

# A Comparison of American Grass-Fed Brands on Strip Loin Quality Grade and Consumer Acceptance

Henry A. Lugo<sup>1</sup>, Taylor M. Horton<sup>2</sup>, Blake A. Foraker<sup>2</sup>, Dale R. Woerner<sup>2</sup>.

<sup>1</sup>Sower Scholar, <sup>2</sup>Department of Animal And Food Science, Texas Tech University.

## Introduction

- Grass-fed beef in the U.S. is a fast-growing consumer phenomenon that is starting to attract the attention of more cattle producers and food companies.
- There is a lack of coherent information on how the market works.
- Consumer preference.
- Consumer perceptions are subjective.

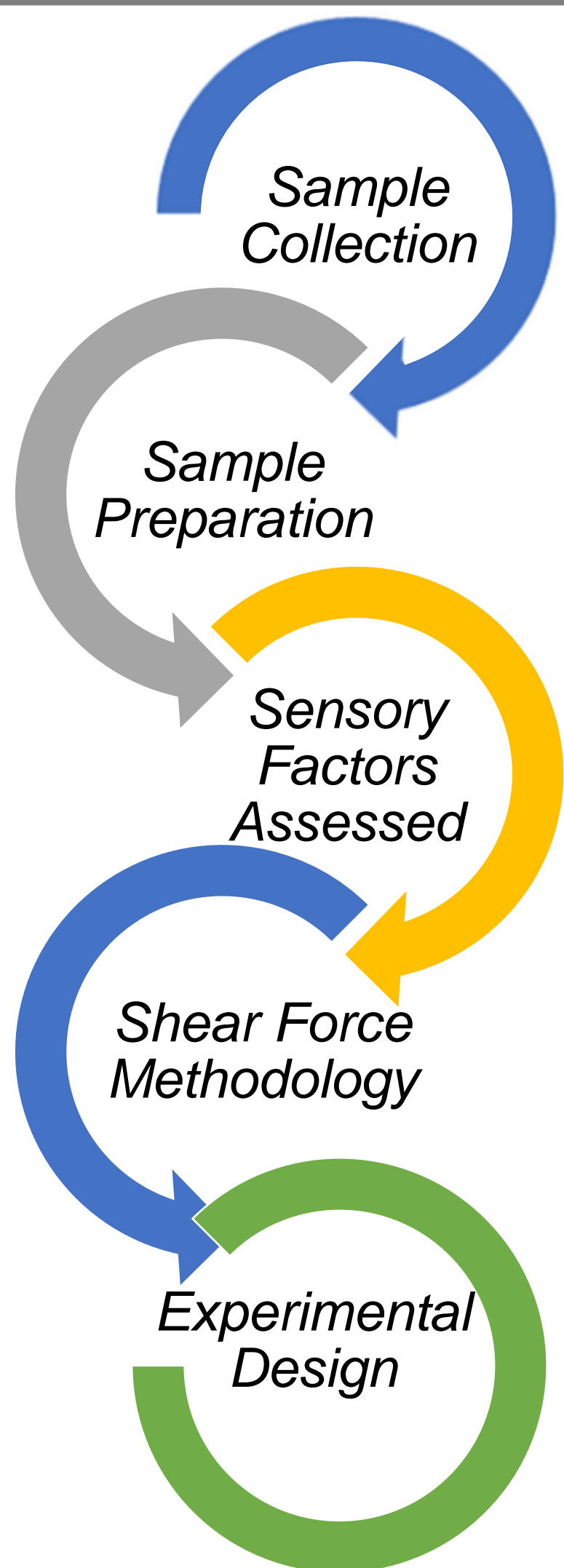
## Purpose

- To determine the market's preference towards the characteristics of Grass Fed Beef.

## Hypothesis

- Consumer preference is subjective, they can not easily identify the differences between the key characteristics of the different brands available on the market.

## Methodology



- Seven different product samples were collected for analysis
- 7.62 cm.
- Trimmed of fat, connective tissue, , and secondary muscles, such that only LM remained.

- 48 – 60 h 2°C
- Silex clamshell grill
- T° set 204°C and internal T° 71°C

- Overall tenderness.
- Overall juiciness.
- Beef flavor ID.
- Browned/roasted.
- Fat-like.
- Sour.
- Oxidized.
- Grass/hay-like.
- Liver-like.

- Metallic
- 1 by 5 cm slice was removed parallel to the muscle fibers on the lateral end.
- Sheared perpendicular to the muscle fibers
- Crosshead speed: 500 mm/min, load capacity: 50 kg

- Completely randomized design.
- R statistical software.
- ANOVA.

