Study of Consumer Perceptions of All Natural Meat Products

Funded by the Kerr Center for Sustainable Agriculture

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Research conducted by:
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Introduction

In recent years, the need to explore possibilities of increasing value-added opportunities to the central US region have been met with several research studies aimed at enhancing the overall economic impact of agricultural producers. A Master's research study from Kansas City State University looked at consumers' preferences for natural beef products. Givry (1998) studied consumers' meat consumption habits, buying habits, preferences of all natural products, and price they were willing to pay. He was not able to determine market segmentation differentiating beef eaters from consumers who are more likely to purchase natural beef. This study replicated some of Givry's study by using several questions from the original survey. An objective of this study was to gather information about consumers' preferences from a regional perspective. Additionally, targeted stores included those providing no all natural meats, those providing some all natural meats, and those providing only all natural meats. An example of the survey for this study is found in the appendix.

Purpose of Study

The intent of this study was to gather information from a regional perspective to determine consumers' perceptions about all natural meat products.

Categorical information studied:

1. To determine how well informed consumers are about all natural meats.
2. To determine the importance to consumers in knowing origin of raised meat, ingredients, and quality of purchased meats.
3. To determine consumer's buying habits.
4. To determine factors used in meat purchasing.

Procedures

To satisfy the objectives of this study, it was determined that a cross-sectional look of the region and the three types of stores would be necessary to provide information that could later be used for a marketing strategy for possible value-added ideas or opportunities. Gathering this information would require a quantitative methodology, and, in addition, a qualitative methodology would be incorporated to determine what people actually do and say. The qualitative methodology used for this study is the Strauss and Corbin method (1990).

Data presented in this report will show percentages, frequency, means, and standard deviations of each of the three areas of the region. Additionally, tables will include the actual data representation of how they compare with each other. The qualitative data will be determined through the Strauss and Corbin formula and extracted from extensive grounded theory methods to test the "fit, understanding, generality, and control" of the data gathered through observation and interview techniques (1990).

Presentation and Analysis

Population

The population of this study included customers of food markets located in three metropolitan areas of the region. Three stores were surveyed in the Dallas and Kansas City metropolitan areas, and two were surveyed in the Oklahoma City metropolitan area. The stores surveyed were of three types: no natural meat offered, both no natural and all natural meat offered, and only all natural meat offered (Dallas). Days selected to do the surveys were on Fridays and Saturdays, due to the larger customer use during those times. The respondent response was estimated at 65-70% (65-70 of every 100 people asked filled out the survey). This population was considered to be urban in background with a few exceptions. Customers and some employees served as the population for the qualitative aspect of this research.

Findings

The purpose of this study was to gather information from a regional perspective to determine consumers' perceptions about all natural meat products. Findings of this study are presented in tables and charts that show percentages, frequency, means, standard deviations and comparison data of each of the three areas of the region. Qualitative data is presented in the Strauss and Corbin formula. Comparisons of the quantitative and qualitative findings provide similarities and differences.

N *is the number of surveys that had answers to the question.*
Mean *is the average. Answers without a numeric answer were assigned a number starting with one.*

Question 1: How informed are you about how meat (beef, chicken, pork) is raised and processed?

This chart indicates that all areas were somewhat informed about the processing of meat products. Oklahoma City had the highest percentage of somewhat informed respondents while Dallas and Kansas City had the highest percentages of very informed. Kansas City was, however, fairly equal in being very informed and not informed.

	Kansas City	**Dallas**	**Oklahoma City**
N	140	212	105
Mean	2.01	2.18	1.97
Not	19.29%	7.55%	13.33%
Somewhat	60.00%	66.51%	76.19%
Very	20.71%	25.94%	10.48%

Question 2: How important is it to know the meat you purchased can be traced back to the farm and animal origin?

The mean indicates a higher degree of interest from Dallas in knowing the origin of the meat they purchase. All said it was very important to know this information, but Dallas and Kansas City had a higher percentage in the extremely important category.

	Kansas City	Dallas	Oklahoma City
N	140	209	105
Mean	3.54	3.70	3.45
Not	2.14%	2.87%	2.86%
Somewhat	22.14%	15.79%	21.9%
Important	23.57%	19.14%	24.76%
Very	23.57%	32.06%	27.62%
Extremely	28.57%	30.14%	22.86%

Question 3: How often do you check food ingredient labels for artificial additives or preservatives?

Oklahoma City was fairly consistent in the occasionally, frequently and always categories. Kansas City was high in the frequently category, while Dallas was very high in the frequently and always categories.

	Kansas City	Dallas	Oklahoma City
N	140	212	105
Mean	3.78	4.27	3.74
Never	1.43%	0.47%	1.9%
Rarely	11.43%	2.83%	8.57%
Occasionally	19.29%	10.85%	31.43%
Frequently	42.86%	40.57%	29.52%
Always	25.00%	45.28%	28.57%

Question 4: How often do you purchase a natural or organic food product?

Oklahoma City and Kansas City showed a mean of occasionally. Oklahoma City, however, was fairly even in the rarely and frequently category while Kansas City was very high in the occasionally category. Dallas was very high in the frequently category and much greater than Kansas City and Oklahoma City in the always category.

	Kansas City	**Dallas**	**Oklahoma City**
N	140	212	105
Mean	3.00	3.83	2.89
Never	6.43%	0.47%	9.52%
Rarely	20.00%	4.72%	24.76%
Occasionally	42.86%	20.75%	36.19%
Frequently	27.86%	59.43%	25.71%
Always	2.86%	14.62%	3.81%

Question 5: What is the factor that concerns you when you purchase beef products?

Taste and tenderness was the most important factor to all respondents and highly important also was the ingredient labels of the products. Oklahoma City, however, expressed significant concern for price compared with Dallas and Kansas City.

