foodservice buyers are committed to purchasing locally grown or processed foods.	9	2.00	0.23

[a] Scale: 5 = strongly agree, 1 = strongly disagree
* Question has been reversed coded.

Paired-samples *t* tests were performed to determine if any attitude statements had significant changes from the pre- to post-test. Three statements showed significance for foodservice buyers. The statement *I have more control over the production method of the foods I buy when purchasing locally* pre-intervention (M = 3.67, SD =.82, N=6) was significantly lower post-intervention (M = 3.00, SD =.63), t (5) = 3.162, p=.025 at a 0.05 alpha level. The standard effect size index, d, was 1.41, a very large value. The statement *Local produce seems to have more blemishes from pests or disease* (reverse coded) pre-intervention (M = 2.75, SD =.96, N=4) was significantly higher post-intervention (M = 3.75, SD =.96), t (3) = -2.449, p= .092 at a 0.10 alpha level. The standard effect size index, d = -1.41, a very large effect size. Buyers felt that they had less control over the production method of local foods and agreed that local produce does not seem to have more blemishes from pests or disease than other produce. These two changes may be due to the interaction with specific producers they purchased from over the intervention period and only indirectly due to the MTK.

For buyers, the statement *I have a good understanding of state and local regulations concerning the sale of local foods* pre-intervention (M = 2.60, SD =1.52, N=5) was significantly higher post-intervention (M = 3.60, SD =.89), t (4) = -2.236, p=.089 at a 0.10 alpha level. The standard effect size index, d, was 1.12, a very large value. For producers, this statement was also significantly higher post-intervention (M = 3.60, SD =.89), t (4) = -2.236, p=.089 at a 0.10 alpha level from pre-intervention (M = 2.60, SD =1.52, N=5). The standard effect size index, d, was 1.12, a very large value. Buyers and producers had increased agreement that they understood state and local regulations concerning the sale of local foods. Though the MTK had a regulations guide which could have influenced this statement, no buyers or producers indicated that they used the regulations guide. The project alone may have influenced them by creating the assumption that local purchasing was allowed.

Three additional statements had significant changes for producers. The statement *Foodservice buyers are committed to purchasing locally grown or processed foods* pre-intervention (M = 2.56, SD = 1.13, N=9) was significantly lower post-intervention (M = 2.00, SD = .71), t (8) = 2.294, p= .051 at a 0.10 alpha level. The standard effect size index, d, was .81, a large value. This may be due to the lack of purchasing that occurred over the project. Producers may have become more frustrated with this market. The statement *I offer more products with unique characteristics than large distributors* pre-intervention (M = 4.33, SD = 1.32, N=9) was significantly lower post-intervention (M = 3.33, SD = 1.32), t (8) = 2.121, p= .067 at a 0.10 alpha level. The standard effect size index, d = .75, a large value. The statement *My local products are more affordable than products from large distributors* pre-intervention (M = 2.88, SD = 1.23, N=8) was significantly lower post-intervention (M = 2.13, SD = .99), t (7) = 2.049, p= .080 at a 0.10 alpha level. The standard effect size index, d, was .77, a large value. Producers realizing they offered fewer products with unique characteristics and that their products were less affordable than large distributors may be due to an increased awareness of what large distributors can offer. The significance of these statements may be valid for this specific population, but one must be wary of generalizing due to the small sample size.

Table 7 presents the mean rating attitude statements received when grouped by category for foodservice buyers (N=6).

Table 7.
Foodservice Buyers Attitudes by Category—A positive to negative reflection of local purchasing.

	n [a]	Mean [b]	Std Dev	Minimum	Maximum
			Pre-test Data		
Strengthening the Local Economy	3	4.50	0.33	4.17	4.83
Support of Local Foods & Family Farms	3	4.11	0.19	4.00	4.33
Protecting the Environment	3	3.89	0.10	3.83	4.00
Purchasing Policies	4	3.76	1.01	2.80	4.83
Food Safety & Security	7	3.66	0.72	2.60	4.50
Service	4	3.50	0.43	3.00	4.00
Product Characteristics	8	3.50	0.61	2.80	4.33
Time	4	3.46	0.72	2.50	4.17
Availability	5	3.13	0.55	2.67	4.00
Distribution Channel	4	3.09	0.29	2.67	3.33
Price	3	3.03	0.45	2.60	3.50
			Post-test Data		
Strengthening the Local Economy	3	4.50	0.29	4.17	4.67
Support of Local Foods & Family Farms	3	4.28	0.19	4.17	4.50
Protecting the Environment	3	4.17	0.00	4.17	4.17
Food Safety & Security	7	3.88	0.64	2.83	4.50
Purchasing Policies	4	3.83	1.02	2.60	4.67
Time	4	3.63	0.44	3.00	4.00
Product Characteristics	8	3.47	0.70	2.67	4.50
Price	3	3.44	0.54	2.83	3.83
Service	4	3.33	0.30	3.00	3.67
Availability	5	3.10	0.77	2.17	4.17
Distribution Channel	4	3.04	0.52	2.33	3.50

