

Market Potential for Locally Produced Meat Products

Leigh J. Maynard, Kenneth H. Burdine, and A. Lee Meyer

The goal of this research was to guide livestock producers in marketing, product design and pricing decisions. Tools included a focus group, a consumer taste-testing and willingness-to-pay survey, and a restaurant survey. Experience attributes of locally produced ground beef were especially competitive, and demand for credence attributes packaged under the “local” label appears consistent with a niche market that could justify verification programs. Restaurants are a potentially receptive outlet for local meats, allowing producers to avoid the barriers to entry in mainstream grocery outlets.

The overall objective of this research was to provide livestock producers with an assessment of market opportunities for locally produced meat products. Specific objectives were to identify the sources of value consumers place on locally produced meats, measure consumer willingness-to-pay (WTP) for locally produced meats, compare flavor attributes of locally produced and commercial meats, and identify factors affecting restaurants’ enthusiasm for offering locally produced meats.

Producers recognize the costs involved in targeting local markets and seek to develop a true assessment of opportunities. These producers hypothesize that willingness-to-pay for “locally produced” meat products exceeds that of commercial meat products. Additionally, certain consumer segments that prefer locally produced meat products are frustrated by lack of access to local meats.

In 1997, individuals representing livestock producers, consumers, processors, Cooperative Extension personnel, health/inspection policy makers, and the Kentucky Department of Agriculture formed the SMMART (Safe Meat Marketing Alternatives through Research and Technology) group to address particular meat-marketing issues. The group provided a catalyst for the marketing work described in this paper and supplied the meat products for this research. One of the group’s efforts was a direct and local meat systems project, funded by the USDA Federal-State Marketing Improvement Project (FSMIP). The project highlighted a need for additional information about potential market

niches and consumer willingness-to-pay for locally produced meat products. A policy priority specific to the Southeast was the farm-level income potential of locally produced meats as an alternative to dwindling income from tobacco.

Literature Review

Identifying key product attributes from the existing literature was an initial step in designing the study. Attributes such as juiciness and tenderness were expected to be important product characteristics (Mintert et al. 2000). Criteria such as environmental stewardship and support of small farms could also affect consumer meat purchases (Hartman Group 1996; Hartman Group 1997). Noelke and Caswell (2000) characterized search attributes as those observable before purchase (e.g., color), experience attributes as those observable after purchase and consumption (e.g., taste, tenderness), and credence attributes as those that cannot be evaluated by the buyer (e.g., humane production standards). Quality-management systems, such as organic certification, can potentially convert credence attributes into search attributes.

Locally produced meat products can potentially deliver a bundle of search, experience, and credence attributes for which consumers exhibit a composite WTP (Lancaster 1966). In this study, the Contingent-Valuation Method was used to elicit consumers’ WTP for locally produced meats given their current perceptions of locally produced meat attributes. The method involves presenting a clearly defined hypothetical scenario and asking respondents to indicate WTP for a “good” or willingness to accept payment for a “bad” (Mitchell and Carson 1989, 4). While the Contingent-Valuation Method is most often used in public-good applications, it is equally useful for eliciting information about pro-

Maynard, Burdine, and Meyer are assistant professor, extension associate, and extension professor, respectively, Department of Agricultural Economics, University of Kentucky.

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spective private goods or attributes (see Buzby, Ready, and Skees 1995; Buzby et al. 1998; Halbrendt et al. 1995; Maynard 2000; van Ravenswaay and Hoehn 1991; van Ravenswaay and Wohl 1995).

