Consumers' preferences for locally produced food: A study in southeast Missouri

Cheryl Brown

Abstract. *A mail survey was used to gather information from the main food buyer in random households in southeast Missouri to analyze consumer preferences for locally grown food. A majority of shoppers in the region were not aware of the state's* AgriMissouri *promotion program. Consumers defined locally grown not as a statewide concept but as a narrower regional concept that could cross state boundaries. Most important when purchasing produce were quality and freshness, and most consumers perceived local produce at farmers' markets to be of higher quality and lower price. Farm households were not significantly different from other households in the region and did not show a preference or willingness to pay a price premium for local food products. Food buyers who were members of an environmental group had higher education and income and were more likely to purchase organic food and more willing to pay a higher price for local produce. Households in which someone was raised on a farm, or had parents who were raised on a farm, had a preference for locally grown food and were willing to pay a price premium for it. Marketing local products should stress quality, freshness, and price competitiveness, and appeal to environmentalists and those with a favorable attitude towards family farms.*

Key words: consumer attitudes, consumer behavior, consumer mail survey, direct marketing, farmers' markets, food marketing, willingness to pay

Introduction

During times of low prices for the usual agricultural commodities, farmers and state departments of agriculture look for alternative enterprises to boost farm income and maintain local agricultural economies. Marketing fruits and vegetables directly to consumers is often considered a potential alternative enterprise for farmers. The Missouri Department of Agriculture has developed the *AgriMissouri* label to promote products grown or produced in Missouri and provides matching funds for growers who use this label to encourage consumers to 'buy Missouri'. To help consumers locate agricultural products produced or processed in Missouri, the Department produces a buyer's guide, listing everything from barbecue sauces to fish to vegetables. Farmers' markets, roadside stands, pick-your-own operations and community supported agriculture (CSA) are possible venues for direct marketing that farmers can use to sell locally produced products. As in the rest of the US, the number of farmers' markets in Missouri has increased over the years. There were 53 in 1997 and 77 in 2002 (MDA, 2002). These 77 markets are scattered all over the state, with several in or near the major metropolitan areas of Kansas City and St. Louis. Several of the more rural counties contain no 'official' farmers' market, although farmers may set up in a parking lot to sell their products when they get an opportunity.

Several studies have used surveys of shoppers at farmers' markets to determine who shops at these markets and why (Eastwood, 1996; Kezis et al., 1998; Lockeretz, 1986). Nayga et al. (1995) used mail surveys to gather information from consumers who had contacted New Jersey Extension for information concerning direct marketing locations. Interviews with customers at urban supermarkets have been used to examine consumers' perceptions and attitudes concerning locally grown produce (Adelaja et al., 1990; Brooker et al., 1987; Bruhn et al., 1992; Eastwood et al., 1987; Lockeretz, 1986; Patterson et al., 1999). Wolf (1997) interviewed consumers at several public locations in addition to supermarkets, concerning their perceptions of produce sold at farmers' markets.

Several statewide studies used mail surveys to analyze a random sample of consumers' views pertaining to direct marketing of local produce (Gallons et al., 1997; Jack and Blackburn, 1984). A multi-state study, also using mail surveys, compared consumer characteristics and opinions related to direct marketing across three states (Kezis et al., 1984). Jekanowski et al. (2000) used a telephone survey to

C. Brown is with the Department of Agricultural and Resource Economics, Division of Resource Management, West Virginia University, P.O. Box 6108, Morgantown, West Virginia, 26506 (cheryl.brown@mail.wvu.edu).

sample random consumers in all counties in Indiana in order to examine their willingness to pay for Indiana-grown produce. A telephone survey of consumers in 12 northeastern states was used to examine opinions about locally grown produce, as well as concerns about keeping farms viable in that region (Wilkins and Gussow, 1997; Winter, 1996). A multi-state telephone survey in the Midwest provided information for estimation of the current and potential size of the market for locally produced food in that region (FPC, 2001).

The Farm Fresh Project in Maine compared changes in purchases of locally grown produce for a group of workers who had access to local produce at their work site to those of control groups who did not have this access (Ross et al., 1999). The effects of consumer and product characteristics on consumers' demand for organic and local produce were derived from an examination of the literature by Harris et al. (2000). Feenstra (1997) reviews the literature on marketing and consumer studies pertaining to local food, as part of an examination of strategies for the development of local sustainable food systems. An international comparison of preferences for locally produced food is given by Lohr (2001).

The main goal of this study was to examine the interest in purchasing local food in the southeast Missouri region. This relatively rural and rich agricultural grain and fiber crop region has significant potential for growing a variety of fruits and vegetables that could be marketed locally. In an attempt to reach the average consumer, rather than one who has already shown an interest in locally grown food by shopping at the local farmers' market, a survey of randomly selected households was used. Although consumers were asked about their awareness of the *AgriMissouri* label, this study was also interested in examining how the region's consumers define 'local' food. Many studies and promotion programs use state boundaries as the definition of local, but does this coincide with consumer perceptions? Goals similar to those of other studies were to determine (1) if area consumers care about the origin of their food; (2) how locally grown produce compared to non-local in the minds of area shoppers; and (3) what is important to local consumers when they are shopping for fresh fruits and vegetables. Also of interest in this study were specific characteristics of households that might influence their opinion of, and willingness to purchase, local products. Would households that had some connection to farming, or who were located in a rural area, be more likely to prefer local food? Harris et al. (2000) found evidence that people concerned about the environment were likely to purchase organic products. Food produced and consumed locally requires less fuel for its transport, resulting in less air pollution and less need for oil development, and thus, could be considered more environmentally friendly. A goal of the present study was to determine if members of an environmental group would prefer locally grown food.

