

Apr 11th, 8:30 AM - 11:30 AM

Reduction of Refined Sugar Content, Taste Panel Overall Acceptability, and Costs Comparison of a Traditional Chocolate Brownie Prepared with Selected Vegetables.

Catherine Fontenot
Louisiana Tech University

Anna Walter
Louisiana Tech University

Taylor Thompson
Louisiana Tech University

Follow this and additional works at: <https://digitalcommons.latech.edu/ans-research-symposium>

Recommended Citation

Fontenot, Catherine; Walter, Anna; and Thompson, Taylor, "Reduction of Refined Sugar Content, Taste Panel Overall Acceptability, and Costs Comparison of a Traditional Chocolate Brownie Prepared with Selected Vegetables." (2019). *ANS Research Symposium*. 55. <https://digitalcommons.latech.edu/ans-research-symposium/2019/poster-presentations/55>

This Event is brought to you for free and open access by the Conferences and Symposia at Louisiana Tech Digital Commons. It has been accepted for inclusion in ANS Research Symposium by an authorized administrator of Louisiana Tech Digital Commons. For more information, please contact digitalcommons@latech.edu.

Reduction of Refined Sugar Content, Taste Panel Overall Acceptability, and Costs Comparison of a Traditional Chocolate Brownie Prepared with Selected Vegetables.

Catherine Fontenot¹, PhD, RD, LDN, Anna Walter²; Taylor Thompson²

¹*Assistant Professor, School of Human Ecology, Louisiana Tech University*

²*Nutrition & Dietetics, Louisiana Tech University*

Chocolate brownies are an American favorite snack food. Unfortunately brownies are typically calorically dense and nutrient poor accounting for 140 calories, 6.6 grams fat, 15 grams sugar, and 0.9 grams dietary fiber (Pennington, 2010). The Centers for Disease Control reports just one in ten adults meet the federal fruit and vegetable recommendations (CDC, 2019). The recommended consumption for adults is at least 1 ½ to 2 Cups of fruit and 2-3 Cups of vegetables per day (CDC, 2019). Researchers suggest the decreased in US consumption of fruits and vegetables has contributed to chronic disease such as diabetes. In 2015, 30.3 million Americans had diabetes and 7.2 million were undiagnosed (CDC, 2019). Recognizing it can be difficult to change eating habits and feeling as though a healthy diet precludes enjoying food favorites, the purpose of this project was to decrease the refined sugar content of a traditional chocolate brownie recipe using selected vegetables that included sweet potatoes, beets, and dates. In addition, a cost comparison and taste panelist overall acceptability was evaluated. The researchers prepared the recipes following the control recipe procedures for each recipe variation. For each laboratory experiment, research members completed the same task for preparing the recipes to control for errors that would influence outcomes of the study. Three laboratory experiences were conducted using a taste-test panel made up of fellow classmates. The panelists used a scorecard to assess selected sensory qualities that included color, texture, flavor and overall acceptability of the four samples presented for each lab. Prior to each taste-testing, the researchers prepared a plate divided into four quadrants. A 2” X 2” sample was prepared by using a serrated knife to cut the piece from the center of each recipe variation. Each sample was identified by a random number that was indicative of a specific recipe variation. Panelists used a scorecard for each sample using a scale ranging from one to five with one representing hard & dry/bitter/overcooked/burnt and five representing consistent fudge-like texture/rich and chocolatey/even color/desirable taste/moist. Each recipe was adjusted according to the ratings of the samples and any comments that panelists may have communicated to the researchers using the scorecards. The researchers also used lab notebooks to record any notes that documented odd occurrences during the mixing and baking of each recipe variation. The notebooks were also used to document recipe adjustments for the next laboratory experiment. The final recipe of each variation was nutritionally analyzed using www.happyforks.com and the costs of each recipe was determined using [grocery sales receipts](http://grocerysalesreceipts.com) and www.CookKeepBook.com. The recipe using sweet potatoes had the highest overall acceptability with a score of 4.67 whereas the recipe prepared with the dates was the least acceptable by the panelist with a 4.45 overall acceptability. The sweet potato and beets recipe variations had an overall acceptability of 4.67 and 4.64, respectively. In terms of nutritional composition, the reduction of sugar was lowest for the brownies prepared with beets and sweet potatoes yielding 14 grams per serving; the control yielded 16 grams of sugar per serving. The fiber content was highest in the recipe using dates yielding 1.9 grams per serving compared to 1.7 grams fiber in the control. On the other hand the sweet potato recipe yielded 1.6 grams

dietary fiber and the beets recipe yielded 1.5 grams dietary fiber. In terms of costs the control was \$3.23 per recipe and the dates was \$5.04, while the beets and sweet potato variations costs were calculated at \$3.52 and \$3.33, respectively. The limitations of this study were the limited time frame available to conduct the study and the limited access to panelists who were unfamiliar with this study. On the other hand, the strength of the study were access to the tools necessary to execute the study and availability of sufficient quantities of the ingredients needed to conduct each laboratory experiment. This study indicates that vegetables are viable options for reducing the refined sugar content while also increasing the dietary fiber of the current food supply. Additional research is necessary to determine consumer acceptability of different foods prepared with other vegetables and vegetable combinations.