To the extent that locally produced meats deliver public goods, free-rider incentives may induce respondents to report higher WTP in a hypothetical setting than they reveal in the marketplace (Cummings, Harrison, and Rutström 1995). For business-decision-making purposes, contingent-valuation responses should be conservatively viewed as an upper bound on revealed WTP. Alternatives to contingent valuation include the hedonic approach used by Loureiro and McCluskey (2000) to assess willingness-to-pay for fresh veal carrying a Protected Geographical Identification label, and experimental approaches requiring consumers to make binding economic decisions (examples involving fresh meat attributes include Lusk and Schroeder 2002; Dickinson and Bailey 2002; and Maynard et al. 2002). Dickinson and Bailey reported WTP for the traceability attribute averaging approximately \$0.40 for ham sandwiches and \$0.20 for roast beef sandwiches. Regarding evidence of WTP for locally produced meats, results from Maynard et al. predicted that 51 percent of sampled consumers would purchase at least one locally produced steak at a 20-percent premium over the price of undifferentiated USDA Choice steak.

Empirical Methods and Results

Livestock-producer demands for information about profitable product attributes, market niches, and pricing strategies required that a mix of tools be used. Data were gathered from the following activities: (1) blind taste tests by a sample of 61 consumers, (2) a willingness-to-pay survey of the same 61 consumers prior to the blind taste tests, (3) a focus group of local chefs, and (4) a statewide survey of 106 restaurateurs.

Consumer Sensory Evaluations

Consumer perceptions of locally produced meat attributes were measured through a blind taste-testing survey of 61 volunteers. Considered low by most survey standards, the number of observations is typical of taste-testing experiments (Resurreccion

1998, 65; Maynard 2000), reflecting the challenges of recruiting and scheduling participants for a laboratory survey involving perishable foods. Volunteers responded to an email distributed on a College of Agriculture listserve, and 77 percent of the volunteers were employees of the College. Thus no claim is made that the sample was demographically representative. Table 1 contains a profile of the participants and their responses to questions included in the survey.

Consumers rated three experience attributes: juiciness, flavor, and texture. The products evaluated were locally produced and non-source-verified (i.e., of unknown origin) samples of ground beef, chicken breast, and fish filet. Three ground beef products were evaluated, consisting of a lean (i.e., 90/10) ground beef product partially finished on grass in Frankfort, Kentucky; a product produced in Olive Hill, Kentucky that was not advertised as lean (i.e., approximately 80/20); and a third product purchased from the case-ready section of a grocery store meat department, also not advertised as lean. Two types of chicken breast were evaluated. The first was free-range organic chicken produced in Kentucky, while the second was purchased from the grocery store. Three fish products were evaluated: farm-raised paddlefish produced in western Kentucky, wild-caught paddlefish from Kentucky, and farm-raised catfish purchased from a grocery store. Paddlefish is a large, freshwater member of the sturgeon family, and catfish is the closest farm-raised substitute for paddlefish that is regularly sold in area grocery stores.

Consumers evaluated the products in the College's taste-testing laboratory, which contains individual booths that allow items to be passed through from the food preparation area. Samples were labeled with the letters A, B, and C (i.e., consumers were not told which products were locally produced), and red lighting was used in the laboratory to prevent visual distinctions from interfering with taste evaluations (Resurreccion 1998). Consumers chose which sample they preferred, if any, based on each attribute individually, then indicated the sample they liked best overall. Participants tasted products separately, rinsing with apple juice between samples. To avoid altering the taste of the meat as much as possible, ground beef was cooked on a griddle, while chicken and fish were prepared in a convection oven.

Table 1. Consumer Sample Profile.

	Sample (N=61)	2000 Census*
Average household size	2.41	2.59
Households with individuals under age 19	20%	36%
Households with individuals over age 64	2%	23%
Age 0–18	25%	29%
Age 19–24	11%	7%
Age 25–34	23%	14%
Age 35–44	12%	16%
Age 45–64	28%	22%
Age 65–	1%	12%
College of Agriculture employees	77%	
Responsible for household food shopping?		
0–25%	20%	
25–50%	13%	
50–75%	5%	
75–100%	62%	
Household meat consumption, self-assessed:		
negligible	0%	
below average	23%	
about average	44%	
above average	33%	
Purchased food during last month at:		
specialty meat store	28%	
farmer's market	28%	
direct from farmer	20%	
food cooperative	15%	
Willing to make extra stop for local meat?		
never	30%	
every couple months	30%	
about monthly	28%	
about weekly	12%	
Willing to pay for source verification?		
0 cents/lb.	13%	
1–2 cents/lb.	38%	
3–5 cents/lb.	22%	
> 5 cents/lb.	27%	
Restaurant use of local foods affects patronage?		
strong factor	13%	
minor factor	45%	
not a factor	42%	

* Source: U.S. Census Bureau. *Census 2000*. Table DP-1.

