Acceptability of Great Northern White Beans as a Fat Substitute
In Oatmeal Chocolate Chip Cookies
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Methods
- Due to the research on acceptability of legumes as a fat replacer, we chose to explore the function of Great Northern Beans as a fat replacer.
- Since oatmeal chocolate chip cookies are very popular, and rich in fat (butter), we tested the acceptability of the beans as a fat replacer to butter that is used to prepare the cookies.

Hypothesis: The quality of the appearance, texture, color and flavor of oatmeal chocolate chip cookies are acceptable when 25%, 50% and 75% of the fat ingredient, butter, is replaced with pureed Great Northern Beans.

Procedure:
- We prepared the 4 batches of Oatmeal Chocolate Chip Cookies. The 1st batch was the control which directly followed the recipe. The following 3 replaced the butter with pureed white beans in the percentages of 25%, 50% and 75%.

| Samples: oatmeal chocolate chip cookies |
| Independent variables: 25%, 50%, 75% of fat replacement white beans |
| Dependent variables: appearance, color, texture, flavor, overall acceptability |

All samples were accepted and the hypothesis was proven correct.

Abstract
The average American diet is usually high in fat. As consumers have attempted to reduce the amount of fat they eat, there is an increased demand in reduced-fat foods. The purpose of this study was to determine the overall acceptability of oatmeal chocolate chip cookies prepared using pureed Northern white beans as a fat ingredient substitute. Pureed Northern white beans were substituted for 25%, 50% and 75% of the fat in oatmeal chocolate chip cookies. 30 college students and our foods professor used a 5 question The results from the 30 students and professor concluded the main effect of bean substitution was statistically significant for the acceptability in all the categories. There were no significant differences in the results between the three tasting sessions. The study shows that it is possible to substitute pureed white beans for fat in oatmeal chocolate chip cookies at a level that results in an acceptable product.

<table>
<thead>
<tr>
<th>Control</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>146 kcal</td>
<td>136 kcal</td>
<td>126 kcal</td>
</tr>
<tr>
<td>Total Fat</td>
<td>6.6g</td>
<td>5.3g</td>
<td>4.0g</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>3.9g</td>
<td>3.1g</td>
<td>2.3g</td>
</tr>
<tr>
<td>Sodium</td>
<td>73mg</td>
<td>65mg</td>
<td>37mg</td>
</tr>
</tbody>
</table>

Significance of this Study
Obesity is a serious problem in America. Our experiment was able to reduce saturated fat in a popular high in fat snack. Our experiment also set the foundation for further research to be done that could substitute 100% of the saturated fat (butter) with Great Northern Beans in Oatmeal Chocolate Chip Cookies. By consuming our product, it could help reduce obesity in the US.

References