	Kansas City	**Dallas**	**Oklahoma City**
N	133	190	100
Mean	2.03	1.75	2.31
Label ingredients	19.55%	40.00%	22.00%
Taste/tenderness	66.92%	50.00%	46.00%
Brand name	3.76%	4.74%	11.00%
Price	9.77%	5.26%	21.00%

Question 6: What image do you associate with all natural beef products?

A high degree of respondents said no antibiotics or hormones was the main factor associated with the image they have of all natural beef products. It is interesting to note that Oklahoma City also ranked taste and tenderness as being an image factor.

	Kansas City	Dallas	Oklahoma City
N	136	194	102
Mean	2.72	2.09	2.53
Environment	7.35%	6.70%	8.82%
No antibiotics/hormones	65.44%	79.38%	46.08%
Taste/tenderness	19.85%	11.86%	27.45%
Family Farms	7.35%	2.06%	17.65%

Question 7: How interested are you in having more information available about ingredients used in processed foods/beef products?

All areas of respondents indicated a high degree of interest in knowing ingredient information. Dallas was extremely interested, Kansas City was very interested and Oklahoma City was interested. All three categories had a high percentage of responses.

	Kansas City	Dallas	Oklahoma City
N	139	209	104
Mean	3.43	3.66	3.42
Not	2.88%	5.25%	2.88%
Somewhat	16.55%	11.00%	16.35%
Interested	28.06%	25.36%	36.54%
Very	39.57%	28.71%	24.04%
Extremely	12.95%	29.67%	20.19%

Question 8: How often do you eat these products?

Beef consumption by the Oklahoma City respondents was ranked extremely high with 58.25 percent eating it three times or more each week. Kansas City and Dallas were evenly distributed between once to three times per week. Pork consumption was highest in the once per week category for all regional areas. Poultry was ranked highest by Kansas City in the twice per week category. Oklahoma City consumes poultry twice per week with once per week second. Dallas consumes poultry evenly in the twice to three times or more category. Fish ranked significantly higher in the once per week category in all regional areas. Dallas did have a fairly significant response in the twice per week category.

	Kansas City	Dallas	Oklahoma City
Beef N	139	208	103
Beef Mean	3.00	2.64	3.37
Pork N	134	199	99
Pork Mean	2.11	1.87	2.07
Poultry N	139	207	105
Poultry Mean	3.22	3.09	3.06
Fish N	136	204	100
Fish Mean	2.25	2.52	2.11

	Kansas City				Dallas				Oklahoma City			
Weekly	0	1	2	3+	0	1	2	3+	0	1	2	3+
Beef	2.16	27.34	38.85	31.65	9.62	36.54	33.17	20.67	0.00	20.39	21.36	58.25
Pork	14.18	63.43	18.66	3.73	26.18	62.30	8.90	2.26	17.17	60.61	20.20	2.02
Poultry	0.00	16.55	44.60	38.85	1.93	23.67	37.20	37.20	3.81	25.71	30.48	4.00
Fish	12.50	61.03	15.44	11.03	8.33	45.59	30.88	15.20	19.00	61.00	10.00	10.00

Question 9: When you buy meat, which type do you buy most often?

All regional areas significantly ranked boneless meat the highest in the type most often purchased. Kansas City and Dallas had a 5 to 1 ratio in favor of boneless and Oklahoma City had a smaller difference with a 2 to 1 ration in favor of boneless.

	Kansas City	Dallas	Oklahoma City
Bone-In	14.39	16.83	33.98
Boneless	84.89	83.17	66.02

Question 10: When you buy beef, which type do you most often purchase?

Oklahoma City typically purchases hamburger having a 53.33 percent rating followed with a 33.33 rating for purchasing steak. Kansas City significantly purchases other meat types followed with steak at 38.41 percent, while Dallas is fairly even between

	Kansas City	Dallas	Oklahoma City
Hamburger	7.25	40.10	53.33
Steak	38.41	47.40	33.33
Other	54.35	12.50	13.33

steak and hamburger purchases.

Question 11: When you buy hamburger, which type do you most often purchase?

Dallas and Kansas City typically purchase hamburger that is 90 percent lean or more. Oklahoma City chose the 80-90 percent category as most often purchased. Oklahoma City chose the 70-90 percent category almost at a 3 to 1 ratio over Kansas City and Dallas.

	Kansas City	Dallas	Oklahoma City
70-90% Lean	7.25	6.67	19.23
80-90% Lean	38.41	25.64	53.85
> 90% Lean	54.35	67.69	26.92

Question 12: When you buy steak, which do you most often purchase?

Kansas City indicated a higher percentage of steak purchases as KC strip followed with tenderloin and then ribeye. Dallas heavily purchases tenderloin followed by ribeye and sirloin. Oklahoma City significantly purchases a higher percentage of sirloin followed fairly even with t-bone and ribeye.

	Kansas City	Dallas	Oklahoma City
Flank	2.34	3.35	3.88
Sirloin	13.28	19.55	38.83
KC Strip	25.78	3.35	4.85
Porterhouse	3.13	3.35	1.94
T-Bone	10.94	7.82	19.42
Ribeye	17.97	23.46	16.50
Tenderloin	21.88	35.22	7.77
Other	4.69	3.91	6.80

Question 13: How would you rate these factors in your meat purchasing decision?

All regions rated health/safety extremely important with Kansas City (77.14), Dallas (85.44) and Oklahoma City (74.29). Convenience was very important to Kansas City and Dallas being somewhat higher. Oklahoma City was fairly evenly distributed from important to extremely important. All three areas rated appealing very to extremely important. Oklahoma City significantly rated price as extremely important. Kansas City and Dallas were similar in their ratings with Kansas City having a mean of 3.70 compared to Dallas at 3.55.