Table 2 contains results from the blind taste-test evaluation. The juiciness, flavor, texture, and overall palatability appeared superior for both locally produced ground beef products versus their non-source-verified alternative. The locally produced ground beef with higher fat content was most preferred in terms of juiciness, texture, and overall palatability. Regarding the fish products, the locally produced wild-caught paddlefish was most often preferred overall, and was most often preferred for its flavor. Catfish purchased from the grocery store was deemed the juiciest, while the texture of both locally produced paddlefish products were more

often preferred to the texture of catfish. In the case of chicken, a large majority of consumers preferred every attribute of the product purchased from the grocery store to the locally produced free-range chicken.

Table 3 provides taste-test information about which experience attributes most heavily influenced consumers' overall preference. The results can affect production, processing, and promotion decisions. Logit regressions on overall preference included the three consumption-attribute variables as well as product-specific dummy variables to capture the influence of other unspecified attributes

Table 2. Percentage of Panelists (N=61) Preferring Products by Attribute.

Ground beef	Local (lean)	Local (not lean)	Grocery store (not lean)
Juiciness	37%	50%	13%
Flavor	45%	40%	16%
Texture	36%	48%	16%
Overall	39%	50%	11%
Fish	Local farmed paddlefish	Local wild-caught paddlefish	Grocery store catfish
Juiciness	19%	37%	44%
Flavor	22%	48%	29%
Texture	37%	36%	27%
Overall	27%	43%	30%
Chicken	Local free-range	Grocery store	
Juiciness	20%	80%	
Flavor	18%	82%	
Texture	22%	78%	
Overall	19%	81%	

Table 3. Influence of Juiciness, Flavor, and Texture on Overall Preference.

Variable	Consumer taste panel, N=61 (Logit)		
	Ground beef	Chicken	Fish
Intercept	-6.5928***	-4.8212***	-4.3004***
Product 1 dummy	0.5593	-0.3073	0.4562
Product 2 dummy	0.9479	n/a	-0.1188
Juiciness	3.3802***	2.5370**	1.2144*
Flavor	5.1619***	3.4453***	4.1794***
Texture	3.0164***	3.9781***	2.7852***
% Concordant	97.6	97.5	96.7

*, **, and *** denote statistical significance at the .10, .05, and .01 levels, respectively.

on overall preference. Coefficient estimates on flavor and texture were significant at the .01 level for all three meat products; juiciness was also significant at levels ranging from .01 to .10. As expected, all coefficients on juiciness, flavor, and texture were positive. None of the product dummy coefficients were significant in any of the regressions, suggesting that juiciness, flavor, and texture encompass all of the attributes that systematically influence overall preference. Not surprisingly, flavor appeared to be the dominant influence on overall preference. Wald tests indicated that flavor was significantly more important than juiciness (.05 level) and texture (.10 level) in the ground beef regression, and flavor was significantly more influential than juiciness (.01 level) in the fish regression. The findings indicate that successful local meat products need to be competitive in all major experience attributes, with emphasis on flavor.

Consumer Willingness-to-Pay Survey

The 61 consumers recruited for the blind taste-test evaluation also completed a survey assessing their WTP for locally produced meat products. Consumers completed the survey prior to entering the taste-testing lab. The survey contained questions regarding frequency of visits to specialty stores and farmer markets, preferences for one-stop shopping, household meat consumption, preference for locally produced meats when dining out, and age. Finally, consumers rated the perceived relative attractiveness of locally produced and commercial meats in terms of freshness, convenience, quality, packaging, food safety, and taste, thus providing data on sources of perceived value.

