RANKING CONSUMER BEEF PREFERENCES

SUMMARY REPORT 1
PREPARED FOR THE KANSAS BEEF COUNCIL

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BACKGROUND

Consumer preferences for beef products are complex and evolving. Fundamental changes in consumer lifestyles and associated food preferences challenge cattle producers and beef processors in aligning production and marketing practices with consumer demands. In addition to expectations to produce affordable, high quality, safe, healthy, and nutritious beef products, pressure is escalating for the industry to become more sustainable. Enhancing sustainability includes increased attention to environmental and social issues in addition to the ever-present economic dimensions of beef production. Concerns regarding animal welfare; impacts of production on land and water quality; greenhouse gas emissions; use of antibiotics and synthetic growth promotants; locally produced food; and other preferences are influencing downstream beef demand and policy.

Cattle producers in the meantime grapple with producing, marketing, and promoting beef products possessing attributes consumers most prefer while addressing environmental, social, customer, and policy concerns that can be complementary or conflicting. Understanding the relative importance of consumer preferences for beef products concurrent with other matters facing producers is necessary for making suitable production decisions, designing prosperous product marketing and promotion programs, and devising effective lobbying.

This fact sheet summarizes information cattle producers can use to understand consumers' rankings of various beef attributes. Specific objectives include: 1) to determine relative rankings of specific beef product attributes by US consumers including traditional product traits such as price and quality as well as evolving environmental and social sustainability dimensions; 2) to quantify how product preferences relate to consumer demographics; and 3) to provide associated recommendations for beef cattle producer production and marketing decisions.

[1] We acknowledge partial funding support for this project from the Kansas Beef Council. Opinions presented are solely those of the authors and do not necessarily represent those of the Kansas Beef Council.

CONSUMER SURVEY

A nationally representative survey was conducted of US consumers in mid-March 2023. The survey was administered through an on-line panel managed by dynata™. The survey was entered by 3,783 possible respondents of which 416 indicated they did not consume meat and thus did not complete the survey. Of 3,367 that completed the survey, 366 respondents were determined to be speeding or had incomplete responses and these responses were not used in our analysis leaving 3,001 useable responses. Survey respondents were required to be at least 18 years old and currently residing in the US. Summary statistics of survey respondents are provided in Table 1. Overall, the sample matches closely with US Census demographic data.

This segment of the study had consumers rank the importance in making purchase decisions of beef possessing nine separate product attributes. Consumer product attribute preferences ranked included broadly product quality and sustainability characteristics. The intent of selecting only nine product attributes was to keep the number of choices from being burdensome for respondents while covering a broad spectrum of product attributes and including those that previous research has found important. The nine product attributes are:

Social	**Environmental**	**Economic**	**General Quality**
1. Animal welfare	3. Low carbon beef[a]	4. Price	6. Freshness
2. Produced without use of hormones or antibiotics		5. Supports local farmers	7. Flavorful, juicy, tender
			8. Safety of food
			9. Nutritious content

[a] Defined as beef produced with 10% less greenhouse gas emissions

Table 1. Summary of Survey Respondent Demographic Traits, 3,001 Respondents

Demographic Trait	Definition (all binary variables)	Average	Std. Dev.
Beef Consumption Frequency			
Low Beef Eater	Two or fewer meals per week	0.545	0.498
Beef Eater	Three or more meals per week	0.455	0.498
Gender			
Male	Male	0.478	0.500
Female	Female	0.520	0.500
Other	Other	0.002	0.048
Age			
Age18-29	18-29 years	0.181	0.385
Age30-49	30-49 years	0.390	0.488
Age50-65	50-65 years	0.273	0.446
Age>65	66-+ years	0.156	0.363
Education			
No College	Not completed college	0.499	0.500
College Grad	College graduate	0.501	0.500
Household Income			
Inc<$25K	Less than $25,000	0.164	0.370
Inc$25-$75K	$25,000 to $74,999	0.388	0.487
Inc$75-$150k	$75,000 to $150,000	0.318	0.466
Inc>$150k	Greater than $150,000	0.130	0.336
Children in Household			
No kids	No children under 18 years	0.648	0.478
Kids	At least one child under 18 years	0.352	0.478
Self-Indicated Familiarity with Farming			
Not Familiar	Not familiar	0.305	0.460
Mod Familiar	Moderately familiar	0.473	0.499
Familiar	Very familiar	0.222	0.416
Political Affiliation			
Democrat	Democratic party	0.376	0.484
Republican	Republican party	0.280	0.449
Other Political	Other party	0.344	0.475
US Geographic Region			
South	Southern states	0.347	0.476
Midwest	Midwestern states	0.176	0.381
West	Western states	0.237	0.425
No. East	Northeastern states	0.241	0.428
Race			
White	White or Caucasian	0.728	0.445
Black	Black or African American	0.129	0.336
Asian	Asian or Pacific Islander	0.053	0.224
Other Race	Other races (includes multi race)	0.090	0.286

To obtain consumer preference rankings for the nine attributes respondents completed a drag-and-drop type questionnaire. Respondents completed two questions where in the first they indicated the three most important and in the second the three least important beef product attributes influencing their beef purchase decisions among nine alternative attributes. Because many on-line survey respondents use cell phones to enter responses, survey questions need to be structured to be completed easily on a small screen. Thus, the first question asked the respondent to select the three most important attributes and the next question asked them to identify the three least important attributes of the remaining six items (eliminating the three attributes they selected as most important from the list). The first question posed is illustrated in Figure 1 for the three most important attributes. The order of the attributes presented was randomized across respondents. Answers to the preference questions are rank-order responses with each respondent having three attributes selected as most important; three attributes not chosen considered moderate importance; and three attributes selected as least important.

Figure 1. First question used to obtain respondent's three most important attributes affecting beef purchase decisions.