	Kansas City		**Dallas**		**Oklahoma City**	
	N	Mean	N	Mean	N	Mean
Healthy/safe	140	4.66	206	4.79	105	4.61
Convenient	140	3.76	195	3.56	103	3.67
Appealing	139	3.89	195	3.75	103	4.33
Price	140	3.70	200	3.55	103	4.11

	Kansas City					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Health/ Safety	00	0.71	9.29	12.86	77.14	0.97	00	2.91	10.68	85.44	0.95	00	9.52	15.24	74.29
Convenient	2.14	7.86	27.14	37.14	25.71	7.69	10.26	21.03	40.00	21.03	5.83	10.68	19.42	17.86	26.21
Appealing	1.44	8.63	23.74	30.94	25.25	8.21	6.15	16.41	40.00	29.23	10.68	2.91	18.45	26.21	40.78
Price	5.71	5.71	29.29	31.43	27.86	5.50	8.50	32.50	32.50	21.00	0.97	4.85	22.33	25.24	46.60

Question 14: How would you rate beef, chicken and pork on these product characteristics?

The region generally looked at the beef categories the same with the majority falling within the middle range of content. Kansas City and Dallas rated cholesterol slightly higher than Oklahoma City with means just above the mid-range of the scale. For pork, Dallas and Oklahoma City rated cholesterol content slightly higher than Kansas City, and Oklahoma City rated calorie and sodium content of pork higher than Kansas City and Dallas. For chicken, Dallas and Oklahoma City rated cholesterol and calorie content higher than Kansas City, being above the midpoint of the scale. Sodium content was rated fairly evenly among the regions, whereas Dallas considered chicken to have a higher artificial content than did Kansas City and Oklahoma City. Comments from respondents indicated that they were not knowledgeable about the categories in this question. The table does indicate that respondents chose the mid-range area which would show a bell curve proportion.

	Beef						Pork						Chicken					
	Kansas City		**Dallas**		**Oklahoma City**		**Kansas City**		**Dallas**		**Oklahoma City**		**Kansas City**		**Dallas**		**Oklahoma City**	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Cholesterol	136	3.71	200	3.86	102	3.59	134	3.36	186	3.71	99	3.71	135	2.30	202	2.63	101	2.75
Calorie	135	3.52	196	3.60	101	3.58	133	3.30	182	3.46	98	3.63	133	2.37	195	2.73	101	2.90
Sodium	136	2.71	184	2.89	101	2.90	132	3.10	171	3.19	98	3.39	136	2.61	187	2.70	98	2.73
Artificial Ingred.	135	2.70	186	3.10	99	2.79	133	2.90	175	3.20	97	3.07	137	2.65	190	3.09	97	2.85

Beef	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Cholesterol	3.68	2.21	33.09	41.18	19.85	5.00	3.00	24.50	34.50	33.00	3.92	6.86	38.24	27.45	23.53
Calorie	5.19	7.41	33.33	37.78	16.30	4.08	6.63	33.67	35.71	19.90	2.97	4.95	41.58	31.68	18.81
Sodium	15.44	20.59	45.59	13.97	4.41	13.59	22.83	38.04	11.96	13.59	15.84	19.80	33.66	19.80	10.89
Artificial Ingred.	20.00	20.00	37.78	14.07	8.15	18.28	16.67	20.97	24.19	19.89	24.24	18.18	25.25	18.18	14.14

Pork	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Cholesterol	4.48	12.67	41.79	23.88	17.16	4.84	11.83	31.72	25.27	25.81	3.03	13.13	24.24	28.28	31.31
Calorie	5.56	9.02	45.86	30.08	9.77	5.49	8.79	39.56	26.37	19.78	3.06	7.14	39.8	23.47	26.53
Sodium	9.85	15.15	42.42	19.70	12.88	11.70	14.62	36.84	16.37	20.47	10.20	12.24	31.63	19.39	26.53
Artificial Ingred.	14.29	20.30	39.10	13.53	12.78	15.43	16.57	22.29	23.43	22.29	19.59	13.40	28.87	16.49	21.65

Chicken	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Cholesterol	22.22	40.00	27.41	5.93	4.44	16.34	40.10	22.28	6.44	14.85	10.89	13.66	34.65	10.89	9.90
Calorie	15.79	41.35	34.52	6.02	2.26	11.28	31.79	37.44	10.77	8.72	6.93	26.73	44.5	12.87	8.91
Sodium	17.65	32.35	36.03	11.76	1.47	16.58	27.27	37.43	6.95	11.76	19.39	17.35	42.86	11.22	9.18
Artificial Ingred.	20.44	22.63	36.50	11.68	8.76	18.42	17.89	21.05	21.05	21.58	21.65	16.49	28.87	20.62	12.37

Question 15: How would you rate beef, chicken and pork on these display characteristics?

Microwaveability was considered by all regions to be very poor for beef, chicken and pork. Comments from the respondents indicated that cooking these products with a microwave is not desirable. For beef, Oklahoma City felt that packaging, display and variety better than average in the good rating. Kansas City and Dallas chose above the midpoint for display and variety of beef. Packaging and display of pork were rated higher by Kansas City and Oklahoma City. Kansas City rated variety higher than Dallas and Oklahoma City. For chicken, the regions generally agreed that packaging, display and variety were closer to very good.

