ASSESSING THE DEMAND FOR LOCALLY PRODUCED NATURAL BEEF IN THE SOUTHEASTERN UNITED STATES FY 2010

The objective of this project was to determine the value that southeastern beef consumers place on the production system and location of production. Specifically, which do they value more, the production system (natural or conventional) or that the beef was locally produced? Another objective was to learn if a regional label such as the hypothetical "Sunbelt Beef" would carry the same value as one carrying a specific state's Department of Agriculture brand such as Georgia Grown or Florida Fresh.

The data for the analysis came from a 37 question internet study with various questions about the shopping behavior of the respondent in regards to beef steak (ribeye). The survey focused on consumers' buying behavior of the different attributes associated with beef. The primary focus of the questionnaire was to determine if production method (e.g. natural, grass-fed, etc.) was more important than location (local or regional) in consumers' decision to purchase a beef product. This objective was accomplished by determining consumer's willingness-to-pay (WTP) for labels that identified the product as grass-fed, organic, natural, locally grown, and regionally grown.

FINAL REPORT

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Final Report to AMS-FSMIP Regarding Assessing the Demand for Locally Produced Natural Beef in the Southeastern U.S.

Objective

The objective of this project was to determine the value that southeastern beef consumers place on the production system and location of production. Specifically, which do they value more, the production system (natural or conventional) or locally produced? We also wanted to learn if a regional label such as the hypothetical "Sunbelt Beef" would carry the same value as one carrying a specific state's Department of Agriculture brand such as Georgia Grown or Florida Fresh.

Procedures

The data for the analysis came from a 37 question internet study with various questions about the shopping behavior of the respondent in regards to beef steak (ribeye). The survey focused on consumers' buying behavior of the different attributes associated with beef (Appendix A). The primary focus of the questionnaire was to determine if production method (e.g. natural, grass-fed, etc.) was more important than location (local or regional) in consumers' decision to purchase a beef product. This objective was accomplished by determining consumer's willingness-to-pay (WTP) for labels that identified the product as grass-fed, organic, natural, locally grown, and regionally grown.

There were three sections to the survey. Section I, which covered the shopping habits of respondents such as where their groceries are purchased, if they had ever bought natural or grass-fed products, and where they obtained their information about organic produce and meats. Section II contained the fractional orthogonal conjoint analysis questions, and Section III collected the demographic information.

Survey respondent recruitment and data tabulation were conducted by the Survey Research Center from the University of Georgia. The survey was approved by the Institute for Behavioral Research through the University of Georgia. A target number of 500 completed surveys was the goal for this study. A random sample of people were called throughout Alabama, Georgia, Florida, North Carolina, South Carolina, and Tennessee. Potential respondents were pre-screened to see if they or their family consumed beef. Only those who were consumers of beef were asked to participate in the survey. They were read a participation letter during the initial phone call and once again in writing when they received the email with the link to the survey.

Once they agreed to take the survey and notified of a $15.00 incentive for completing the survey, they were sent an email which gave them a link and password to complete the survey online. Respondents were able to complete the survey at their convenience and return to it at a later date if they chose to do so. After completing the survey, the respondents were mailed a letter of appreciation and a $15.00 check for their participation.

A total of 2,879 individuals were contacted by phone to recruit participants (Appendix A). This resulted in 521 completed surveys which were collected by the Survey Research Center. Once the data was checked for response errors and completeness, nine were excluded leaving 512 usable surveys for analysis.

RESULTS

Analysis of the data provided some interesting results. Major findings of the project include:

- Consumers' definition of "local" largely means my state (Figure 1).
- Consumers' definition of "regional" means my state and surrounding states (Figure 2).
- 73 percent of respondents were willing to pay more for a locally or regionally produced beef product.
- Consumers ranked information about production systems (52 percent) more important than local production (47 percent), other brand labels, e.g. Certified Angus Beef (40 percent), and nutritional value (27 percent). Expiration date and price were the least important to respondents at seven percent and eight percent, respectively.
- In terms of credence attributes that consumers would pay more for, there was no statistical difference between Naturally-grown (40 percent) and Grass-fed (39 percent). A statistically smaller percentage (p=.01) were willing to pay more for Organic (34 percent).

