



Consumer comparison of different beef production systems based on palatability

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INTRODUCTION

- For consumers, several intrinsic characteristics (nutritional value, visual appearance, palatability) and extrinsic factors (price, origin, type of production system) influence their meat purchasing decisions (Grunert et al., 2004).
- Organic and natural markets have become more prevalent in recent times, due to their perceived increased nutritional content and lack of harmful additives.
- There have been several studies that show that both organic and conventional products are comparable in nutritional value (Dangour, 2009).
- The average consumer lacks information about beef production and relies heavily on the internet and popular media.

OBJETIVE

- The objective of this study is to determine the difference in palatability traits between production systems of beef in a blind taste panel.

MATERIALS AND METHODS

- Panelists (n = 240) were recruited from Lubbock, Texas and surrounding areas; and were paid to participate in the study.
- Beef samples represented the following categories: Top Choice Certified Angus Beef (CAB), USDA Select, Grain-Fed Natural, USDA Certified-Organic, and Local Grass Fed (LGF).
- Samples were thawed at 2-4° C for 24 h prior to consumer evaluation and then, were cooked to a medium (71° C) degree of doneness using a belt grill (Wheeler et al., 1998).
- Prior to the start of session each panelist received verbal instructions about the ballot and the testing procedure.
- Each sample was rated on a 100-mm continuous line scale for juiciness, tenderness, flavor liking, and overall liking (0= verbally anchored as extremely dry, extremely tough, and dislike extremely; 100= verbally anchored at extremely tender, extremely juicy, and like extremely).
- Each panelist was served a 1cm³ cube representing each treatment blind in random order.
- All analyses were conducted using statistical procedures of SAS (SAS Inst. Inc., Cary, NC)



RESULTS

Table 1. LSMMeans of consumer palatability traits for all treatments

Treatments	Overall Liking	Tenderness	Juiciness	Flavor Liking
Natural	62.1097 ^A	64.6674 ^A	62.9505 ^A	61.2065 ^A
CAB	56.7528 ^B	61.6105 ^A	61.7785 ^{AB}	55.6647 ^B
Select	53.9806 ^B	52.7874 ^B	53.3543 ^C	51.5266 ^B
LGF	47.3010 ^C	53.4765 ^B	55.9170 ^C	43.3511 ^C
Organic	44.2889 ^C	44.4712 ^C	56.9699 ^{BC}	44.9075 ^C

^{a,b,c} Columns without common super scripts differ at a significance of $\alpha < 0.05$



CONCLUSIONS

Based on results, Grain-Fed Natural beef showed greater acceptance than others treatments in all palatability traits. Panelists rated greater overall linking and flavor linking of Select Beef than LGF Beef, however they perceived similar tenderness and juiciness in both categories. Although Organic beef has many flavor and health claims for sales, this category had lower acceptance values in this study. With the insurgence of a high demand for a grass fed and organic beef product this study shows that when consumers are unaware of the production system they rate Organic and LGF lower than conventional type products, which identifies a consumer bias.

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