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**FSC 100 Lab Report**

**Dr. Ferris**

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**Attribute Test – Crackers**

**Summary**

The objective of the experiment was to see if there was a different taste of saltiness between the original Ritz cracker and the reduced sodium Ritz. The project objective was reduced sodium product is not perceived as saltier than the original. A Directional Difference Test was done. Samples were coded with 4 different random numbers. Panelists were given 1 sample of original and 1 sample of reduced salt; they were asked which product is saltier out of the 2. 31 out of 32 pairs showed that the original cracker was saltier than the reduced sodium. It can be concluded that there is a difference in taste between the 2 products.

**Objectives**

 The project objective was reduced sodium product is not perceived as saltier than the original. It was to see if there was a taste difference between the 2 products. The test objective was there is no difference in taste between the two samples.

**Experimental**

*Detail*

 The detail of the Directional Difference Test can be seen in Sensory Evaluation Techniques Fourth Edition textbook, by Morten C. Meilgaard, Gail Vance Civille, and B. Thomas Carr page 105 to 108.

*Design*

 There were 64 crackers used for this test; 32 of them were the original Ritz crackers, the other 32 were the reduced sodium Ritz crackers. Each type of cracker got 2 different codes which were randomly chosen from table 17.1 from the Sensory Evaluation Techniques Fourth Edition textbook. Code 446 and 461 were for the original crackers, and code 557 and 885 were for the reduced sodium crackers. Each panelist was tested 2 times. Each tray has 4 samples (2 originals and 2 reduced salt crackers) randomly presented, a cup of water, a napkin, a score sheet, and a pencil or pen. Directional Difference Test was used to test the attribute difference. Because we presented 2 replications at the same time, each panelist had to test the samples 1 by 1. 4 different random codes and combinations of AB and BA were used to minimize error. We presented to each panelist 2 different coded samples. The subjects were asked to taste the products from left to right and right down the number of the sample that was saltier than the other.

*Panel*

 There were 16 panel members (6 men and 10 women); all of them were from the FSC 100 class, so the range for the age was probably from 18 to 30. No training was given.

*Conditions of Test*

 The test was taken in the Food Science building, in the Sensory Science Laboratory. It has 5 booths with a sliding door in each booth. There were little noises from the hallway because other students were talking. The lab was off-odor, and color of the furniture was off-white, which were preferred. The temperature in the lab was cool, just about right. We prepare the score sheets, the codes, and bought the crackers a few days ahead from the test. We prepared the trays just before the test. We decided to put one whole cracker in every black cup. We put the crackers upside down to prevent bias. We decided to use red lighting because red can cover the most differences than other colors we tried.

*Statistical*

 31 out of 32 chosen that the original was saltier than the reduced sodium. The null hypothesis is the original cracker = the reduced sodium cracker. The alternative hypothesis is the original cracker ≠ the reduced sodium cracker. The degree of freedom is 0.05. Use Table 17.12 from the textbook page 437 to analyze the result. This is a parametric type of data.

**Results and Discussion**

*Tabel:*



Where:

 Green numbers: sample reported that chose original to be saltier

 Red number: sample reported that chose reduced sodium to be saltier

 Original: code 446 and 461

 Reduced sodium: code 557 and 885

Results: 31 chose original was saltier, 1 chose reduced sodium was saltier.

*Statistic*

 Hypothesis

 Ho: Original Ritz cracker = Reduced Sodium Ritz cracker

 Ha: Original Ritz cracker ≠ Reduced Sodium Ritz cracker

 α= 0.05

 According to table 17.12 from the textbook page 437, with n = 32 and α = 0.05, more than 23 correct answers indicates a significant difference. In this experiment, there are 31 correct answers, so there is a significant difference between the 2 products. Therefore, reject the null hypothesis and accept the alternative hypothesis.

*Conclusion*

 The original product is significantly saltier than the reduced sodium product. Almost everyone said that the original was definitely taste saltier than the other product. The textures themselves were a little different. The original has more salt on top of the cracker. So, the reduced sodium product was not perceived as saltier than the original, but the taste of saltiness was significantly different.