[a] n = Number of statements within each category
[b] Scale: 5 = strongly agree, 1 = strongly disagree

The top three attitude categories did not change from pre- to post-test for buyers. Buyers had the highest level of agreement— a positive reflection of local purchasing— for statements within the categories of *Strengthening the Local Economy, Support of Local Foods* & *Family Farms* and *Protecting the Environment.* There is a strong level of agreement with the category *Strengthening the Local Economy,* indicating that buyers feel purchasing locally has a positive impact on the economy, enhances profits for local producers, and develops good public relations. Buyers had the highest level of disagreement— a more neutral reflection of local purchasing— for statements under the category of *Price* pre-intervention and *The Distribution Channel* both pre- and post-intervention. This indicates buyer indifference in regard to pricing and the distribution channel as an incentive to local foods purchasing. Buyers do not agree that local products are more affordable than products from large distributors or that local producers can make more than one delivery per week. Buyers have neutral attitudes about the packaging of local products to standard industry packaging. Producers should be aware of these weak areas and find ways to present a more positive local foods image.

Table 8 presents the mean rating attitude statements received when grouped by category for local producers (N=10).

Table 8.
Local Producers Attitudes by Category—A positive to negative reflection of local purchasing.

	n [a]	Mean [b]	Std Dev	Minimum	Maximum
			Pre-test Data		
Strengthening the Local Economy	3	4.34	0.05	4.30	4.40
Food Safety & Security	7	3.79	0.70	2.57	4.50
Protecting the Environment	3	3.71	0.18	3.56	3.90
Product Characteristics	8	3.71	0.62	2.90	4.60
Service	4	3.59	0.31	3.13	3.78
Distribution Channel	7	3.38	0.60	2.71	4.13
Purchasing Policies	4	3.20	0.54	2.40	3.60
Support of Local Foods & Family Farms	4	3.17	0.82	2.00	3.90
Availability	4	2.89	0.70	2.00	3.63
Price	3	2.40	0.30	2.13	2.71
Time	1	2.00	.	2.00	2.00
			Post-test Data		
Strengthening the Local Economy	3	4.79	0.05	4.73	4.82
Product Characteristics	8	4.24	0.49	3.55	5.00
Food Safety & Security	7	3.82	0.73	2.56	4.73
Protecting the Environment	3	3.82	0.33	3.55	4.18
Distribution Channel	7	3.78	0.40	3.20	4.36
Support of Local Foods & Family Farms	4	3.66	0.83	2.55	4.55
Service	4	3.62	0.47	3.20	4.27
Purchasing Policies	4	3.21	0.67	2.36	4.00
Availability	4	3.11	0.72	2.27	3.91
Price	3	3.07	0.20	2.91	3.30
Time	1	2.55	.	2.55	2.55

[a] n = Number of statements within each category
[b] Scale: 5 = strongly agree, 1 = strongly disagree

The top four attitude categories changed rank order, but did not alter from pre- to post-test for producers. Producers had the highest level of agreement—a positive reflection of local selling to foodservice— for statements under the category of *Strengthening the Local Economy, Food Safety* &

Security, Product Characteristics, and *Protecting the Environment.* The strongest level of agreement, as with buyers, was the category *Strengthening the Local Economy*. Producers had the highest level of disagreement, and more neutral to negative reflection of local selling, for statements under the category of *Time* and *Price* both pre- and post-intervention. Producers do not agree that foodservice buyers are willing to pay fair prices, pay more for local products, or take the time to seek out local sources. They also feel that their products are less affordable than products from large distributors.

Buyers and producers seem to be in agreement with the value of local foods to the local economy and the environment. Producers may want to work on better marketing of product characteristics and food safety and security benefits since they feel these are strong attributes of their local products and buyers seem less aware of these assets.

H_o2: Local Foods Purchasing by Foodservice Buyers

The principal investigator failed to reject H_o2. The amount of money spent purchasing locally in 2007 (M=$2,375.83, SD 5,695.17) did not show significance over the money spent in 2006 (M=$1,100.00, SD 2,645.75), p=.353 at a 0.05 alpha level following the implementation of the MTK. The standard effect size index, d was -.46, a medium value. Even though there was a medium effect size, the limited amount of participation may not have had enough power to create significance in the amount of money spent on local foods. Strong marketing and training to a larger group of participants may improve the outcome of the MTK on local food purchasing.