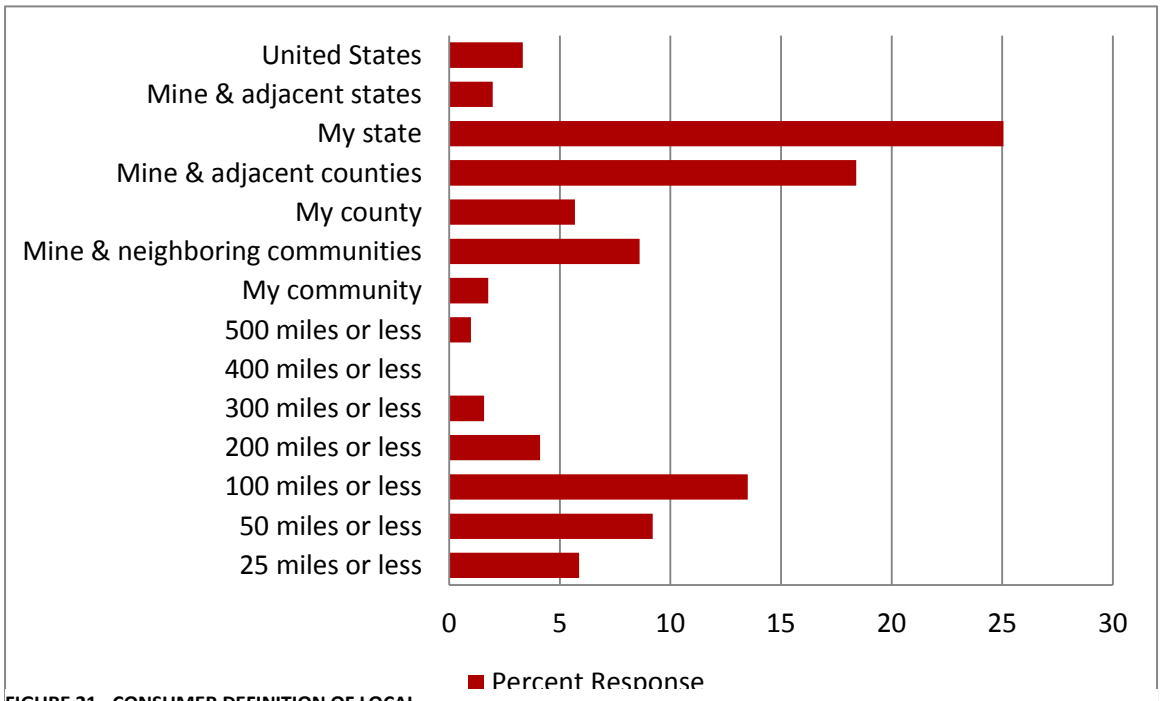


FIGURE 21. CONSUMER DEFINITION OF LOCAL

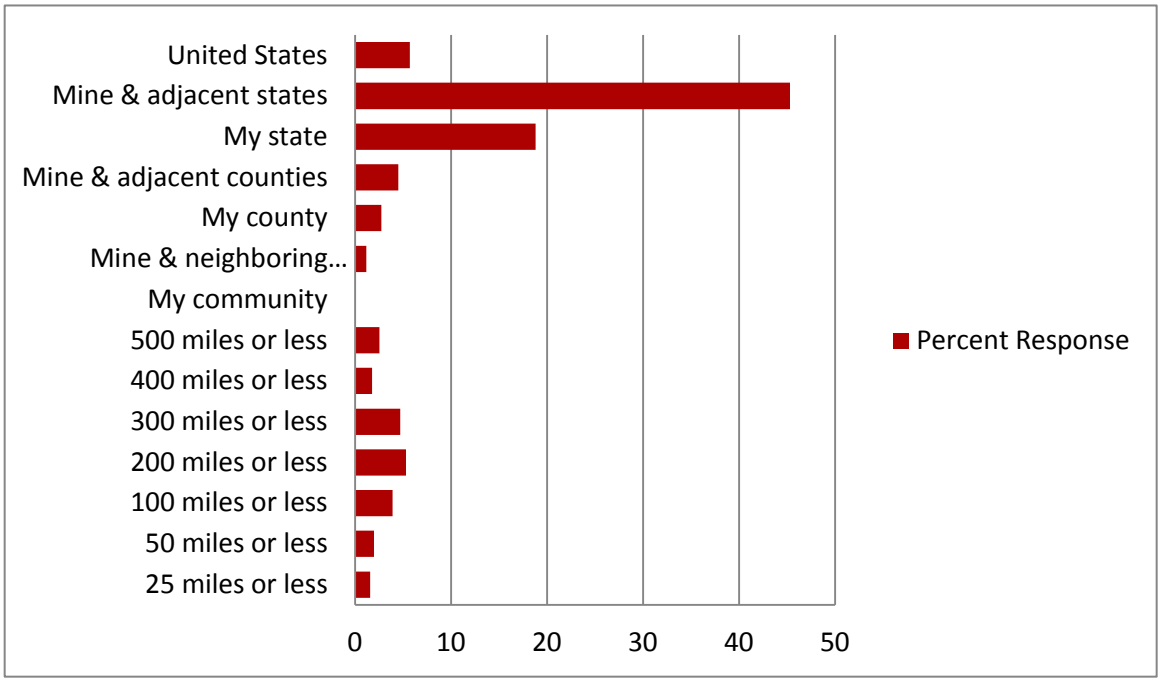


FIGURE 2. CONSUMER DEFINTION OF REGIONAL

IMPLICATIONS

The results of this project indicate that "locally grown" labels are something consumers prefer in a product. Overall, consumers rated production system information as more important than locally-raised. In terms of production systems, they rated "naturally-raised" and grass-fed higher than organic. After production system, respondents indicated that information regarding the locality of the product as being important information. In terms of local, most respondents indicated that they considered their state to be "local." They also indicated that they thought "regional" was best described as their state and surrounding states. Finally, survey respondents indicated a positive response to purchasing a regionally-labeled food product. These findings indicate that there is a market for a regionally produced beef steak product.

The implications of these findings as they relate to food hubs are significant. First, since consumers are generally accepting of regionally-labeled food products, it may behoove state departments of agriculture in Georgia and surrounding states to develop a regional label, especially for those food products where aggregation is a concern. In addition to a regional label, Land Grant Universities in the region should seek ways to improve the food distribution system within the region.

As it relates to beef production and marketing in the region, it appears that more consumers are willing to pay a higher price for either naturally-raised or grass-fed beef as opposed to organic. The implications for this finding are also significant. First, it appears that the demand for organic beef is smaller than that of naturally-raised or grass-fed. Second, given this finding, there appears to be a potential market for a collection of producers or agribusiness firms to establish a regional beef label to produce a beef product raised in Georgia and surrounding states. This product could be either naturally-raised or grass-fed as there was no reported statistical difference in consumer response to these two products.

In addition to label development, future research should focus on developing profitable finishing systems from grass-fed and naturally-raised beef cattle within the region.

Additional reference and a complete description of procedures as well as the statistical and econometric tools utilized are available from the corresponding author upon request.

Descriptive Statistics and Demographics

The majority of the respondents were females at 61.87 percent. Eighty percent of the survey population was Caucasian, followed by African Americans at 15.32 percent (Figure 3).

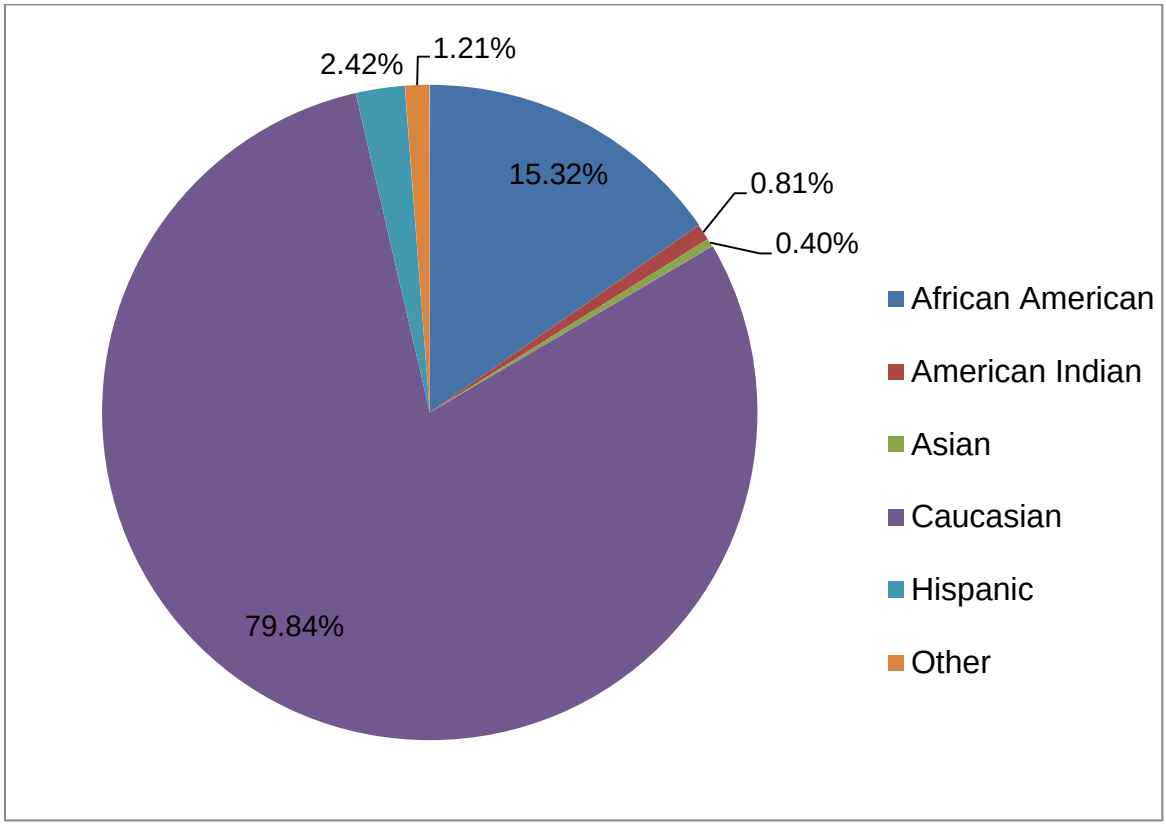


Figure 3: Race composition of survey respondents

When compared to the United States Census statistics, the average race composition was similar throughout each state. States included in the survey were Alabama, Georgia, Florida, North Carolina, South Carolina, and Tennessee. The percentage of the states included in the Census contains all the races except for Hispanics and adds the race Native Hawaiian and Other Pacific Islander. As shown in Table 1, all the states in the survey combined had an average Caucasian percentage of

69.25 which is ten percent lower than the survey average. African Americans averaged 23.11 percent among the six states which is higher that the survey average by almost eight percent.