## Results

### Shear Force:

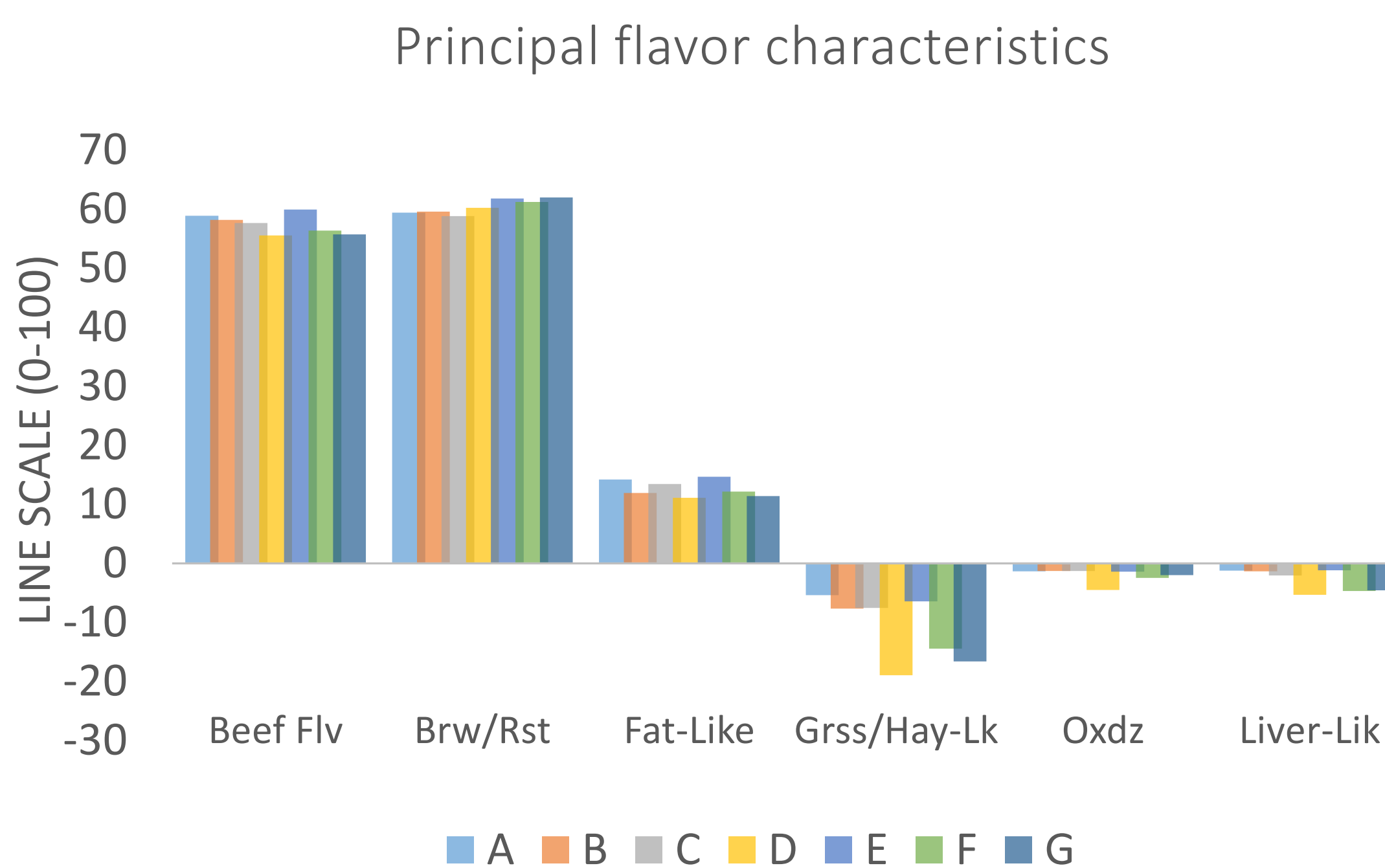
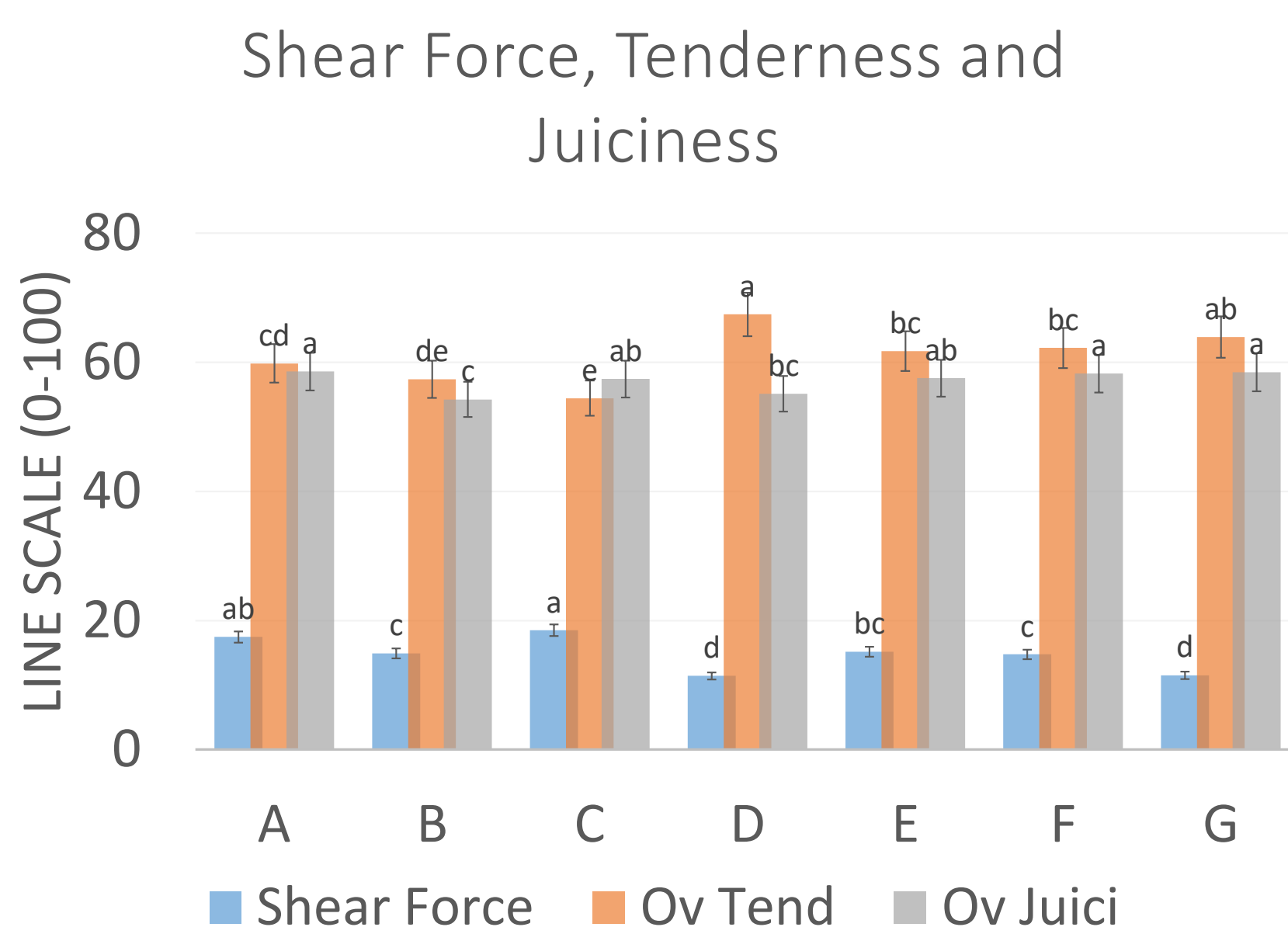
- P < 0.01
- Consumers were unable to detect.

### Beef Flavor/Fat-Like:

- A was greater than D, F, G.
- P < 0.01

### Tenderness:

- Trained panelists did not detect a difference in tenderness.
- 2.54 < 4.4 (Kg)



## Conclusion

- A's beef rated the greatest for positive beef flavor notes and the lowest for negatively associated flavor notes, including grassy/hay-like, relative to its competitors.
- A was more juicy and fat-like than the grain-fed products (B,C).
- In the marketplace product E would be the primary competitor of product A as both products perform very similar.
- Sensory ratings for overall tenderness and shear force values of A were acceptable among industry standards, without compromising the flavor profile.
- Competitors may be aging product for a greater than 21 days, which may contribute to a tenderness advantage and different flavor profiles in these alternate brands.

## Recomendations

- Conduct similar research using the same aging periods to reduce bias.

## Bibliography

Shackelford, S. D., Wheeler, T. L., Meade, M. K., Reagan, J. O., Byrnes, B. L., & Koohmaraie, M. (2001). Consumer impressions of Tender Select beef. *Journal of animal science*, 79(10), 2605-2614.