DESSERT OR DESSERT?

A Note-by-note dish with a theme of Food for the Future

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ADVANCED MOLECULAR GASTRONOMY – TFCS9025

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1. Introduction

1.1 General background

Molecular Gastronomy has been an interdisciplinary aspect for both Culinary Arts and Science. With Molecular Gastronomy, making a dish is using pure compounds rather than using whole ingredients. This would enhance the creativity and flexibility of science in combining new dishes with novel ingredients, using the knowledge of food chemistry. Molecular Gastronomy is a scientific approach to food and cooking, exploring the interactions between the ingredients and their physical and chemical transformation. With the current challenges exposed with food, molecular is a pioneer as it helps to address the food challenges (Barham et al., 2010). The emergence of Note-by-Note cuisine, a sub category of molecular gastronomy, facilitated the imagination of creating a dish even further by constructing a complete dish with pure ingredients, surpassing the traditional technique, tailor nutritional at its molecular level (This, 2013). Several techniques have been applied to create a dish of Note by Note such as spherification, emulsification and sous-vide cooking. This enables the combination of pure compounds, to make a dish full of science and creativity with improvement in food preservation, reducing waste (Van der Linden et al., 2008). Note by Note cooking is a concept introduced by Herve This in 1994, with a published article in The American. Overtime, this idea is developed into what we know Note by Note cooking today, in which, he promoted the uses of pure compounds (This, 2014). The concept has gained popularity not only in food competitions, by the chefs of Cordon Bleu but is also integrated into school subjects for food science (Burke and Danaher, 2016). Note by Note can be considered as an art of cooking because it requires dedication, techniques, and skills.

Currently, where the population is ever-increasing, humans are putting burden upon the existing resources. Several goals have been put in place for nations to achieve the goal of sustainability by 2030 by the United Nations. A healthy planet that enables our agri-food systems to sustainably offer a nutritious diet for everyone is the critical point of our existence and the focal point of the 2030 Agenda for Sustainable Development (Fund, 2015). As a matter of fact, the theme of Note-by-Note Contest of 2025 is to take advantages of the cutting-edge technology, make uses of ingredients to create a dish that serves the theme of Food For

The Future – where the visualization of the future can be envisaged through Note by Note components.

This report will examine the role of molecular gastronomy using pure ingredients, under the perspective of science and as sustainability innovation to match the theme of Food for The Future 2025.

1.2 Dish background

According to the theme, it is crucial to create a dish that aligned with the visualization of how the future of food is going to assemble. Inspired from that, “Dessert or Dessert” is created with the potential scenario of Ireland not having adequate amount of clean water by 2050, when Ireland without water is no longer an imagination.

Ireland's water systems and agricultural viability are increasingly at risk from climate change. The nation is anticipated to experience more severe seasonal water shortages, especially during the summer, as a result of an increase in severe weather events including storms and flooding and a decline in water quality (Citizens, 2025). According to projections, Ireland's population and infrastructure would require about 40% more treated water by 2044 (Irish, 2025). The problem is made worse, though, by the fact that 38% of treated water leaks before it reaches end customers, pointing to structural inefficiencies in the supply chain (Irish, 2025). Summer shortages will put strain on food production and rural life, especially in agriculture, which is highly dependent on water supply. These patterns highlight the pressing need for sustainable, Summer shortages will put strain on food production and rural life, especially in agriculture, which is highly dependent on water supply. These patterns highlight the pressing need for water-efficient, sustainable food system innovations, such as Note-by-Note cuisine and low-water cooking techniques (like sous-vide), which reduce reliance on traditional agricultural inputs while promoting culinary and nutritional results.

2. Goal and Objective

- Create a Note-by-Note Dish from pure ingredients that is in accordance with the theme Food for the Future.
- Examine the potential and explain the scientific interactions between the components.
- Give conclusions and recommendation for future improvement of the dish.

3. Material and Methods

"Dessert or Dessert" - An inspired Irish coffee-based custard creme coming from the concept of water shortage, where the possibility of Ireland being surrounded by no more water is created – even when we still have water, can we consume it?

The dish is composed of three main parts:

1. The floating Ireland, the interlaced rings (inspired by the color of Irish flags) **– Gelling**
2. The corroded soil, land: Making with Irish coffee foam – **Foaming technique**
3. The dessert: Note-by-Note Custard Crème **Sous-vide cooking**

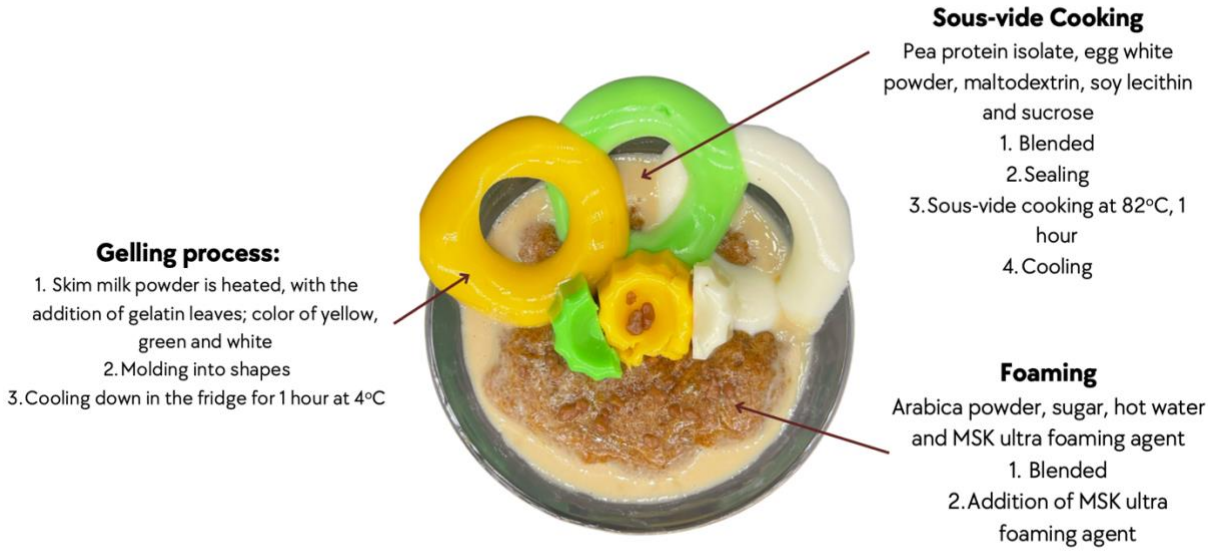


Figure 1. General depiction of Dessert or Dessert with three main components

For weighing dry ingredients, a personal scale is used with clean spoons and containers.