Additionally, the dollar value made by producers selling locally in 2007 (M = $2,516.50, SD = 5,392.24) was not significantly more than the dollar value made in 2006 (M = $2,380.00, SD = 5,088.09), p = .555 at a 0.05 alpha level. The standard effect size index, d, was -.20, a small value.

Purchasing & Selling Practices

What is the effect of the MTK on foodservice buyers' purchasing practices of local food products? What was the effect of the MTK on local producers' selling practices of local food products to foodservice buyers?

During the 13-week intervention period no significant change occurred in the number of producers used by foodservice operations or in the number of foodservice operations producers sold to compared to 2006. No significant difference existed in the number of MTK participants used versus the total number of buyers and producers used outside of the project. If the intervention would have occurred during a different three month period or lasted for an entire year versus three months, these numbers may have showed change.

No significant difference occurred in the amount of time spent by foodservice buyers on purchasing locally and by local producers selling to foodservice operations during the intervention period. This may have indicated that no additional effort was put forth to buy from local producers or sell to local foodservice operations during the intervention period.

Table 9 presents frequency data collected on both the pre- and post- test survey to determine foodservice buyers' top concerns in regard to purchasing local foods. In the post-test buyers (N=6) reported adequate volume (n=5) most frequently, followed by reliable supply and delivery (n=4) and price (n=3). Employee skill level, existing vendor contracts, packaging, production equipment and purchasing policies were not selected by any buyers as a top five purchasing concern in either the pre- or post-test. Chef Collaborative members had similar results, also indicating competitive pricing and distribution and delivery were key issues. Strohbehn & Gregoire (2002) rated reliable food quantity and on-time delivery, and product cost as mid-level obstacles to local food purchasing in restaurants. Their research considered year-round availability as the largest obstacle.

Table 9.
Foodservice Buyers Concerns of Local Purchasing Pre- and Post-test.

Local Purchasing Concern	Pre-test n	Post-test [a] n
Adequate Volume	4	5
Reliable Supply	5	4
Delivery	3	4
Price	6	3
Food Safety	4	2
Quality	4	2
Lack of Convenience	2	2
Other	0	2
Seasonality	0	2
Liability	2	1
Ordering Method	0	1
Laws & Regulations	0	1
Time Consuming	0	1
Employee Skill	0	0
Existing Vendor Contracts	0	0
Packaging	0	0
Production Equipment	0	0
Purchasing Policies	0	0

[a] Table arranged highest to lowest by post-test.

Table 10 provides data collected from the pre- and post- test survey to determine buyers' top perceived benefits regarding local foods purchasing. Post-test buyers reported flavor (n=6) most frequently, followed by freshness (n=5), strengthening the local economy and supporting family farms (n=4). Food security, good public relations, health, production choice and shelf life were not selected by any buyers. Strohbehn and Gregoire (2002) found that freshness was the top benefit to local food purchasing in restaurants. Aid to the local economy was also considered a benefit.

Table 10.
Foodservice Buyers Perceived Benefits to Local Purchasing Pre- and Post-test.

Local Purchasing Perceived Benefit	Pre-test n	Post-test [a] n
Flavor	2	6
Supporting Family Farms	4	5
Freshness	4	5
Strengthening the Local Economy	3	5
Quality	3	3
Customer Satisfaction	3	2
Knowing the Source	3	2
Environmentally Friendly	2	2
Food Safety	2	0
Price	1	0
Unique Products	1	0
Other	1	0
Food Security	0	0
Good Public Relations	0	0
Health	0	0
Production Choice	0	0
Shelf-life	0	0

[a] Table arranged highest to lowest by post-test.

Table 11 presents frequency data was collect on both the pre- and post- test survey to determine local producers' top concerns in regard to selling local foods. In the post-test producers (N=12) reported buyers not receptive (n=7) most frequently, followed by buyer expectations (n=5), delivery (n=4) and time consuming (n=4). Food safety, liability, and product quality were not selected by any producers as a top five selling concern in either the pre- or post-test.

Table 11.
Local Producer Concerns of Local Selling Pre- and Post-test.

Local Purchasing Concern	Pre-test n	Post-test [a] n
Buyers Not Receptive	8	7
Buyer Expectations	6	5
Delivery	6	4
Time Consuming	5	4
Price Issues	8	3
Adequate Volume	2	3
Lack of Convenience	2	3
Seasonality	2	3
Purchasing Policies	3	2
Reliable Supply	3	2
Not Knowing How	2	2
Ordering Method	1	2
Packaging	2	1
Laws & Regulations	1	1
Other	1	1
Food Safety	0	0
Liability	0	0
Product Quality	0	0

[a] Table arranged highest to lowest by post-test.

Table 12.
Local Producer Perceived Benefits to Local Purchasing Pre- and Post-test.

