

CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

Soybean cupcake has a decent amount nutritional value when it comes to “Snacks”. Soybean is one of the cheapest source of protein, since soybeans contain no starch they are a good source of protein. Soybean is the most commonly used protein supplement in dairy rations and is the standard used for determining the value of other supplements. Soybeans could be beneficial component of a normal healthy diet, as they are low in saturates, provide a source of fiber, and contain a wide range of other nutrients (Da Silva et al., 2020). Soya beans are also the main source of phytoestrogens in the diet. In addition, soya beans may have a number of potential health benefits. For infants that has lactose intolerant, soy based infant milk can be an invaluable alternative to cows' milk-based. For older children and adults who are allergic to cows' milk or intolerant to lactose, drinks and other foods made from soya can be very important components of the diet, helping to ensure that nutrient intakes are adequate for the maintenance of health (Nout, 2015).

Mocaf flour, also known as modified cassava flour is a type of flour made from cassava roots. It is gaining popularity due to its alternative to wheat flour of its gluten free properties and nutritional value. Mocaf flour is known for its high calcium and fiber contain, making it a nutritious alternative to traditional flour. Nutritional content of mocaf is almost equal with wheat flour, which makes mocaf could be a substitutes for wheat flour. The energy content of 357 calories mocaf is similar to wheat flour that is 365 calories. The carbohydrate, protein, fat, iron, calcium and phosphorus content of mocaf is 88.6gr, 0.19gr, 0.02gr, 1.58mg, 20.0mg and 7.0mg (Hasrini et al., 2021).

4.2 Nutrition Fact

4.2.1 Nutrition table

The nutritional value of Soybean Flour:

Table 4. 1 Nutrition value of soybean flour

Calorie (kcal)	357
Protein (g)	12.35 gr
Fiber (g)	4.2 gr
Fat (g)	6.4 gr
Carbohydrate (g)	11.05 gr

(Nout, 2015).

Table 4. 2 Nutrition value of mocaf flour

Nutrition	Total/100gr
Ash	1.3 gr
Calcium	60 mg
Carbohydrate	85.0 gr
Fat	0.6 gr
Food fiber	6.0 gr
Iron	15.8 mg
Protein	1.2 gr
Vitamin C	2 mg
Zinc	0.6 mg
Sodium	11.9 mg

(Hasrini et al., 2021).

4.2.2 Nutrition Calculation

Researched and collected some of Soybean nutritional value in average per 100 gr of soybean (Da Silva et al., 2020). Results have shown

that soybean has a plenty good amount of proteins and carbohydrate, which mean it could benefit for those who are aware of their healthiness.

Table 4. 3 Nutritional value of ingredients used in soybean cupcakes

Ingredients	Calories (cal)	Carbohydrate (g)	Protein (g)	Fat (g)	Sugar (g)	Fiber (g)	Sodium (g)
Soybean flour (275 gr)	553.0	23.1	25.7	13.1		9.0	
Mocaf flour (50 gr)	52.1	43.5		0.3		3.0	
Baking powder (3 tsp)	6.1	3.3					363 mg
Salt (2 tsp)							1200 mg
Stevia (2 tsp)		1					
Milk (240 ml)	350	24	24	24	12		
Vegetable oil (120 ml)	712			100			
Vanilla extract (1 tbsp)	22.2				1.5		
Water (240 ml)							
Eggs (2 pieces)	144	1	12	10	0.2		
Heavy Cream (230 gr)	750	6.76	6.8	85.9	6.9		64.3 mg
Stevia		1					

(2 tbsp)						
Vanilla extract	10.1				0.4	
(1 tsp)						
Total	2,579.5	103.66	68.5	233.3	21	1,627.3

4.2.3 Nutrition Label

Nutrition Facts	
10 servings per container	
Serving size	1 Cup (150g)
Amount Per Serving	
Calories	240
% Daily Value*	
Total Fat 12g	15%
Saturated Fat 3g	15%
<i>Trans Fat</i> 0g	
Cholesterol 130mg	43%
Sodium 50mg	2%
Total Carbohydrate 25g	9%
Dietary Fiber 15g	54%
Total Sugars 0g	
Includes 10g Added Sugars	20%
Protein 8g	16%
Not a significant source of vitamin D, calcium, iron, and potassium	
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

Figure 4. 1 Nutrition facts

4.3 Food safety and packaging

4.3.1 Processing and Storage Temperature

Soybean cupcake has several cooking steps that consist of Creaming method, pouring and mixing (folding method). This steps will require some hard skills and also soft skills. First step comes with beating the egg and added stevia using a hand mixer until the its “Foamed”. This process is called creaming method, were by beating the eggs using a

mixer could create a small bubbles or air pocket into the mixture. This process needs to be done properly or else the cupcake would collapse after the addition ingredients from the dry ingredients.