3.1 The floating Ireland, the interlaced rings (inspired by the color of Irish flags) – Gelling

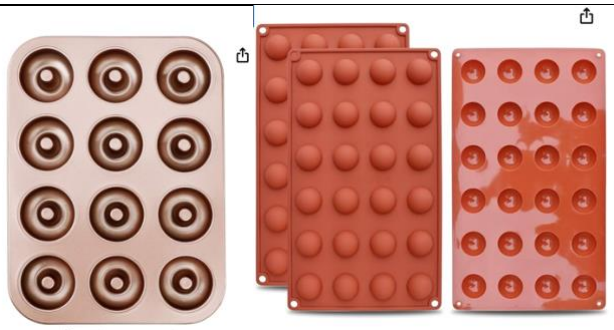
a. Materials and Suppliers

Table 1. Materials for Dessert or Dessert's floating islands

Materials	Supplier	Picture
100g of Skim milk powder	Millac Value	
5 Gelatin leaves	Newforge	
Food colorings - Yellow and Green	Goodall's from Dunne's store (self-prepared)	

b. Equipment

Table 2. Equipment for Dessert or Dessert's floating islands

Equipment	Picture
Saucepan stainless steel 1L	
Sieving	
1 large bowl	
2 molds	

c. Preparation method

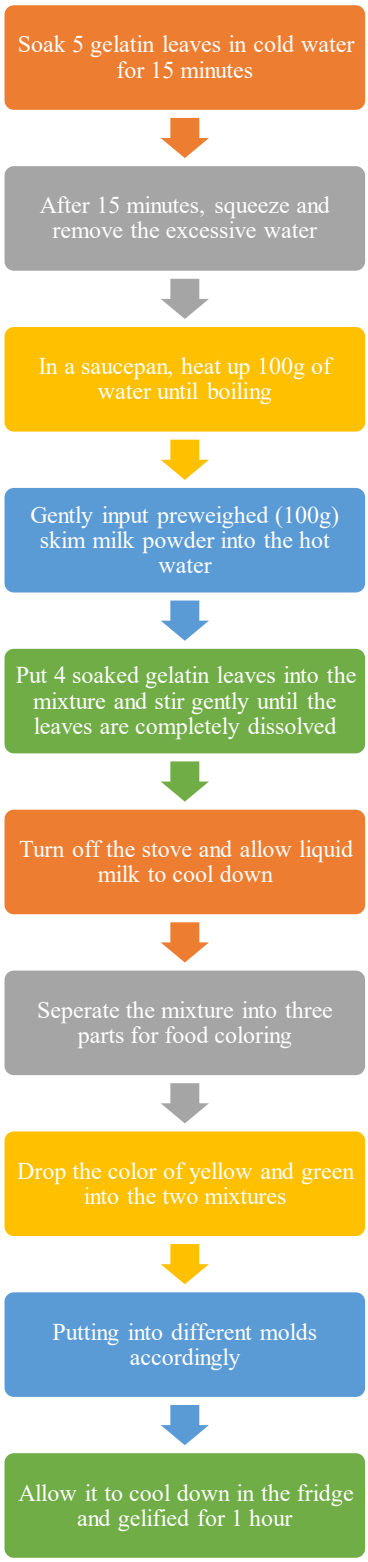


Figure 2. Preparation steps for gelatin floating islands

3.2 The corroded soil, land: Making with Irish coffee foam – Foaming technique

a. Materials and Suppliers

Table 3. Materials and Suppliers for Irish corroded soil

Materials	Supplier	Picture
20g of Arabica Powder	Nestle	
20g of sugar	TU Dublin	
1 drop of Champagne aroma (~0.1ml)	MSK	
2 drops of Mojito Aroma (~0.2ml)	MSK	
8g of MSK Ultra Whip Agent	MSK	

b. Equipment

Table 4. Equipment used for Irish corroded soil

Equipment	Picture
Milk Frother	
Mug	

c. Preparation method

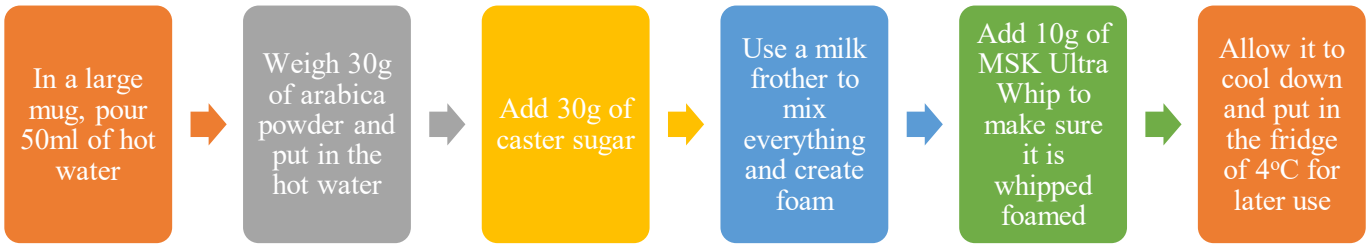


Figure 3. Preparation method of Irish Corroded Soil

3.3 The dessert: Note-by-Note Custard Crème Sous-vide cooking

a. Materials and Suppliers

Table 5. Materials and Suppliers of Custard Crème

Materials	Supplier	Picture
250g of Water	TU Dublin	n/a
20g of Pea Protein Isolate	Bulk	
5g of Egg White Powder	Louis Francois	
20g of Maltodextrin	Sosa	

20g of Soy Lecithin	Sosa	
2 drops of butterscotch flavor (~0.2ml)	MSK	
1 drop of caramel flavor (~0.1ml)	MSK	
20g of Sucrose	TU Dublin	

b. Equipment

Table 6. Equipment of Custard Crème

Equipment	Picture
2 large bowls	
2 tablespoons	
Saucepan stainless steel 1L	
Vacuum seal bag	
Vacuum Pack Machine	
Water Bath	