Table 1: Percentage of Race by States

State	**Percent of population by state**					
	Caucasian	African American	American Indian, Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Other
Alabama	68.53	26.18	0.59	1.12	0.06	2.03
Florida	75.04	15.96	0.38	2.42	0.07	3.62
Georgia	59.74	30.46	0.33	3.25	0.07	4.01
North Carolina	68.47	21.48	1.28	2.19	0.07	4.34
South Carolina	66.16	27.90	0.42	1.28	0.06	2.45
Tennessee	77.56	16.66	0.32	1.44	0.06	2.24
Average States	**69.25**	**23.11**	**0.55**	**1.95**	**0.06**	**3.12**

Source: 2010 United States Census Data (US-CB) 2010

The average age of respondents was 50.4, with the youngest being 18 and the oldest at 89. Over 80 percent of the respondents completed at least some college. 41.70 percent are unemployed leaving the other 58.30 percent as students, part-time or

full-time. According to the Bureau of Labor Statistics Data the national unemployment rate is 8.3 percent as of February 2012. The unemployed percentage is very high in this survey when compared to the national average. However, it should be noted that 61.87 percent of respondents were female 42.62 percent of respondents were 55 years old or older. Since employment choices did not include spouses staying at home or retired, it is quite possible that seemingly high unemployment rate merely reflects a significant percentage of females not working outside the home and large number of retired individuals that completed the survey.

The majority of survey takers live in a suburban environment at just over 56 percent. Sixty-eight percent of the respondents are married and 84.08 percent own their home either with or without a mortgage. Average income among the households ranged from $35,000 to $99,000 a year.

Eighty-six percent of survey takers primarily purchase their meat products from the supermarket and the second most popular place to purchase meat is a retail meat store at 41.5 percent (Figure 4). Nearly 40 percent of respondents purchase some portion of their meat directly from the producer. This figure is obtained by summing the individual purchase point as a primary source, secondary source, and occasional source. Health/natural food store and farmers markets are shopped at occasionally by respondents whereas most people rarely shop for meat via the internet. Respondents chose Health/Natural Food stores as their primary source 3.61 percent of the time, Retail Meat Markets 12.05 percent of the time, Farmers Markets 11.84 percent of the time, directly from the producer 7.43 percent of the time, and the Internet 0.60 percent of the time. Alternatively only two percent of people never buy their meat products from

the Supermarket, 39.76 percent never from Health/Natural Food Stores, 14.86 never from Retail Meat Markets, 23.69 never from Farmer's Markets, 47.79 percent directly never from the producer, and 72.29 percent never from the Internet.

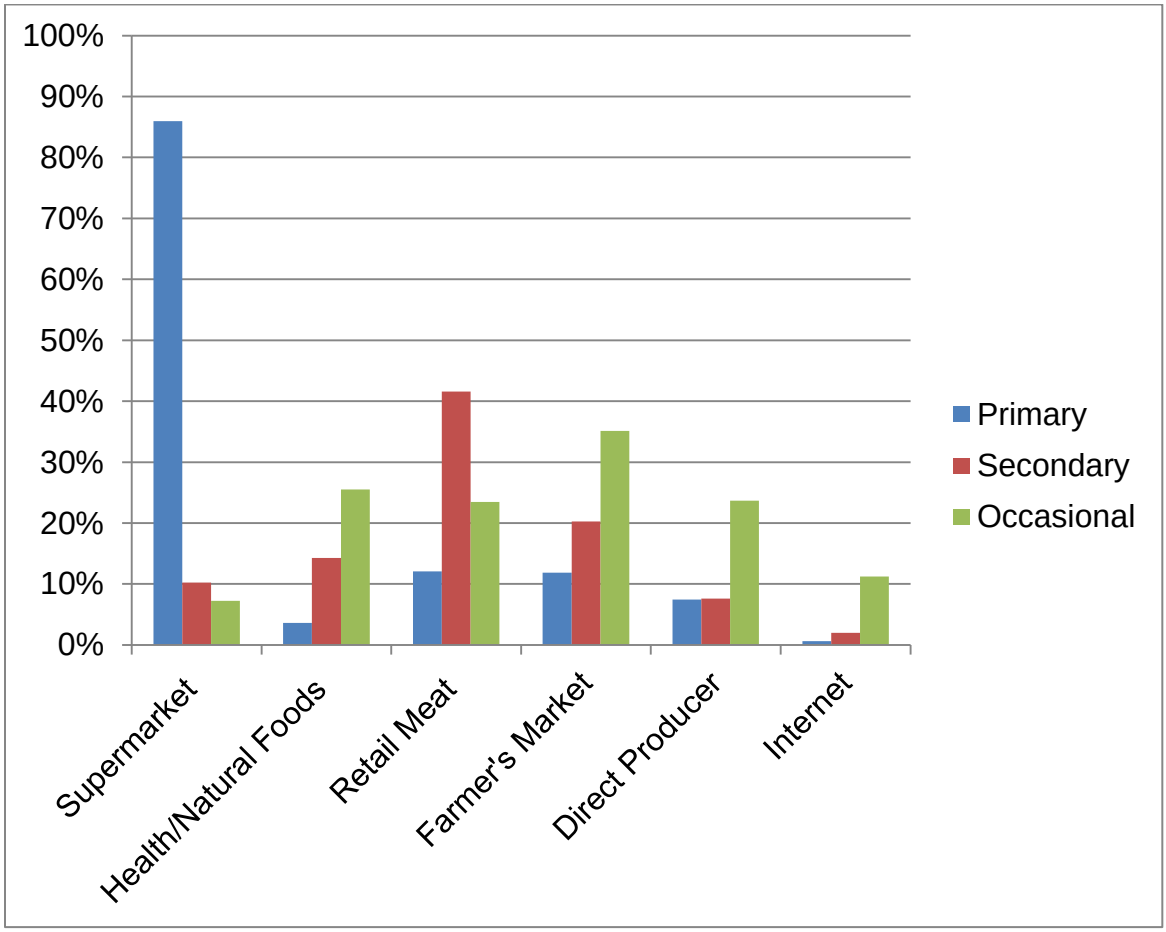


Figure 4 Respondents Preferred Shopping Location for Meat Purchase

Willingness to Purchase Locally Grown Products

Survey respondents were asked if they were likely to purchase “locally or regionally produced” food products from the Southeast. The respondents were given the option to choose from the following options:

1. Not at all likely
2. Not very likely
3. Neutral or somewhat likely
4. Very likely
5. Extremely likely

To allow for analysis within the logistic model’s 0/1 framework, it was necessary to create new variable (LOCAL) where responses four and five (very or extremely likely) were coded as one and responses one, two and three were coded as zero.

Logit regression was used to analyze this question. The overall explanatory power was somewhat disappointing with an R-squared value of 0.2498. However, the p-value is significant for the overall model showing that the parameter estimates are a good fit for estimating willingness-to-purchase locally or regionally grown ribeye steaks.

With Logit models, the marginal effects are usually the most desired metric as opposed to the parameter estimates in most other regression models. For this model, the marginal effects show the change in the probability of purchasing locally or regionally labeled food products when there is one unit change of a single independent variable holding all other variables constant.

The most significant variable in determining willingness-to-pay for locally grown food products was the respondent's previous purchasing of locally grown products. Survey responders that had previously purchased local foods were 28 percent more likely to be willing-to-pay for a locally produced food product. The next highest determinant of WTP was product information at 16.84 percent. The implication is that respondents who place a high value on product information are more 16 percent more likely to very or extremely likely to purchase a regionally-produced naturally-raised beef product than others. Other variables that were statistically significant and positively impacted the likelihood of purchase were: males, those who viewed added growth hormones as important or very important, those who obtain product information from their friends, consumers who finished high school or higher.

There were also a couple of variables that had an adverse effect on WTP. Somewhat surprisingly, respondents who receive information about locally grown products via direct mail are 10 percent less likely to purchase the regional product. Also, those respondents from Florida they are almost nine percent less willing-to-pay for a regional label than those from other states. Finally, respondents who think food safety is an exaggerated concern are eight percent less likely to purchase the regional product than those who do not share the same food safety concerns.