Please rank the importance to you of the following beef product attributes in your purchase decision (select the **three (3) most important** from the list below)

NOTE: PLEASE SELECT ONLY THE 3 MOST IMPORTANT

- ☐ Price
- ☐ Freshness
- ☐ Flavorful, juicy, tender
- ☐ Nutritious content
- ☐ Safety of food
- ☐ Supports local farmers
- ☐ Low carbon beef
- ☐ Animal welfare
- ☐ Produced without use of hormone or antibiotics

RESULTS

OVERALL RANKING RESULTS

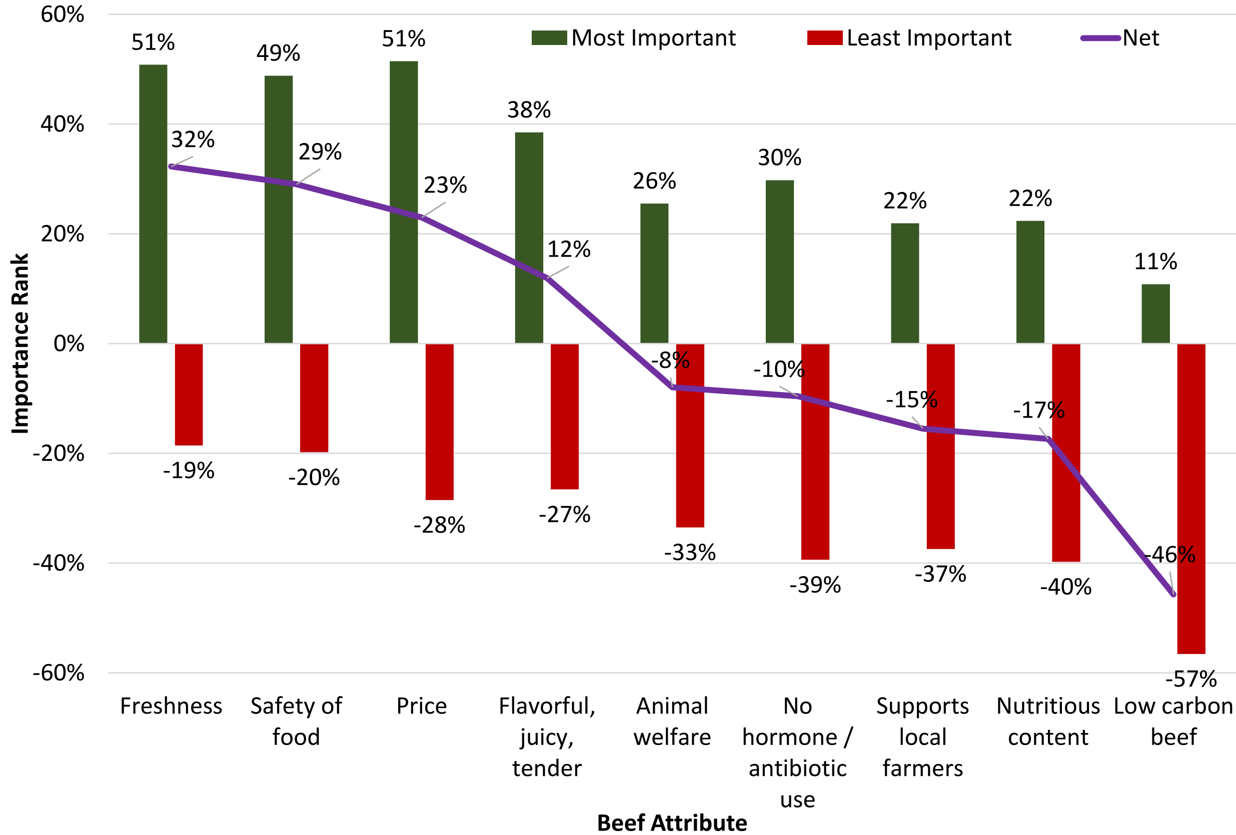
Distributions and average rankings of responses to the nine beef product attributes are illustrated in Figure 2. The percentage of respondents that selected each attribute as one of their three most important and three least important are presented. These two categories add to less than 100% with the remainder having selected the trait as neither most nor least important. The mean response ranking is also reported which is the difference between the frequency of the most and least preferred responses.

The three attributes with the largest number of respondents indicating they were among the most important attributes were 1) *Freshness* and 2) *Price* (each at 51%) and 3) *Safety of Food* (49%). Only about 20% indicated *Freshness* and *Safety of Food* were least important, resulting in these two traits having the highest average importance rank. For *Price*, 28% indicated it was a least important attribute affecting purchase decisions resulting in ranking third. This indicates more than half of respondents were sensitive to *Price* whereas 28% ranked it as least important suggesting a significant portion were not price sensitive. The highest four ranked attributes of 1) *Freshness*, 2) *Safety of Food*, 3) *Price*, and 4) *Flavorful, juicy, tender* are consistent with prior research.

On the other end of our ranking spectrum were 1) *Supporting local farmers*, 2) *Nutritious content*, and 3) *Low carbon beef*. Less than one-quarter of respondents indicated any of these three were among the most important. A surprising 57% of our respondents placed *Low carbon beef* as least important. Given elevating importance of public concerns about greenhouse gas emissions and contributions of beef cattle production to greenhouse gases, as well as branded products being developed in this space, we expected more consumers to rank this attribute important.

A final point about results shown in Figure 2 is that every attribute had a notable proportion of consumers who ranked it highly and every attribute also had a number that ranked it low importance. This illustrates heterogeneous preferences of consumers for beef product attributes. Furthermore, it indicates a variety of beef product claims can potentially be successful in attracting consumers. For example, roughly one-quarter of consumers indicate *Animal Welfare*, *No hormone/antibiotic use*, *Supports local farmers*, and *Nutritious content* are among their three most important beef purchase decision determinants.

Figure 2. "***Please rank the importance to you of the following beef product attributes in your purhcase decision***" **(3,001 respondents, select 3 best/ 3 worst)**



RANKING RESULTS BY DEMOGRAPHIC TRAITS

For each of the nine beef product attributes in Figure 2, Figures 3-11 summarize the percentages of survey respondents ranking each product attribute among the three most important factors affecting beef purchase decisions broken down by demographic traits of the respondents. In each chart, red bars indicate the largest percentage of respondents in each demographic category ranking the attribute among their three most important. For example, in Figure 3 ranking of *Price*, 53% of beef eaters (3 or more meals eaten per week include beef) rank *Price* among the most important compared to 50% of low beef eaters (less than 3 meals per week include beef).

Important to note in Figures 3-11. First, the horizontal axis is scaled the same for each chart ranging from 0 to 70%. This is intended to make it easier to identify beef attribute importance ranking across figures as charts with more bars filling the space are those having the highest preference ranking in Figure 2. Second, many preference rankings broken down by respondent demographic are similar across traits within that demographic subset whereas others differ more noticeably. For example, in Figure 3, 53% of males and 50% of females rank *Price* among the most important attributes implying little difference between the sexes on *Price* ranking. In contrast, 59% of the lowest income group (<$25,000) rank *Price* as one of the most important attributes compared to only 46% in the two highest income groups ($75,000 or more). Where rankings are similar across demographic traits of respondents, there is little opportunity to target one of the attributes toward a specific demographic. Alternatively, where rankings vary across demographics presents an opportunity for targeting product attributes with specific demographics. We discuss highlights of Figures 3-11 followed by overall recommendations based on findings in this segment of our study.

