



# White chocolate, pumpkin & manuka honey magic shell sauce

CREST



## Project brief

Our team worked with GROENZ to develop a sauce/product for the Asian market.

### Specifications:

- Must meet target market food legislation requirements
- Must be suitable for Halal accreditation
- Contain natural colours and flavouring
- Where possible have clean label declaration-no E numbers
- Be shelf life of 6 months
- Must have a pH <4.2

## Research

"Bubble tea is so over. The cool new trend in Asian sweets is Thai rolled ice cream."  
Micheline Maynard.

- Food Trends:** Street food, Thai rolled ice cream
- Trade:** Thailand is New Zealand's 10<sup>th</sup> largest trading partner
- Taste Testing:** The basis of Thai cuisine is the balancing of contrasting flavours
- Nutritional Needs:** Thai children are lacking in Vitamin A, Iron and Iodine
- Halal Food:** Milk is a Halal safe food and alcohol can not be used

## Aim

To create a typical New Zealand flavoured sweet sauce for the Thai street food market. The creation of a magic shell sauce for rolled ice cream, is an innovative accompaniment that fills a gap in the market.

## Final brief

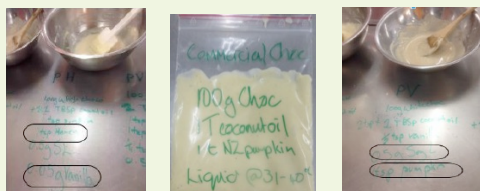
**Conceptual statement:** We have the opportunity of developing a white chocolate pumpkin and manuka honey magic shell sauce for GROENZ food company. The concept will represent the 150th anniversary of the NZ Royal Society. GROENZ is expanding their export market therefore our product targets the street vendors in Thailand making and selling rolled ice cream.

### Specifications:

- Must meet target market food legislation requirements
- Must be suitable for Halal accreditation
- Contain natural colour and flavouring
- Where possible have 'clean label' declaration- no 'E' numbers
- Be shelf stable
- Have a shelf life of at least 6 months
- Must have a BRIX of above 75
- Must be high in Vitamin A as it is one of the nutritional deficiencies in Thailand
- Must contain New Zealand pumpkin powder as stated in the final formula
- Must include manuka honey

## Concept Development Stages

### Tests for developing optimal flavours



Photos indicate flavour inclusions per test

"With every 100 grams of raw pumpkin, you consume 8,513 IU of Vitamin A."

United States Department of Agriculture, Agricultural Research Service.  
Therefore justifying our decision to use pumpkin.

### Blooming of chocolate

In the early stages of our product development we experienced chocolate blooming. The solution is to gradually expose the chocolate to moderate temperature change and store chocolate at 21°C or below.

### Pour ability

The temperature at which magic shell sauce is runny

Seconds the sauce is in the microwave	0 sec	5 sec	15 sec	20 sec	30 sec
Temperature	16.9°C	18.7°C	20.6°C	20.8°C	27.5°C
Viscosity	N/R	N/R	R	R	R
Fit for purpose			Pourable from squeeze bottle		



### Addition of emulsifiers

#### Problem

Sauce separated on heating however the use of soy lecithin solved this issue.

## Optimizing the formula

Sunflower oil	Time to snap	Solidify	Viscosity
7.25ml	10 sec	1hr +	1.5cm
30ml	15 sec	1 ½ hr +	1cm
60ml	30sec	3 hr +	0.5cm

Testing the snap, solidify and viscosity of our product after adding sunflower oil.

## Modelling for mitigating risks of failure

### 1. Viscosity Testing



Bench top version of Bostwick test for measuring flow for optimum viscosity.

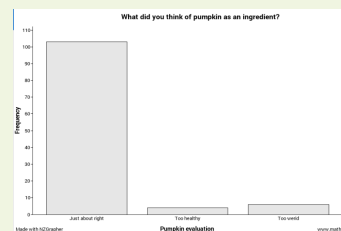
### 2. BRIX Test



Calculating sugar level of the product.

Since we were making a sweet sauce, we couldn't have a pH of <4.2. That is why we did a BRIX test, if the sugar level in the product are about 75 we can assume that there is low water activity and that the product is shelf stable.

### 3. Sensory Evaluation



We used our schools open evening to ascertain the suitability of our product with potential consumers. The results, shown here in the graph indicate that the ingredient in our product is well liked.

## Fitness for purpose

- ☒ Feasible for use in intended market
- ☒ Clean label
- ☒ Halal
- ☒ Enhance nutritional value
- ☒ Natural colour and flavourings
- ☒ Shelf life
- ☒ Has New Zealand produce

## Final product



## Further work that could be done

Honey as an ingredient can be problematic as our sauce needed to be heated and honey loses its health benefits when heated. Further development could be to substitute cinnamon instead of honey, as it compliments the flavour of pumpkin.

The product could be sent to Formula Foods to have the water activity tested.

We would like to acknowledge the people who have guided us and given us their knowledge:  
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