

Introduction

- The purpose of this project was to develop a new food product for healthy strivers that included whole cranberries for the 2016-2017 Ocean Spray Cranberry Competition. The product was customized for people on-the-go.

Objective

- The specific objective was to evaluate sensory aspects of the cranberry chutney and biscotti.
- A secondary objective was to discuss formulation and processing issues that occurred during the development phase of the chutney and biscotti.

Materials and Methods

- The initial concept was to develop a cranberry salsa and to compliment it with a gluten-free biscotti stick.
- Due to the lack of tomatoes, the salsa product was renamed as a cranberry chutney with a spicy profile coming from peppers. The chutney was too spicy in the original formulation due to the addition of multiple peppers.
- For the biscotti stick, the Maillard browning reaction was not optimal. The thickness and bake time of the original recipe also lead to an undesirable product.
- To evaluate the sensory properties and to obtain consumer feedback on the chutney and biscotti, a focus group was conducted. The panelists (n=7) were asked to rate a prototype of the chutney and biscotti on a scale of 1 to 10 with 1=extremely dislike and 10=extremely like. The averages of these scores are shown in Figure 1.
- The parameters tested for each individual part of the final product were: the outside appearance of the biscotti stick and chutney, the biscotti size, and the chutney particle size. The parameters tested for the chutney and biscotti together were: mouthfeel, sweetness of cranberry, level of cranberry, and overall taste.
- Final formulations for both the Cranberry Chutney and Biscotti Stick are shown in Table 1.

Table 1. Final Formulations.

Cranberry Chutney		Biscotti Stick	
Ingredients	Percentage	Ingredients	Percentage
Anaheim Pepper	2.85	Egg	9.8
Whole Cranberry	30	Sugar	14.1
Ginger	1.1	Oil	8.1
Pear	26.3	Xanthan Gum	0.8
Fresh Cilantro	1.1	Gluten-Free All Purpose Flour	22.9
Sugar	12.1	Rice Flour	22.8
Granny Smith Apple	13.8	Baking Powder	1.1
Canned Crushed Pineapple	12.1	Anise Seeds	0.6
		Whole Cranberry	10.5
		Water	9.3

Results

- For the final formulation, only Anaheim peppers were added to provide a unique “sweet and heat” profile (Table 1 and Figure 1).
- To develop a stronger Maillard browning reaction, a raw egg mixture was brushed on top of the biscotti sticks prior to baking. The shape of the stick and the bake time was also modified to create a more desirable product.
- Figure 1 shows the average ratings of the prototype (n=7). A panel of college-age individuals (Figure 2) reviewed the final products and 70% of the participants stated that they would buy this product as a snack.



Figure 1. Cranberry Chutney and Biscotti. Photo by Conrad Kabus.



Figure 2. Focus Group Session.

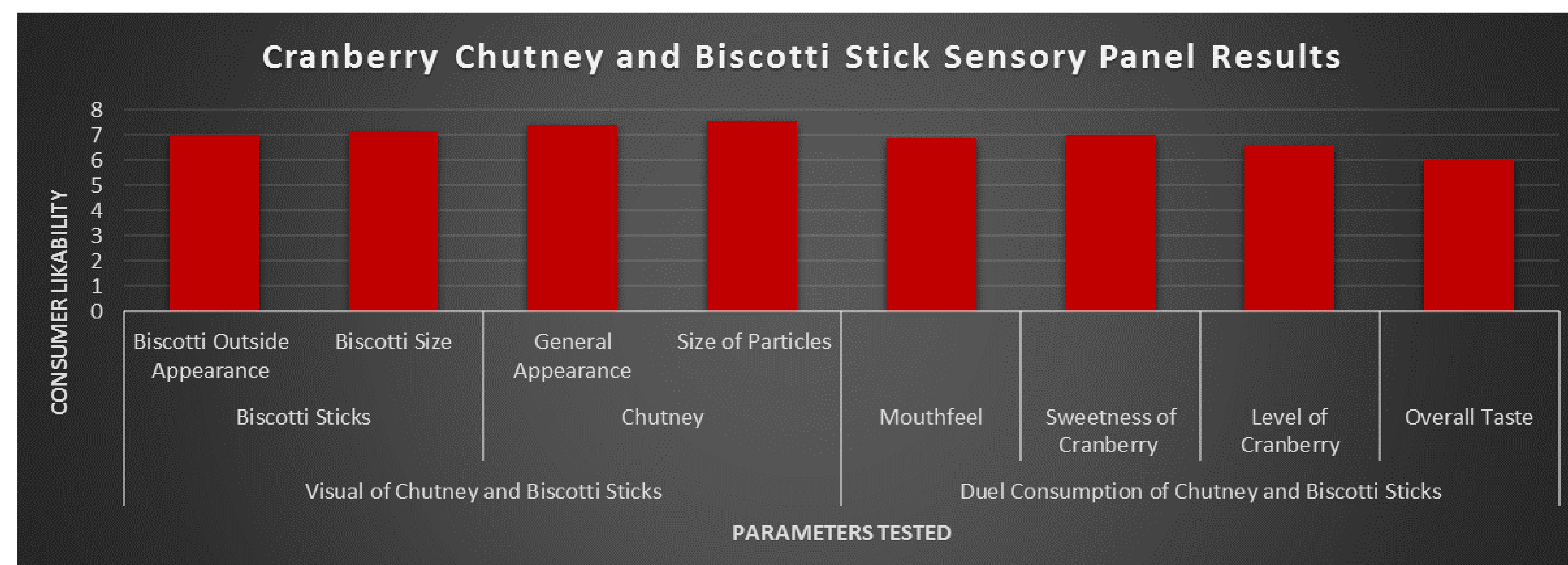


Figure 3. Means (n=7) of Sensory Attributes of the Chutney and Biscotti Sticks. 1=Extremely Dislike and 10=Extremely Like.

Conclusions

- The cranberry chutney by itself was perceived to be a marketable product by the panelists.
- The biscotti stick was deemed undesirable by the consumer panel and needed more development.
- The chutney might be as a potential new product made by the Food Science Club and sold at the Call Hall Dairy Bar.