Methods

Survey

A mail survey was chosen due to monetary and personnel constraints that precluded personal or telephone interviews. The format of the questionnaire used for the mail survey was developed using Don A. Dillman's book, Mail and Telephone Surveys: The Total Design Method (Dillman, 1978). The main food buyer for the household was asked to fill out the questionnaire. Along with the usual demographic questions, questions specific and helpful to the local farmers' market and the *AgriMissouri* label were included (survey available upon request). The majority of the questions, developed from the existing literature, asked consumers about their food-buying behavior and their opinions regarding locally produced foods. Questions about household and food-buyer characteristics were included in order to determine if these characteristics influenced attitudes towards locally grown products. Respondents were asked about their frequency of purchasing organic food and looking at country-of-origin labels, to find out if this behavior was associated with the willingness to purchase or to pay a higher price for locally grown food. The back of the survey encouraged consumers to write any comments they might have and provided space for this purpose. Any references throughout this study to comments by respondents were unsolicited remarks from this section.

Pretesting of the survey, following Dillman's advice, included review by several academics familiar with mail survey techniques and the goals of this study, along with examination of the questionnaire by farmers' market administrators and producers. In addition, a cross-section of potential respondents read the cover letter and filled out the survey in the presence of the researcher, providing valuable feedback. Official university stationary was used for the cover letter and envelope, and a preaddressed postage-paid return envelope was included. The first mailing was followed up with a postcard reminder, which was followed by a second mailing of the survey with a new cover letter.

Sample

The area included in this study lies midway between St. Louis, Missouri and Memphis, Tennessee, just north of Missouri's agriculturally rich Bootheel region. Too far from either of these major metropolitan areas, consumers in this region shop locally or in the major city in the region, Cape Girardeau (population 36,000). In November 2000, 1594 surveys were mailed to a random sample of households in a five-county area surrounding Cape Girardeau. Addresses were selected from a commercially purchased mailing list to reflect the population of the region. Of the approximately 168,000 residents in the five counties, 7% live in Bollinger county, 41% in Cape Girardeau county, 11% in Perry county, 24% in Scott county, and 18% in

Stoddard county (not equal to 100% due to rounding). The number of questionnaires returned from each county corresponded to these population percentages, providing a representative sample of the distribution of population across the five counties. Eight percent of the surveys returned were from Bollinger county, 40% from Cape Girardeau county, 11% from Perry, 22% from Scott, and 19% from Stoddard county. Seventeen percent of the questionnaires were not delivered due to address problems. A total of 544 responses were received for a return rate of 41% of the surveys actually received by households.

One of the goals of this study was to determine if environmentalists were any more inclined to purchase locally produced food or to pay more for local products than a randomly selected household. Although each questionnaire asked if the respondent was a member of an environmental group, concern that the number of positive responses to this question would be too small for statistical analysis led to the addition of a local environmental group's mailing list of 59 households to the general mailing list. Ten percent of survey respondents indicated that they were a member of an environmental group such as the Sierra Club or Audubon Society. Statistically significant (using chi-square tests) characteristics of environmental group members are presented in Table 1, where N is the number of respondents to each question.

Environmentalists in southeast Missouri are more likely to live in a large town, to have a college, graduate or professional degree, not to have been raised on a farm or to have parents who were raised on a farm, and to have a higher annual household income than those who are not members of an environmental group. They are also more likely to understand the meaning of the term 'organic' and to purchase organic food.

Results

Characteristics of those who responded to the survey compared to the population of the region are given in Table 2. A female was the main food buyer in 60% of the households. Most of the survey respondents were white (94%), which is similar to the racial distribution of the five counties (average 93% white) (USBC, 2002a). Households in the survey sample were very similar to the area's population with respect to young children and older adults in the household, and average household size (USBC, 2002a). Eighteen percent of those surveyed responded positively when asked if any member of the household was

Table 1. Characteristics of survey respondents related to membership in an environmental group.

Characteristic[1]	Member (%)[2]	Not a member (%)[2]
Were you or your parents raised on a farm?	(N = 52)	(N = 488)
Yes	52	65
No	48	35
Location of housing	(N = 51)	(N = 482)
Town >5000	73	45
Subdivision outside town	4	6
Town <5000	6	17
Rural	18	32
Education	(N = 52)	(N = 476)
Some high school	2	8
High school degree or equivalent	10	39
Some college	13	22
Technical college degree	2	7
College degree	17	16
Graduate or professional degree	56	9
Income (US$)	(N = 52)	(N = 476)
<10,000	2	8
10,000–24,999	10	23
25,000–49,999	27	37
50,000–74,999	27	21
>75,000	33	11
How often do you purchase foods labeled organic?	(N = 51)	(N = 484)
Always	4	1
Frequently/regularly	27	5
Sometimes/seldom	59	46
Never	6	39
Do not understand meaning of 'organic'	4	9

[1] Chi-square tests significant at $P < 0.05$, except 'raised on a farm' (0.10).
[2] Columns for each characteristic sum to 100% (may not sum to 100% due to rounding).