Local Purchasing Perceived Benefit	Pre-test	Post-test [a]
Knowing the Source	8	7
Quality	9	6
Freshness	6	6
Flavor	6	5
Strengthening the Local Economy	6	5
Supporting Family Farms	4	5
Health	4	2
Unique Products	4	2
Food Security	1	2
Customer Satisfaction	6	1
Price	1	1
Food Safety	0	1
Environmentally Friendly	3	0
Good Public Relations	2	0
Production Choice	0	0
Shelf-life	0	0
Other	0	0

[a] Table arranged highest to lowest by post-test.

Table 12 provides frequency data collected on both the pre- and post-test survey to determine local producers' top perceived benefits to buying locally produced foods. In the post-test producers reported knowing the source (n=7) most frequently, followed by freshness and quality (n=6), and strengthening the local economy, supporting family farms, and flavor (n=5). Production choice and shelf life were not selected as a top five benefits of buying local in either the pre- or post-test. This information should guide producers in knowing what areas need improved marketing and what areas are already strong selling points. Producer should use the knowledge gained in regard to buyers' perceived benefits and obstacles of local purchasing to strengthen their marketing efforts.

Does the purchasing of local food products by foodservice operations lead to economic growth in this market?

As a result of this research, no economic growth occurred in the foodservice market. In 2007, the total local food costs were a slightly lower percentage of total estimated food costs for foodservice operations, from 19.6% in 2006 to 18.6% in 2007.

What local food products were purchased by foodservice buyers?

The main products purchased by or sold to foodservice operations in 2006 and 2007 by local producers included: apples, asparagus, bacon, green beans, beef (brats, chuck roast, filet mignon, flank steak, flat iron steak, ground, New York strip, Prime Rib, ribeye, roast beef, and sirloin), beets, Brussels sprouts, bread, buns, cheese, chicken (patties, whole), cinnamon rolls, chokecherries, sweet corn, cucumbers, duck, eggs, eggplant, elk steaks, geese, gourds, herbs, jam and jelly, kohlrabi, lamb (chislic, French racks, ground, leg of lamb, loin chop, shanks, and summer sausage), lettuce (baby, Bibb, & red-leaf), muskmelon, peas, peppers, pie, pizza burger, plums, pork, produce, pumpkin, radishes, root vegetables, sausage patties, smoked stix, sprouts, baby squash, squash, tomatoes, watermelon, wine and zucchini. This demonstrated that a large variety of local products appear to be viable in the foodservice market.

How many purchasing relationships were formed and are expected to continue post-project between foodservice buyers and local producers as a result of the MTK?

The average number of MTK producers used during the intervention period was 3.33 ($\underline{SD}$ = 5.78) producers. Buyers plan to continue using just over two ($\underline{M}$ = 2.17, $\underline{SD}$ = 2.57) producers. Though this is a limited number of producers, this showed that buyers plan to continue using the local producers as vendors. Producers indicated that they sold to less than one ($\underline{M}$ = 0.33, $\underline{SD}$ = 5.78) MTK foodservice operation. Therefore, no relationships were established.

MTK Assessment

Frequency data was analyzed on the post-test survey to determine which tools the project participants used. The Participant Directory was used by three buyers and six producers, the Business Summaries were used by two buyers and 11 producers, the Inventory Website was used by three buyers and six producers, the Local Foods Promotional Ideas for Foodservice Operations was used by one buyer and two producers, the Local Foods Selling to Restaurants Guide was used by three buyers and three producers, the Local Foods Benefits List was used by two producers, and the South Dakota Regulations on Local Purchasing was not used.

The MTK components were rated on overall value from 1 to 7, 1= highest value (See Table 13). Foodservice buyers rated the Inventory Website ($\underline{M}$ = 1.33, $\underline{SD}$ = .58) as the most valuable and the Local Foods Promotional Ideas for Foodservice Operations ($\underline{M}$ = 6.0, $\underline{SD}$ = 1.41) as the least valuable tool. Local producers rated the Participant Directory ($\underline{M}$ = 1.25, $\underline{SD}$ = .50) as the most valuable and the South Dakota Regulations on Local Purchasing ($\underline{M}$ = 7.00, $\underline{SD}$ = 0) as the least valuable tool.

Table 13.
MTK Component Overall Value Ranking.