In addition to the survey responses profile in Table 1, consumer perceptions of locally produced meat attributes relative to non-source-verified meat products are shown in Table 4. On average, locally produced products were expected to be superior to typical grocery store products in terms of freshness, quality, food safety, and taste. Convenience of purchase was the weakest attribute of local products relative to undifferentiated products, with the widest variation in perceptions.

An iterated dichotomous-choice contingent-valuation instrument was designed to measure willingness-to-pay (Mitchell and Carson 1989, 103). WTP scenarios were provided for four products: ground beef, beef steak, chicken, and sausage. For each product, consumers indicated if they would choose a locally produced product over its non-source-verified alternative at three price levels: a zero premium over the non-source-verified product, a premium representative of current pricing for the few existing local meat suppliers, and a premium twice as large as the representative level. In the case of local ground beef, steak, and sausage the premium alternatives relative to non-source-verified products were zero, 20 percent, and 40 percent. For locally produced chicken the premium alternatives were zero, 50 percent, and 100 percent above the current grocery store price. Logit regressions allowed identification of target-market segments by regressing willingness-to-pay responses on reported frequency of visits to specialty stores and farmer markets, perceived attributes of locally produced meats, preferences for one-stop shopping, household meat consumption, preference for locally produced meats when dining out, and age.

Table 5 provides a key to variables used in the

Table 4. Consumer Perception of Local Meat Products Versus Undifferentiated Products (N=61).

Attribute *	Mean	Std. dev.
Freshness	1.83	0.38
Convenience of purchase	0.92	0.65
Quality	1.50	0.54
Packaging	1.02	0.50
Food Safety	1.25	0.51
Taste	1.53	0.54

* Responses of 2, 1, and 0 denote local product better than, same as, and poorer than undifferentiated product, respectively.

analysis. Survey responses regarding willingness-to-pay premiums for local meat products are shown in Table 6. A minority of respondents (15–20 percent for ground beef, steak, and chicken; 34 percent for sausage) indicated that they were willing to pay the highest premium of 40 percent for locally produced ground beef, steak, and sausage, and 100 percent for locally produced chicken. The majority of respondents expressed willingness to pay a 20-percent premium for locally produced ground beef, steak, and sausage, and 36 percent of respondents were willing to pay a 50-percent premium for locally produced chicken. Virtually all respondents said they would choose the locally produced products in the zero-premium scenario. Similar results were reported by Maynard et al. (2002). De-

spite fundamental differences in the samples and methods used, 52 percent of participants in both studies expressed or revealed willingness to pay a 20-percent premium for locally produced steak over undifferentiated USDA Choice steak.

SMMART representatives were particularly interested in identifying market segments with the highest willingness-to-pay for local meats. Table 7 contains results from ordered logit regressions of consumer WTP for locally produced ground beef, steak, chicken, and sausage. Respondents' willingness-to-pay was assigned a value of three if they were willing to pay the highest premium offered, a value of two if they were willing to pay no more than half of the highest premium, a value of one if they were willing to buy the local product only if

Table 5. Variable Definitions and Ranges.