Thermomix	
Egg Whisk	

c. Preparation Method

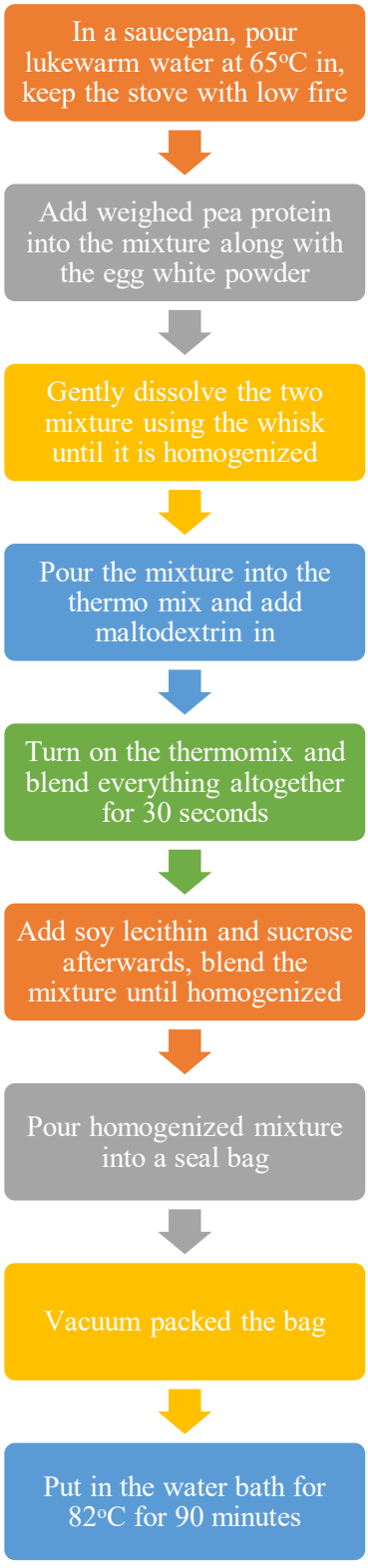


Figure 4. Preparation procedure for Custard Crème

4. Results and Discussion

4.1 The floating Ireland and interlaced rings: Gelling process

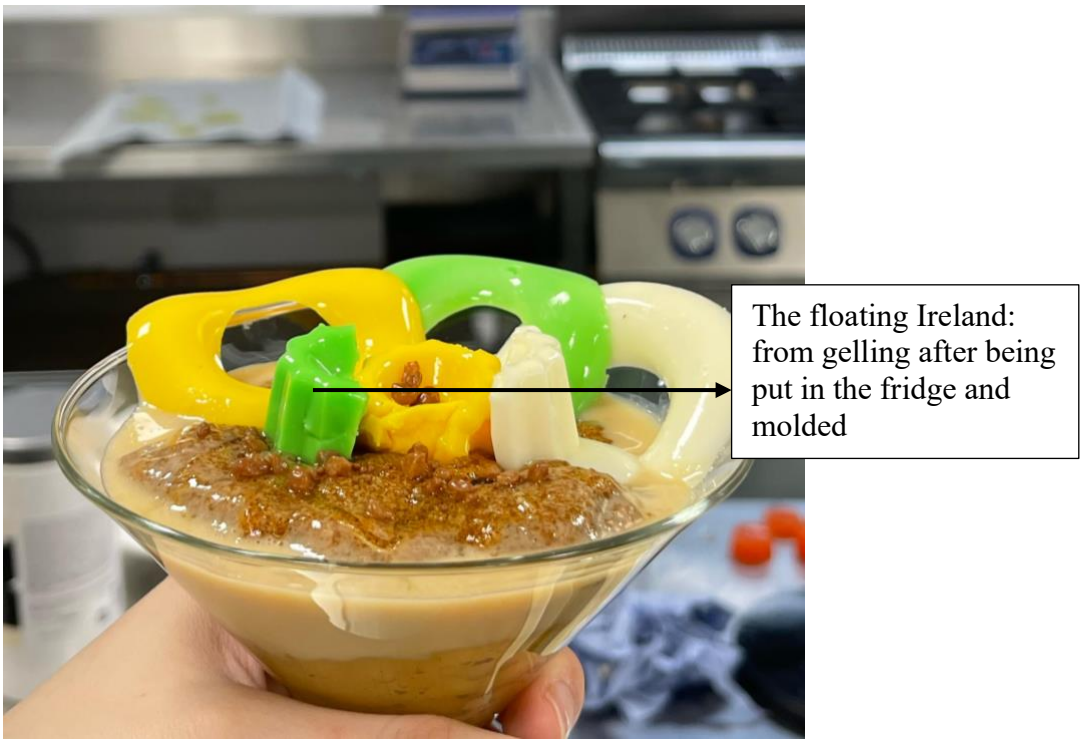


Figure 5. Presentation of Irish floating Ireland and the interlaced rings

Main ingredients: Gelatin leaves, skim-milk powder, water, and food colorings

Gelatin is considered as one of the most used hydrocolloids in the food industry from the past until now. It has wide culinary applications, due to its ability to form thermo-reversible gels that will contribute significantly to the structure and the texture of the dishes, from jellies to foams. Gelatin leaves will give out more consistent attribute to the gelling process, owing to its capability of having uniform hydration (Ishaq et al., 2020). Being derived from collagen, sourced from connective tissues of bovine, collagen is hydrolyzed and purified into the solid, flexible sheets prior to cooking process. Hence, before cooking, the soaking of gelatin leaves in water is highly essential for it to be fully hydrated again. This will initiate the dispersion and gelling process (Schrieber and Gareis, 2007).

The gelling mechanism of gelatin leaves is originated from the hydrolyzed collagen molecules into a network. The first, primary mechanism lies in the transformation of the

molecular from a random state in solution into a helix structure, as the solution cools down, creating a gelling process, also called as a gel matrix (Schrieber and Gareis, 2007).

The phases of gelling can be described as followed:

1. Hydration and dissolution phase

Before the leaves can be able to form a gel, they must be fully hydrated by soaking in cold water. That is the reason why before molding, in the procedure, 5 leaves of gelatin were soaked in cold water. This step enables water to be introduced into the dried protein matrix again, which will initiate the molecules to uncoil and become mobile. Once being hydrated with water; the sheets will be able to dissolve in warm solution. In this point, warm skim milk solution at 50^{o}C. Temperature control is highly crucial for this part because if the temperature exceeds 70^{o}C, gelling degradation might exist as this process is thermo-reversible, and gelling strength will be reduced (Ward and Courts, 1977).

2. Cooling and Gelation Phase

After being mixed with the solution, the gelatin solution can enter their gelation phase at room temperature. The coils begin to reorganize into triple helices, these bond together by hydrogen bonding and hydrophobic interaction, this will create a gel network that traps water and air in its matrix. The final gelling strength depends largely upon gelatin concentration, the presence of solutes such as sugar or acid (Erge and Zorba, 2018). This factor has largely influenced the gelling process while making the floating islands. In the first place, only 3 leaves were put in 100g of skim milk solution, making it possible for the solution to set and gel (Ward and Courts, 1977).