	BEEF						PORK						CHICKEN					
	Kansas City		**Dallas**		**Oklahoma City**		**Kansas City**		**Dallas**		**Oklahoma City**		**Kansas City**		**Dallas**		**Oklahoma City**	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Microwave	130	1.85	179	1.98	98	2.23	128	1.91	171	1.97	96	2.22	130	2.26	179	2.327	97	2.52
Packaging	129	3.58	179	3.36	97	3.77	127	3.48	172	3.16	94	3.52	129	3.45	177	3.33	98	3.56
Display	133	3.84	182	3.75	98	3.83	130	3.62	173	3.42	95	3.55	133	3.63	181	3.56	99	3.64
Variety	130	4.19	186	4.00	98	3.88	127	3.76	176	3.53	95	3.56	129	3.78	185	3.87	99	3.74

Beef	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Microwave	55.38	18.46	14.62	8.46	3.08	49.72	18.99	18.99	7.82	4.47	41.84	20.41	19.39	9.18	9.18
Packaging	2.33	6.98	42.64	26.36	21.71	5.03	11.73	37.99	31.84	13.41	2.06	6.19	31.96	31.96	27.84
Display	2.26	4.51	27.82	37.59	27.82	2.20	5.49	29.12	40.66	22.53	2.04	4.08	30.61	34.69	28.57
Variety	1.54	1.54	16.15	37.69	43.08	2.15	3.76	20.97	37.63	35.48	3.06	8.16	22.45	29.59	36.73

Pork	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Microwave	50.00	21.88	17.19	8.59	2.34	50.88	16.37	21.05	8.19	3.51	42.71	20.83	14.58	14.58	7.29
Packaging	3.15	7.87	45.67	23.62	19.69	9.30	10.47	44.19	26.74	9.30	4.26	9.57	37.23	27.66	21.28
Display	2.31	8.46	34.62	33.85	20.77	4.62	10.98	37.57	31.21	15.61	5.26	7.37	34.74	31.58	21.05
Variety	2.36	5.51	34.65	28.35	29.13	5.11	11.93	31.82	26.70	24.43	5.26	13.68	28.42	24.21	28.42

Chicken	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Microwave	43.08	18.46	16.15	13.85	8.46	44.69	13.97	20.11	11.17	10.06	39.18	12.37	20.62	12.37	15.46
Packaging	3.10	6.20	50.39	22.48	17.83	5.08	14.69	37.29	27.68	15.25	3.06	10.20	38.78	23.47	24.49
Display	2.26	9.77	33.08	31.58	23.31	2.76	9.39	36.46	30.94	20.44	2.02	9.09	35.35	29.29	24.24

Variety	3.10	10.08	27.13	24.81	34.88	1.62	7.03	26.49	32.43	32.43	3.03	11.11	29.29	21.21	35.35

Question 16: When you purchase beef, how would you rate these factors?

All factors were considered by the regions to be better than average on importance except for brand and sodium. Packaging to Dallas was not as important as it was to Kansas City and Oklahoma City. Again, comments from respondents indicated that knowledge about sodium content was low.

Beef	**Kansas City**		**Dallas**		**Oklahoma City**	
	N	Mean	N	Mean	N	Mean
Color	135	4.40	191	4.36	105	4.47
Marbling	136	4.00	189	4.01	103	3.96
Min. Ext. Fat	136	4.22	194	4.14	104	4.28
Tenderness	136	4.48	191	4.46	105	4.34
Packaging	134	3.74	190	3.40	105	4.02
Brand	136	3.00	190	3.12	103	3.16
Leanness	136	4.06	195	4.09	101	4.15
Sodium	136	3.27	190	3.44	103	3.27
Artificial Ing.	136	3.92	194	4.21	103	3.87

Beef	**Kansas City**					**Dallas**					**Oklahoma City**				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Color	0.00	2.22	14.07	25.19	58.52	2.62	1.57	9.95	28.80	57.07	1.90	0.95	7.63	26.67	62.86
Marbling	2.94	4.41	19.12	36.03	37.50	2.12	6.88	19.05	31.22	40.74	6.80	0.97	15.53	42.72	33.98
Min. Ext. Fat	2.21	3.68	13.97	30.15	50.00	4.12	3.09	15.98	27.84	48.97	1.92	4.81	8.65	31.73	52.88
Tenderness	0.74	1.47	8.09	27.94	61.76	1.05	1.05	7.33	31.41	59.16	0.95	1.90	9.52	37.14	50.48
Packaging	3.73	6.72	30.60	29.10	29.85	9.47	10.00	32.11	27.89	20.53	31.81	31.81	21.90	26.67	43.81
Brand	15.44	16.91	32.35	22.79	12.50	14.74	17.37	24.21	28.42	15.26	17.48	12.62	26.21	23.30	20.39
Leanness	3.68	3.68	19.12	29.41	44.12	4.10	6.15	12.82	29.74	47.18	2.97	2.97	13.86	35.64	44.55
Sodium	9.56	13.97	32.35	27.21	16.91	8.95	12.63	30.53	20.53	27.37	7.77	17.48	37.86	13.59	23.30
Artificial Ing.	5.15	8.09	18.38	25.74	42.65	7.22	2.58	10.31	21.13	58.76	6.80	5.83	26.21	15.53	45.63

Please read the following description of all natural beef, then proceed with the remaining parts of the survey. "Natural beef is a high quality beef product raised without any hormones or antibiotics. Family farmers and ranchers who produce natural beef are committed to agricultural production methods that ensure the protection and enhancement of natural resources and believe in humane treatment of animals."

Question 17: Which of the following best describes your knowledge of all natural beef before you read the description?

Over 50 percent of all respondents said they had heard about the all natural beef description before they read the description printed on the survey. Dallas (38%) said they knew a lot about all natural beef.

	Kansas City	Dallas	Oklahoma City
Knew a lot	24.82%	38.54%	24.04%
Had heard	64.23%	51.71%	65.38%
Never heard	10.95%	9.76%	9.62%

Question 18: How had you previously heard of or read about all natural beef?

On how they received their information about all natural beef, Oklahoma City said promotional materials and other sources were where 69 percent got their information. Dallas was evenly distributed among the choices. Kansas City got most of their information from newspapers with in-store samples and other sources being evenly distributed.

	Newspaper	Instore samples	Promo materials	Other
Oklahoma City	18.28%	11.83%	38.71%	31.18%
Dallas	24.00%	25.33%	24.67%	26.00%
Kansas City	34.41%	23.66%	17.20%	24.73%

Question 19: How often do you purchase all natural beef products?