Variable name	Variable definition
WTPGB	WTP premium for local ground beef, 0=neg., 1=0%, 2=20%, 3=40%
WTPST	WTP premium for local steak, 0=neg., 1=0%, 2=20%, 3=40%
WTPCH	WTP premium for local chicken, 0=neg., 1=0%, 2=50%, 3=100%
WTPSA	WTP premium for local sausage, 0=neg., 1=0%, 2=20%, 3=40%
WTPHIGH	Willing to pay highest premium for at least one product, 0=no, 1=yes
WTPLOW	Not willing to pay premium for any product, 0=no, 1=yes
FRESH	Freshness of local meats, 0=local worse, 1=local same, 2=local better
CONVENIENT	Convenience of purchase, 0=local worse, 1=local same, 2=local better
QUALITY	Quality of local meats, 0=local worse, 1=local same, 2=local better
SAFE	Safety of local meats, 0=local worse, 1=local same, 2=local better
TASTE	Taste of local meats, 0=local worse, 1=local same, 2=local better
WTPSOURCE	WTP for source verification, 0=0¢/lb, 1=1-2¢/lb, 2=3-5¢/lb, 3=>5¢/lb
WTSTOP	Make extra stop for local meats? 0/1/2/3=never/bi-monthly/monthly/weekly
MEATSTOR	Purchased food at specialty meat store in last month, 0=no, 1=yes
FARMMKT	Purchased food at farmer market in last month, 0=no, 1=yes
FARM	Purchased food direct from farmer in last month, 0=no, 1=yes
COOP	Purchased food at food co-op in last month, 0=no, 1=yes
OTHER	Purchased food through other channels in last month, 0=no, 1=yes
SUPERMKT	Purchased food only at grocery store in last month, 0=no, 1=yes
RESTAUR	Is local meat a factor in restaurant choice? 0/1/2 = no/minor/major factor
SHOP	Percentage of household food shopping by respondent, 1=0-25%, 4=>75%
MEATCON	Household meat consumption: 0=negligible, 1/2/3=below/equal/above avg. above average
AG	Work in College of Agriculture? 0=no, 1=yes
AGExxy	Number of household members between ages xx and yy
KIDS	Number of household members under age 19
YOUNGADT	=1 if all household members are age 19-24, =0 otherwise
SINGLE	=1 if household size =1, =0 otherwise

Table 6. Percentage of Participants (N=61) Willing to Pay Given Premiums for Local Products.

Binary willingness-to-pay responses ^a	High premium ^b	Low premium ^b	No premium
Locally produced ground beef	15%	64%	100%
Locally produced steak	20%	52%	98%
Locally produced chicken	20%	36%	98%
Locally produced sausage	34%	52%	100%

^a 1 = choose local product at the stated premium, 0 = choose typical grocery store product

^b premium over undifferentiated product: high = 40%, low = 20% for beef, steak, and sausage; high = 100%, low = 50% for chicken.

Table 7. Ordered Logit Results on Consumer Willingness to Pay Premiums for Local Meats.

Variable name	Ground beef (N=60)	Steak (N=57)	Chicken (N=59)	Sausage (N=57)
Intercept 1 ^a	-6.5967***	-1.8585**	-5.7117***	-2.1081**
Intercept 2	-2.8897**	0.3231	-4.1628**	-0.8063
Intercept 3	n/a	5.1969***	2.4751	n/a
CONVENIENT	-1.2870**	-0.5985	—	—
QUALITY	0.9545*	—	1.0370	—
SAFE	—	—	0.9155	—
WTPSOURCE	0.9963***	—	0.8729**	0.8426***
WTSTOP	—	0.5529*	—	—
MEATSTOR	2.1194***	—	1.4902**	—
FARMMKT	—	-0.8371	—	—
FARM	—	2.6940***	2.0869***	—
OTHER	—	—	—	1.5369**
SHOP	0.5286**	—	—	—
AG	—	-1.6899**	-1.6199**	-1.6668**
AGE06	—	1.1040**	—	—
KIDS	—	—	—	0.6995**
YOUNGADT	-1.7190*	-1.2334	-2.7480**	1.8561*
SINGLE	—	1.7475**	—	—
Concordant pairs (%)	82.3	79.0	87.5	77.4

*, **, and *** denote statistical significance at the .10, .05, and .01 levels, respectively.

^a The differences between successive intercepts represent increases in cumulative probability of observing successively higher WTP levels, holding all other right-hand-side variables equal to zero. Local steak and sausage only have two intercepts because no respondents indicated negative WTP for these products.

the price were the same as the alternative product, and a value of zero if they would not buy the local product at a zero premium.