3. Thermo-Reversibility

Gelatin is a thermo-reversible gel, meaning that gelatin gels can melt by reheating and regel when cooling down. Hence, temperature control is highly crucial for this process. The cycle is made due to the interlink between hydrogen bonds, that enable gels to form and deform interchangeably (Gómez-Guillén et al., 2011).

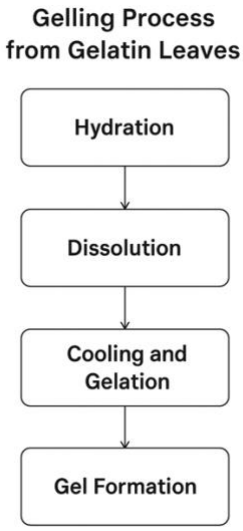


Figure 6. Summary of gelling process using gelatin leaves

In this process, it is highly useful for a precise measurement and proper gelling agent. The interlaced rings with three colors represent the collaboration between the multiple parties of Ireland in creating a nation that is sustainable and green. This is also inspired by the Olympics symbols of the interlink between nations (Rothenbuhler, 1989). In this case, the hope, union, and inclusion of different people on the island of Ireland, with green being associated with the Catholic tradition and Irish nationalism. White is the symbol of peace and harmony and Orange represents the Protestant minority (Alter, 2017). Regardless of the belief, it is one nation of Ireland that will protect its nature and prevent it from being deserted.

4.2 The corroded Irish coffee soil, land – Foaming technique

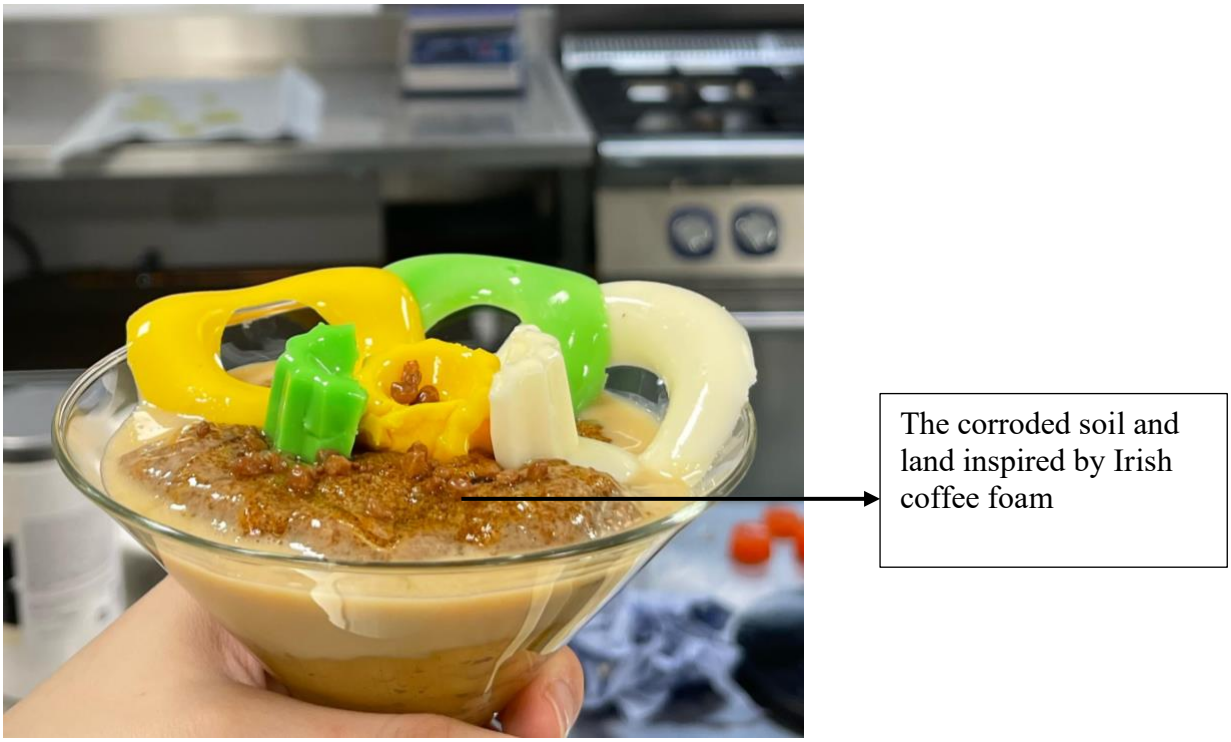


Figure 7. Presentation of Corroded soil – inspired by traditional Irish coffee

Main ingredients: Arabica Powder, Sugar, Hot water, MSK Ultra Whip agent

Foam formation in this relies on surface-active agents, and stabilizers to achieve stable structure. In this case, one of the most important ingredients for the formation of foam is sugar and MSK Ultra Whip agent. Foam is a colloidal system of gas bubbles being dispersed in liquid. Using Arabica coffee, foam is formed because air is incorporated and trapped into the matrix by whipping, with amphiphilic proteins and polyphenols in present in coffee solids, these compounds help to stabilize the interface by reducing surface tension (S and Nisha, 2020). Coffee itself cannot be a stable foam formation. Hence, it enhances the role of sugar in this process of helping to stabilize the foam matrix, without sugar, the liquid between coffee bubbles will degrade quickly and turn into collapse. Sugar, the addition helps improving the formation by acting as an interfacial stabilizer, preventing bubble collapse (Kubbutat et al., 2021). Furthermore, sugar molecules bond with water by hydrogen bonding, which will thicken the continuous liquid phase, slow down the coalescence of bubbles by making the whole solution to be more viscous (Bureiko et al., 2015). Further than

that, sugar limited the tendency of smaller bubbles to shrink, leading to a more uniform and durable foams (Dickinson, 2010).

With MSK Ultra Whip, a professional foaming agent will create synergetic effect with sugar in creating a stable foam. MSK is composed with modified starches, emulsifiers and hydrocolloids and proteins. These have proved to be effective surfactant, and stabilizers (Dickinson, 2009). Its contribution is significant because it will accelerate the incorporation of air into the matrix when whipping. Emulsifiers and stabilizers in Ultra Whip will strengthen the bubble walls, creating the elasticity for the whole matrix without degrading it. Unlike other dairy foams, the use of MSK Ultra Whip can be widely applied for other plant-based process as it does not contain fat or protein from milk. Further from that, Ultra Whip can perform under a wide range of temperature and acidity (Ingredients).