Table 2. **Characteristics of survey respondents compared to area residents.**

Characteristic	Respondents (%)	Census Five county average (%)
Total household income (1999) (US$)	(N = 484)	(N = 66,285)
<10,000	7	13
10,000–24,999	21	25
25,000–49,999	37	33
50,000–74,999	22	17
>75,000	13	12
Education level[1]	(N = 529)	(N = 109,131)
Some high school	7	25[2]
High school degree or equivalent	36	39
Some college	21	17
Technical college degree	6	3
College degree	16	11
Graduate or professional degree	13	5
Location of housing	(N = 535)	(N = 72,943)
Town >5000	48	53[3]
Subdivision outside town	5	
Town <5000	16	
Rural	31	47[3]
Households	(N = 533)	(N = 66,150)
With child aged < 18	36	35
With individuals aged 65 and over	26	26
Average household size	2.6	2.5

[1] Census education level is for population aged 25 years and over (USBC, 2002b); survey refers to respondents aged 19 years and older.
[2] Census percentage includes less than 9th grade plus 9th to 12th grade, no diploma.
[3] Location of housing classified as urban housing units or rural housing units by Missouri Census Data Center (MCDC, 2002).
Sources: Missouri Census Data Center, Demographic Profile 3 Trend Report for Counties, 1990–2000 (MCDC, 2002). US Bureau of the Census, Census 2000 (USBC, 2002a, 2002b, 2002c).

currently either a part-time or full-time farmer. This contrasts with census data that report ‘persons on farms’ averaging only 3.4% for the five counties (MCDC, 2002). Urban housing, according to the Census Bureau, is located within an ‘urban cluster’, defined as having a population density of 500–1000 people per square mile, although less densely settled territory could also be considered part of an urban cluster (USBC, 2002d). Households located in a town with more than 5000 residents or in a subdivision outside of town are considered urban for purposes of analysis in this study, and households located in a town with fewer than 5000 residents or identified as rural are considered rural. The sample contains fewer low-income households and more middle- and upper-income households than for the general population in the region. Survey respondents also have more education than the general population of the region.

When shopping for fresh fruits and/or vegetables, consumers reported that quality and freshness was their most important concern (Table 3). Price came in a distant second, and least important was where the produce was grown. Asked to compare the quality of fresh fruits and vegetables purchased directly from farmers to similar produce purchased at a grocery store, 73% of respondents believed the quality is usually higher at the farmers’ market. Forty-three percent of survey respondents thought that the price is usually lower when produce is purchased directly from farmers compared to a grocery store. Forty-five percent of shoppers said the most important reason for shopping at a farmers’ market was the quality and selection of the produce.

The survey also asked food buyers how often they purchase food labeled ‘organic’. Overall, 1% claimed to always purchase organic food, and 7% regularly bought organic products. Forty-seven percent sometimes bought organic, but 36% never did. Nine percent of those questioned did not understand the meaning of the term ‘organic’. Those most likely to purchase organic food were members of an environmental group, or had characteristics similar to that group, such as higher education and income and an urban residence. Two food buyers commented that organically produced food was more important than locally grown food.

Many studies have looked at consumer interest in locally produced food but few have asked the consumer for his/her definition of ‘local’. Household food buyers responding to this survey were asked what ‘locally grown’ meant to them, and it appears to be a regional geographic concept that does

Table 3. Consumers' concerns when shopping for fresh fruits and vegetables, comparison of farmers' market produce to supermarket, and reasons consumers shop at farmers' markets.

Concern	Percentage
Most important concern when buying fresh fruits and vegetables	($N = 523$)
Quality/freshness	82
Price	8
How the produce was grown	4
Nutritional value	3
Convenience	2
Where the produce was grown	1
How does produce quality at farmers' market compare to supermarket?	($N = 534$)
Quality is higher	73
Quality is the same	10
Quality is lower	1
Don't know	16
How do produce prices at farmers' market compare to supermarket?	($N = 532$)
Price is higher	12
Price is the same	20
Price is lower	43
Don't know	25
Reasons purchase produce at farmers' market	($N = 478$)
Produce quality and selection	45
Locally grown	18
Price	6
Direct contact with the grower	5
Buying for canning or freezing	3
Atmosphere of the market	2
Never shopped at a farmers' market	21

not correspond with state boundaries. Thirty-seven percent of the respondents said 'locally grown' meant within the southeast Missouri region. Twenty-three percent would expand 'locally grown' to include the nearby southern Illinois region in addition to southeast Missouri. Fourteen percent restricted 'locally grown' to within their county, and 14% would expand that definition to include their county and an adjoining county. Only 12% of the consumers considered products from the whole state of Missouri as 'locally grown'. Missouri's statewide program promoting local products has been in place for 15 years, yet almost two-thirds (64%) of the survey respondents had not heard of, or seen, the *AgriMissouri* label.

Food buyers were asked if they would seek out products identified as locally grown by an *AgriMissouri* label or some 'Southeast Grown' label compared to foods without such a label. Seventy-nine percent of the respondents indicated they would seek out such local products. Table 4 shows the characteristics of those who would seek out local produce compared to those who would not. Chi-square tests were used to test for a statistically significant difference between these groups. When asked if the food buyer or his/her parents were raised on a farm, 63% of the respondents answered 'yes'. Those with this farm connection were more likely to seek out local food than those without. Interestingly, having a farmer currently in the household was not significant when it came to seeking out locally grown food. Urban households were less likely to search for a local product. Another farm connection, having purchased meat from a local farmer, had a positive impact on the desire to purchase local products. Those concerned with quality and freshness were more likely to seek out local products, as were those concerned with nutritional value. Consumers who look at labels to see where products are made would also look for local produce. Being a member of an environmental group was not a significant factor for seeking local produce. Neither were any demographic factors such as gender, age, income or education.

