

# The Acceptance of Food Product Development made with Vegetable By-products among THEi Students

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## Research Questions



The study sets out to answer the following research questions:

- Are there any associations between sensory attributes between males and females?
- Are there any statistical differences between the 4 products, based on the scores give in the scoresheets?
- Are there any associations between sensory attributes between males and females?



## Methodology



The study was conducted in two parts. The first part consisted of a preliminary Market study, which contained questions about the likelihood and habits of food by-products. Data was collected and analyzed. After finding the most popular food category in the first part, the second part for the New Product Development was conducted. After making the snacks, data was collected through conducting textual assessment tests using human panelists and a texture analyzer. Statistical analysis was then carried out to see the associations.



## Objectives



- To understand the current trend of vegetable food by-products;
- To examine the existing problems/obstacles for converting food waste into food by-products;
- To explore the possibility of revitalizing by-products for new food product development; and
- To measure the acceptance of food products that were made with vegetable by-products with textural assessment.

## Ingredient List

| Number of by-product percentage | Weight of materials*                           | Next Modified Percentage | Ingredients              | Weight required |
|---------------------------------|--|--------------------------|--------------------------|-----------------|
| 0% (Control)                    | 200g flour                                     | 5%                       | Frozen corn              | 60g             |
| 5%                              | 10g replacement materials +<br>190g soft flour | 10%                      | Stone ground corn powder | 35g             |
| 10%                             | 20g replacement materials +<br>180g soft flour | 15%                      | Low gluten/cake flour    | 5g              |
| 15%                             | 30g replacement materials +<br>170g soft flour | 20%                      | Starch                   | 10g             |
| 20% (Final recipe)              | 40g replacement materials +<br>160g soft flour | 25%                      | Raw cane sugar           | 5g              |
|                                 |  |                          | Salt                     | 1.5g            |
| 25%                             | 50g replacement materials +<br>150g soft flour | 20%                      | Corn oil                 | 10g             |
|                                 |  |                          | Hot water / Corn juice   | 15g             |

## Findings

## Results



Market study:

- Most people think food waste problems is serious in Hong Kong;
- Lack of knowledge and methods to handle food waste rather than landfilling.

Textual assessment:

- The fracturability of cornflakes had statistical differences;
- The mean scores on the panelist tests on muffins were significantly lower than our expected score of 7.

## Overall Working Framework