The role of hot water is crucial in this process because it helps to dissolve instant coffee quickly. This is because instant Arabica Powder contained multiple polysaccharide and aromatic compounds that require heat to be fully dissolved. Along with that, the role of hot water also helps sucrose to dissolve faster and quickly stabilize the matrix once foaming because of increased molecular motion. The addition of energy in hot water causes water molecules to move faster and vibrate sucrose, creating the collision between sucrose molecules and water molecules (Thomas et al., 1986). Furthermore, warm water gradually has lower surface tension than cold water, which facilitates the capability of forming bubbles and allowing surfactants (such as sugar) to act (Van Oss, 2006).

The combination of sugar, MSK Ultra Whip, and hot water works in concert to create whipped coffee froth. Sugar enhances mouthfeel, thickens the liquid, and keeps bubbles from bursting. MSK Ultra Whip improves the foam's flexibility, aeration, and structural integrity. Each element is dissolved and activated by hot water, which acts as a physical facilitator to guarantee a homogenous combination and appropriate surface behavior. These ingredients work together to create a very smooth, glossy, and sturdy foam of Irish Coffee Base.

The flavor in this case is added with Mojito and Champagne, since the twist of Irish coffee includes the addition of alcohol to complete the wholeness of flavor (Iomaire, 2012). The

flavor of wine (usually whiskey) but in this case, is replaced by mojito mixed with champagne, provides a warming effect and the complexity in aromas to the drink, which fulfils the complements of coffee and sugar. Further from that, alcohol sense will provoke the aromatic compounds of the final dish (Belitz et al., 2009).

4.3 The dessert: Custard base crème using Sous-vide cooking technique

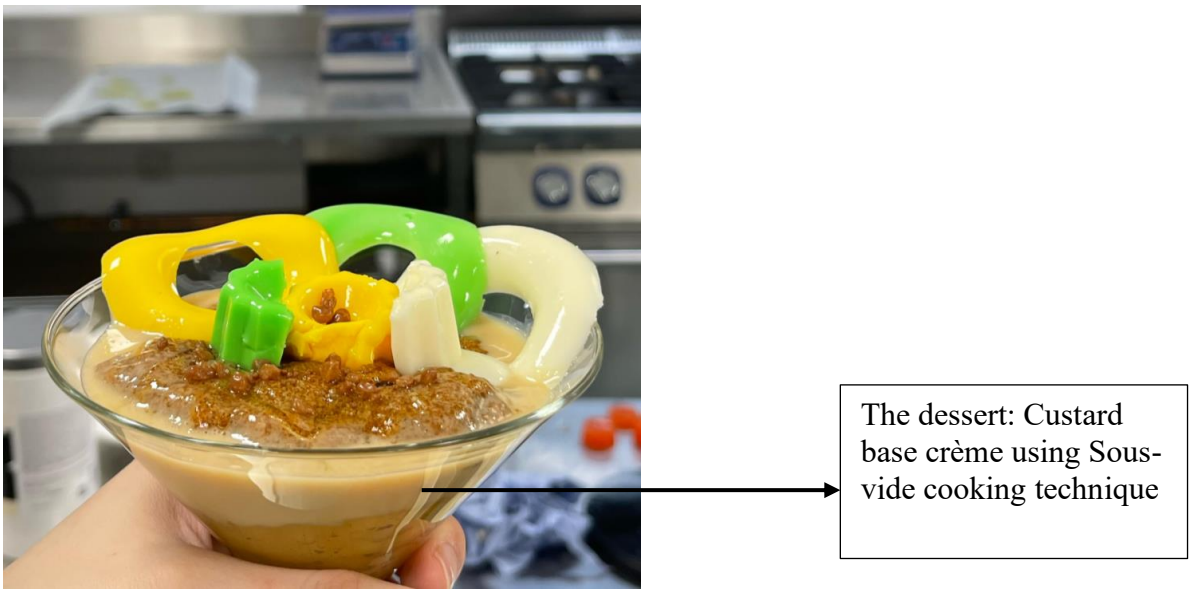


Figure 8. Visual Presentation of Custard Crème

Main ingredients: Water, Egg White powder, Maltodextrin, Soy Lecithin, Pea Protein isolate, Butterscotch Flavor, Caramel Flavor, Sucrose.

Water acts as a primary solvent for the whole formulation of this custard base. In this custard crème, water dissolves and hydrates the dry components from protein to hydrocolloids. This is because Note by Note cooking does not rely on the food matrix, but instead single components, the role of water is even more important, which acts as an aqueous phase of traditional custard recipe. Further than that, due its heat capacity and high boiling point, water can help to facilitate protein denaturation and gelling process for the custard (Belitz et al., 2009). Apart from it, volatile compounds are also added in this process which will be facilitate due to the help of water (McGee, 2007).

In the traditional recipe, custard crème is composed of egg. While doing Note-by-Note method, the role of eggs is replaced with pea protein isolate, egg white powder and soy lecithin.

In terms of protein isolate, it plays an essential role in providing the texture and stability of the whole dish, replicating the function of egg protein in traditional custard. Pea protein is highly effective due to its high concentration in essential amino acids, which is known for promoting gel formation (Lam et al., 2018). When being hydrated in water, pea protein will form cohesive gels that mimic the thickening of egg yolks in traditional custard. The amino acid components of pea protein include globulins such as vicilin and convicllin, and these compounds are excellent in promoting the network by hydrogen bonding, electrostatic interaction, and hydrophobic interaction (Gorissen et al., 2018). This gel-like formation will contribute to the creamy, firm texture of the custard, ensure the custard is in shape and not runny, consistent, and smooth. Furthermore, its combination with soy lecithin, which will be discussed in the following paragraph, will stabilize the custard matrix. The overall texture created by pea protein isolate also enhances the mouthfeel and smoothness, and the color because pea protein isolate has a yellow color, which is similar to the color of mustard (Gorissen et al., 2018).

Egg white powder is also a key component for the formulation of the custard crème, contributing significantly to the stabilization and texture of the custard. Egg whites powder contains albumin, ovalbumin, that accounts for the majority in egg whites, along with other protein like ovotransferrin and ovomucoid (Ma et al., 2013). These proteins are highly important for foaming and gelation capability. In this case, egg whites are powdered and retained by adding water, which will form a stable foam for a custard, this is highly important for making traditional custard. For Note-by-Note cooking, it helps structuring the whole components, preventing the matrix from being too runny. The foaming ability of egg whites help trapping air into the matrix, and the protein of egg white powders is crucial in forming the protein network that bind ingredients altogether (Boreddy and Subbiah, 2016).