The regressions were performed on 57–60 observations (some participants did not respond to every question). The survey offered a large number of potential regressors, any of which could be theoretically relevant in explaining WTP. Previous

empirical studies provided no guidance on variable selection. Regressors that contributed little to the models' explanatory power were generally omitted to improve reliability and limit multicollinearity.

Explanatory power, as measured by the percentage of concordant actual and predicted pairs, ranged from 77.4 percent for sausage to 87.5 percent for chicken. In the case of ground beef, consumers re-

porting higher WTP viewed local meats as less convenient to purchase but of higher quality. Consumers with high WTP tended to also value source verification highly, indicating the importance of production location as a product attribute. Willingness to make an extra stop for local products was only significantly correlated with WTP for local steak, implying that success in getting supermarket shelf space may be a key factor in local meat marketing. Those who already shop in specialty meat stores tended to report higher WTP, as shown in the ground beef and chicken regressions. The generally negative and insignificant relationship between farmers' market patronage and WTP for local meats was surprising. Consumers who purchased meat directly from farms tended to indicate high WTP for the less-processed products (steak and chicken).

Consumers with children—particularly those with young children—tended to report higher WTP for local meat. However, these consumers were also significantly more likely to shop only at mainstream grocery stores, again suggesting the importance of product placement in supermarkets and superstores. Single consumers were significantly more willing to pay for locally produced steak. Respondents living in households composed entirely of people in the 19–24 age group (eight percent of the sample)

tended to report low WTP for local meats, with the exception of sausage. The negative coefficient in the chicken regression was especially high. Employees of the agricultural college where the research was performed reported significantly lower WTP. Income appears an unlikely explanation, as the household-income distribution of college employees (e.g., faculty, lab technicians, support staff, and research assistants) is known to cover a wide range. Another possibility is that many college employees are not native to the area. To the extent that WTP for locally produced products might incorporate an expression of loyalty to local producers over other producers, a testable hypothesis in future research is that consumers with a diverse residence history may express weaker demand for locally produced meats.

The diversity of significant variables across the product-specific regressions prompted a closer look at the extremes of the WTP distribution. A second pair of regressions identified characteristics of those consumers most willing to pay and of those not willing to pay any premium for local meat products. Table 8 shows that consumers selecting the highest WTP category for at least one product tended to be more willing to make an extra stop to obtain local meats, as were shoppers who frequent

Table 8. Logit Results Profiling Consumers Most and Least Willing to Pay Premiums for Local Meats.

Variable name	WTP highest premium on one or more products = 1 (N=59)	Not WTP premium on any product = 1 (N=58)
Intercept	-2.5091*	2.2182
SAFE	—	2.6307**
TASTE	—	-2.1607**
WTPSOURCE	—	-1.7709***
WTSTOP	1.2417***	—
MEATSTOR	1.0296	-3.2929**
FARMMKT	-1.6048*	—
COOP	1.8713*	—
OTHER	1.4214	-1.6226
SHOP	0.4755	—
AG	-1.7527**	—
KIDS	—	-0.9362*
Concordant pairs (%)	85.0	89.9

*, **, and *** denote statistical significance at the .10, .05, and .01 levels, respectively.

food cooperatives, while those who shop at farmer markets were less likely to express a high WTP.

Respondents who were unwilling to pay a premium for any of the locally produced meat products differed systematically from the rest of the sample. Although they viewed local meats as safer than undifferentiated meats, they had a low opinion of local meats' taste and did not value source verification labeling. Consumers in the "zero-bid" category were significantly less likely to have recently shopped at a specialty meat store, and tended to live in childless households.

The difficulty of placing locally produced products on supermarket shelves implies that commercial viability of local meat products may depend as much on shopping convenience as on WTP. On average, respondents reported willingness to make an additional stop to purchase local product between "once every couple months" and "once per month." Table 9 presents results of a regression of consumer willingness to make an extra stop for local meats. Those who were most willing to make an extra stop valued the freshness and quality of local meats and had recently shopped at specialty meat stores. They tended to be young and were likely to report that local meat offerings affected their restaurant choices. Note that WTP and willingness to make an extra stop were not significantly correlated, holding all else constant.