APPENDIX A:

Locally Produced Natural Beef Survey

Locally Produced Natural Beef Survey

Dear Respondent:

Thank you for agreeing to participate in our study. This survey is intended to collect data about consumer preferences of beef namely those attributes that influence buying decisions. We are interested in your preferences for beef products that are produced by different production techniques such as organic, natural, grass-fed, and conventional, and offered for sale at various price levels and product quality. In addition, we would like to know what you consider locally grown and how that affects your purchase. The answers to these questions will provide valuable data about the buying preferences of beef consumers and give us insight into how this could affect the producer and food retailers in the southeast.

Again, we would like to emphasize that your participation in this study is **completely voluntary** and we want to assure you that the information you provide will be kept **strictly confidential** and used only for the purposes of this research.

Section I. General Food Purchasing Behavior, Preferences, and Attitudes

1. Are you the primary food shopper of the household?

   ☐ 1. Yes
   ☐ 2. No

2. In which of the following states do you reside currently?

   ☐ 1. Alabama
   ☐ 2. Florida
   ☐ 3. Georgia
   ☐ 5. North Carolina
   ☐ 6. South Carolina
   ☐ 7. Tennessee

3. Approximately, what does your family/household spend on food type groceries in an average week? (Please X ONE box)

☐ 1. Less than $50
☐ 2. $50 to $99
☐ 3. $100 to $149
☐ 4. $150 to $199
☐ 5. $200 to $299
☐ 6. $300 to $399
☐ 7. $400 to $499
☐ 8. $500 or more

4. Are you aware that the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA) have implemented rules and regulations for food that can be labeled as "natural" food?

☐1. Yes
☐2. No

5. Thinking about the importance of various food attributes, please rate the importance of the following attributes in your decision to purchase food (Please X ONE box).

Attribute	Not at all Important	Somewhat Important	Important	Very Important	Extremely Important
a. No antibiotics	G	G	G	G	G
b. No added growth hormones	G	G	G	G	G
c. No added animal by-products	G	G	G	G	G
d. No mineral supplements	G	G	G	G	G
e. No artificial sweeteners	G	G	G	G	G
f. No artificial flavorings	G	G	G	G	G
g. No artificial food colorings	G	G	G	G	G
h. Minimally processed	G	G	G	G	G
i. Animals treated humanely	G	G	G	G	G
j. Other (please describe)	G	G	G	G	G

_____
_

6. What would you consider to be "locally produced" food? If it is produced within: (Please X ONE box)

☐ 1. 25 miles or less
☐ 2. 50 miles or less
☐ 3. 100 miles or less
☐ 4. 200 miles or less
☐ 5. 300 miles or less
☐ 6. 400 miles or less
☐ 7. 500 miles or less
☐ 8. My community
☐ 9. Mine and neighboring communities
☐ 10. My county
☐ 11. Mine and adjacent counties
☐ 12. My state
☐ 13. Mine and adjacent states
☐ 14. The United States
☐ 15. Canada
☐ 16. Mexico

7. What would you consider to be "regionally produced" food? If it is produced within: (Please X ONE box)

☐ 1. 25 miles or less
☐ 2. 50 miles or less
☐ 3. 100 miles or less
☐ 4. 200 miles or less
☐ 5. 300 miles or less
☐ 6. 400 miles or less
☐ 7. 500 miles or less
☐ 8. My community
☐ 9. Mine and neighboring communities
☐ 10. My county
☐ 11. Mine and adjacent counties
☐ 12. My state
☐ 13. Mine and adjacent states
☐ 14. The United States
☐ 15. Canada
☐ 16. Mexico

8. In general, when purchasing food products, which if any of the following best describes your behavior? (Please X ONE box)

☐ 1. I always purchase the same brand
☐ 2. I usually purchase the same brand
☐ 3. I sometimes purchase the same brand
☐ 4. I rarely purchase the same brand
☐ 5. I never purchase the same brand
☐ 6. Don't know

9. In comparison to mainstream national food suppliers, would you say food produced or supplied locally/ regionally are superior or inferior with respects to the following attributes? (Please X ONE box)

Attribute	Superior	About the Same	Inferior	Don't Know
a. Convenience	G	G	G	G
b. Freshness	G	G	G	G
c. Consistent quality	G	G	G	G
d. Availability	G	G	G	G
e. Affordability	G	G	G	G
f. Food safety	G	G	G	G
g. Healthfulness/Nutrition	G	G	G	G
h. Reduced transportation	G	G	G	G
i. Community development	G	G	G	G
j. Social fairness	G	G	G	G
k. Easy traceability	G	G	G	G
l. Environmental sustainability	G	G	G	G

10. Which, if any, of the following local food have you bought at all in the past?

☐ 1. Meat products
☐ 2. Dairy products
☐ 3. Eggs
☐ 4. Fish/Seafood
☐ 5. Fruits
☐ 6. Vegetables
☐ 7. Other (please specify) _____
☐ 8. None at all

11. Where do you find information about local food?

☐ 1. Newspapers or magazines
☐ 2. Radio
☐ 3. Television
☐ 4. World Wide Web or Internet
☐ 5. Direct mail
☐ 6. Leaflets
☐ 7. From friends or colleagues
☐ 8. Other (please specify) _____
☐ 9. None of these

12. If a “locally produced” or “regionally produced” label or logo is used to identify food products that are produced in the Southeastern region of the U.S. (i.e., Alabama, Florida, Georgia, North Carolina, South Carolina, and Tennessee), how likely or unlikely would you be to purchase such a product?

    ☐ 1. Not at all likely
    ☐ 2. Not very likely
    ☐ 3. Neutral or somewhat likely
    ☐ 4. Very likely
    ☐ 5. Extremely likely

13. How likely or unlikely would you be to pay a higher price a food product that was produced? (Please X ONE box for each)

Production Practice	**Not at all Likely**	**Not very Likely**	**Neutral or Somewhat Likely**	**Very Likely**	**Extremely Likely**
a. Naturally	G	G	G	G	G
b. Organically	G	G	G	G	G
c. Grass-fed	G	G	G	G	G

14. Which meat product do you most prefer to consume? (Please X ONE box)

    ☐ 1. Beef
    ☐ 2. Chicken
    ☐ 3. Lamb
    ☐ 4. Pork
    ☐ 5. Fish/Seafood
    ☐ 6. Other (please specify) _____

15. Where do you prefer to purchase your meat? (Please X ONE box for your primary source of meat, X ONE box for your secondary source of meat, and X all that apply for occasional sources of meat and locations where you never purchase meat.)

Location	Primary Source (X ONE)	Secondary Source (X ONE)	Occasional Source (X All that Apply)	Never (X All that Apply)
a. Supermarket	G	G	G	G
b. Health/Natural Foods Store	G	G	G	G
c. Retail Meat Store	G	G	G	G
d. Farmer's Market (in season)	G	G	G	G
e. Direct from Producer	G	G	G	G
f. Internet & Direct Mail Order	G	G	G	G

16. What is your best estimate of the amount of money your family/household spends on meat products in an average week? Round to the nearest dollar: $_____ /week.

17. How often do you prepare each of the following cuts of beef throughout the year? (Please use only one box per cut)

Cut of Beef	Several times a week	Weekly	Monthly	Yearly	Not at all
a. Ground Beef	G	G	G	G	G
b. Ground Beef Patties	G	G	G	G	G
c. Steak	G	G	G	G	G
d. Roast	G	G	G	G	G
e. Processed Beef (sausage, hot dogs)	G	G	G	G	G
f. Precooked Entrées	G	G	G	G	G
g. Other (please describe)	G	G	G	G	G

_____
__

18.

19. What type of information, if any, do you look for when buying beef and beef products? (Please rank from 1 to 7; 1= least important and 7 = most important)

____ Expiration date
____ Nutritional value
____ Price
____ USDA Grade (Prime, Choice, Select, etc.)
____ Locally Produced
____ Other industry brand labels such as Certified Angus Beef
____ Production system labels (Organic Beef, "Natural Beef", Grass-fed Beef)
____ Other (please describe) _____
____ Do not buy beef

20. Thinking about various beef production practices, please rate the level of importance of each on your purchase decision (Please X ONE box).