Generally, all respondents said they purchase all natural beef products occasionally and to a lesser degree, frequently. However, Kansas City chose frequently slightly more than occasionally. Of the always category, Dallas chose it at a 4 to 1 ration over Kansas City and Oklahoma City. The never category was distributed fairly evenly with Kansas City having the higher percentage.

	Kansas City	Dallas	Oklahoma City
N	134	201	103
Mean	2.22	2.49	2.24
Never	23.13%	15.42%	17.48%
Occasionally	33.58%	37.31%	45.63%
Frequently	41.04%	29.85%	32.04%
Always	2.24%	17.41%	4.85%

Question 20: What other types of all natural products are of interest?

Pork was of significant interest to all regional respondents. Note: Oklahoma City consistently chose more than one category. Eighty percent chose pork, 72 percent chose two categories, and 69 percent chose all three.

	Kansas City	Dallas	Oklahoma City
Vegetables	32.12%	14.98%	69.90%
Poultry	26.28%	22.22%	72.38%
Pork	45.99%	49.76%	80.95%

Question 21: Prior to reading the description, how would you characterize your attitude to an all-natural beef label?

All regional respondents were either indifferent or positive about their attitude of an all natural beef label. Dallas had a significant positive attitude with 80 percent choosing positive. Kansas City and Oklahoma City were evenly distributed with positive attitudes in the 60 percent range and indifferent attitude at a 30 percent average.

	Kansas City	Dallas	Oklahoma City
Indifferent	32.85%	18.41%	27.18%
Negative	2.19%	1.49%	2.91%
Positive	64.96%	80.10%	69.90%

Question 22: After reading the description, how would you characterize your attitude to an all-natural beef label?

After reading the description, Kansas City and Oklahoma City greatly increased their attitude from indifferent to positive. Dallas changed very little with a slight increase of the positive selection.

	Kansas City	Dallas	Oklahoma City
Indifferent	15.33%	10.45%	16.35%
Negative	1.46%	1.00%	1.92%
Positive	83.21%	88.56%	81.73%

Question 23: If regular beef sirloin cost $4.00 per pound and all-natural beef sirloin cost $5.60 per pound, I would buy:

Dallas selection was significantly higher for all natural beef than was Kansas City and Oklahoma City. They were split about 50/50 on the purchase of all natural and regular beef.

	Kansas City	Dallas	Oklahoma City
All Natural	56.62%	81.68%	47.12%
Regular	43.38%	18.32%	52.88%

Those who chose regular beef in question 23 were asked to complete question 24.
Question 24: If regular beef sirloin cost $4.00 per pound and all-natural beef sirloin cost $5.00 per pound, I would buy:

For those who chose regular beef from question 23, Dallas still significantly chose all natural beef over regular beef. Kansas City and Oklahoma City still selected at about a 50/50 split.

	Kansas City	Dallas	Oklahoma City
All Natural	51.35%	75.00%	42.19%
Regular	48.65%	25.00%	57.81%

Those who chose natural beef in question 23 were asked to complete question 25.
Question 25: If regular beef sirloin cost $4.00 per pound and all-natural beef sirloin cost $6.50, I would buy:

For those who chose all natural beef from question 23, the results were similar as that of question 24 with Dallas being close to the 80 percent selection they made in question 23.

	Kansas City	Dallas	Oklahoma City
All Natural	52.75%	79.53%	46.67%
Regular	47.25%	20.47%	53.33%

This section details demographics:

Generally, all regions had slightly more than 50 percent of respondents being women. Dallas had the highest percentage of women at a 2 to 1 ratio.

	Kansas City	Dallas	Oklahoma City
Female	55.56%	66.99%	55.34%
Male	44.44%	33.01%	44.66%

Question 28 asked for the participant's age.

Age span was fairly equal at all locations. Oklahoma City was slightly younger in it's respondents.

Question 29 asked for the number of people who lived at the respondent's residence.

Mean for this question ranged from 2.61 to 2.79 people who resided at the respondent's residence.

	Kansas City	Dallas	Oklahoma City
N	135	204	104
Mean	2.79	2.61	2.72
7 people	0.74%	0.49%	0.00%
6 people	2.22%	1.47%	5.77%
5 people	8.89%	5.88%	5.77%
4 people	14.81%	13.73%	16.35%
3 people	20.00%	20.10%	19.23%
2 people	43.70%	46.08%	32.69%
1 person	9.63%	12.25%	20.19%

Question 30: What is the highest level of education you have completed?

Educationally, Dallas and Kansas City rated higher with most respondents having a BS degree or higher. Oklahoma City respondents had a mean of 3.95, indicating the higher response had some college.

	Kansas City	Dallas	Oklahoma City
N	135	203	103
Mean	5.20	5.26	3.95
PhD/DDS/MD/JD	7.41%	7.39%	5.83%
MS/MA Completed	17.04%	18.23%	5.83%
Some Grad	13.33%	11.82%	3.88%
BS/BA Completed	33.33%	32.02%	16.50%
Some College	17.04%	22.66%	28.16%
Tech/Trade/Bus	2.96%	2.96%	16.50%
HS or GED	8.89%	4.43%	16.50%
Less than 12th	0.00%	0.49%	6.80%

Question 31 asked the respondent's occupation.

There were numerous occupations recorded at the locations. A listing of those occupations is available; however, that information is not disclosed in this report. This information has been given to the Kerr Foundation and to the individual storeowners.

Question 32: What is your annual household income before taxes?

Kansas City and Dallas had the higher income levels of all respondents and were significantly higher than that of Oklahoma City. The mean salary for Kansas City and Dallas was in the $80,000 per year income level, while the mean for Oklahoma City was in the $30,000 income level.