In addition to lower income respondents ranking *Price* most important, older respondents; those not familiar with farming; Midwest residents; and Asians rank *Price* among the three most important attributes (Figure 3). *Freshness* (Figure 4) was ranked most highly by those over 65 years old; respondents not familiar with farming; and by blacks. *Flavorful, juicy, tender* (Figure 5) was ranked most highly by older respondents; those without a college degree; those with higher incomes, and whites. *Nutritious content* (Figure 6) was not ranked highly by many respondents with 31% of those 18-29 years old ranking it highly being the largest percentage by any demographic trait.

Safety of Food (Figure 7) was ranked similarly high across each demographic subset. The highest ranking was for blacks and other race at 53% each and the lowest was 43% for those familiar with farming. *Supports local farmers* (Figure 8) was relatively low ranked across demographic with perhaps the highest ranking being those who are familiar with farming (31% of whom ranked this attribute among the most important). *Low carbon beef* (Figure 9) was not frequently ranked highly important by any demographic subset. The highest percentage ranking for *Low carbon beef* importance was 18-29 year olds, 16% of which ranked this attribute among the most important. *Animal welfare* (Figure 10) was ranked relatively important by roughly 20-30% of respondents across demographic subsets with the oldest (>65 years old) having a notably low 15% ranking this attribute highly. Beef *produced without use of hormones or antibiotics* (Figure 11) had relatively similar rankings across demographic traits with between 25% and 35% ranking it among their most important.

Figure 3. Percentage of Respondents By Demographic Ranking *Price* Among 3 Most Important Attributes

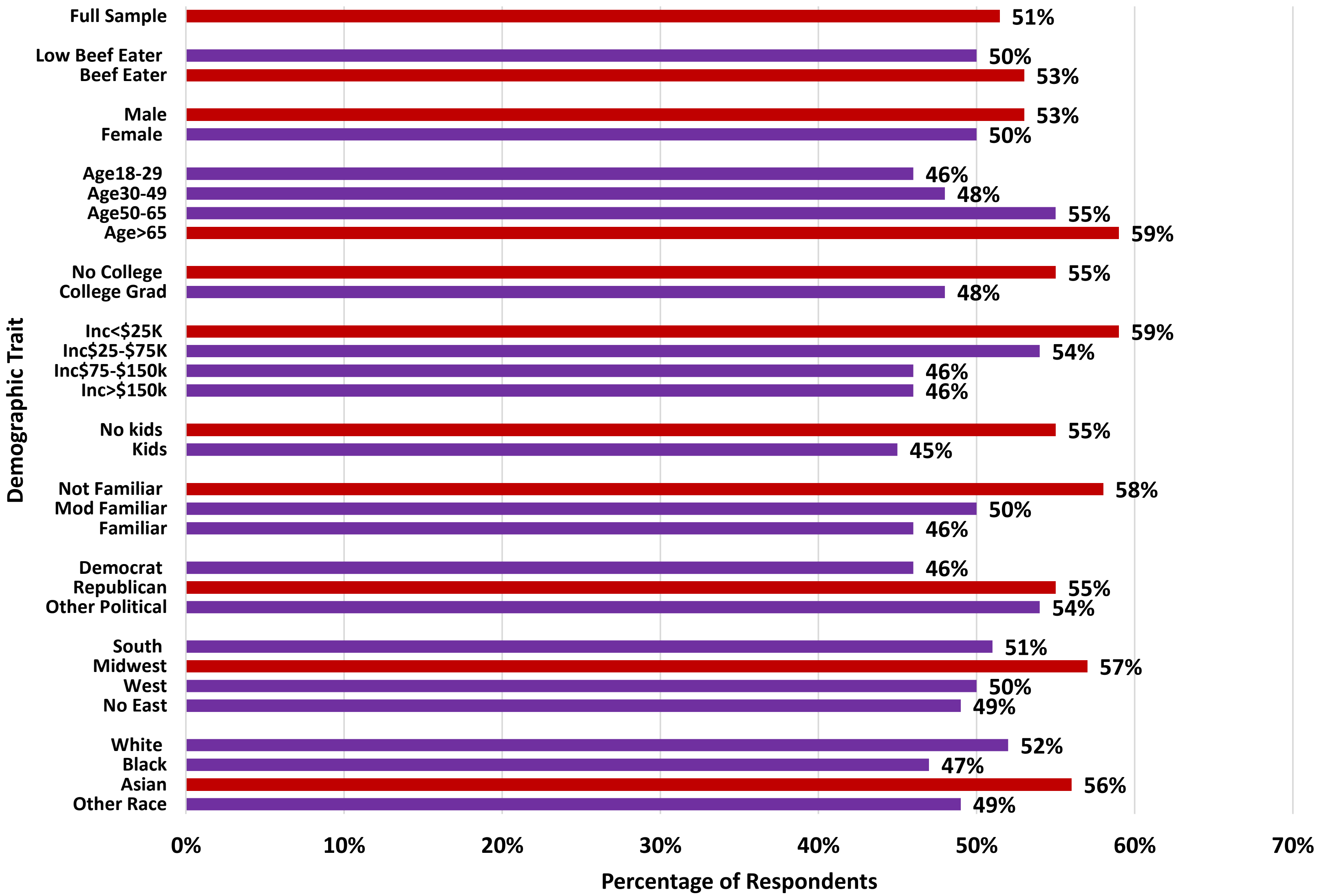


Figure 4. Percentage of Respondents By Demographic Ranking *Freshness* Among 3 Most Important Attributes

