Measuring and Engaging the Business Sector Response to NCDs

THE CARIBBEAN NCD PRIVATE SECTOR FORUM

Voluntary reformulation of food products – The reduction of salt in bread. The Purity Bakeries Experience

Presented by – Christopher Symmonds
Professor Sir Trevor Hassell threw out a challenge in 2012 to the Management of Purity Bakeries to measurably lower the volume of salt in major bakery products.
CHALLENGE

Was it important enough to devote the time, effort and risk?  YES
Both the 2010 Dietary Guidelines and the April 2010 Institute of Medicine report, identified yeast raised bakery goods as the largest single food contributor to daily sodium intake, accounting for 7.2% of the total.

Not only the volume of sodium per serving, but importantly the number of servings.
RESEARCH

- The two year journey of salt reduction...
Considering the Herculean task.

Some notoriously high-sodium categories have led the way.

- Soups
- Sauces
- Meats
- Snacks
Considering the Herculean task.

Up until recently many Bakery goods hadn’t exhibited the same success.

Baked goods represent a great challenge to sodium reduction, because of the range of baked goods and the roles that sodium plays.
RESEARCH

- What is the role of salt / sodium in bakery products?
RESEARCH

Form

O Contributes to the creation of a thin crisp well coloured crust.

O Studies have shown that the crust has more dietary fiber and antioxidants

O Salt slows the rate of the consumption of sugar by yeast & more of what is known as residual sugar is available at the time of the bake for crust coloration.
Form

* Imparting flavour balance.
  * Salt enhances the positive sensory attributes of foods, even some otherwise unpalatable foods. It simply makes them “taste” better.

* Do you remember the 1\textsuperscript{st} time you cooked rice with no salt?
Function

- Improves dough strength
  - This is essential to creating high-quality bread.

- Salt tightens the gluten structure, offering strength & balance via 2 main properties—extensibility and elasticity.
**Function**

- Controls rate of yeast fermentation
  - Salt by its nature is hygroscopic, that is, it attracts moisture.

- In the presence of salt, the yeast releases some of its water to the salt by osmosis, and this in turn slows the yeast’s fermentation or reproductive activities.
RESEARCH

Function

- Inhibits microbial growth
  - Dehydrates bacterial cells, alters osmotic pressure, inhibits bacterial growth and the consequent spoilage.
We selected our three best selling products...

1. Sodium content was relatively high in all of them.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2012</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
<td>100% Whole Wheat</td>
<td>100% Whole Wheat</td>
</tr>
<tr>
<td>SODIUM PER SLICE</td>
<td>110mg</td>
<td>??</td>
</tr>
</tbody>
</table>
Concerns

- Risk of a negative consumer response to the flavour profile.
- Risk of consumer migration to competitors.
Concerns

- Affect on the functionality of the yeast in creating a ‘perfect’ loaf.

- Risk of failure.
Actions

- Conducted tests over several months before achieving our 1st milestone breakthrough.

- In October 2013 we certified a 5% reduction.
As tests exhibited better control we accelerated.
In November 2014, we achieved our 1st internal goal.

<table>
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<td>85mg</td>
</tr>
</tbody>
</table>

Reduction in overall salt content in a range of main products by 20%
<table>
<thead>
<tr>
<th>Nutritional Facts</th>
<th>WONDER 100% Whole Wheat</th>
<th>PEPPERIDGE 15 Grain Loaf</th>
<th>DEMPSTERS 12 Grain Loaf</th>
<th>EZEKIEL Sprouted Grain Loaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on a 2,000 calorie diet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERVING SIZE</td>
<td>1 SLICE</td>
<td>1 SLICE</td>
<td>1 SLICE</td>
<td>1 SLICE</td>
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<tr>
<td>CALORIES</td>
<td>40</td>
<td>100</td>
<td>100</td>
<td>80</td>
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<tr>
<td>CALORIES FROM FAT</td>
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<td>20</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL FAT</td>
<td>0.5g</td>
<td>2g</td>
<td>1.5g</td>
<td>0.5g</td>
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<tr>
<td>SATURATED FAT</td>
<td>0.35g</td>
<td>0.5g</td>
<td>0.2g</td>
<td>0.2g</td>
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<tr>
<td>TRANS FAT</td>
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<td>0g</td>
<td>0g</td>
<td>0g</td>
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<tr>
<td>CHOLESTEROL</td>
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<td>0g</td>
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<tr>
<td>SODIUM</td>
<td>85mg</td>
<td>115mg</td>
<td>130mg</td>
<td>75mg</td>
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<tr>
<td>TOTAL CARBOHYDRATE</td>
<td>13g</td>
<td>20g</td>
<td>18g</td>
<td>15g</td>
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<tr>
<td>DIETARY FIBRE</td>
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<td>4g</td>
<td>3g</td>
<td>3g</td>
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<tr>
<td>SUGARS</td>
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<td>3g</td>
<td>3g</td>
<td>0g</td>
</tr>
<tr>
<td>PROTEIN</td>
<td>4g</td>
<td>5g</td>
<td>4g</td>
<td>4g</td>
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</tbody>
</table>
FUTURE

Performance measure

Number of trials or attempts at learning

Plateau
Steep acceleration
Slow beginning
THANK-YOU