Soy lecithin is highly vital as mentioned above, it is one of the main components to act as an essential emulsifier in making note-by-note custard, ensuring the custard to be smooth and

stable in the texture. Lecithin is a phospholipid, which has a hydrophilic head and hydrophobic tail regions, which acts as a perfect stabilizer in balancing the mixture of water and fat in the custard (Scholfield, 1981). In this recipe, it is particularly important because there are several phases within the custard that can be separable (eat white powder, water and pea protein isolate). Not only does it act as a stabilizer, but soy lecithin is also a replacement of traditional egg yolk in the traditional recipe of Note by Note. Finally, it has the ability of enhancing the texture and increase the smoothness (List, 2015). Beyond emulsification, it aids in texture adjustment, guaranteeing that the finished custard has the appropriate consistency and fluidity without any unintended separation or graininess (Xia et al., 2024, List, 2015).

Maltodextrin is a polysaccharide derived from starch and plays several important roles, including in Note-by-Note custard crème. The primary goal of Maltodextrin in this dish is to become a bulking agent, which will add to the final volume of the custard and structure without using dairy or egg yolks (Xiao et al., 2022). Being a digestible carbohydrate, maltodextrin can increase the custard's viscosity, which will result in thicker, consistent viscosity without degrading the flavor of custard (Verma et al., 2018). In custard, maltodextrin will help to modify the texture, create the smooth texture for a traditional custard. Apart from that, maltodextrin can help to stabilize emulsions, preventing the segregation between fats and water. With this, custard can have desired homogeneity and smoothness over time (Xiao et al., 2022). Maltodextrin may also encapsulate tastes, which helps to improve flavor delivery without dominating the custard's flavor character. Because of its neutral flavor, assisting in the binding of moisture and preventing drying, maltodextrin can also enhance texture stability in some applications, keeping the custard creamy and smooth (Alves et al., 2017).

Without using traditional components like eggs and cream, a note-by-note custard crème made with pea protein isolate, egg white powder, soy lecithin, and maltodextrin enables a precise reconstruction of the classic custard texture and flavor. Each of these components plays in simulating the structural, textural, and sensory qualities of custard. Soy lecithin guarantees the smooth, uniform texture, egg white powder stabilizes the custard, pea protein isolate acts as a plant-based thickening and gel-former, and maltodextrin adds to the

mouthfeel and texture while stabilizing the entire mixture. When blended in precisely the right quantities, these ingredients replicate the custard's sensory experience while maintaining the general structure of the base.

Using butterscotch flavor and caramel flavor, it is essential in recreating the complexity of flavor profile of the traditional custard. These synthetic flavor compounds are composed of esters, aldehydes and ketones, which will provoke the rich, sweet and toasty notes in the crème. In traditional custard, Maillard reaction and caramelization are the two main reactions for the note of brown, caramel-like flavors. In this case, it is mimicked by adding these flavors. With butterscotch flavor, it gives of a buttery, toffee-like taste (Ferrão et al., 2022, Martins-Meyer et al., 2013).

Using sucrose is served as a sweetener in custard crème. Sucrose contributes to the overall sweetness of the custard and aid in achieving the final texture. According to Martins et al. (2000), sucrose aids in the note-by-note replication of the sweetness and taste richness that are normally obtained from heating sugar in custard preparation. By adding it, the custard is guaranteed to have the characteristic sweetness of classic recipes.

Sous-vide technique offers a precise and innovative method in preparing custard crème in Note-by note context. Note-by-Note cuisine relies on assembling the texture through isolated molecules, such as pea protein isolate or egg white powder. The traditional methods will risk in unven cooking temperature, over-coagulation or even separation. Sous-vide cooking, enables the highly controlled environment, in this case, 82^{o}C to ensure the consistency between proteins (Baldwin, 2012). In traditional custard, egg proteins coagulate upon heating, forming a network that traps water and resulting in a smooth gel. In NbN cooking, this role is divided among pea protein isolate, egg white powder and maltodextrin. This technique allows synchronization in heat application, providing balanced heat transfer to form a stable matrix (Baldwin, 2012). With the addition of flavor, Sous-vide cooking also enhances the general attributions of these compounds, providing comforting mouthfeel with intensified tastes (Latoch et al., 2023).

These components along with sous-vide cooking technique are combined to create the note-by-note custard crème, which uses the concepts of molecular gastronomy to mimic the

sensory characteristics of classic custard. This creative method gives molecular control over the custard's texture, flavor, and consistency, resulting in a more accurate, sustainable, and adaptable take on the traditional dish. This recipe demonstrates how molecular gastronomy may be used to reassemble and reinterpret classic dishes through the careful selection and manipulation of individual ingredients.