Production Practice	**Not at all Important**	**Somewhat Important**	**Important**	**Very Important**	**Extremely Important**
a. Open range (no small or crowded pens)	G	G	G	G	G
b. No antibiotics	G	G	G	G	G
c. No added growth hormones	G	G	G	G	G
d. Naturally grown	G	G	G	G	G
e. Grass-fed	G	G	G	G	G
f. Animals treated humanely	G	G	G	G	G
g. Traceable from farm to consumer	G	G	G	G	G
h. Organic (USDA certified organic)	G	G	G	G	G
i. Other (please describe)	G	G	G	G	G

21. Please indicate your level of agreement or disagreement with the following statements that most closely reflect your opinion on the food you purchase or eat and your health (Please X ONE box).

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
a. Product information is of high importance	G	G	G	G	G
b. I always compare product information labels	G	G	G	G	G
c. I collect ad coupons and use them when I go shopping	G	G	G	G	G
d. I constantly check and compare prices in the grocery store	G	G	G	G	G
e. I try to avoid food products with additives	G	G	G	G	G
f. I often eat fruits and vegetables	G	G	G	G	G
g. I eat red meat in moderate amounts	G	G	G	G	G
h. I exercise regularly	G	G	G	G	G
i. Knowing how my food is grown is important	G	G	G	G	G
j. Concerns about food safety are exaggerated	G	G	G	G	G
k. Supporting local producer is an important concern of mine	G	G	G	G	G
l. Convenient purchase location is important	G	G	G	G	G
m. Visual appeal is important to me	G	G	G	G	G
n. Taste is an important concern of mine	G	G	G	G	G
o. Nutritional value is a major concern of mine	G	G	G	G	G
p. Food is not as safe as it was 10 years ago	G	G	G	G	G
q. I usually look for health information when I buy food products	G	G	G	G	G
r. I seldom eat at a fast food restaurant	G	G	G	G	G

<u>Section II.</u> Ribeye Steak Purchasing Decisions

Image you are shopping at your local grocery store or supermarket. You find there are several different kinds of ribeye steaks available with some notable features and differences. The packaging, size, and expiration date, etc. on the steaks are all identical except they vary depending on production practice (organic, natural, grass-fed, or conventional), with or without a label that identifies the beef as produced locally or in the southeastern region, and the grades of the beef (USDA Prime, USDA Choice, and USDA Select), and the price of the ribeye steak varying from $6.99/lb., to $11.99/lb.

22. Scenario 1

Please choose among the three ribeye steak packages in the scenario below. You should look and evaluate the characteristics of each product carefully and check only ONE box below the package you most prefer in this scenario.

Product #**1A** ☐

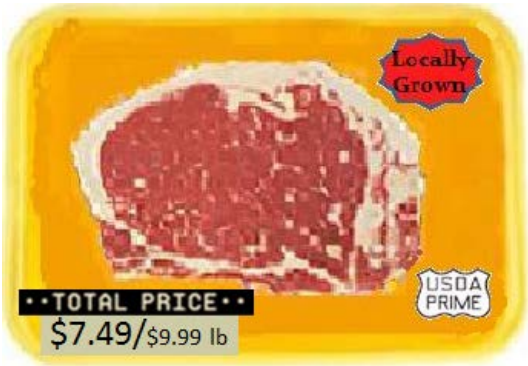
Product #**1B** ☐

Product #**1C** ☐

I would prefer to buy none of the products above: Product#**1D** ☐

23. Scenario 2

Please choose among the three ribeye steak packages in the scenario below. You should look and evaluate the characteristics of each product carefully and check only ONE box below the package you most prefer in this scenario.



Product #**2A** ☐

Product #**2B** ☐

Product #**2C** ☐

I would prefer to buy none of the products above: Option #**2D** ☐

24. Scenario 3

Please choose among the three ribeye steak packages in the scenario below. You should look and evaluate the characteristics of each product carefully and check only ONE box below the package you most prefer in this scenario.

Product #**3A** ☐

Product #**3B** ☐

Product #**3C** ☐

I would prefer to buy none of the products above: Option #**3D** ☐

25. Scenario 4

Please choose among the three ribeye steak packages in the scenario below. You should look and evaluate the characteristics of each product carefully and check only ONE box below the package you most prefer in this scenario.

Product #**4A** ☐

Product #**4B** ☐

Product #**4C** ☐

I would prefer to buy none of the products above: Option #**4D** ☐

26. Please rank the above 4 ribeye steak products that you chose from each scenario from **least** preferred (1) to the **most** preferred (4) and write by their product identification # and option letter, e.g.,4B (from scenario 4 and option B), 2A (from scenario 2 and option A), etc. in the box below each ranking number.

Ranking:	1	2	3	4

<u>Section III:</u> Demographics and Background Information

27. What is your gender?

- ☐ 1. Male
- ☐ 2. Female

28. What is your ethnic background?

- ☐ 1. African American
- ☐ 2. American Indian (Native American)
- ☐ 3. Asian
- ☐ 4. Caucasian
- ☐ 5. Hispanic
- ☐ 6. Other (please describe) _____

29. What is your age? Please state in years: _____ years

30. Please indicate the highest level of education that you have completed.

- ☐ 1. Elementary school
- ☐ 2. Some high school
- ☐ 3. Completed high school
- ☐ 4. Some college
- ☐ 5. Completed college
- ☐ 6. Some graduate school
- ☐ 7. Completed graduate degree
- ☐ 8. Any other education (please describe) _____

31. What is your current employment status outside the home?

- ☐ 1. Not employed
- ☐ 2. Student
- ☐ 3. Part-time
- ☐ 4. Full-time

32. Which of the following best describes the area in which you live in?

- ☐ 1. Urban
- ☐ 2. Suburban
- ☐ 3. Rural

33. Including yourself, how many adults (18 yrs+) are living in your household? _____

34. Do you have children living in your household?

- ☐ 1. Yes. If yes, how many children (18 yrs or younger)? _____
- ☐ 2. No

35. What is your current marital status?

- ☐ 1. Single (never married)
- ☐ 2. Divorced (now single)
- ☐ 3. Married
- ☐ 4. Domestic partnership
- ☐ 5. Widowed (not remarried)

36. Which of these best describe your home?

- ☐ 1. Owned without mortgage
- ☐ 2. Owned with mortgage
- ☐ 3. Rented house
- ☐ 4. Rented apartment
- ☐ 5. Share parent/relative's home

37. Which of the following ranges describes your annual household income before taxes? (X ONE box)

- ☐ 1. Under $10,000
- ☐ 2. $10,000 to $19,999
- ☐ 3. $20,000 to $34,999
- ☐ 4. $35,000 to $49,999
- ☐ 5. $50,000 to $74,999
- ☐ 6. $75,000 to $99,999
- ☐ 7. $100,000 to $149,999
- ☐ 8. $150,000 or more

Thank you very much for your cooperation!!!

ASSESSING THE DEMAND FOR GRASS-FED BEEF

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PREVIOUS RESEARCH

In 2005 and 2006 two separate experiments were conducted in Athens, GA and Clemson, SC to gauge consumer's willingness to pay for grass-fed beef. A more detailed description of the study is available in the August 2006 issue of the Georgia Cattleman.

A short summary of the experiment is that study participants compared and bid on grass and grain-fed steaks in numerous rounds. However, they were not told which steak was the grass-fed or grain-fed steak until the final round.

In each round, participants were given additional pieces of information related to the nutritional and production aspects of the two steaks. They also tasted the steaks and judged them on taste, tenderness and juiciness.