Food buyers were asked if they would pay a price that was lower, the same, or higher for products labeled 'locally grown' versus unlabeled products of the same quality. A majority of the respondents (58%) would only choose the local product if its price was the same as for a comparable non-local product. Fourteen percent would only pay a lower price for food that was locally grown. Sixteen percent would pay a price that was 5 percent higher, 5% would pay 10% more, and 1% would pay 25% more for a local product. Six percent of the food buyers had a strong preference for local products, claiming they would pay 'any price' for locally produced versus non-local food. Food buyers who would pay a higher price were female, raised

Table 4. Characteristics related to responses to the question: Do you, or would you, seek out products with the *AgriMissouri* label or with a 'Southeast Grown' label over those without such a label?

Characteristic[1]	Response	
	Yes (%)[2]	No (%)[2]
Were you or your parents raised on a farm?	($N=415$)	($N=109$)
Yes	66	53
No	34	47
Housing location	($N=417$)	($N=105$)
Urban	77	84
Rural	23	16
Have you ever purchased meat from a local farmer?	($N=413$)	($N=109$)
Yes	49	33
No	51	67
When shopping for fresh fruits and vegetables my most important concern is:	($N=403$)	($N=105$)
Quality/freshness	84	80
Nutritional value	4	0
Convenience	2	2
Price	5	12
Where the produce was grown	1	1
How the produce was grown	4	5
How often do you look at labels to see where a product is made?	($N=417$)	($N=109$)
Always	11	8
Frequently/regularly	35	17
Sometimes/seldom	42	49
Never	12	26
When purchasing fresh fruits or vegetables I do not care where they are grown.	($N=417$)	($N=108$)
Strongly agree	3	4
Agree	9	24
No opinion	12	13
Disagree	57	44
Strongly disagree	19	16

[1] All chi-square tests significant at $P<0.05$.
[2] Columns for each characteristic sum to 100% (may not sum to 100% due to rounding).

on a farm or had parents who were raised on a farm, or members of an environmental group (Table 5). Survey respondents with annual household income of US$50,000 or more or with a graduate or professional degree were more likely to pay a higher price for local food, and those with annual household income less than US$10,000 or with a high school education or less would only pay a lower price. Consumers who purchased organic food and looked at labels to see where a product was made were more willing to pay a higher price for local food (Table 5). Shoppers who indicated that they cared where fresh fruits and vegetables they purchased were grown would also pay a higher price for that produce. Survey respondents whose most important concern when shopping for produce was either how that produce was grown or where it was grown were more likely to pay a higher price for local produce, although the number of shoppers in these two groups was very small, 18 and 7, respectively. The majority of shoppers, whose concern was quality and freshness, wanted to pay the same price, but willingness to pay a higher price was almost as strong.

Discussion

State agricultural promotion programs

This study found that just over one-third (36%) of the food buyers surveyed were aware of the statewide *AgriMissouri* program which was created in 1985. This indicates a need for more advertisement and education by the Missouri Department of Agriculture. Other studies have also found low rates of awareness of statewide agricultural promotions. Gallons et al. (1997) found that 29% of consumers surveyed had seen or heard of the Delaware agricultural logo. Patterson et al. (1999) learned that only 23% of surveyed consumers were aware of the *Arizona Grown* promotion 4 years after its launch, and concluded that the *Arizona Grown* campaign had only minimally, if at all, increased product sales of Arizona produce. An analysis by Adelaja et al. (1990), however, found that consumers viewed the *Jersey Fresh* tomato as a differentiated and superior product. The *Jersey Fresh* campaign 'is credited with doubling consumer awareness of New Jersey agriculture in the first year of operation' (Jekanowski et al.,

Table 5. Characteristics of those who would pay a higher price for products labeled 'locally grown' or 'Missouri grown' over products that were unlabeled (same product of similar quality).

Characteristic[1]	Lower price (%)[2]	Same price (%)[2]	Higher price (%)[2]
Were you or your parents raised on a farm?	($N=75$)	($N=305$)	($N=145$)
Yes	67	59	71
No	33	41	29
Member of an environmental group	($N=75$)	($N=306$)	($N=145$)
Yes	7	7	16
No	93	93	84
Gender	($N=72$)	($N=305$)	($N=145$)
Female	71	54	66
Male	29	46	34
When shopping for fresh fruits and vegetables my most important concern is:	($N=71$)	($N=298$)	($N=140$)
Quality/freshness	69	86	85
Nutritional value	3	3	2
Convenience	3	1	2
Price	21	6	1
Where the produce was grown	1	1	2
How the produce was grown	3	2	8
How often do you look at labels to see where a product is made?	($N=75$)	($N=306$)	($N=145$)
Always	17	7	11
Frequently/regularly	17	30	43
Sometimes/seldom	39	48	36
Never	27	15	10
How often do you purchase food labeled 'organic'?	($N=75$)	($N=303$)	($N=142$)
Always	3	0	3
Frequently/regularly	9	4	11
Sometimes/seldom	40	47	54
Never	31	41	27
Do not understand meaning of 'organic'	17	8	6
When purchasing fresh fruits or vegetables I do not care where they are grown.	($N=74$)	($N=307$)	($N=145$)
Strongly agree	7	3	2
Agree	18	14	7
No opinion	16	14	6
Disagree	43	54	62
Strongly disagree	16	15	23

[1] All chi-square tests significant at $P < 0.05$.
[2] Columns for each characteristic sum to 100% (may not sum to 100% due to rounding).

2000:44). Despite low awareness levels and inconclusive evidence about the effectiveness of these statewide programs, in 1999 there were 23 states promoting state branding of agricultural products through programs similar to the *AgriMissouri* program (Patterson et al., 1999).