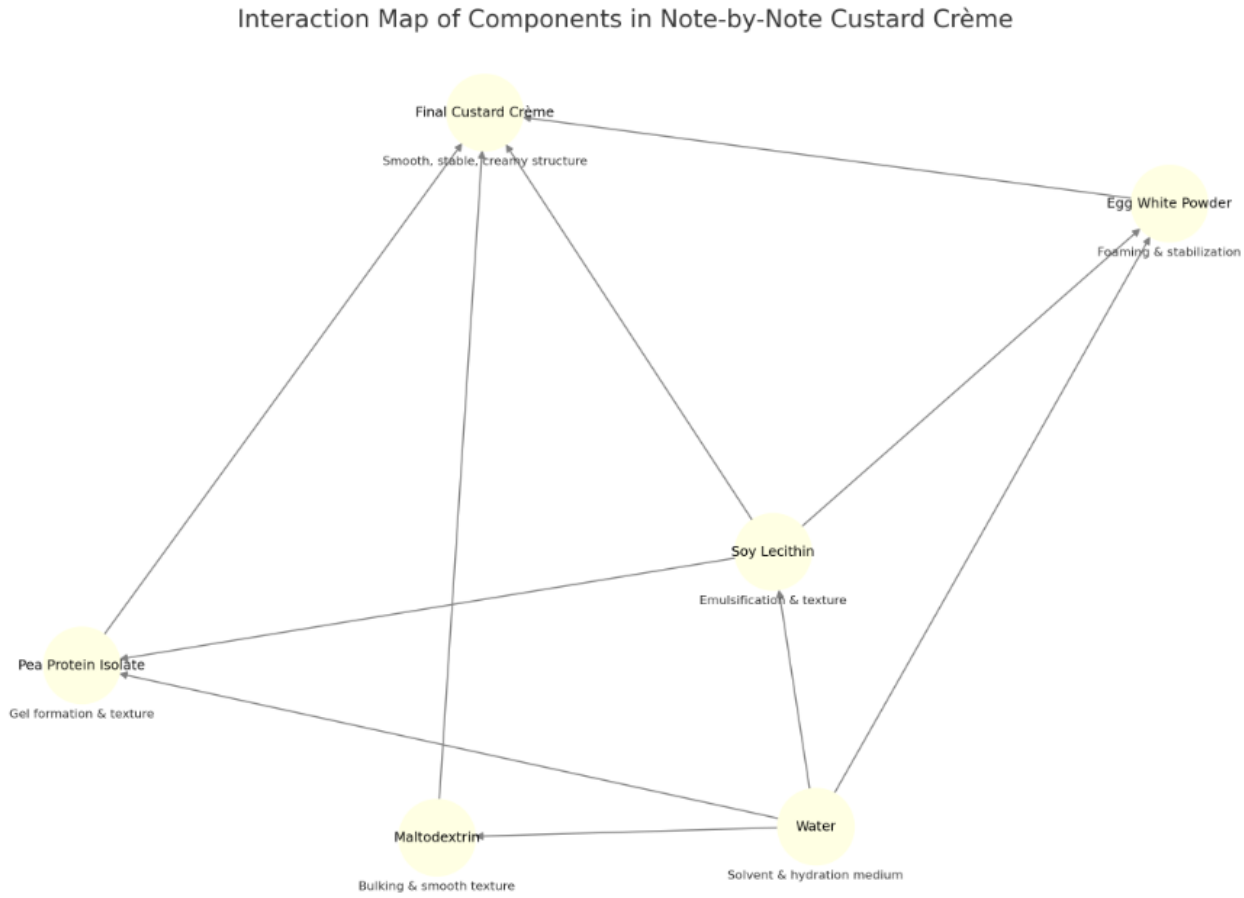


Figure 9. Interaction Map of components in Note-by-Note Custard Crème

4.4 The relationship of "Dessert or Dessert" with Food for the future

A note-by note Custard Crème Concept - The dish is a future-thinking reinterpretation of the traditional custards, using the compounds for molecular function and sensory achievement. The dish is aligned with the theme for these following reasons:

1. Sustainability and Plant-based Efficiency

By using pea protein isolate, soy lecithin and maltodextrin, this will reduce the reliance on animal-based ingredients such as cream or egg yolk. Pea protein, is highly recognized for its low environmental impact and reduced carbon emissions compared to animal proteins (Day, 2013, Poore and Nemecek, 2018).

2. Note-by note precision and scientific control and measurement

By making custard from Note-by-note, it enables precise formulation of textures and flavors and nutritional from food compounds using Sous-vide Cooking at 82°C. This will enable any replication for this dish in the future to tailor dietary needs, flavor preferences and environmental concepts, which will be resourceful for urban food challenges (This, 2013).

3. Reshaping Sensory and Culinary Norms

The name "Dessert or Dessert" has a playful tone that highlights the sensory and experiential shift in future foods. This is in line with the increasing consumer interest in sensory surprise, personalization, and culinary storytelling; all of which are characteristics of contemporary gastronomy and experiential cuisine (Spence et al., 2014).

4. Ingredient stability

By using shelf-stable ingredients such as maltodextrin, egg white powder and soy lecithin will help the food system to be more resilient towards spoilage, refrigeration, or seasonal constraints. This is ideal for future food scenarios that require less storage or constraint living environment (Fund, 2015).

5. Functional and Personal Nutritional need

The dish is having high protein content and is low in fat, with no lactose or cholesterol, making it suitable for diverse nutritional needs. This can be further applied by adding vitamins, prebiotics, and micronutrients, making it a foundation for personalized diets. This is also in accordance with the theme of this year that personalized diets are enhanced (Mathers, 2019).

5. Conclusion and Recommendation

"Dessert or Dessert" is a Note-by-Note dish that visualizes the future of Ireland without clean water, or being deserted if not being preserved and sustained in a proper way. Having three main components: the interlaced rings made with gelatin, the Irish coffee foam representing the corroded soil and the surrounding dessert with custard base, the aim of the dish is to promote the technique, combining pure compounds and ingredients to raise awareness among people about the climate issues that we are witnessing. Further from that, the dish also shows the potential of recreation by using pure compounds, which enhances the arts of molecular gastronomy. This dish is closely related to the theme "Food for the Future" due to its precision in technique, using plant-based alternative such as MSK whipping agent, pea protein isolate or soy lecithin.

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General Timeline for Molecular Gastronomy Dish Development

	Week 1 (18/3/2025)	**Week 2** (24/03/2025)	**Week 3** (31/03/2025)	**Week 4** (07/04/2025)
Component 1: The floating Ireland, the interlaced rings (inspired by the color of Irish flags) – Gelling		Adjustment of gelatine concentration		
Component 2: The corroded soil, land: Making with Irish coffee foam – Foaming technique			Adding MSK Ultra Whip and observe the foaming performance	
Component 3: The dessert: Custard base crème using Sous-vide cooking technique	Important part, made of the most components, high priority of accumulation			
Overall dish assemble				Final dish presentation Photography taken

APPENDIX

WEEKLY LOGBOOK 1

STUDENT NAME: Giang Yen Tho Nguyen

FOOD PRODUCT: Dessert or Dessert – Note by Note dish

WEEK NO: 1 DATE: **18/03/2025**

1. Weekly Aims and Objectives

- Finding necessary ingredients
- Resembling the core of the dish: Dessert Custard Crème

2. Materials and Method (Ingredients, Equipment and Method)

Ingredients	Equipment	Method
250g of Water 20g of Pea Protein Isolate 5g of Egg White Powder 20g of Maltodextrin 20g of Soy Lecithin 0.2ml of Butterscotch flavor 0.1ml of Caramel flavor 20g of Sucrose	Large bowl Table spoon Saucepan stainless steel Vacuum seal bag Vacuum Pack Machine Water bath Thermomix Egg Whisk	• In a saucepan, pour lukewarm water at 65°C in, keep the stove with low fire • Add weighed pea protein into the mixture alongwith the egg white powder • Gently dissolve the two mixtures using the whisk until it is homogenized • Pour the mixture into the thermomix and add maltodextrin in • Turn on the thermomix and blend everything altogether for 30 seconds • Add soy lecithin and sucrose afterwards, blend the mixture until homogenized • Pour homogenized mixture into a seal bag • Vacuum packed the bag • Put in the water bath for 82°C for 90 minutes

3. Results and discussion

Observation 1: Without the use of thermomixer, the mixture cannot be homogenized properly.

Observation 2: Temperature should be regulated perfectly because it might cause segregation of protein when being denatured.