	N	Mean [a]	Std Dev	Minimum	Maximum
	Foodservice Buyers				
Inventory Website	3	1.33	0.58	1.00	2.00
Participant Directory	3	2.00	1.00	1.00	3.00
Local Foods Selling to Restaurants Guide	2	2.50	2.12	1.00	4.00
Business Summaries	3	4.00	2.00	2.00	6.00
South Dakota Regulations on Local Purchasing	2	5.00	2.83	3.00	7.00
Local Foods Benefit List	2	5.50	0.71	5.00	6.00
Local Foods Promotional Ideas for	2	6.00	1.41	5.00	7.00
	Local Producers				
Participant Directory	4	1.25	0.50	1.00	2.00
Local Foods Promotional Ideas for	3	3.00	2.00	1.00	5.00
Inventory Website	4	3.50	2.38	1.00	6.00
Business Summaries	3	3.67	1.15	3.00	5.00
Local Foods Selling to Restaurants Guide	3	4.00	2.00	2.00	6.00
Local Foods Benefit List	3	4.67	1.15	4.00	6.00
South Dakota Regulations on Local Purchasing	3	7.00	0.00	7.00	7.00

[a] Scale: 1 = highest value, 7 = lowest value

Foodservice buyers rated each tool for overall effectiveness from 1 = not effective to 5= very effective. The Local Foods Selling to Restaurants Guide (M = 3.00, SD = .58) had the highest effectiveness rating with moderate effectiveness. Local producers rated the Local Foods Promotional Ideas for Foodservice Operations (M = 3.00, SD = 1.79) and the Participant Directory (M = 3.00, SD = 1.53) as the most effective tool with moderate effectiveness (See Table 14).

Table 14.
MTK Component Overall Effectiveness Ranking.

	N	Mean [a]	Std Dev	Minimum	Maximum
	Foodservice Buyers				
Local Foods Selling to Restaurants Guide	3	3.00	1.00	2.00	4.00
Inventory Website	3	3.00	1.73	2.00	5.00
South Dakota Regulations on Local Purchasing	4	2.75	1.26	1.00	4.00
Participant Directory	4	2.75	1.71	1.00	5.00
Local Foods Promotional Ideas for	3	2.67	1.53	1.00	4.00
Business Summaries	4	2.50	1.00	1.00	3.00
Local Foods Benefit List	3	2.00	1.00	1.00	3.00
	Local Producers				
Local Foods Promotional Ideas for	7	3.00	1.53	1.00	5.00
Participant Directory	6	3.00	1.79	1.00	5.00
South Dakota Regulations on Local Purchasing	6	2.83	1.60	1.00	5.00
Local Foods Benefit List	7	2.71	1.50	1.00	5.00
Inventory Website	6	2.67	1.51	1.00	5.00
Producer Selling Guide	6	2.50	1.52	1.00	5.00
Business Summaries	6	2.33	1.63	1.00	5.00

[a] Scale: 1 = not effective, 3 = moderately effective, 5 = very effective

Participants rated each tool for ease of use from 1 = difficult to 5= easy (See Table 15). Foodservice buyers (N=4) rated the Participant Directory (M = 4.50, SD = 1.00) as the easiest tool to use and the Business Summaries (M = 3.50, SD = 1.91) as the least easy tool to use. Local producers (N=7) rated the Local Foods Benefits List, Local Foods Promotional Ideas for Foodservice Operations, Local Foods Selling to Restaurants Guide, and Participant Directory (M = 4.33, SD = 1.03) as the easiest tools to use and the Inventory Website (M = 3.43, SD = 1.40) as the least easy tool to use.

Table 15.
MTK Component Ease of Use Ranking.

	N	Mean [a]	Std Dev	Minimum	Maximum
			Foodservice Buyers		
Participant Directory	4	4.50	1.00	3.00	5.00
Promotional Ideas List	3	4.33	0.58	4.00	5.00
Regulations Guide	3	4.33	1.15	3.00	5.00
Local Foods Benefit List	4	4.25	0.96	3.00	5.00
Inventory Website	3	4.00	1.00	3.00	5.00
Producer Selling Guide	4	4.00	1.15	3.00	5.00
Business Summaries	4	3.50	1.91	1.00	5.00
			Local Producers		
Local Foods Benefit List	6	4.33	1.03	3.00	5.00
Promotional Ideas List	6	4.33	1.03	3.00	5.00
Producer Selling Guide	6	4.33	1.03	3.00	5.00
Participant Directory	6	4.33	1.03	3.00	5.00
Business Summaries	6	4.17	0.98	3.00	5.00
Regulations Guide	6	3.83	0.98	3.00	5.00
Inventory Website	7	3.43	1.40	1.00	5.00

[a] Scale: 1 = difficult, 3 = moderate, 5 = easy

Online Assessment

The *http://farmtorestaurantsd.com* website tracked user access during the intervention. Table 16 summarizes the number of users and logins for foodservice buyers and local producers. Eight out of nine buyers and 20 out of 22 producers became members of the site. Usage slowed for both groups of participants toward the end of the intervention. Additionally, three emails were sent to encourage operations to add their Business Summary onto the website, five emails were sent encouraging producers to add their products to the inventory, and four emails were sent to encourage buyers to view the inventory lists.