Definition of locally grown

Results of the present study show strong interest in local food among southeast Missouri consumers, but most considered 'locally grown' to mean within the region and not within the whole state. This indicates that it is the distance the product has traveled that matters, rather than loyalty to the state in which the product was grown. A consumer survey by Gallons et al. (1997) found that 83% of respondents defined 'locally grown' as the state of Delaware; however, this does not contrast with the present findings. When the definition of 'locally grown' was expanded beyond the boundaries of the small state of Delaware to the Delmarva (Delaware, parts of Maryland and parts of Virginia) region, only 48% of consumers agreed with this definition (Gallons et al., 1997). A product for sale in southeast Missouri that is from northwest Missouri will have traveled farther than a product from just across the Mississippi river in southern Illinois. Labels that indicate a smaller region such as *Select Sonoma* and *PlacerGROWN* (Feenstra and Campbell, 1998), two labels based on counties in California, may mean more to consumers than statewide labels such as *AgriMissouri*, *Kentucky: Where Quality Grows*, *Pick Tennessee Products*, etc. According to Feenstra and Campbell, the effect on the community of the *Select Sonoma* campaign was ' . . . a big impact on the availability of local products in regional grocery store chains as well as restaurants . . . due to increased consumer awareness of [the] diversity of local products' (Feenstra and Campbell, 1998:23).

Support for locally grown

Southeast Missouri survey results show a level of support for locally grown produce similar to those found in other studies. Gallons et al. (1997) found that 75% of consumers preferred produce with the Delaware agricultural logo over unlabeled produce. Seventy-four percent of Arizona shoppers surveyed by Patterson et al. (1999) preferred *Arizona Grown* produce. Preference for locally grown tomatoes was strong in New Jersey, where 66% of consumers favored those with the *Jersey Fresh* label (Adelaja et al., 1990), and in Tennessee, where 52% of shoppers preferred tomatoes from that state (Brooker et al., 1987). Ross et al. (1999) found that 76% of those surveyed in Maine preferred produce grown in Maine. Seventy-five percent of consumers surveyed in Pennsylvania had a preference for local produce, although only 10% had a strong preference and 25% had a moderate preference (Thomson and Kelvin, 1996). In addition, consumers surveyed in Massachusetts, California and Minnesota had strong preferences for produce from their respective states (Ross et al., 1999). Only 28% of southeast Missouri consumers were willing to pay a higher price for local products, compared to 72% of consumers surveyed at farmers' markets in Maine, who would pay an average price premium of 17% (Kezis et al., 1998). Fifty percent of Tennessee shoppers surveyed were willing to pay more for local tomatoes, but only 25% would pay more for local apples, broccoli, cabbage or peaches. Bruhn et al. (1992) also found the greatest number of consumers willing to pay more for locally grown tomatoes (17%), but consumers were also willing to pay 15–20 cents more per unit for local corn (10%), peaches (12%) and greens (12%).

Influence of a farm connection

A unique result of the present study is that a farm background has a positive influence on the preference for local products, even though current farm households did not show this preference. For those who were raised on a farm, or who had parents raised on a farm, there may be nostalgia for high-quality products that came directly from the farm, or a desire to support family farmers by purchasing local products. As agricultural production has become more like industrial production, farm households have become more like non-farm households. Survey respondents who indicated that someone in their household was currently a farmer were not significantly different from other respondents with respect to age, education or income. This is reflected in the results that show farm households are no more willing to seek out or pay a higher price for local produce than other households. Also, today's farmers, who often work an off-farm job in addition to their farming duties, may not find the time to seek out local products or the money to pay a price premium for such goods.

Consumers who had purchased meat from a local farmer in the past were more inclined to seek out local products. It appears that those who have had a positive experience consuming a local product could become loyal customers. Ross et al. (1999) found that consumers who had the opportunity to taste and purchase local produce at their work place made more purchases of local products at other locations as well, when compared to a control group.

Demographic factors

Although the present study did not find that age, income or education directly influenced the preference for local produce, other studies have found several of these consumer characteristics to be important. This survey did find that environmentalists were willing to pay a higher price for local products, and these shoppers were more likely to have higher income and more education. According to Wolf (1997), farmers' market shoppers are more likely to be older and in middle- or higher-income brackets. Kezis et al. (1998) also found farmers' market shoppers to have higher incomes as well as more education. The oldest group of consumers surveyed by Eastwood et al. (1987) were more likely to care where their tomatoes were grown. Shoppers between ages 25 and 34 and shoppers who were high school graduates or with some college education made fewer trips to farmers' markets (Eastwood, 1996). Age, income and education had varying impacts on the willingness to pay a higher price for a variety of local products in Tennessee (Eastwood et al., 1987). Willingness to buy local products increased with income in Indiana (Jekanowski et al., 2000). New Jersey shoppers at direct markets were more likely to be female, between the ages of 36 and 50, have at least some college education, and have annual household income greater than US$50,000 (Nayga et al., 1995).

Rural versus urban

Household location influenced preference for local products, with rural residents more willing to seek out local products than urban residents, but household location did not significantly influence the price a shopper was willing to pay. A study by the Food Processing Center (FPC, 2001) had similar results with respect to preference, finding that more rural and small-town residents cared that the product they purchased supported a local family farm, was locally grown and produced, was grown in the state, or was made by a small local company, when compared to urban and suburban residents; however, small-town and rural residents were less willing to pay a price premium for local products. A contrary result concerning preference was discovered by Patterson et al. (1999), who found that residents of the Phoenix metro area were more likely to prefer local products. Jekanowski et al. (2000) and Jack and Blackburn (1984) concluded that rural versus urban residence did not matter when it came to preference for local products or caring where the produce was grown.

