

## CHAPTER III

### METHODS

#### 3.1. Time and Place

Culinary Innovation and New Product Development start making product in march 2023 at Apartement Pakuwon Mall, and was done in July 2023 at baking pastry kitchen, Ottimmo International Surabaya.

#### 3.2. Ingredients and Utensils

The ingredients and utensils of this study are shown in the table 3.2.1 and 3.2.2

**Table 3.2.1** The ingredients of Pie Crust

No	Ingredient	Quantity	Used for
1.	Mung bean flour	40 gr	Main ingredient and flour substitute
2.	Red bean flour	47 gr	Main ingredient and flour substitute
3.	Sugar	12 gr	Sweetener
4.	Butter	40 gr	Fat in dough
5.	Egg yolk	7 gr	Emulsifier and dough binder
6.	Water	20 ml	Extra liquid
7.	Salt	¼ tsp	Seasoning
8.	Egg white	2 gr	Binding agent

**Table 3.2.2** The ingredients of Pie Filling

<b>No</b>	<b>Ingredient</b>	<b>Quantity</b>	<b>Used for</b>
1.	Milk	125 ml	Main ingredient filling that makes it taste creamy
2.	Granulated sugar	15 gr	Sweetener
3.	Cornstarch	10 gr	Thickener
4.	Whipped cream	100 ml	Firm dough texture maker
5.	Vanilla bean	¼ tsp	Add extra flavour and fragrance
6.	Longan	300 gr	Toppings and garnishes final look
7.	Egg yolk	1 egg	Provide creamy texture

1. Ingredients for Pie crust

- 40 gr Mungbean flour
- 47 gr Red bean flour
- 12 gr Sugar
- 40 gr Butter
- 7 gr Egg yolk
- 2 gr white egg
- 20 ml Water
- ¼ tsp Salt

2. Ingredients for Pie filling

- 125 ml Milk
- 15 gr Granulated sugar
- 10 gr Corn starch
- 100 ml Whipped cream
- ¼ tsp Vanilla bean
- 1 Egg yolk
- 300 gr Longan

**Table 3.3** List of utensils

<b>No</b>	<b>Utensils</b>	<b>Function</b>
1.	Stainless Bowl	Container for mixing all ingredients
2.	Measuring Spoon	Used to measure the ingredients
3.	Baking Tray	Container for pie crust when it goes into oven
4.	Silicon Spatula	To mix filling dough
5.	Fork	To pierce the pie crust dough before put it in the oven
6.	Sauce Pan	To cook the pie filling dough
7.	Knife	To cut the sleeves and trim the edges of the pie crust
8.	Rolling Pin	To flatten the dough crust
9.	Mixer	To mixer filling dough
10.	Scale	To weigh ingredients
11.	Oven	For bake pie crust
12.	Mould	Pie crust mould
13.	Cutting board	Place mate while cutting ingredients
14.	Wooden spatula	To mix pie crust dough
15.	Measuring cup	Measuring liquid ingredients
16.	Marbles	Ballast for the pie dough does not pile up

### **3.3. Processing Methods**

The processing method of this study are presented below :

Pie crust method :

1. Mix the red bean flour, mung bean flour and sugar in a bowl
2. Add the fat and rub it in until resemble a fine breadcrumb
3. Beat the egg yolks with water and salt. Add to the flour mixture. Mix until completely absorbed
4. Roll to a half cm thin and cover the pie tin, poke lightly with forks
5. Blind bake the crust
6. Bake in a 175°C oven for about 15-18 minutes

Pie filling method:

1. In a heavy saucepan, bring the milk and add vanilla bean to just a boil.
2. With a mixer, beat the egg yolks and sugar in a stainless bowl, stir in the cornstarch. Beat until perfectly smooth.
3. Temper the egg mixture by slowly beating in the hot milk in a thin stream.
4. Return the mixture to the heat and bring to a boil, stirring constantly. When the mixture come to a boil and thickens, remove from the heat.
5. Cover and let it cool down completely. Once cold, beat well until perfectly smooth.
6. Beat the whipping cream and fold into the cold pastry cream mixture.
7. When the pie crust was cold, add three tablespoons of cream filling to the pie
8. Helve the longan then put on top of the pie as a topping