Table 17 summarizes the amount of time in minutes that users spent on the site. Producers put in considerable more time than buyers. Producers put in a larger amount of time pre-project when developing their business summaries and inventories. Producers only put in 4 minutes of time the last 5 weeks of the project. Buyers put in a larger amount of time in the first month verses the last months of the project.

Table 18 summarizes the relevant posts and page visits of the foodservice buyers and local producers. Nineteen Business Summaries were posted by the 20 producer users while two Business Summaries were posted by the eight buyer users. Producers listed a total of 60 products. They viewed the buyer list three times. Two foodservice Business Summaries were viewed. Buyers viewed 13 Business Summaries and 4 products (in detail). Thirty-four pages of listed products were viewed. The lists of producers were viewed six times by users. The MTK was access four times by users.

Table 16.
Website Users & Access.

	Foodservice Buyer Users	Foodservice Buyer Logins	Local Producer Users	Local Producer Logins
Pre-Project –April 23	.	.	5	2
Pre-Project –April 30 [a]	.	.	17	15
Pre-Project –May 7 [a, b]	.	.	20	18
Week 1 – May 14 [b]	2	0	20	7
Week 2 – May 21 [c]	5	5	20	2
Week 3 – May 28	5	0	20	4
Week 4 – June 4 [a, b, c]	6	4	20	0
Week 5 – June 11	7	1	20	1
Week 6 – June 18	7	0	20	0
Week 7 – June 25 [b]	7	1	20	2
Week 8 – July 2 [c]	8	1	20	3
Week 9 – July 9	8	1	20	0
Week 10 – July 16	8	0	20	0
Week 11 – July 23 [b]	8	0	20	1
Week 12 – July 30 [c]	8	1	20	0
Week 13 – August 6	8	0	20	0

[a] Indicates a reminder email was sent to encourage submission of the business summary
[b] Indicates a reminder email was sent to encourage submission of products to the inventory
[c] Indicates a reminder email was sent to encourage viewing of product inventory

Table 17.
Time Spent by Users Weekly on Website.

	Foodservice Buyer Ave Time (Min)	Foodservice Buyer Minimum Time	Foodservice Buyer Maximum Time	Local Producer Ave Time (Min)	Local Producer Minimum Time	Local Producer Maximum Time
Pre-Project –April 23	.	.	.	23.00	23	23
Pre-Project –April 30	.	.	.	69.80	2	146
Pre-Project –May 7	.	.	.	65.00	5	268
Week 1 – May 14	0.0	.	.	81.70	9	367
Week 2 – May 21	14.7	2	28	2.00	2	2
Week 3 – May 28	0.0	.	.	56.00	13	84
Week 4 – June 4	15.3	7	26	0.00	.	.
Week 5 – June 11	2.0	2	2	4.00	4	4
Week 6 – June 18	8.0	8	8	21.00	21	21
Week 7 – June 25	8.0	8	8	23.30	11	30
Week 8 – July 2	2.0	2	2	13.25	1	49
Week 9 – July 9	2.0	2	2	0.00	.	.
Week 10 – July 16	0.0	.	.	0.00	.	.
Week 11 – July 23	0.0	.	.	4.00	4	4
Week 12 – July 30	2.0	2	2	0.00	.	.
Week 13 – August 6	0.0	.	.	0.00	.	.

Table 18.
Website Posts & Page Visits.

	Foodservice Buyer Posts	Foodservice Buyer Unique Pages Visited [a]	Local Producer Posts	Local Producer Unique Pages Visited [a]
Pre-Project –April 23			1 Business Summary	
Pre-Project –April 30			9 Business Summary	
Pre-Project –May 7			7 Business Summary 16 Products	
Week 1 – May 14			27 Products	1 MTK
Week 2 – May 21		3 PBS 2 Producer List 12 Product Lists 2 Products 1 MTK	2 Business Summary 6 Products	
Week 3 – May 28			7 Products	2 Buyer List 1 MTK
Week 4 – June 4	2 Business Summary	8 PBS 2 Producer List 8 Product Lists 2 Products 1 MTK	3 Products	
Week 5 – June 11		1 Producer List 2 Product Lists		1 Buyer List
Week 6 – June 18				
Week 7 – June 25		2 PBS 1 Producer List 7 Product Lists	1 Product	1 MTK
Week 8 – July 2				
Week 9 – July 9		2 Product Lists		
Week 10 – July 16				
Week 11 – July 23				2 FSBS
Week 12 – July 30		4 Product Lists		
Week 13 – August 6				

[a] Abbreviations: PBS = Producer Business Summary, FSBS= Foodservice Business Summary, MTK= on-line Marketing Tool Kit