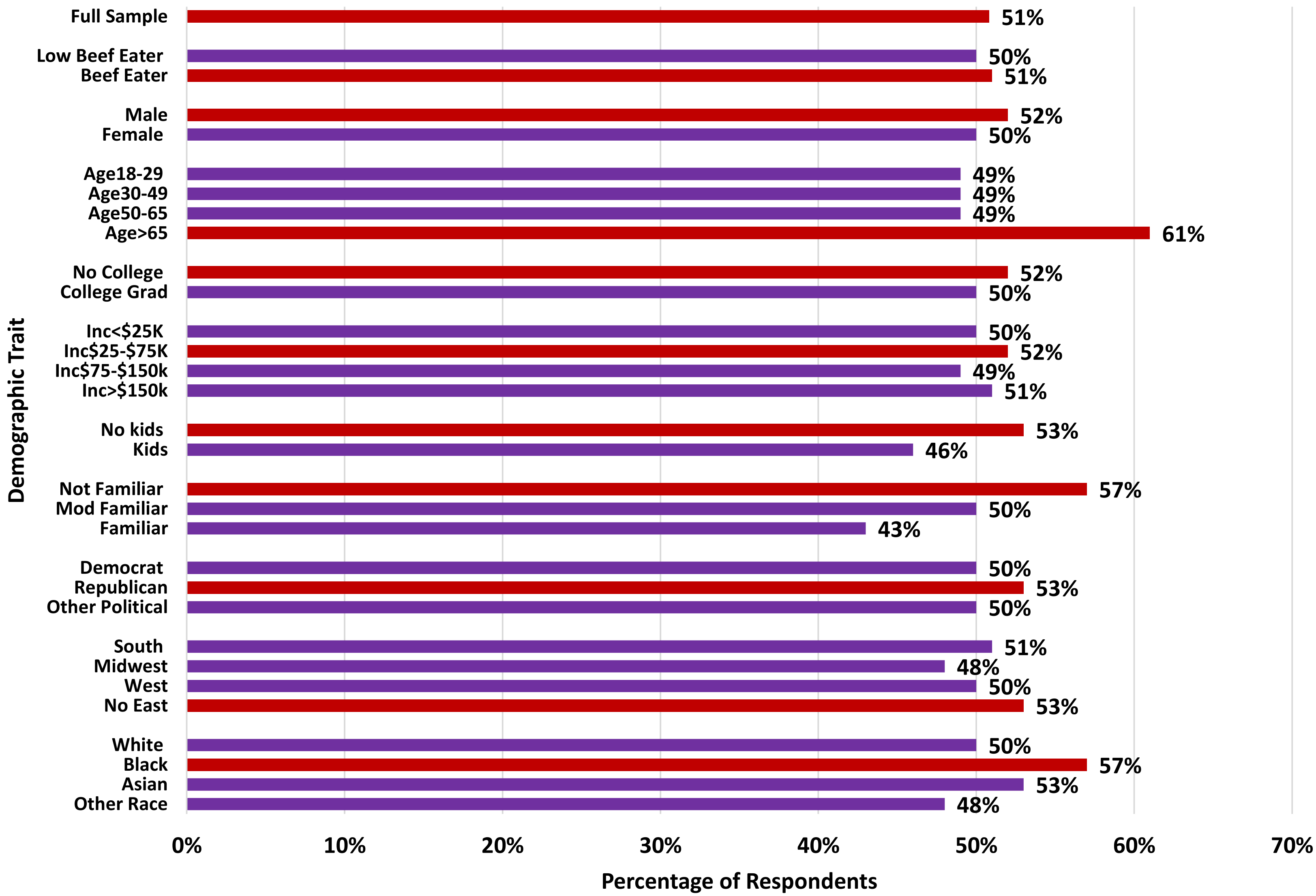


Figure 5. Percentage of Respondents By Demographic Ranking *Flavorful, juicy, tender* Among 3 Most Important Attributes

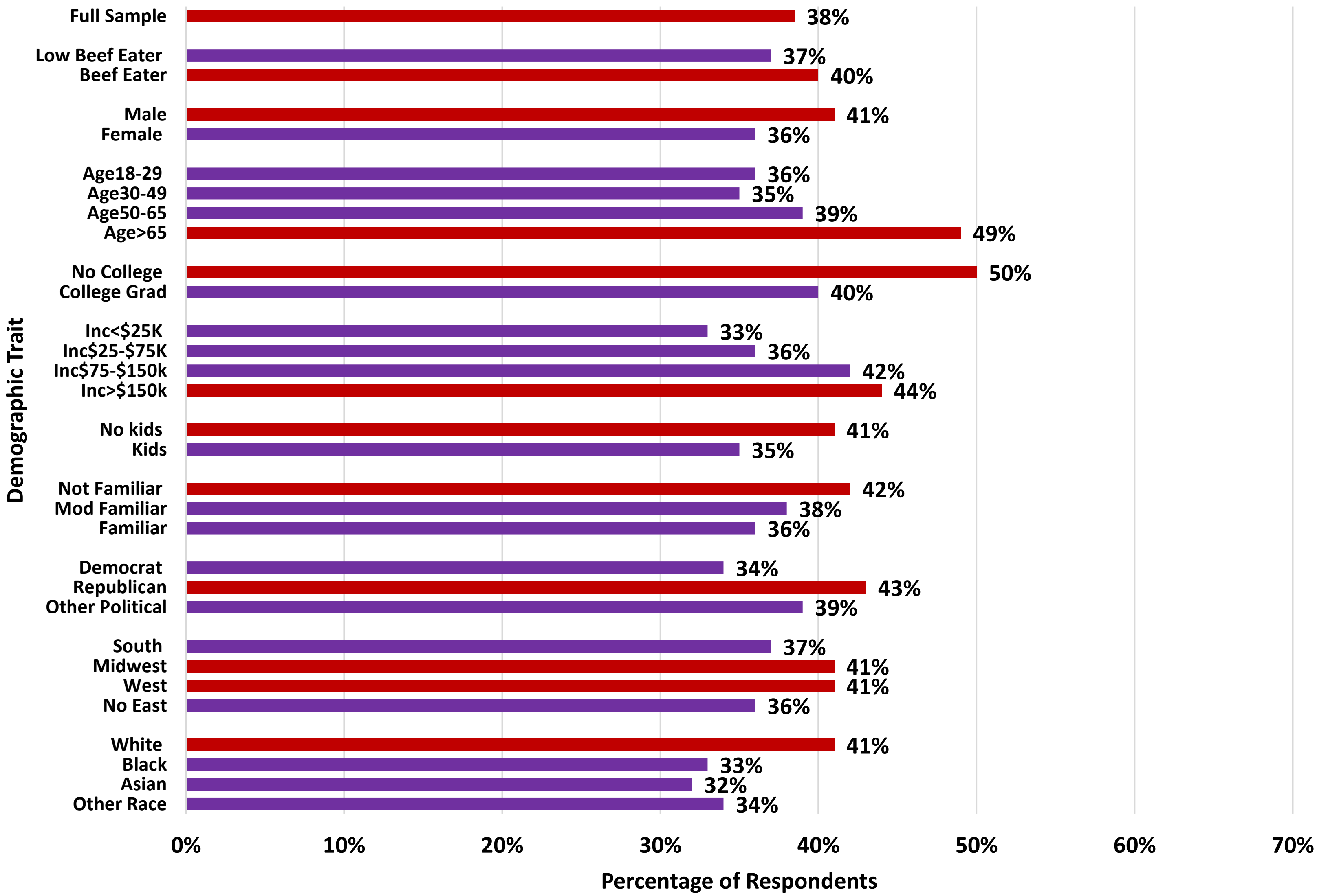


Figure 6. Percentage of Respondents By Demographic Ranking *Nutritious content* Among 3 Most Important Attributes