	Kansas City	Dallas	Oklahoma City
N	131	178	98
Mean	8.44	8.17	3.31
>$120,000	27.48%	32.02%	1.02%
$110-119,999	8.40%	6.18%	1.02%
$100-109,999	12.21%	8.43%	2.04%
$ 90- 99,999	7.63%	6.18%	1.02%
$ 80- 89,999	6.11%	6.18%	1.02%
$ 70- 79,999	3.82%	6.74%	6.12%
$ 60- 69,999	11.45%	3.37%	4.05%
$ 50- 59,999	10.69%	11.80%	9.18%
$ 40- 49,999	3.82%	5.62%	12.24%
$ 30- 39,999	3.82%	6.18%	14.29%
$ 20- 29,999	3.05%	2.25%	18.37%
< $20,000	0.76%	4.49%	28.57%

Question 33: Are there children in your household?

Slightly more than 50 percent of all respondents had no children in their household.

	Kansas City	Dallas	Oklahoma City
No	54.89%	59.80%	57.84%
Yes	45.11%	40.20%	42.16%

If the answer to 33 is yes, how many of these children are less than 18 years of age?

Those having children in the household less than 18 years of age, had between 1.57 to 1.95 children per household, with Oklahoma City having slightly more than Dallas and Kansas City.

	Kansas City	Dallas	Oklahoma City
N	57	77	42
Mean	1.57	1.57	1.95
1	35.09%	44.16%	45.24%

2	24.56%	31.17%	28.57%
3	19.30%	12.99%	24.29%
4	1.75%	1.30%	9.52%
5	1.75%	1.30%	2.38%

Findings (Qualitative)

Prominent methods of research assume there is a reality that can be predetermined and the process controlled by the researcher, who maintains a separation from the study's topic. Qualitative research is the "one systematic approach … that leads us into those separate realities which others have learned and which they use to make sense out of their worlds" (Spradley, 1980). Stake (1978) said "truth in the fields of human affairs is better approximated by statements that are rich with the sense of human encounter" rather than "prepositional statements of lawful relationships." The qualitative method used in this study of customer's perceptions of all natural meat was Strauss and Corbin (1990). Inferences were made from observations of the customers' behavior, their artifacts and their conversations with the researcher.

Observations of the customers' movements, expressions and actual buying procedures during their shopping were noted during the time the researcher was present. Any lists or other information customers had with them were noted. Several open-ended questions were asked which led to additional questions to better understand the meaning of their buying actions. Discussions between customers and meat managers and employees were noted and led to some questioning by the researcher. A list of answers was developed and later placed in categories and analyzed to determine how these influence customers' perceptions of all natural meat. The following is the analytical formula used for in this study:

The Paradigm Model

Causal condition Increased Image	--------→	Phenomenon All Natural Meat	--------→
Context Heath/Disease	--------→	Action/Interaction Strategies Marketing	--------→
Intervening Conditions Price/Availability	--------→	Consequences Increased Demand	

Phenomenon (core category)---All Natural Meat

Quality
1. price
2. availability
3. consumer information

Consistency
1. color
2. tenderness
3. availability
4. definition

Image
1. healthier
2. free of growth stimulants/antibiotics
3. environmental issues

Value Added
1. traditionally, producers conservative
2. important for local producers
3. economic impact

Responsibility
1. government
2. producer groups
3. retail outlets

Causal Conditions---Increased Image

1. consumer demand
2. lack of information
3. lack of marketing

Context---Health/Disease

1. hoof and mouth/mad cow
2. environment
3. health/safety issues

Action/Interaction Strategies---Marketing

1. marketing plan
2. consumer education
3. producer emphasis

Intervening Conditions---Price/Availability

1. economic conditions
2. availability
3. lack of consumer education

Consequences---Increased Demand

1. increase production of all natural meat
2. changed consumer behavior
3. value added economics

Summary

Customers and store personnel were interviewed and observed during the time surveys were being completed. The formula shows the findings of the qualitative part of this study. Perceptions of all natural meat were varied from the type of stores data was being taken. Customers who were shopping in all natural and organic type stores were unconcerned about price. However, they were somewhat uninformed as to the overall value of all natural meats. Their knowledge of health and safety issues showed more awareness than those customers who were shopping at non-natural meat or partially natural meat stores.

Economic situations were highly influential in answers from customers who were shopping in non-natural meat stores. The quantitative portion of this study indicated these differences in non-natural meat stores, and the demographic information also showed less disposable income from those particular individuals.

Generally, a high percentage of the respondents had high regard for all natural meat. Those who have shopping experience with all natural meat discussed health/safety concerns, value added economics, consumer education and quality at a 3 to 1 ratio compared to those that have little or no experience. Several respondents expressed a need to increase marketing of all natural meat and entertained the idea for producers to move more in an all natural direction.

The intervening conditions that surfaced during the interviews show that the Dallas and Kansas City areas were more interested in the availability and consumer education responses, whereas, the OKC area dwelled mostly on the price considerations. Respondents from all three areas discussed producer involvement in making the changes necessary to increase all natural meat production. Several noted that increased production should help to decrease price to some degree.

The Dallas group wasn’t as concerned with price but rather more about health/safety, quality and consistency. Many respondents from all areas of the study did express the need to develop more marketing and provide more consumer information. Demand was thought to be a result of a marketing plan. Of those who discussed the demand theory, it was thought that increased production would occur which in effect would decrease prices at some degree.

Respondents generally were not concerned about price, but more about the safety issues. Those with experience shopping at stores that carried all natural meat had a more positive attitude than for non-natural stores. Some suggested that the government should provide support for all natural products. The suggestions included financial grants and loans, more consumer information, and tax incentives.

Those who purchase all natural meat stated that there is a definite difference in taste between all natural and non-natural. Respondents in all areas stated that a more comprehensive definition of all natural meat should be provided. Antibiotics and growth stimulants were a concern of most interviewees. Disease such as hoof and mouth and mad cow were often brought up in conversations.