Concern for product origin

A majority of respondents to this survey indicated that they cared where produce they purchased was grown. These same consumers were also more likely to seek local products and pay a higher price for them. This agrees with findings by Brooker et al. (1987) that Tennessee consumers were more willing to purchase a local product if they cared where it was grown. A majority (52%) of consumers surveyed in that study cared where tomatoes were grown, but percentages were lower for other produce, as was willingness to purchase and pay a higher price for those fruits and vegetables (Brooker et al., 1987).

Not surprisingly, consumers who more often look at labels to see where a product is made were more likely to seek local agricultural products and pay a higher price for them. This may represent some loyalty to location that influences product choice. Patterson et al. found that only 45% of consumers surveyed ' . . . expressed sentiments related to state loyalty . . . ' (Patterson et al., 1999:186). Length of time the consumer resided in the state was found to significantly influence preference for local products, indicating that loyalty to a state builds over time and can influence consumer behavior (Jekanowski et al., 2000). A study of elasticities for *Jersey Fresh* tomatoes found a positive bias that was attributed to loyalty to that state's product (Adelaja et al., 1990).

Concern when purchasing fresh produce

Similar to the results of this Missouri study, many studies have found that consumers' most important concern when purchasing fresh fruits and vegetables is quality and freshness (Brooker et al., 1987; Bruhn et al., 1992; Feenstra, 1997; FPC, 2001; Jack and Blackburn, 1984; Jekanowski et al., 2000; Kezis et al., 1984; Stringer and Thomson, 1998; Thomson and Kelvin, 1996; Wilkins and Gussow, 1997; Wolf, 1997). As would be expected, survey respondents who listed quality and freshness as their most important concern when shopping for fresh produce were more inclined to seek out local produce. Because survey respondents consider local produce to be higher quality, they give this as the main reason they shop at farmers' markets. Several survey respondents commented that locally grown produce is fresher, has 'better flavor', and no ' . . . other produce compares with locally grown'. Other studies have also found that consumers rate local produce as better quality, fresher and more flavorful, and this is why they shop at farmers' markets (Adelaja et al., 1990; Bruhn et al., 1992; Eastwood, 1996; Gallons et al., 1997; Jack and Blackburn, 1984; Kezis et al., 1984, 1998; Lockeretz, 1986; Nayga et al., 1995; Patterson et al., 1999; Ross et al., 1999; Wilkins and Gussow, 1997; Wolf, 1997).

Environmentalists

Members of an environmental group were willing to pay a higher price for local products, as were those who purchase organic food. Some of the same shoppers must be in both groups, since members of an environmental group were also more likely to purchase organic food. Harris et al. (2000) found a connection between environmentalists and organic food purchases. Their results show that 75% of those who buy organic food participate in environmental activities, compared to 43% who do not buy organic food. Lohr's work found that regular buyers of organic foods also had a strong preference for local products, and that US consumers actually ' . . . preferred local conventionally grown products over organic products brought in from outside the region' (Lohr, 2001:75).

Direct market price expectations

An expectation of lower prices for farmers' market produce is likely to influence a consumer's willingness to pay a higher price for a local product. Fifty-nine percent of shoppers surveyed who compared the price of farmers' market produce to the price of produce at a supermarket ($N = 395$) said price is usually lower at the farmers' market. Seventy-four percent of consumers surveyed by Nayga et al. (1995) expected lower prices at direct markets. Jekanowski et al. (2000) found that, on average, consumers expect local food products to be less expensive than non-local products. A majority of consumers surveyed in West Virginia (58%) expect direct market prices to be lower than the grocery store (Jack and Blackburn, 1984). In Delaware, 50% of consumers believe prices are lower at direct markets (Gallons et al., 1997), and 49% of consumers surveyed in Maine expect lower prices when buying directly from farmers (Kezis et al., 1984). Bruhn et al. (1992) found that 48% of consumers surveyed expected to pay less for locally grown produce, attributing this to the fact that less shipping is involved. Although food buyers in the present study were not asked why they expected a lower price, the expectation of lower shipping costs for local food would be one likely explanation. Economic theory tells us that two identical products, selling at the same time and in a competitive market, should sell for the same price once transportation costs have been taken into account (Kohls and Uhl, 2002).

Another reason that consumers want to pay a lower price for produce at a farmers' market may be related to the inconvenience involved in shopping at these markets. Eastwood (1996) mentions that the cost in time required to shop at a farmers' market may need to be offset with lower prices. Many of those surveyed in this southeast Missouri study indicated that they did not shop at the Cape Girardeau farmers' market because of the inconvenient hours (Thursday afternoon) and/or location. Consumers surveyed by Wolf (1997) rated supermarkets as more convenient and accessible compared to farmers' markets, as did Massachusetts shoppers (Lockeretz, 1986) and California shoppers (Bruhn et al., 1992). New Jersey direct market shoppers mentioned time and convenience as reasons for not visiting direct marketing facilities (Nayga et al., 1995). The two most important reasons given by West Virginia consumers for not shopping at direct markets were 'none nearby' and 'inconvenient' (Jack and Blackburn, 1984). Indiana consumers were interested in purchasing local products but were ' . . . unwilling to incur the search and time costs involved in purchasing some of their food directly from the farm, or from an organized farmers' market' (Jekanowski et al., 2000:49). Ross et al. (1999) found that consumers were not willing to go out of their way for local products, and considered it an inconvenience to have to travel to a separate market for local produce. Comments made by southeast Missouri shoppers support these findings. One shopper commented 'I would support farmers if the product was available at supermarkets . . .' and another mentioned 'I would be very interested in buying fresh fruits and vegetables from local farmers, but I prefer they be placed in supermarkets so I can get all of my shopping done at the same time.'