Observation 3: Cool down in the fridge enhances the flavor when tasting.

4. Conclusions

- The use of water, pea protein isolate and egg white powder is necessary for this process because it mimics eggs in the traditional recipe.
- Butterscotch and caramel enhances the taste of the crème.

5. Recommendations for following week

Next week will be focused on the next part, gelatin interlaced rings and the floating island using gelling technique.

6. Ingredients required for the following week

Skim milk, gelatin leaves, food colorings

WEEKLY LOGBOOK 2

STUDENT NAME: Giang Yen Tho Nguyen

FOOD PRODUCT: *Dessert or Dessert – Note by Note dish*

WEEK NO: 2 DATE: **24/03/2025**

1. Weekly Aims and Objectives

- Finding necessary ingredients
- Resembling the gelatin interlaced rings

2. Materials and Method (Ingredients, Equipment and Method)

Ingredients	Equipment	Method
100g of skim milk powder Food Coloring 5 gelatin leaves	Saucepan stainless steel 1L Sieving One large bowl 2 molds	• Soak 5 gelatin leaves in cold water for 15 minutes • After 15 minutes, squeeze and remove the excessive water • In a saucepan, heat up 100g of water until boiling • Gently input preweighed (100g) skim milk powder into the hot water • Put 4 soaked gelatin leaves into the mixture and stir gently until the leaves are completely dissolved • Turn off the stove and allow liquid milk to cool down • Separate the mixture into three parts for food coloring • Drop the color of yellow and green into the two mixtures • Putting into different molds accordingly • Allow it to cool down in the fridge and gelified for 1 hour

3. Results and discussion

Observation 1: Gelatin concentration determined the strength and the ability of gelling

Observation 2: Low content of gelatin leaves or high amount of water can result in low ability of gelling after being put in the fridge.

4. Conclusions

Gelatin leaves help gelling the matrix, with the right concentration and proper amount of water. The ratio between water and skim milk should not be imbalanced because too much water can degrade the ability of gelling.

5. Recommendations for following week.

Next week will be focused on the next part, foaming using Arabica Powder and MSK Ultrawhip.

6. Ingredients required for the following week

Arabica Powder, Sucrose, Water and MSK Ultra Whip

WEEKLY LOGBOOK 3

STUDENT NAME: Giang Yen Tho Nguyen

FOOD PRODUCT: *Dessert or Dessert – Note by Note dish*

WEEK NO: 3 DATE: **31/03/2025**

1. Weekly Aims and Objectives

- Finding necessary ingredients
- Resembling foamed, corroded Irish soil

2. Materials and Method (Ingredients, Equipment and Method)

Ingredients	Equipment	Method
20g Arabica Powder 20g of Sucrose 50g of Hot water 8g of MSK Ultra Whip	Milk Frother Mug	• In a large mug, pour 50ml of hot water • Weigh 30g of arabica powder and put in the hot water • Add 30g of caster sugar • Use a milk frother to mix everything and create foam • Add 10g of MSK Ultra Whip to make sure it is whipped foamed • Allow it to cool down and put in the fridge of 4^{o}C for later use

3. Results and discussion

Observation 1: MSK Ultra Whip enhances the whipping and foaming ability

Observation 2: With the aid of sugar, the foam can be made easier

4. Conclusions

With sugar, MSK Ultra Whip the performance of the whip can be more stable without degrading.

5. Recommendations for following week.

Visualization and input the components together for the final dish.

6. Ingredients required for the following week

All ingredients from week 1 to week 3.

WEEKLY LOGBOOK 4

STUDENT NAME: Giang Yen Tho Nguyen

FOOD PRODUCT: *Dessert or Dessert – Note by Note dish*

WEEK NO: 4 DATE: **07/04/2025**

1. Weekly Aims and Objectives

- Resemble all components together and create the final dish
- Take picture of the final product

2. Materials and Method (Ingredients, Equipment and Method)

Ingredients	Equipment	Method
- 20g Arabica Powder - 20g of Sucrose - 50g of Hot water	**1. Corroded Soil and Land - Foaming** - Milk Frother - Mug	**1. Floating island - Foaming** In a large mug, pour 50ml of hot water • Weigh 30g of arabica powder and put in the hot water • Add 30g of caster sugar

- 8g of MSK Ultra Whip - 250g of Water - 20g of Pea Protein Isolate - 5g of Egg White Powder - 20g of Maltodextrin - 20g of Soy Lecithin - 0.2ml of Butterscotch flavor - 0.1ml of Caramel flavor - 20g of Sucrose - 100g of skim milk powder - Food Coloring - 5 gelatin leaves	**2. Dessert Custard Crème** - Large bowl - Table spoon - Saucepan stainless steel - Vacuum seal bag - Vacuum Pack Machine - Water bath - Thermomix - Egg Whisk **3. Gelatin Irish Island** - Saucepan stainless steel 1L - Sieving - One large bowl - 2 molds	• Use a milk frother to mix everything and create foam • Add 10g of MSK Ultra Whip to make sure it is whipped foamed • Allow it to cool down and put in the fridge of 4^{o}C for later use **2. Dessert Custard Crème** • In a saucepan, pour lukewarm water at 65^{o}C in, keep the stove with low fire • Add weighed pea protein into the mixture alongwith the egg white powder • Gently dissolve the two mixtures using the whisk until it is homogenized • Pour the mixture into the thermomix and add maltodextrin in • Turn on the thermomix and blend everything altogether for 30 seconds • Add soy lecithin and sucrose afterwards, blend the mixture until homogenized • Pour homogenized mixture into a seal bag • Vacuum packed the bag • Put in the water bath for 82^{o}C for 90 minutes **3. Gelatin Irish island** • Soak 5 gelatin leaves in cold water for 15 minutes • After 15 minutes, squeeze and remove the excessive water • In a saucepan, heat up 100g of water until boiling • Gently input preweighed (100g) skim milk powder into the hot water • Put 4 soaked gelatin leaves into the mixture and stir gently until the leaves are completely dissolved • Turn off the stove and allow liquid milk to cool down

		• Separate the mixture into three parts for food coloring • Drop the color of yellow and green into the two mixtures • Putting into different molds accordingly • Allow it to cool down in the fridge and gelified for 1 hour

3. Results and discussion

- Finding the ingredients in the final day takes longer time that expected.
- The assemble of components requires dedication and effort.

4. Conclusions

Note by Note dish is finished with three main components, indicating the main issue that Ireland is having and the potential scenario in the future.

5. Recommendations for following week

n/a

6. Ingredients required for the following week

n/a