Managers indicated that there was a need for more producer groups that were willing to dedicate themselves to this type of animal production. Many customers had the same concern. Managers in all natural meat stores indicated that price increases don’t seem to slow down customer demand. Managers also believed that consumer information/feedback was needed to help them with management decisions.

Comparison of Data

The intent of this study was to gather information from a regional perspective to determine consumers' perceptions about all natural meat products. The objectives were to determine how well informed consumers are about all natural meats; to determine the importance to consumers in knowing the origin of raised meat, ingredients, and quality of purchased meats; to determine consumers' buying habits; and to determine factors used in meat purchasing. The population for this study was consumers from food markets in the Dallas, Kansas City, and Oklahoma City metropolitan areas.

The methodologies used were both quantitative and qualitative strategies. To determine the best possible responses, data was collected through surveys at three stores in Dallas, three stores in Kansas City and two stores in Oklahoma City. During the collection of survey data, the researcher spent time observing the consumers and interviewing them about their purchasing habits, knowledge of all natural meats, and discussing related topics of interest. Open-ended questions were asked of the consumers which led to more discovery questions and later were placed in emerging categories and analyzed using the Strauss and Corbin qualitative formula.

Quantitative data revealed that health/safety issues were of strong importance to the respondents. Quality of the meat was another important consideration of the respondents that included various types and characteristics. Price wasn't a major factor; however, Oklahoma City did have strong feelings about price. In comparing the other regions, there were obvious factors that influenced the price questions. Those who shopped in non-natural stores gave price the most consideration. Looking at the demographics, these responses parallel to the income means of the state who fell in a lower income level.

Some data showed or alluded to the image, consistency, quality, and economics of all natural meat versus non-natural meat. Even though a definition prior to three questions of all natural meat was outlined in the survey, attitudes were slightly influenced and price became the determining factor.

The qualitative data showed responses that were not easily, if at all, captured from the surveys. Questioning of the respondents at each location further explained the internal perceptions of the consumers toward all natural meat products. The Paradigm Model used in analyzing the qualitative data determined the influences that existed about all natural meat. A condition of influence from a negative perspective was due largely to a lack of strategies used for increasing the image of all natural meats. Many respondents noted that health and disease influenced their change in attitude of all natural meats. Much discussion was presented about marketing. They said this factor was most important to increasing demand for all natural meat. There was a difference in attitude about price and availability. Dallas was more concerned about increased availability whereas Oklahoma City was more concerned with price. Kansas City interviewees seemed less concerned for price, although it was a factor, and more concerned about availability and consistency of the product. In comparison, the quantitative data inferred a similar feeling among the respondents.

Many thought the government should get involved with various means of support to help increase the production and marketing of all natural meats. Consumer education was readily touted as a major factor to help increase the demand and, thus, consumption of all natural meats. Economic factors were strongly discussed by the Kansas City and Dallas consumers. The idea of value added was given as a motivating factor to increase all natural meat production. Two people specifically said that the "old conservative approach of producers" must be redirected toward a venturing attitude that would bring the consumer a timely, healthier product. It was suggested by some that some sort of producer organization might be an answer to some economic woes that now exist in agriculture. The heart of a marketing plan, many said, should have a strong producer emphasis. The quantitative data showed a high interest in knowing where the animal of origin comes from and being able to trace that origin back to the farm.

The most positive responses about increased production, availability, quality and education came from those who either shopped at all natural stores or stores that carried some all natural products. In comparison with the quantitative data, those who gave positive feedback were those who had experience with purchasing all natural meats. Additionally, these respondents did have a higher income level and a slightly higher education level.

Therefore, it is concluded that the need to increase this type of production would be responsive to a high percentage of respondents. The need for consumer education, image building, and marketing were highly recommended by the respondents. It was also concluded that all natural meat gives off an image of being of higher quality that enhances several characteristics. The quantitative data revealed similar results. It was concluded that those who were most informed were those who had experience buying all natural meat. As one manager said, “once I get them in here and they buy some, they will always come back and eventually become a regular customer.” It can be inferred that experiencing all natural meat will have a high probability of increasing consumer demand for all natural meats.

The answer tends to lie in the development of a marketing plan that best fits the consumers’ tastes and preferences, and at the same time increasing production that may help in price adjustment as consumption increases.

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Appendix

All Natural Beef Survey

The Kerr Center for Sustainable Agriculture and the OSU Food and Agriculture Products Research and Technology Center are conducting consumer beef marketing surveys in Oklahoma, Kansas, and Texas. The purpose of the study is to become more informed about consumer perceptions and preferences related to natural beef. Aggregate results will be made available to the public on the Kerr Center's web site: www.kerrcenter.com. The survey will only take 10 minutes. Your input is very important to the success of this project.

1. How informed are you about how meat (beef, chicken, pork) is raised and processed?
   a) Not Informed b) Somewhat Informed c) Very Informed

2. How important is it for you to know the retail meat you purchase can be traced back to the farm and animal of origin?
   a) Not Important b) Somewhat Important c) Important d) Very Important e) Extremely Important

3. How often do you check food ingredient labels for artificial additives or preservatives?
   a) Never b) Rarely c) Occasionally d) Frequently e) Always

4. How often do you purchase a natural or organic food product?
   a) Never b) Rarely c) Occasionally d) Frequently e) Always

5. What is the factor that concerns you when you purchase beef products?
   a) Label ingredients b) Taste and Tenderness c) Brand Name e) Price

6. What image do you associate with all natural beef products?
   a) Environment b) No antibiotics or Hormones Used in Production c) Taste and Tenderness d) Local Family Farms
7. How interested are you in having more information available about the ingredients used in processed food/beef products?
   a) Not Interested b) Somewhat interested c) Interested d) Very Interested e) Extremely Interested