Implications

The results of this study support the advice given by Feenstra (1997) for a successful marketing strategy for local products. The products must be high quality yet sold at a competitive price. To quote one respondent to the southeast Missouri study 'quality and price must be competitive'. Direct markets, in particular farmers' markets, are seen by consumers as providing a quality product that perhaps deserves a price premium, but because transportation and marketing costs have been reduced, prices should still be the same or only a little higher than supermarket prices. Rather than promote products based on the state in which they were grown, appealing to a consumer's loyalty to a smaller region should capture the interest of those who pay attention to, and care about, the origin of products they purchase. Emphasis should also be placed on the short distance that the produce has traveled and how quality and freshness have been maintained. A shorter travel distance for food products should also find favor with environmentalists, but the combination of local and organic would hold even greater appeal, along with the corresponding price premiums that they are willing to pay. One shopper commented, 'I would like to see locally grown organic produce. I cannot find it here. I would go out of my way and spend more money if it were available.'

Limitations

The number of environmentalists that this study used for analysis is a relatively small group (52 households) where the definition of environmentalist was based on membership in an environmental group such as the Sierra Club or Audubon Society. There may be environmentally oriented individuals who do not belong to such a group, and who would consequently not be considered environmentalists in this study. The study sample contained more households with higher income and more education than is representative of the region. Individuals with less education may be reluctant to respond to a mail survey, and those with less education are more likely to earn less income. Income and education were not found to be significant factors affecting preference for local food; however, it is unknown if this would change if more low-income and low-education households were included. This study also contained more farmers than the Missouri Census Data Center indicates for the region, likely due to a definition difference. No definition of 'farmer' was given in the questionnaire; survey respondents were asked if a full- or part-time farmer was a member of the household. This study is based on what consumers say they will do, such as seek out or pay more for locally grown food, when in fact they may not actually behave that way in the marketplace. Data on actual consumer expenditures for local food would provide information on consumers' purchasing behavior, but would not reflect consumers' interest in, or the availability of, local food.

Conclusions

Direct marketing of local food products has the potential to increase farm income. Random households in southeast Missouri were surveyed by mail to determine if consumers in the area preferred local produce and if they were willing to pay a price premium for local food products. Farm households were identified and found to be no different from other households with respect to demographic characteristics and regarding interest in and willingness to pay a higher price for local food products. Households where someone was raised on a farm, or their parents were raised on a farm, were found to have a preference for local produce and a willingness to pay a price premium for those products. Households in which someone was a member of an environmental group were willing to pay a higher price for local food, but they would not seek out such products. Food buyers in these households had higher income and more education than the average household in the region. They were found to purchase organic food more frequently compared to randomly selected households, and it appears that local organic food is their preference.

Awareness of the *AgriMissouri* agricultural product promotion program was not widespread in the region. Southeast Missouri consumers did not define locally grown as a statewide concept, but as a smaller, regional concept that could cross state boundaries. This is consistent with the belief that locally grown products have not traveled as far to reach the consumer, and are therefore likely to be fresher and of higher quality than produce that has been shipped in from other states or other parts of Missouri. This perceived higher quality and lower price that consumers believe should result from less shipping and handling are reflected in a preference for local products and generally favorable view of produce available at farmers' markets. A number of consumers also showed a concern for the origin of products they purchase, and indicated that they care where produce they purchase is grown. These expectations of higher quality and lower price for local fruits and vegetables are consistent with many previous studies that looked at consumer demand for local produce.

The results of this study imply that marketing of local produce should focus on quality and competitive pricing of a product that has come from within the southeast Missouri region. Similar to other studies, quality and freshness are the most important characteristics consumers in the region look for when purchasing produce. Inconvenience of shopping at a farmers' market needs to be considered. This may mean changing the time of the local farmers' market, in addition to selling local produce in the region's supermarkets. The area's consumers indicated that they were concerned about the region's farmers and, particularly those with a farm background, were willing to seek out and pay more for local produce in order to support them. There also appears to be demand in the region for locally grown organic produce within environmentalist households.

References

Adelaja, A.O., Brumfield, R.G., and Lininger, K. 1990. Product differentiation and state promotion of farm produce: An analysis of the *Jersey Fresh* tomato. Journal of Food Distribution Research 21:73–85.

Brooker, J.R., Eastwood, D.B., and Orr, R.H. 1987. Consumers' perceptions of locally grown produce at retail outlets. Journal of Food Distribution Research 18:99–107.

Bruhn, C.M, Vossen, P.M., Chapman, E., and Vaupel, S. 1992. Consumer attitudes toward locally grown produce. California Agriculture 46:13–16.

Dillman, D.A. 1978. Mail and Telephone Surveys: The Total Design Method. John Wiley and Sons, New York, NY.

Eastwood, D.B. 1996. Using customer surveys to promote farmers' markets: A case study. Journal of Food Distribution Research 27:23–30.

Eastwood, D.B., Brooker, J.R., and Orr, R.H. 1987. Consumer preferences for local versus out-of-state grown selected fresh produce: the case of Knoxville, Tennessee. Southern Journal of Agricultural Economics 19:193–194.

Feenstra, G.W. 1997. Local food systems and sustainable communities. American Journal of Alternative Agriculture 12:28–36.

Feenstra, G. and Campbell, D. 1998. PlacerGROWN; Select Sonoma County. Community Food Systems in California: Profiles of 13 Collaborations. Sustainable Agriculture Research and Education Program, University of California, Davis, CA.