### 3.4. Flow Chart

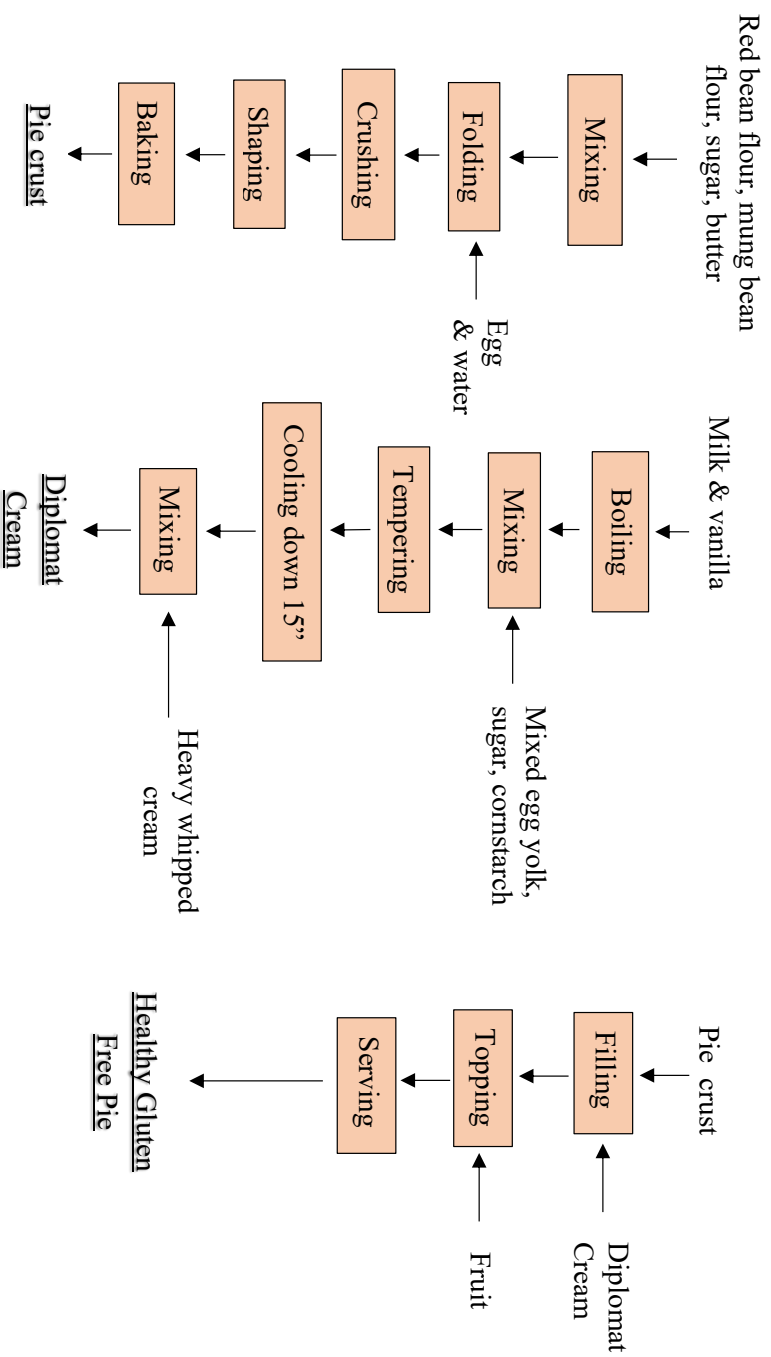


Figure 3.1 Flow Chart Gluten Free Pie