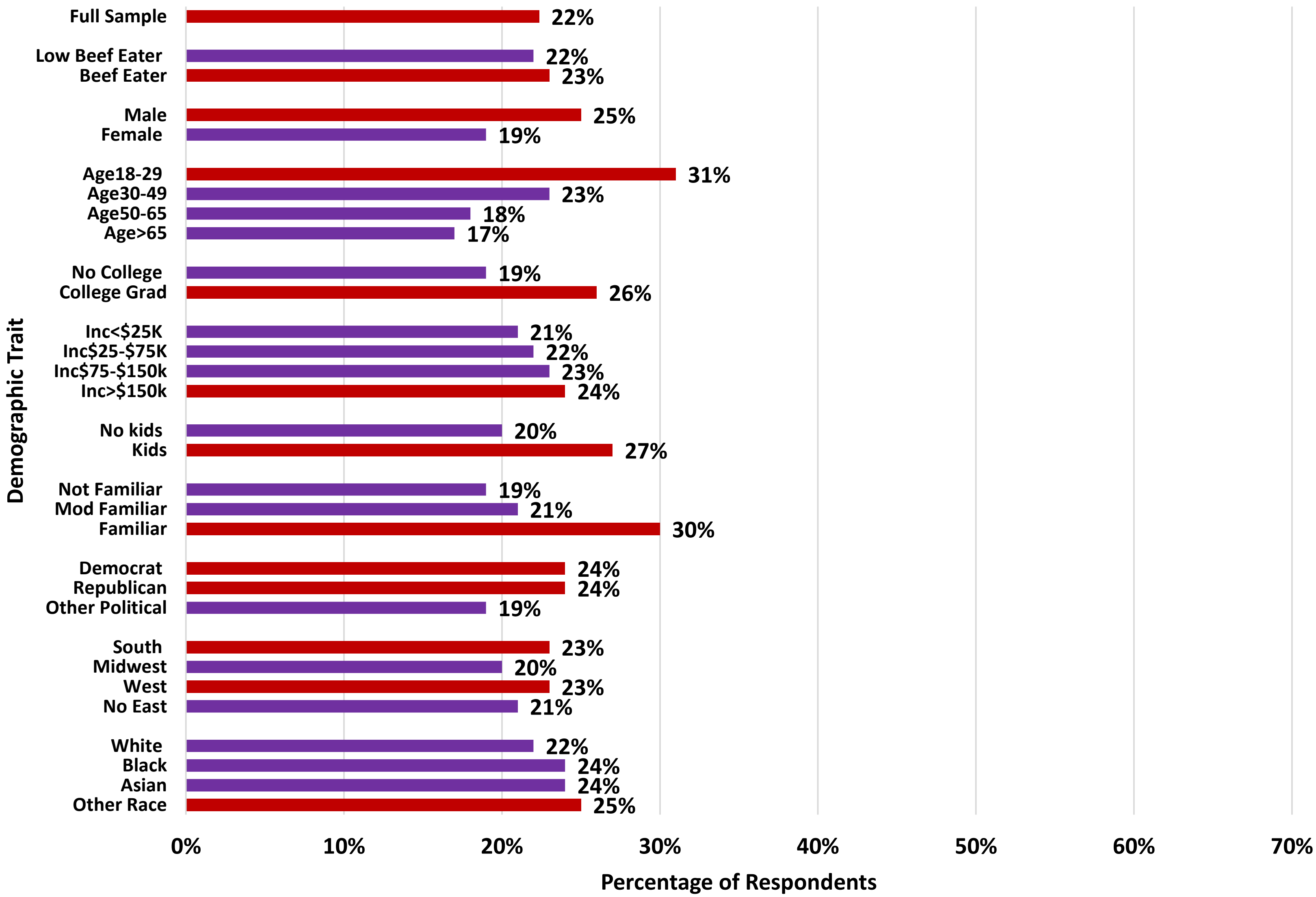


Figure 7. Percentage of Respondents By Demographic Ranking *Safety of Food* Among 3 Most Important Attributes