Restaurateur Focus Group and State-Wide Survey

Opportunities for marketing local meat products to restaurants were explored through a local chef focus group and a state-wide survey of 106 chefs. A focus group of chefs from six Lexington, Kentucky restaurants was conducted to acquaint them with some of the products and to collect information on opportunities and obstacles related to use of locally produced meat products in their establishments. Each chef was provided with a locally produced sample of either beef, pork, or paddlefish, and then prepared one entree using the University's food-preparation facility. The chefs sampled all dishes and discussed perceptions of the value of locally produced products in their restaurants. They also described obstacles and strategies producers could use in direct marketing.

Based on input from the focus group about criteria typically used in meat-purchasing decisions, a statewide restaurant survey was developed. Restaurant decision makers were asked in the survey to rate the business impact of featuring locally produced meats, rank criteria used in selecting meats, indicate preferences for product packaging, and explain the advantages and disadvantages associated with working with local producers. The mail survey of 600 Kentucky restaurants, with a follow-up mailing, yielded 106 responses. After account-

Table 9. Ordered Logit Results Profiling Consumer Willingness to Make an Extra Stop to Purchase Local Meats (N=58).

Variable name	Estimated coefficient
Intercept 1 ^a	-10.5838***
Intercept 2	-8.2553***
Intercept 3	-6.3808***
FRESH	1.6671*
QUALITY	1.1520**
MEATSTOR	1.6446***
RESTAUR	1.1395***
AGE2534	0.6606*
WTPPREMIUMMM (sum over all products)	0.1544
Concordant pairs (%)	80.2

*, **, and *** denote statistical significance at the .10, .05, and .01 levels, respectively.

^a The differences between successive intercepts represent increases in cumulative probability of observing successively higher willingness to make an extra stop, holding all other right-hand-side variables equal to zero.

ing for 100 bad addresses, the response rate was 21 percent. Respondents were either chefs, managers, or owners, depending on who made primary purchase decisions. Roughly 40 percent of restaurants responding indicated they operated "fine dining" restaurants, 21 percent referred to themselves as "family/casual dining," and 18 percent considered themselves to be "budget diners." Average seating capacity was over 100, while average weekly gross sales were between "\$10,000–20,000" and "\$20,000–30,000."

Survey responses shown in Table 10 suggest that marketing local meats through restaurants rather than through retail food stores may be advantageous. Restaurants do not impose slotting fees, and they offer a way to reach consumers who object to making a special trip to shop for local meats. Forty percent of responding restaurateurs had used local meat products in the past. About half of the respondents felt that local meat products would help their business, while the remainder felt that local meat products would have no effect on their busi-

ness; no respondents felt that local meat would hurt their business.

Most restaurateurs believed they could influence vendors to carry certain items, such as local meat products. While most were willing to work with individual producers to obtain local products, greater support existed for supply relationships with cooperatives or groups of producers. When asked what problems were anticipated in carrying local products, many responses centered around fears of inconsistent and unreliable local meat sourcing.

Respondents indicated whether they expected locally produced meat offerings to help their business, have no impact, or hurt their business. An ordered logit analysis was performed to help explain responses to this question. Two variables were significant at the .05 level (a table is not provided due to space constraints, but results are available from the authors upon request). Those who had offered local meats previously were more likely to expect positive business impacts, and respondents who were chefs with purchase decision-making author-

Table 10. Restaurateur Receptiveness to Local Meat Products (N=106).

Question (1 = yes, 0 = no)	Mean	Std. dev.
Used locally produced meat in the past	0.40	0.49
Local meats help your business	0.52	0.50
Influence vendors to carry certain items	0.80	0.40
Willing to work with individual farmers	0.63	0.49
Willing to work with group of farmers	0.75	0.44

Table 11. Restaurateur Purchasing Priorities(N=106).