CONCLUSIONS

The principal investigator failed to reject both null hypotheses and determined that the enhanced MTK did not have an effect on attitudes and purchasing practices of local foodservice buyers in regard to local food purchasing. Additional results indicated that:

1. The MTK may have had an effect on attitudes of local producers in regard to selling local products to foodservice operations. The change indicates a neutral to slightly positive shift in attitudes.
2. Foodservice buyers had a neutral to slightly positive attitude in regard to local food purchasing.
3. A significant difference was not seen between foodservice buyers' and local producers' overall attitudes in regard to local purchasing.
4. Foodservice buyers had a more positive attitude toward local foods purchasing and its relationship to strengthening the local economy, supporting family farms, and protecting the environment, and a less positive attitude toward the distribution channel.
5. Local producers had a more positive attitude toward local foods selling to foodservice operations and its relationship to strengthening the local economy, product characteristics,

protecting the environment and food safety and security, and a less positive attitude toward pricing and time.

6. After the intervention foodservice buyers felt (a) they have less control over production methods when buying locally, (b) they have a better understanding of state and local regulations concerning the sale of local foods, and (c) that local produce does not seem to have more blemishes from pests or disease than other produce.
7. After the intervention local producers felt: (a) they have a better understanding of state and local regulations concerning the sale of local foods, (b) that foodservice buyers are less committed to purchasing locally produced foods, (c) that they offer less products with unique characteristics than large distributors, and (d) that their local products are less affordable than products from large distributors.
8. The amount of money spent by foodservice operations on local foods in 2007 was estimated to be no more or less than what was spent in 2006.
9. Foodservice buyers plan to continue using just over two MTK producers in the future. The majority of producers did not establish any relationships with foodservice buyers.
10. Buyers and producers did not increase the amount of time devoted to local purchasing and selling during the project period.
11. Foodservice buyers' top concerns in regard to local purchasing are adequate (supply) volume, reliable supply, delivery, and price. Employee skill level, existing vendor contracts, packaging, production equipment and purchasing policies were not top concerns.
12. Local producers' top concerns in regard to selling local foods included buyer receptiveness, buyer expectations, delivery and time. Food safety, liability, and product quality were not major concerns.
13. Foodservice buyers' greatest perceived benefits from local purchasing included flavor, freshness, strengthening the local economy, and supporting family farms. Food security, good public relations, health, production choice and shelf life were not highly perceived benefits.
14. Local producers' greatest perceived benefits are knowing the source, freshness, quality, strengthening the local economy, supporting family farms, and flavor. Production choice and shelf life were not considered top benefits.
15. A large variety of local food products appear to be viable in the foodservice market.

MTK

Overall the MTK had limited usage by study participants. Foodservice buyers indicated that the Inventory Website was the most valuable tool while local producers rated the Participant Directory as the most valuable. Foodservice buyers rate the Local Foods Selling to Restaurants Guide as the most effective tool while local producers rated the Local Foods Promotional Ideas for Foodservice Operations as the most effective. Overall the tools were rated moderate to somewhat ineffective by both groups. Foodservice buyers rated the Participant Directory as the easiest tool to use while local producers equally rated the Local Foods Benefits List, Local Foods Promotional Ideas for Foodservice Operations, Local Foods Selling to Restaurants Guide, and Participant Directory as the easiest to use. Overall, all tools were considered easy to use by both groups.

Producers spent much more time on the *http://farmtorestaurantsd.com* website than buyers. For both groups of participants, website usage decreased toward the end of the intervention period. Emails were sent during the intervention period to encourage website usage. Without this interaction with the researcher website usage would have been even less.

The MTK may have been more successful if it would have been presented in a workshop or face-to-face format. Participants may not have taken the time to read the printed materials, and the information may have been better absorbed if presented orally. Additionally, a workshop would have allowed for some educational time to present the website tools to participants, and help in preventing usage problems. This type of format might have increased participant enthusiasm to use the MTK ultimately increasing the potential for local food purchasing.

Implications of Study

Though the MTK did not prove to be successful as used, adjustments or enhancements on individual tools may help. Changes to the website to make it more user friendly or faster could help. It could become very time consuming for producers to individually enter products into the inventory website. A different format could be helpful. Considering that many producers do not have access to high-speed internet, slow speed is a deterrent to its use with its current set-up. Working with other organizations could be helpful. For example, Dakota Rural Action developed a Producer Directory in 2007 that is more extensive than the one used in this project. Additionally, the *Dakota Flavor*© website is a useful tool already in existence. Helping to promote marketing pieces that already exist could be beneficial to all parties involved through better exposure and cost savings.