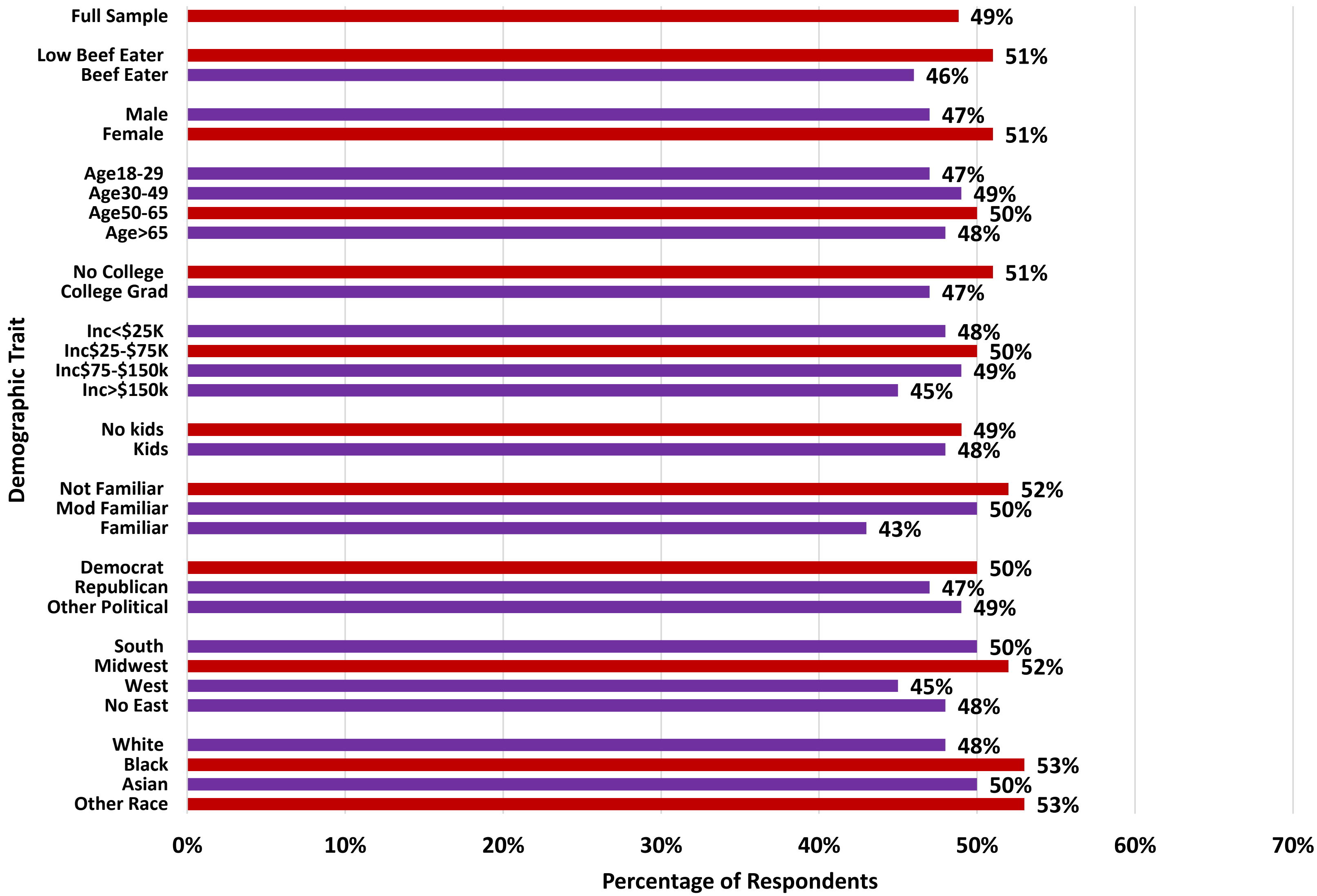


Figure 8. Percentage of Respondents By Demographic Ranking *Supports local farmers* Among 3 Most Important Attributes

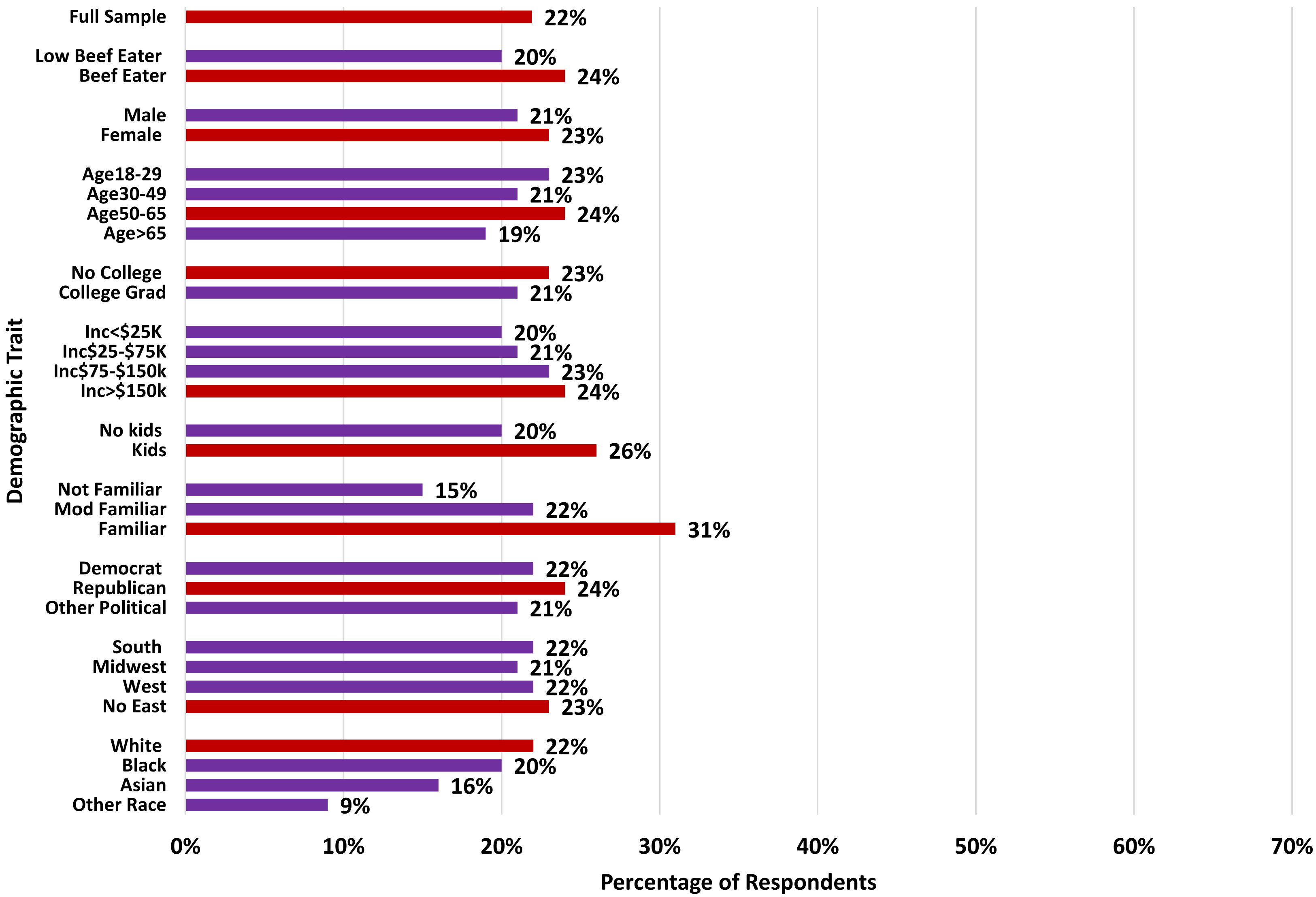


Figure 9. Percentage of Respondents By Demographic Ranking *Low carbon beef* Among 3 Most Important Attributes