8. How often do you eat? (Please check the appropriate box on each line)

	Never eat	Once per week	Twice per week	Three times or more
Beef Products	___	___	___	___
Pork Products	___	___	___	___
Poultry products	___	___	___	___
Fish products	___	___	___	___

9. When you buy meat, which type do you most often buy? (Please choose one category)
   ___ Bone-in ___ Boneless

10. When you buy beef, which type of beef do you most often purchase? (Please choose one category)
   ___ Hamburger ___ Steak ___ Other (please specify) ______________________

11. When you buy hamburger which type do you most often purchase?
   ___ 70-80% lean ___80-90% lean ___ Greater than 90% lean

12. When you buy steak, which type do you most often purchase? (Please choose only one)
   ___ Flank ___ Sirloin ___ KC Strip ___ Porterhouse
   ___ T-Bone ___ Rib eye ___ Tenderloin ___Other (Please specify) _______________

13. How would you rate these factors in your meat purchasing decision? (1=not important to 5=very important)

	Not Important			Very Important	
Healthy-safe	1	2	3	4	5
Convenient (easy to cook, to eat)	1	2	3	4	5
Appealing (attractive packaging, color, appearance)	1	2	3	4	5
Price	1	2	3	4	5

14. How would you rate beef, chicken, and pork on these product characteristics? 1=very low to 5=very high content)

	Beef	Pork	Chicken
Cholesterol content	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Calorie content	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Sodium content	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Artificial ingredients	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

15. How would you rate beef, chicken and pork on these display characteristics? (1=very poor to 5=very good)

	Beef	Pork	Chicken
Microwaveability	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Packaging	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Display in store	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Variety of the products available	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

16. When you purchase beef, how would you rate these factors? (1=not important to 5=very important)

	Not important				Very important
Color	1	2	3	4	5
Presence of marbling	1	2	3	4	5
Minimum external fat	1	2	3	4	5
Tenderness (known by purchasing experience)	1	2	3	4	5
Good Packaging	1	2	3	4	5
Brand	1	2	3	4	5
Leanness	1	2	3	4	5
Sodium content	1	2	3	4	5
Artificial ingredients content	1	2	3	4	5

Please read the following description of all natural beef, then proceed with the remaining parts of the survey. (Read) Natural beef is a high quality beef product raised without any hormones or antibiotics. Family farmers and ranchers who produce natural beef are committed to agricultural production methods that ensure the protection and enhancement of natural resources and believe in humane treatment of animals.

17. Which of the following best describes your knowledge of all natural beef before you were read the description?
___ Never heard of All Natural Beef until now
___ Had heard of it, but didn't know much about it
___ Knew a lot about it

18. When had you previously heard of or read about All Natural Beef? (Please choose all that apply)
___ Newspaper ___ In-store product samples
___ Promotional materials at the store ___ Other (please identify) _____________________

19. How often do you purchase All Natural Beef products? (Please choose one category)
a) Never b) Occasionally c) Frequently d) Always

20. What other types of all natural products are you interested in?
___ Pork ___ Poultry ___ Vegetables

21. Prior to being read the description, how would you have characterized your attitude to an "all natural beef label?"
___ Positive ___negative ___ Indifferent

22. After hearing the description, how would you now characterize your attitude to an "all natural beef label."
___ Positive ___ Negative ___ Indifferent

Now, imagine you are shopping for beef sirloin steak at your local supermarket. You can choose between Regular Beef Sirloin Steak and All Natural Beef Sirloin Steak.

23. If Regular Beef Sirloin Steak costs $4.00 per pound and All Natural Beef Sirloin Steak costs $5.60 per pound, I would buy (please choose only one)
___ Regular Beef Sirloin Steak at $4.00 per pound
___ All Natural Beef Sirloin Steak at $5.60 per pound

If you choose Regular Beef, please go to Question 24, do not answer question 25. If you chose All Natural Beef, please go to Question 25, do not answer Question 24.

24. If Regular Beef Sirloin Steak costs $4.00 per pound and All Natural Beef Sirloin Steak cost $5.00 per pound, I would buy (Check only one)
    ___ Regular Beef Sirloin Steak at $4.00 per pound
    ___ All Natural Beef Sirloin Steak at $5.00 per pound

25. If Regular Beef Sirloin Steak costs $4.00 per pound and All Natural Beef Sirloin Steak cost $6.50 per pound, I would buy (Check only one)
    ___ Regular Beef Sirloin Steak at $4.00 per pound
    ___ All Natural Beef Sirloin Steak at $6.50 per pound

In this section, we would like some background information about you. This information will be treated as confidential and the results will only be used in aggregate form.

27. Are you … ___ Male ___ Female

28. Your age … ____

29. How many people live at this residence? _____

30. What is the highest level of education you have completed? (Please check only one category)

___ Less than 12th Grade	___ B.S., B.A., Completed
___ high school graduate or GED	___ Some graduate work, no degree
___ Technical, trade or business school	___ M.S., M.A., completed
___ Some college, no degree	___ Ph.D., D.D.S., M.D., J.D., etc.

31. What is your occupation? _________________________________

32. What is your annual household income before taxes? (Please check only one category)

___ Less than $20,000	___ $50,000 to $59,999	___ $90,000 to $99,999
___ $20,000 to $29,999	___ $60,000 to $69,999	___ $100,000 to $109,999
___ $30,000 to $39,999	___ $70,000 to $79,999	___ $110,000 to $119,999
___ $40,000 to $49,999	___ $80,000 to $89,999	___ more than $120,000

33. Are there children in your household? ___ Yes ___ No
    If answer is yes, how many of these children are less than 18 years of age? ___

We would like to thank you for your participation in this project, and should you have any questions about the Natural Beef Study, please contact Eric Allenbach at 2801 E. Memorial, Suite 104, Edmond, OK 73013, 405-478-4618 or e-mail: kcfsa@flash.net