Overall, respondents considered the grass-fed steaks to be tougher, less juicy and less flavorful than the grain-fed steaks. Part of this could be due to the fact for experimental design reasons both steaks were cooked to the same degree of doneness. The result is that the grass-fed steaks were likely overcooked.

From a marketing standpoint, the results of that study that are relevant to this article are that roughly half of the consumers were willing to pay some sort of premium for grass-fed steaks compared to grain-fed. However, if the additional production costs associated with producing a grass-fed market animal were considered (roughly 25-50 percent more), only about 20 percent of consumers were willing to this. Even so, 20 percent of 10 million people (Georgia's population) is still a big number and amounts to a significant potential market.

Some of the more interesting results to come out of this study were that contrary to popular-belief, higher income individuals were **not** likely more to purchase grass-fed beef. However, individuals who spent relatively higher dollar amounts per week on beef consumption **were** more likely to be willing to pay a higher price for grass-fed beef. While this may not make sense

to many, we reason that the high level of beef expenditures is more a function of price than quantity. As a result, the market may be those who are willing to spend more and consume less. So, even though we might assume that means higher levels of income that may not necessarily be the case.

As mentioned before, the participants were given increasing amounts of information and were asked to bid on the steaks. However, it was not until the final round that they were given full information about the production and nutritional value of the steaks as well as being told which steaks was grass-fed and which was grain-fed.

It was at this point that premium most consumers were willing to pay greatly diminished. This was almost exclusively due to the issues concerning tenderness, juiciness and flavor. There are several implications for these findings which will be discussed later.

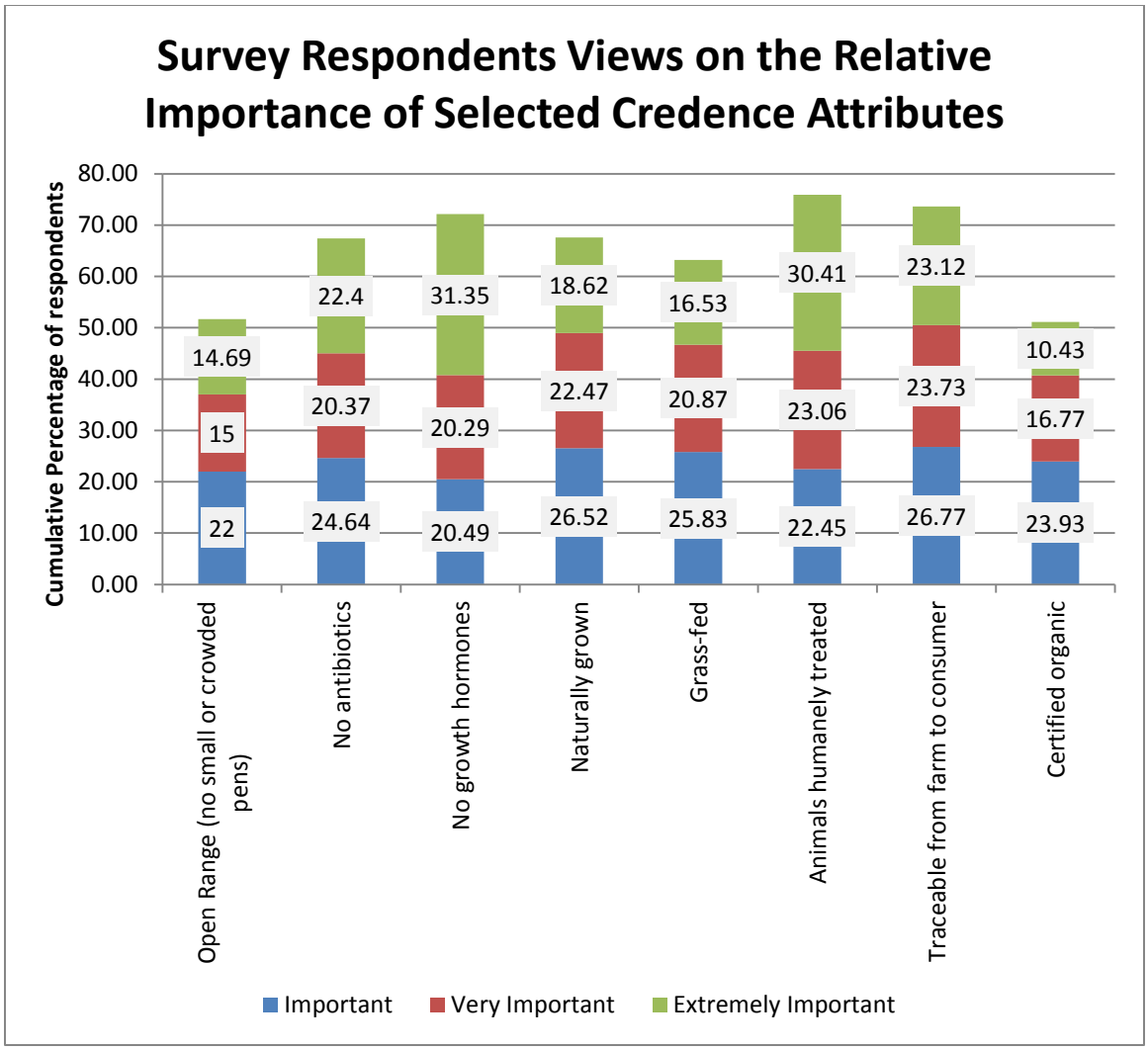
CURRENT RESEARCH

In the winter of 2010 and spring 2011 a similar study was conducted by the University of Georgia's Department of Agricultural and Applied Economics. However, the purpose of this study was to determine the demand for locally produced beef and to determine: 1) which was more important production method (conventional, natural, grass-fed, organic, etc.) or local, and 2) what is the consumer's definition of local? So, even though the study was not directly targeted at evaluating grass-fed beef, there were several questions and responses that are useful in discussing this subject.

Perhaps one of the most useful items to come out of the study is the reaffirmation that humanely-raised, antibiotic-free beef without additional hormones is what consumers most want. Survey-takers were asked to rate on an importance scale of 1-5 with 1 not being at all important and 5 being extremely important, their views on different credence (descriptive) attributes. The cumulative totals for important, very important, and extremely important are given below in Figure 1 along with the individual values for each level of importance.

The top three concerns in order of importance were:

1. Animals humanely treated (76 percent)
2. Traceable from farm to consumer (73 percent)
3. No growth hormones (72 percent)



Even though grass-fed was not ranked in the top three, over 63 percent of respondents indicated that it was at least important and 37 percent of those surveyed indicated that it was very or extremely important. This is noteworthy because only slightly more than 50 percent of respondents indicated that certified organic was important to extremely important. The implication is that the grass-fed market potential is considerably larger than that of the certified organic beef market.

STUDY LIMITATIONS

As with any economic experiment there are several caveats. The first caveat is the degree of doneness of the grass-fed steaks, but that has already been covered. The second but perhaps more important one is that these two experiments dealt only with steaks. In the overall scheme, steaks make up a relatively small percentage of a beef carcass. Roasts and ground product comprise a much larger percentage of the weight of the carcass. As a result, more

research should definitely be done to determine if the results reported here also hold for ground beef and roasts.

RESULTS AND IMPLICATIONS

In both of the studies at UGA beef consumers have strongly indicated their desire and willingness to pay for beef steaks that are antibiotic-free and from animals that were humanely treated and not given growth hormones. While we could certainly talk for a while about the scientific basis of these concerns, the fact is that they are real.

So, while there is a noticeable percentage of beef consumers that seek grass-fed beef, more benefit may come from promoting attributes such as humanely treated, antibiotic free and no additional growth hormones.

In the 2007 study consumers indicated that while they desired the positive health benefits associated with grass-fed beef, taste mattered more. The implication is that it is critical for grass-fed beef producers to educate potential customers on the proper method to handle and cook their product. It is also very important that they develop and implement genetic and management programs that specifically address the meat quality differences between grass-fed and grain-fed cattle.