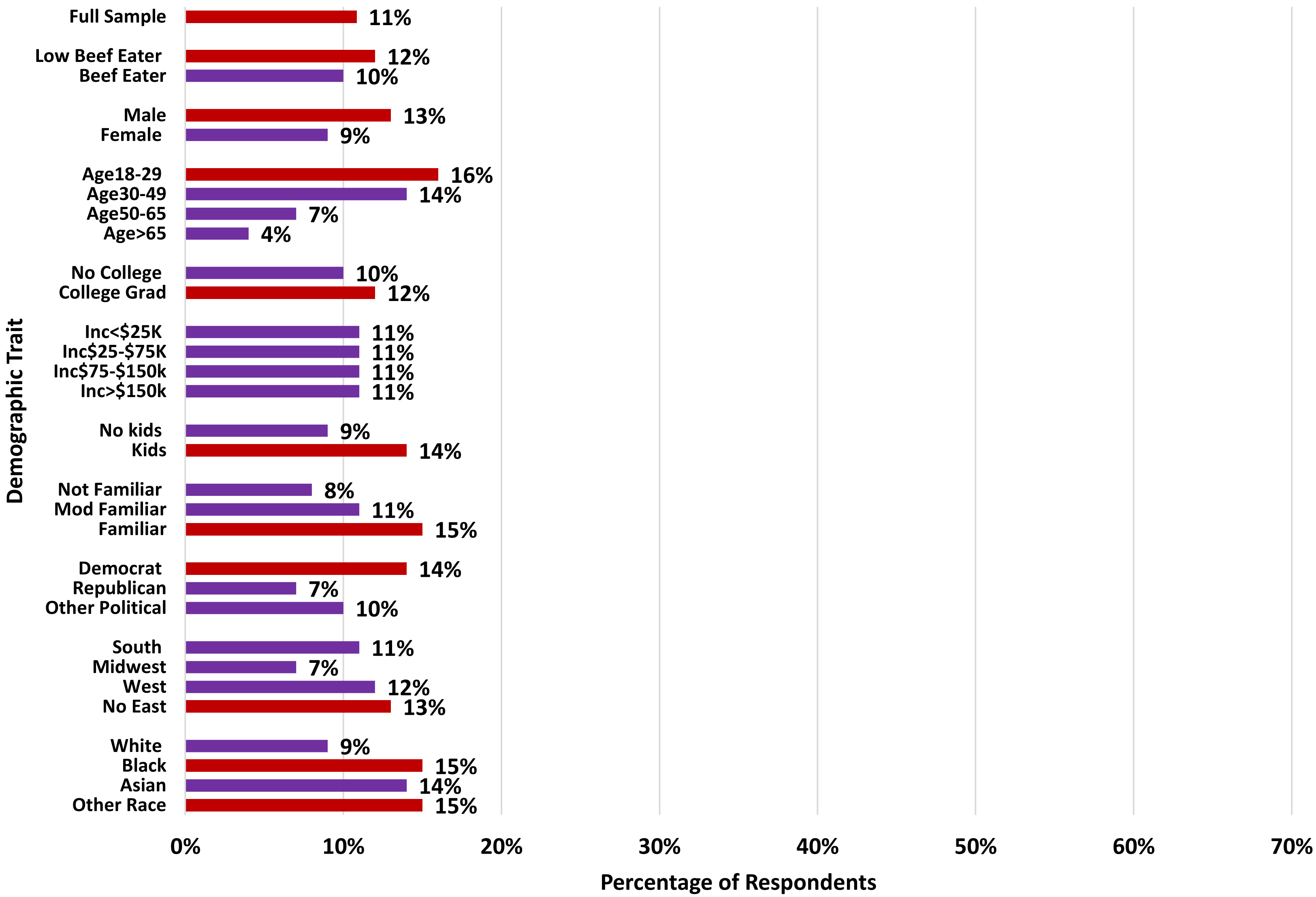


Figure 10. Percentage of Respondents By Demographic Ranking *Animal welfare* Among 3 Most Important Attributes

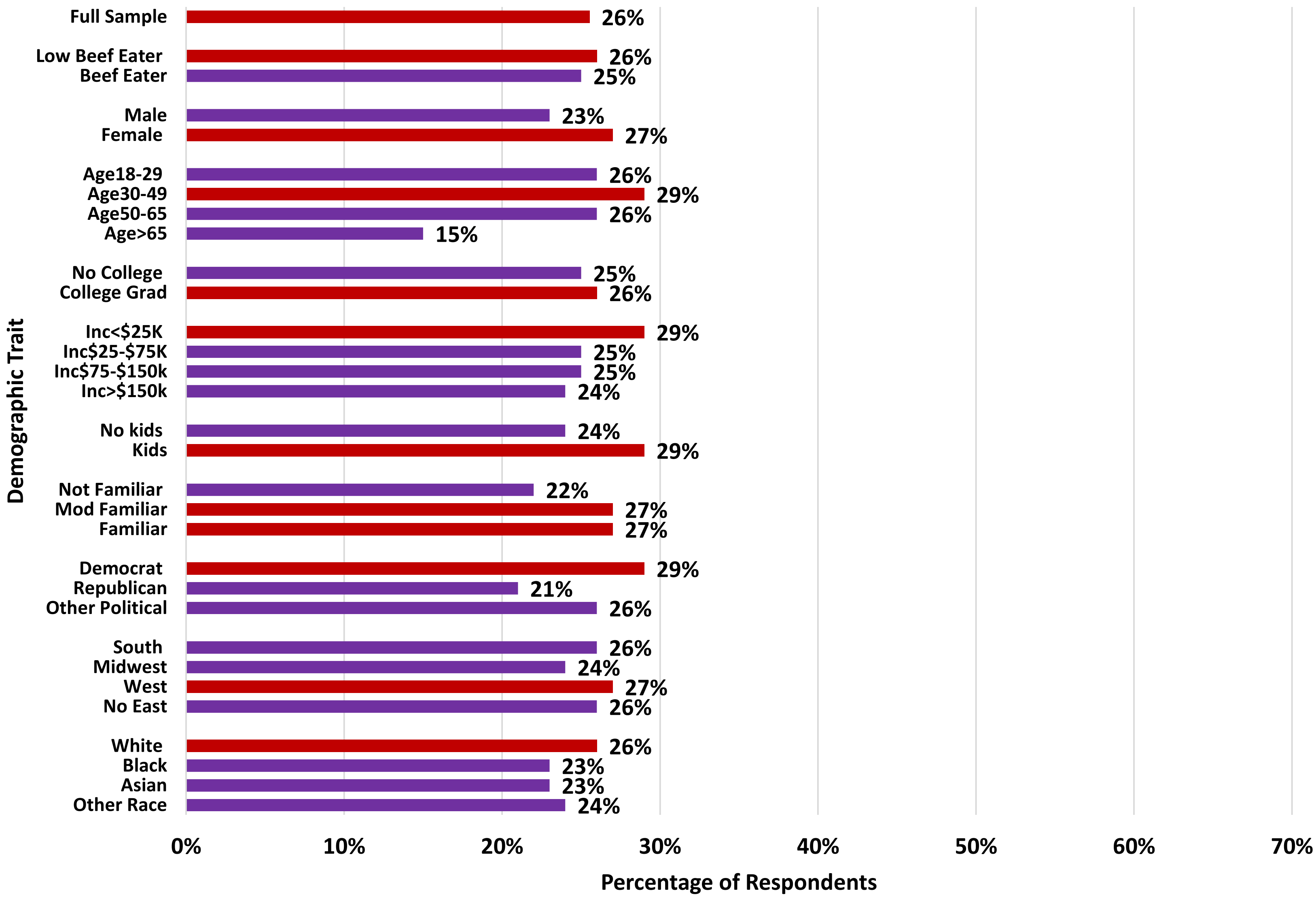
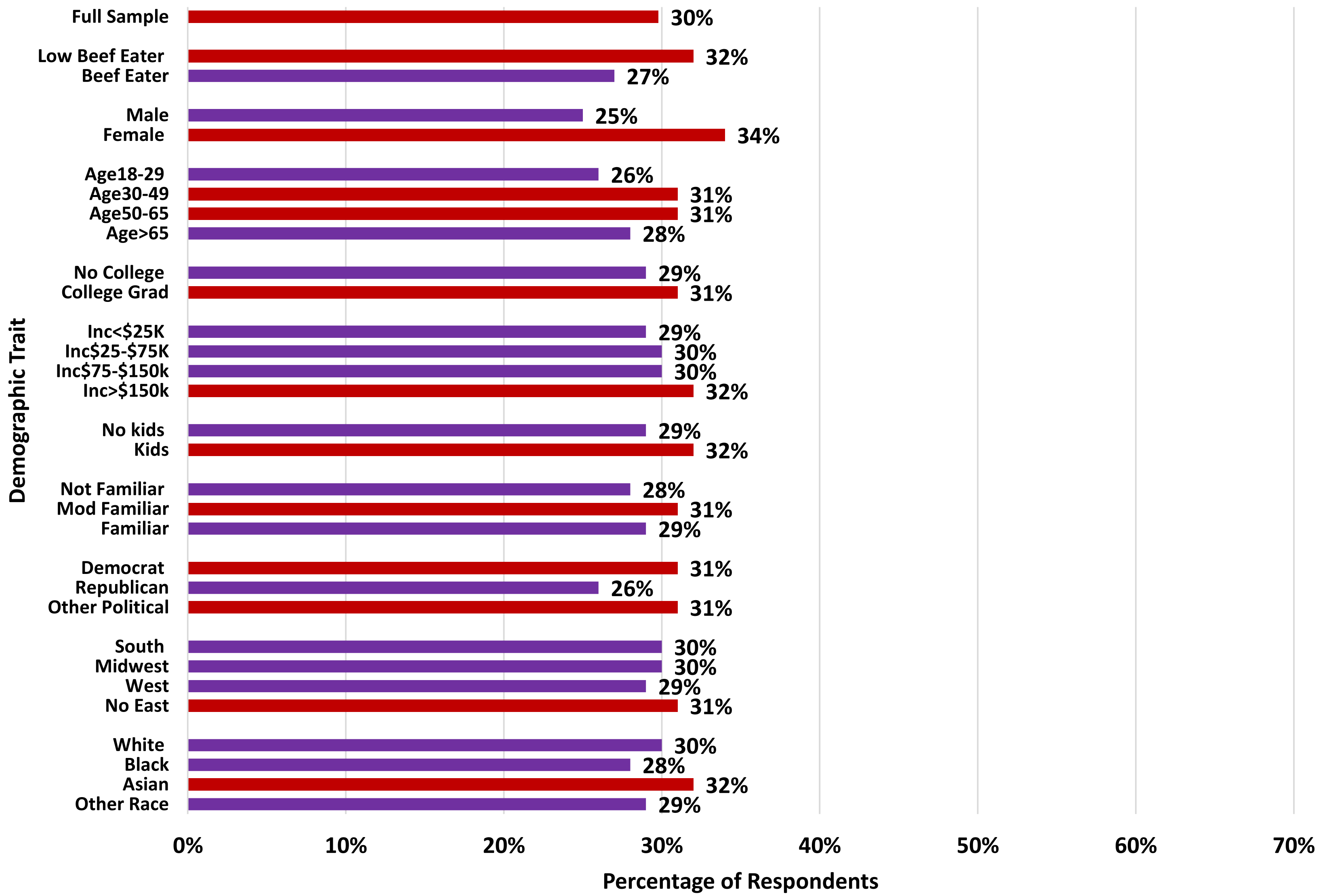