Attribute	Mean	Standard deviation	Highest rank	Lowest rank (6 = not in top 5)
USDA grade	2.68	2.00	1	6
Price	2.92	1.43	1	6
Freshness	2.94	1.72	1	6
Appearance	4.25	1.48	1	6
Purveyor	5.24	1.25	1	6
Aging	5.42	1.21	2	6
Number of servings per package	5.53	1.00	2	6
Origin	5.54	.94	2	6
Leanness	5.55	1.33	1	6

Note: Low numbers indicate higher priority.

ity were most likely to expect positive impacts from local meat offerings. When purchase decisions were made farther up the organizational command chain the attractiveness of local meats appeared to suffer, particularly in the case of purchase decisions made at the corporate level.

Restaurateurs were given a list of nine purchase-decision criteria, and asked to rank the top five. As shown in Table 11, USDA grade was the highest-ranking attribute, followed closely by price and freshness. Product appearance was a distant fourth, and none of the remaining criteria consistently appeared among the top five.

Implications

This stakeholder-motivated study was designed to generate a broad range of quantitative information about commercial opportunities for locally produced meat products. Important issues included willingness-to-pay for locally produced meats; competitiveness of local meats with undifferentiated meats in terms of juiciness, flavor, and texture; relative importance of direct attributes (e.g., flavor, convenience of purchase) versus indirect attributes (e.g., support of local agriculture); identification of consumer segments that value local meats highly; and receptiveness of restaurants as a marketing outlet.

Bearing in mind that hypothetical willingness-to-pay results should be interpreted conservatively as upper-bound estimates, the analysis suggested that a considerable proportion of consumers are willing to pay premiums that would justify developing verification systems to differentiate meats as "locally produced." Given the barriers to entry for new products in traditional grocery stores, lack of consumer willingness to make an extra stop for locally produced meat was a concern. While 77 percent of respondents reported food purchases at non-traditional outlets during the previous month, the average frequency of such extra stops was only once every 1–2 months. A reviewer suggested that Internet sales and Community Supported Agriculture buying clubs may offer alternative marketing venues that reduce the transaction costs of multi-stop shopping.

The locally produced ground beef and fish sampled in the taste-testing component were judged favorably by participants; the locally produced

chicken sampled in this particular study did not fare as well. The poultry industry has a substantial lead on the beef industry, in particular, in supply-chain management driven by consumer preferences. The taste-test findings highlight under-exploited opportunities to build competitive advantage in consumer responsiveness through local beef marketing.

Locally produced meats are expected to occupy a niche market in the foreseeable future. The portion of survey participants willing to pay the highest premium level for local meats suggests that this niche may encompass 15–20 percent of consumers, and could be served through development of verification systems. A specific target segment appears to be primary shoppers in families with children who already shop in specialty food stores or purchase food products directly from farms. The mix of search, experience, and credence attributes packaged under the "local" label needs deeper investigation. The results profiling respondents who were most willing to pay premiums for locally produced meats (Table 8) suggested that credence attributes such as support of local producers were particularly important to that segment, since WTP was not strongly tied to perceptions of local meats' taste, freshness, or safety.

Restaurants represent an appealing market outlet for locally produced meats. Survey results suggest receptiveness to local meats by a considerable portion of restaurateurs, particularly in the fine dining segment, where quality is more important than price and chefs often have greater sourcing flexibility. Forty percent of respondents offer or have offered locally produced meats on their menus. Consumers do not appear to explicitly consider local meat offerings in their choice of restaurants, however, and interest by restaurateurs may stem mainly from the indirect ability of locally produced meat offerings to promote an image of the restaurant as a local establishment.

Recall that the purpose of this study was to promptly obtain information on a wide range of interests expressed by SMMART representatives, local producers, and consumers interested in local meat availability. Having attained that initial objective, future research should emphasize greater scientific validity, using a representative consumer sample that will allow greater confidence in WTP results, better isolating attributes in taste tests, considering additional marketing venues such as

Internet sales and Community Supported Agriculture farms, and testing new hypotheses generated by the results of this study.

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