Consumer Purchase Decisions and Preferences for Locally Produced Beef

Samuel Perkins, Dr. Charles Huang, Dr. Curt Lacy

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Current Problem

- Livestock Producers are faced with high inputs such as increased grain prices and transportation costs.
  - Increases in either one of these can have a negative impact on calf values.
- Growing demand in specialty food items such as organic, natural, and grass-fed beef.
  - Willingness to Pay for these attributes
- Consumers valuation of locally grown beef products and what they consider 'local'.

Literature Review

- “Locally Grown” labels have direct and indirect effects on consumers buying decisions according to Dentoni et al (2009)
- Loureiro and Umberger (2003) found that respondents are willing to pay 38% to 58% more for products labeled as “U.S. Certified Steak”

Literature Review Cont.

- Smith et al (2009) finds that geographic location is the most important factor in predicting whether a household would become an organic vegetable user.

Objectives

- Understanding and assessing consumer's preferences for beef products that are grown by alternative production techniques such as organic, natural, and grass-fed.
- Determining if Southeastern U.S. consumers place more weight on locally-grown or other attributes related to production practices such as organic, grass-fed and naturally raised.
- Determining consumer acceptance of a regional label and their willingness to pay for various beef attributes examined in the study.

Survey Data Methods

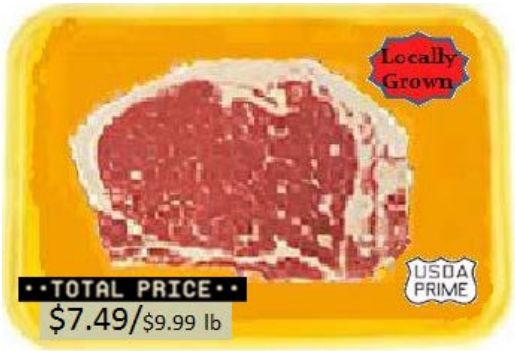
- Web Based Conjoint Analysis Steak Survey
  - Orthogonal Fractional Factorial Design
- In addition to prices, 3 Attributes, 1 with 4 levels, 1 with 3 levels, and 1 with 2 levels
  - Attribute 1– Production Practice (conventional, organic, grass-fed and natural)
  - Attribute 2 – Quality Grade (Select, Choice, Prime)
  - Attribute 3 – Local or not labeled

Survey Data Methods Cont.

- 500 respondents recruited for the steak portion of the survey.
  - UGA Survey Research Center generated consumer sample.
  - Consumers in SE US (AL, FL, GA, SC, NC, TN)
- Pre-determined that participants are consumers of beef

Survey

Please choose among the three ribeye steak packages in the scenario below. You should look and evaluate the characteristics of each product carefully and check only ONE box below the package you most prefer in this scenario.