Figure 11. Percentage of Respondents By Demographic Ranking *Produced without use of hormones or antibiotics* Among 3 Most Important Attributes



Recommendations

Our recommendations for the Kansas Beef Council based on this segment of our analysis are:

1. Beef product freshness and food safety are among the most important product attributes to most consumers. Furthermore, these two attributes rank relatively high across demographic subsets identified. This same result has also been found in several prior studies. Continuing to ensure beef products are fresh in the retail counter is essential. Also, ensuring food safety must continue to be a major effort for the industry. We consider these attributes of utmost importance for the industry to accomplish.

2. Beef price matters for many consumers and must continue to be a focus of the industry. Development and adoption of production technologies that make the industry more efficient and cost competitive both with other proteins and globally will directly affect long run prosperity of the cattle industry. However, a significant share of consumers rank price relatively low in importance. This has been confirmed in prior research as well. This means for those who are more price sensitive, low-cost (but not less fresh or less safe) beef will attract consumers. However, there is also a robust market for high-end expensive beef products offering consumers things they most value – this includes high quality, branded products, special assurances, certifications, etc. Continued differentiation of beef product offerings is recommended to provide desired eating experiences for diverse consumers.

3. Beef flavor, juiciness, and tenderness are important to most consumers. A desirable eating experience will continue to attract consumers to beef products. Efforts improving beef quality in the industry have been remarkable over the last several years. We strongly recommend continuing to develop cattle value signals that pay premiums for high quality products offering the best eating experience for consumers. We also believe this is a great promotion opportunity for the industry. Consumers need to know the eating quality of beef products is at a high threshold and as also improved relative to competing meat proteins.

4. A number of consumers indicate preference for beef produced without use of hormones or antibiotics. This market segment has been relevant for several years and appears at least stable, if not growing. We do not recommend over-expanding the industry into natural and related beef production practices as the supply could easily outpace demand growth. However, as market pricing signals continue to evolve, we expect this segment to be worth continuing to build and promote for consumers who value this and for producers who have comparative advantage to supply this segment. One thing that must be recognized though in promoting natural beef (or similar) is it should be done carefully so as not to damage markets for the rest of the beef industry – that is, a potential stigma for the rest of the beef offering could occur if natural beef were heavily promoted.

5. Animal welfare is important to many consumers. We recommend on-going efforts to ensure consumers the entire industry is practicing proper animal welfare standards. Currently the beef cattle industry has a relatively strong reputation for animal welfare. However, potential contradictions between animal welfare and using fewer antibiotics in cattle production must continue to be monitored and efforts assessed to make these more compatible.

6. Consumer preferences are heterogeneous which is both beneficial and challenging to the industry. The fact no single beef product attribute was ranked among the three most important by more than half of survey respondents reveals the degree of diversity in preferences across consumers. The benefit is numerous production and marketing strategies can be successful if designed and targeted toward consumers having specific preferences. The challenge is a single strategy is likely to be less successful than a variety of strategies targeting varied consumer segments.