Finding willing participants was difficult for this research project. Foodservice buyers required four contacts to commit to participate. All recruitment methods resulted in a 7.1% response rate, with a letter mailing recruiting 3.2% of the participants and a direct phone call recruiting an additional 2.3% of participants. A follow-up postcard and press release were less successful. Direct phone calls are recommended for future projects trying to recruit foodservice buyers in order to obtain participants more efficiently. Producers had a 20% response rate using a letter mailing, conference display and newsletter article for recruitment. The letter mailing was the most effective, though the conference display and newsletter article had created additional awareness about the project, possibly influencing a small number of producers' decision to participate. A letter mailing is recommended for recruiting producers for future research projects.

This low response rate may indicate that most foodservice buyers and local producers are not willing or able to become involved in local food purchasing and selling at this time. The benefits of local purchasing may not out weight the obstacles to justify this type of procurement. In addition, foodservice buyers may not have the demand from customers to rationalize buying foods locally.

If stakeholders choose to implement use of the MTK, an extensive promotion of the tools is recommended. However, stakeholders may want to do more research before implementing the MTK because its effect cannot be determined with certainty due to the small sample size.

Limited participation did not allow for success during the research period. This research, similar to research conducted by Strohbehn and Gregoire (2002), found that some foodservice buyers were interested in using local suppliers, but less commitment existed when it came to actual purchasing. As in a farmer's market, the more vendors available to buyers the more attractive the market is (Marr & Gast, 1995). "There must be competition to make a market large, diverse and active. Numerous vendors make the market larger and potentially more prosperous" (p. 13). If the number of local vendors exist to make an attractive market, than additional work must take place to make buyers more committed to purchase. Aggressive promotion must occur with buyers in order for them to connect with the vendors, feel comfortable with using the MTK, and find financial success to justify local purchasing.

Ultimately, it is the producers' responsibility to sell and market the local products to the buyers, though it may be challenging to make buyers receptive to their product. Buyers expect the producer to initiate the contact (Huber, 2002). As indicated in this research, to attract buyers, producers should promote the value local foods have to strengthening the local economy, supporting family farms and protecting the environment. Producers should work to develop a more positive image of price and the distribution channel in regard to local food purchasing. Also, if producers feel that product characteristics and food safety and security are strong attributes of local products, they should make buyers more aware of the benefits through improved marketing. Once a producer gains a customer, they must not fall short on what is promised to a buyer whether it relates to top concerns such as adequate supply volume, reliable supply, delivery, price, or other needs.

Limitations of Study

No cause and effect conclusions can be made about the MTK due to the limited amount of participation. Since the sample size was under 30 participants the normality assumption was violated. These results may not be valid due to the possibility of inaccurate p-values. Additionally, without comparing a control group that did not use the MTK, it cannot be assumed that all change was due to the MTK. Finally, no reliability test could be run due to the small population.

The sparse population of South Dakota also created a limitation with a small number to pool participants from. Furthermore, the foodservice operations that participated were not necessarily in close proximity to the producers that participated. The additional use of a convenience sample may have introduced bias.

Interaction of foodservice buyers and local producers outside of the study was an additional limitation. One cannot be assured that the resulting attitudes or purchasing and selling practices were not influenced by these external variables.

Recommendations for Further Research

Further development of specific tools from the MTK could prove to be beneficial. Creating specific variations within one tool could provide data used to make a high quality final product. More definite information on the success or failure of a tool could be determined if only one tool was studied at a time. For example, continued work with the MTK website in a larger market or with updates to improve usability or speed could be beneficial.

Alternatively, one might attempt to reuse the existing kit, but offer it with a more aggressive promotion and educational component. The kit could also be redesigned into two kits, one for producers and one for foodservice buyers to better fit their individual needs. For example the producer MTK should have additional marketing components focusing on strengthening perceived weak attributes of local foods, such as pricing and the distribution channel. Since foodservice buyers considered adequate supply volume, reliable supply, delivery and price as top barriers to local selling, efforts are needed to overcome these obstacles.

Beyond the MTK, projects to help producers increase profitability and sales and overcome time constraints when working with foodservice operations are needed. Producers also see receptiveness of buyers, buyer expectations, and delivery as barriers to overcome.

Attempting the project again during a different time period is suggested. Growers mentioned that the project period was not long enough and that it missed major periods of their growing season. More time and product availability could have made a difference in the actual purchasing of local foods by foodservice buyers.

A customer-oriented consumer marketing approach for foodservice buyers could increase their need for local products. Research implementing ideas from the Local Foods Promotional Ideas for Foodservice Operations such as consumer advertising and promotions could be beneficial. If consumers were more aware of the benefits of local foods and developed an increased demand for local foods, then foodservice buyers would be justified in offering more local products on their menus. This could lead to more local purchasing.

A qualitative examination of the foodservice market is recommended to develop models of successful foodservice buyer-local producer relationships. A researcher could examine foodservice operations that are positioned well with purchasing local foods and develop strategies that could be used elsewhere.

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