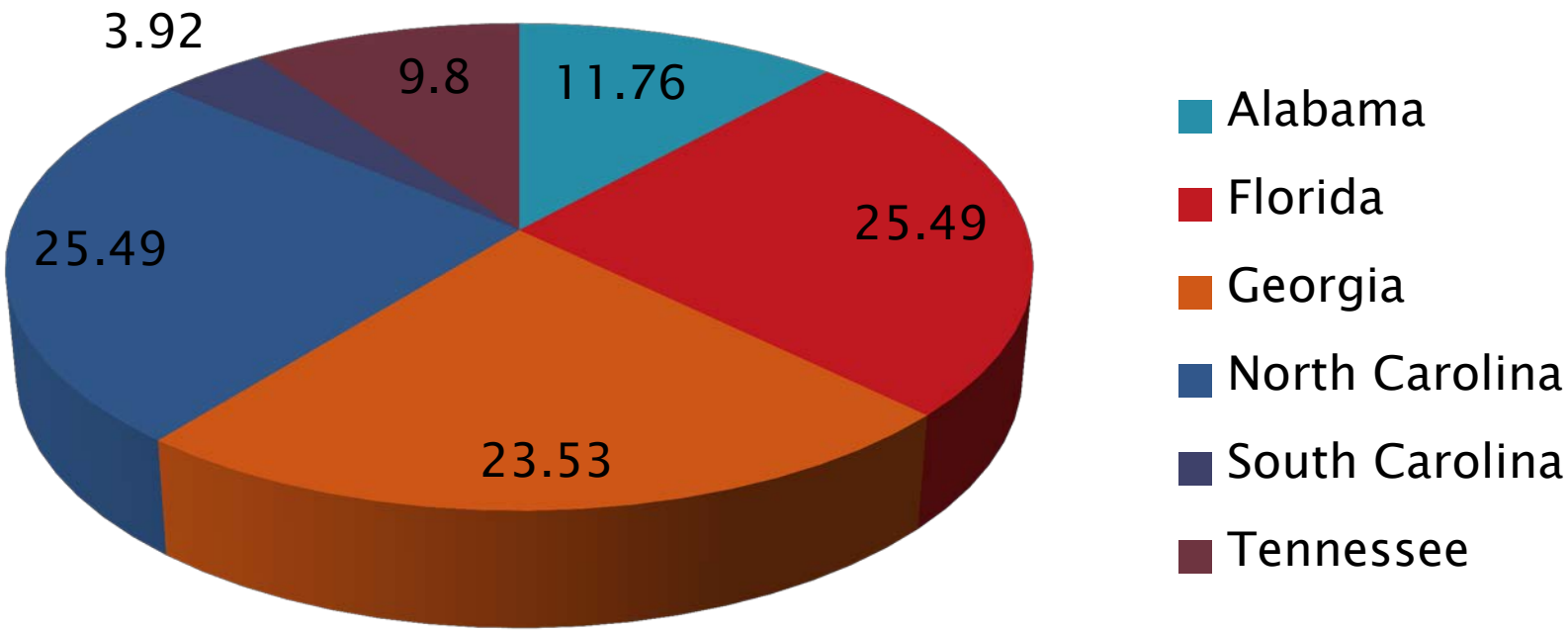
Product #**2A** ☐

Product #**2B** ☐

Product #**2C** ☐

I would prefer to buy none of the products above: Option #**2D** ☐

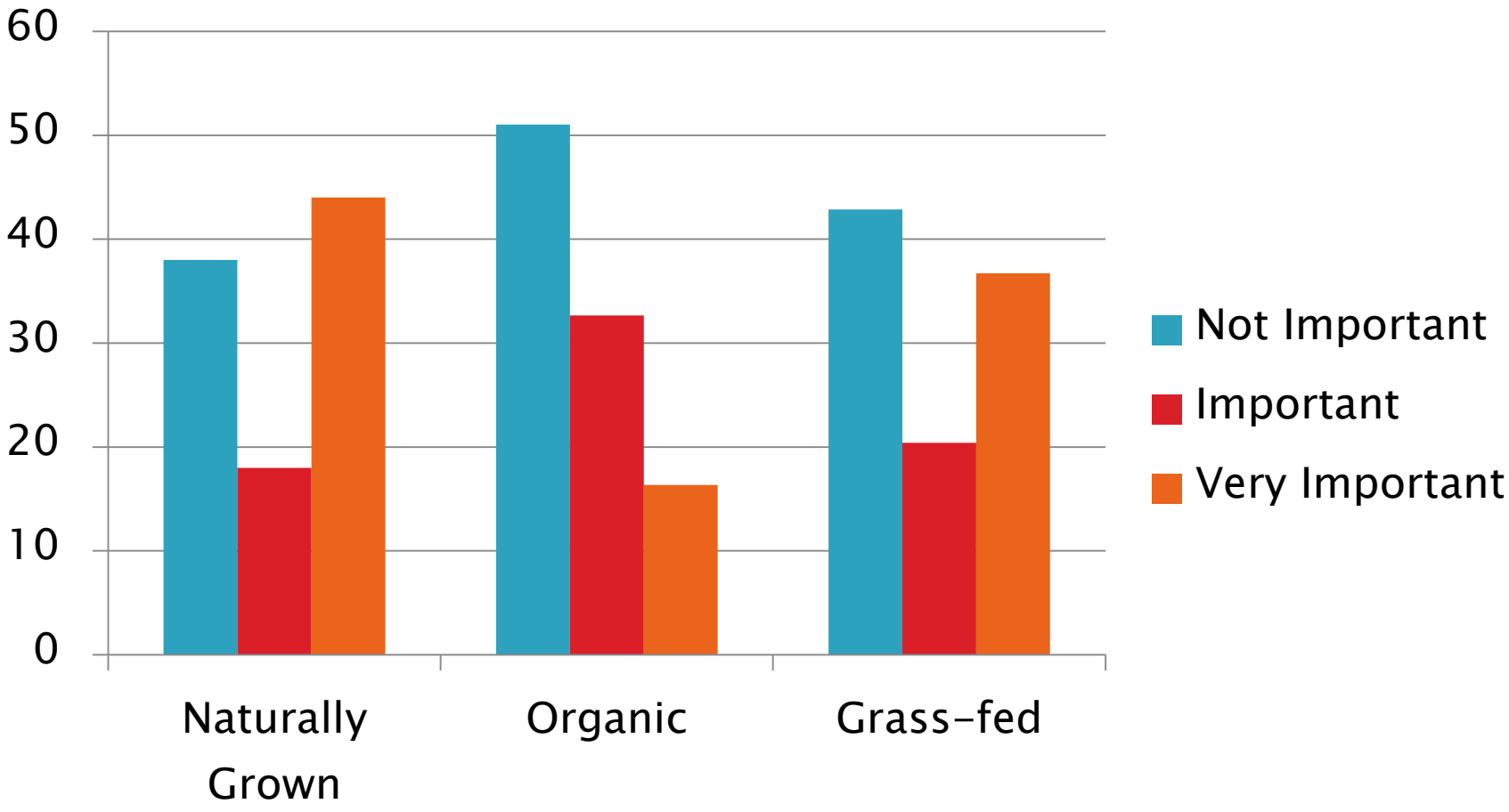
Distribution of Respondents



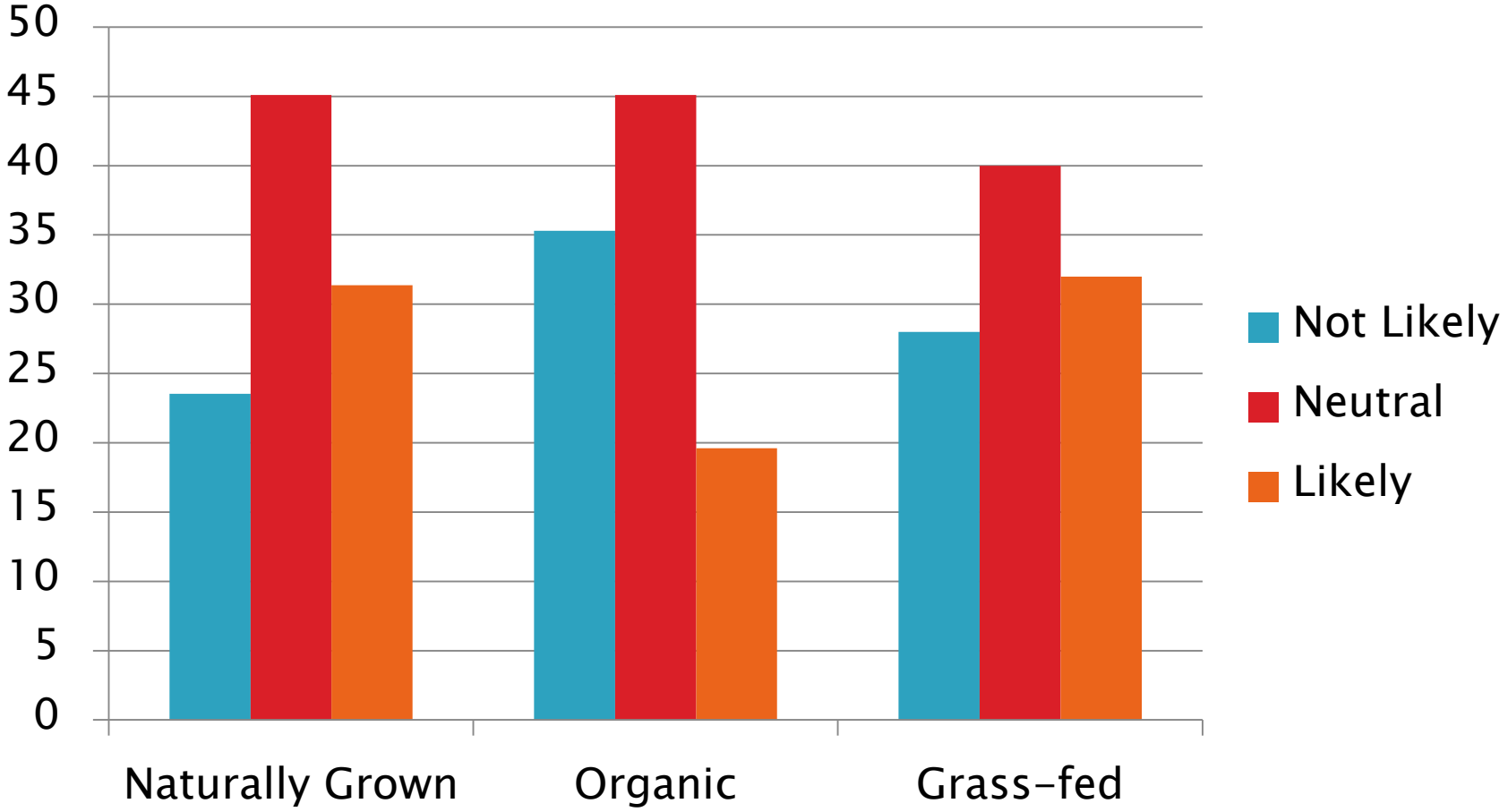
Demographics

- The average age of the respondents is 47 years old
  - The youngest respondent is 18 and the oldest being 82.
  - 60% of the respondents were female.
  - 34% of the respondents completed college.
- The majority of respondents spend from $50 to $200 a week on groceries and on average $50 a week on meat products.

Percentage of consumers perception of importance for various production practices.



Likelihood consumer is willing to pay a higher price for a particular attribute labeled on a food product.



Results –Would you buy a local or regional product?

- Only 2% said they would not be very likely
- 46% of the respondents were very likely to purchase these products.
- What is considered local and regional is the next question.

What is considered “Locally and Regionally Produced”			
Distance		“Locally Produced” (in percentages)	“Regionally Produced” (in percentages)
25 miles or less		7.84	
50 miles or less		9.80	1.96
100 miles or less		13.73	1.96
200 miles or less			3.92
300 miles or less		1.96	7.84
400 miles or less			1.96
Mine and adjacent communities		5.88	
My county		11.76	
Mine and adjacent counties		13.73	9.80
My state		29.41	15.69
Mine and adjacent states		1.96	52.94
The United States		3.92	3.92

Results – Top 4 Choices

Rank	% Rank	Price	Production Practice	Quality Grade	Location
1	42.00	$6.37	Grass-fed	Select	
2	46.00	$5.24	Organic	Select	
3	39.22	$5.24		Select	
4	43.14	$6.37	Natural	Choice	

Conclusions – based on preliminary results

- Price is most important?
  - According to the previous slide the consumers based their decision on price.
- What consumer considers most and least important
  - Price – most important
  - Organic label – least important
- Local and natural labels are important to consumers
  - Prefer that over and Organic label