

## 2018 Reciprocal Meat Conference – Consumer Topics

## Meat and Muscle Biology™



## Relationship between Descriptive Flavor and Texture Attributes on In-Home Consumer Acceptance of Ground Beef

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### Objectives

Ground beef comprises between 50 and 60% of the beef sold and consumed in the U.S. It is one of the most popular protein sources due to its affordability and versatility. Emerging trends in the industry are changing the way ground beef is formulated to include different formulations and grind treatments to change the flavor and texture attributes. In this study, 16 treatments were utilized, including 4 meat sources (chuck, regular, sirloin, round), 2 fat percentages (10 and 20%), and 2 grind treatments (6.4 mm grind and bowl chopped) to better understand consumer attitudes and preferences of ground beef in a home use test.

### Materials and Methods

Knuckle, outside round flat, and chuck shoulder clod subprimals and 50/50 beef trim were used to formulate the sirloin, round, and chuck treatments, respectively for both fat percentages. Regular 80/20 coarse ground beef was used for the 20% fat and it was supplemented with trimmed knuckle to formulate the 10% fat treatment. For each source, the ground beef was divided into 2 final grind batches either 6.4 mm or bowl chopped to approximately 6.4 mm grind. Patties were then formed with a patty maker using a 2.5 cm mold or 454 g chubs. Patties and chubs were vacuum packaged and frozen until use. Each consumer received 8 samples including 4 patties and 4 chubs from the same treatment. Treatments were randomly selected for each consumer. Eighty consumers were recruited from Griffin, GA; Portland, OR; Manhattan, KS, and State College, PA. Of the 314 consumers that were given product, 218 actively participated and returned the ballots.

### Results

Consumers varied in their preparation methods. More consumers used an outdoor grill to cook the patties and more consumers pan fry/sautéed the meat when given chubs. More consumers ate the patties as a main course when compared to the chubs.

Meat source affected raw appearance, overall, flavor and texture liking. Raw appearance liking was highest ( $P < 0.05$ ) for the regular meat source treatments and lowest ( $P < 0.05$ ) for the round and sirloin. For overall, flavor, and texture liking, the consumers rated chuck the highest ( $P < 0.05$ ) and regular and round the lowest ( $P < 0.05$ ). Patties with 6.4 mm grind size were rated higher ( $P < 0.05$ ) than the bowl chop method for overall, flavor and texture liking. Fat level affected the raw appearance, cooked appearance and texture liking. Consumers preferred the 10% lipid level over the 20% lipid level. Form did not affect overall liking.

A grind by fat interaction was present for overall liking ( $P < 0.05$ ). Consumers preferred the 6.4 mm grind size with 10% lipid over the 6.4 mm with 20% lipid and both bowl chop treatments. The meat source by fat interaction was significant for texture liking ( $P < 0.05$ ). Regular 20% lipid, round 10% lipid, and sirloin 20% lipid beef patties rated lowest in texture liking compared to chuck and sirloin ground beef patties. Texture liking also had a grind by form interaction ( $P < 0.05$ ). Both the 6.4 mm treatments for patties and chubs were liked more than ( $P < 0.05$ ) the bowl chop patties and chubs.

## Conclusion

With ground beef accounting for such a large percentage of beef consumption, it is crucial to understand

how flavor and texture affect overall liking. Overall, consumers preferred 10% lipid ground chuck beef in patties or chubs ground to a 6.4 mm grind size.