FPC. 2001. Attracting Consumers with Locally Grown Products. Food Processing Center, Institute of Agriculture and Natural Resources, University of Nebraska, Lincoln, NE.

Gallons, J., Toensmeyer, U.C., Bacon, J.R., and German, C.L. 1997. An analysis of consumer characteristics concerning direct marketing of fresh produce in Delaware: A case study. Journal of Food Distribution Research 28:98–106.

Harris, B., Burress, D., and Eicher, S. 2000. Demands for Local and Organic Produce: A Brief Review of the Literature. Institute for Public Policy and Business Research, University of Kansas, Lawrence, KS.

Jack, R.L. and Blackburn, K.L. 1984. Effect of Place of Residence on Consumer Attitudes Concerning Fresh Produce Marketed Through Direct Farm Markets in West Virginia. WV University Agriculture and Forestry Experiment Station Bulletin 685.

Jekanowski, M., Williams, D., II, and Schiek, W. 2000. Consumers' willingness to purchase locally produced agricultural products: An analysis of an Indiana survey. Agricultural and Resource Economics Review 29:43–53.

Kezis, A., King, F.R., Toensmeyer, U.C., Jack, R., and Kerr, H.W. 1984. Consumer acceptance and preference for direct marketing in the Northeast. Journal of Food Distribution Research 15:38–46.

Kezis, A., Gwebu, T., Peavey, S., and Cheng, H.T. 1998. A study of consumers at a small farmers' market in Maine: Results from a 1995 survey. Journal of Food Distribution Research 29:91–99.

Kohls, R.L. and Uhl, J.N. 2002. Marketing of Agricultural Products. Prentice-Hall, Upper Saddle River, NJ. p. 159–162.

Lockeretz, W. 1986. Urban consumers' attitudes towards locally grown produce. American Journal of Alternative Agriculture 1:83–88.

Lohr, L. 2001. Factors affecting international demand and trade in organic food products. In A. Regmi (ed.). Changing Structure of Global Food Consumption and Trade. US Department of Agriculture, Economic Research Service, Washington, DC.

MCDC. 2002. Demographic Profile 3 Trend Report for Counties 1990–2000, Missouri Census Data Center, Jefferson City, MO. Available at Web site http://mcdc2.missouri.edu/websas/dp3_2ktmenus/mo/Counties.html (verified December 18, 2002).

MDA. 2002. Farmers' Market Directory: Numbers of Missouri Farmers' Markets. Missouri Depart. of Agriculture, Jefferson City, MO. Available at Web site http://agebb.missouri.edu/fmktdir/numberof.htm (verified June 27, 2002).

Nayga, R.M., Jr., Govindasamy, R., Wall, T.C., and Thatch, D.W. 1995. Characteristics of farmer-to-consumer direct market customers in New Jersey. New Jersey Agricultural Experiment Station P–02136–3–95, Department of Agricultural Economics and Marketing, Rutgers University Cooperative Extension, New Brunswick, NJ.

Patterson, P.M., Olofsson, H., Richards, T.J., and Sass, S. 1999. An empirical analysis of state agricultural product promotions: A case study of *Arizona Grown*. Agribusiness 15:179–196.

Ross, N.J., Anderson, M.D., Goldberg, J.P., Houser, R., and Rogers, B.L. 1999. Trying and buying locally grown produce at the workplace: Results of a marketing intervention. American Journal of Alternative Agriculture 14:171–179.

Stringer, S.B. and Thomson, J.S. 1998. Demographic data and fresh fruit and vegetable purchasing preferences of minority consumers in southeastern Pennsylvania. Journal of Family and Consumer Sciences 90:18–22.

Thomson, J.S. and Kelvin, R.E. 1996. Suburbanites' perceptions about agriculture: The challenge for media. Journal of Applied Communications 80:11–20.

USBC. 2002a. US Bureau of the Census, Census 2000, Table DP-1 for each county. Profile of general demographic characteristics: 2000. Available at Web site http://quickfacts.census.gov/qfd/states/29000.html (verified January 23, 2003).

USBC. 2002b. US Bureau of the Census, Census 2000, Table DP-2 for each county. Profile of selected social characteristics:

2000. Available at Web site http://quickfacts.census.gov/qfd/states/29000.html (verified January 23, 2003).

USBC. 2002c. US Bureau of the Census, Census 2000, Table DP-3 for each county. Profile of selected economic characteristics: 2000. Available at Web site http://quickfacts.census.gov/qfd/states/29000.html (verified January 23, 2003).

USBC. 2002d. US Bureau of the Census, Census 2000, Urban and Rural Classification. Available at Web site http://www.census.gov/geo/www/ua/ua_2k.html (viewed January 23, 2003).

Wilkins, J.L. and Gussow, J.D. 1997. Regional dietary guidance: Is the Northeast nutritionally complete? Proceedings of the International Conference on Agricultural Production and Nutrition. Available at Web site http://www.cals.cornell.edu/agfoodcommunity/afs_temp3.cfm?topicID=204 (verified December 8, 2002).

Winter, M. 1996. Buying locally benefits more than just consumers. Cornell Cooperative Extension Food and Nutrition. Available at Web site http://www.cce.cornell.edu/programs/food/staff/news/0596/local.html (verified December 10, 2002).

Wolf, M.M. 1997. A target consumer profile and positioning for promotion of the direct marketing of fresh produce: A case study. Journal of Food Distribution Research 28:11–17.

Accepted 28 April 2003 DOI: 10.1079/AJAA200353