After the creaming method has been done, we move to phase 2. Where we add the dry ingredients and also liquid ingredients such as soybean flour, mocaf flour, milk, vegetable oil and etc. On this process we need to pour ingredients by turns, so for example we insert some of the dry ingredients that add on the liquid ingredients after it. We do it this way so that the batter can be perfectly mixed.

Moving to phase 3 baking. After finished adding all the ingredients we move to the cooking process which is baking. Pour the batter into a cup liners, make sure not to overfill or else it would spilled during the baking process. Bake for around 15-20 min at 180c. After finished put on to the cooling rack and soybean cupcake is ready to be served.

4.3.2 Self Life

Cupcakes moisture content is not too high but not too low neither. It's moisture content stand around 30-33%. Which still attract microbes to makes the cupcake turn into moldy and produces bad scent. Cupcake will last 20-30 hours in a room temperature and could last 24-48 hours in fridge for the best results.

4.3.3 Product Packaging

Food packaging is essentials when it comes to food. Food packaging comes in handy from protecting the food from getting a physical damage, airborne microbes which can lead to impacting bad quality to the food. Although sometimes food packaging could be pricey as well. Cupcakes is categorized as “Snacks”, as a new brand entering

the FNB world sorting a certain budget is needed. Going for a cheap with good quality build could be a good thing to do.

Thinwall could get the job done since it's low cost and can retain the moisture of cupcake. Although by using a thinwall we would lose the aesthetic from the physical appearance, thinwall is made from polypropylene plastic which is good for any kind of food. Polypropylene thinwall have a dimension of 13.5 cm for the base, 7.5 cm of height and 16.5 cm for the surface cover.



Figure 4. 2 Polypropylene plastic thinwall



- ✓ Gluten free
- ✓ High in protein
- ✓ Low sugar

Ingredients

Soybean, Moca^f, Baking powder, Salt, Stevia, Milk, Veg oil, Vanilla extract, Eggs, Water

Nutrition Facts

10 servings per container

Serving size 1 Cup (150g)

Amount Per Serving

Calories 240

	% Daily Value*
Total Fat 12g	15%
Saturated Fat 3g	15%
Trans Fat 0g	
Cholesterol 130mg	43%
Sodium 50mg	2%
Total Carbohydrate 25g	9%
Dietary Fiber 15g	54%
Total Sugars 0g	
Includes 10g Added Sugars	20%
Protein 0g	18%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



Figure 4. 3 Logo

4.4 Financial Aspects

4.4.1 Product cost (Variable Cost, Overhead Cost, Fixed Cost)

Product cost is calculated based on the total cost per week. That consist of Labour cost, raw material cost, packaging cost and utility cost. The labour cost is counted by weekly working days, which are 7 days per week and 31 days in total. As for the raw material is counted as 5 recipes per day or 155 recipes per month, Which are 50 portions per day or 1,550 portions per month.

1. Start-up Capital

Table 4. 4 Start up capital

Tools and Equipment	Quantity	Price (/unit)	Sub Total
Spatula	5	Rp 20,000	Rp 100,000
Hand Mixer	3	Rp 150,000	Rp 450,000
Large Mixing Bowl	10	Rp 9,000	Rp 90,000
Digital Scale	2	Rp 180,000	Rp 360,000
Frying Pan	2	Rp 200,000	Rp 400,000
Oven	1	Rp 1,000,000	Rp 1,000,000
Brass	2	Rp 100,000	Rp 200,000
TOTAL			Rp 1,600,000

2. Labour Cost

Table 4. 5 Labour cost

Occupation	Personel	Salary (/week)	Sub total
Cook	1	Rp 1,000,000	Rp 4,000,000
Cook assistant	1	Rp 800,000	Rp 3,200,000
TOTAL			Rp 7,200,000

3. Packaging Cost

Table 4. 6 Packaging cost

Packaging	Quantity	Price (/unit)	Sub Total
Thinwall	20 pcs	Rp 1,000 (/pc)	Rp 20,000
Plastic Bag	20 pcs	Rp 30,000(/50pcs)	Rp 12.000
TOTAL (/day)			Rp 35,200
TOTAL (/month)			Rp 1,091,200

4. Utility Cost

Table 4. 7 Utility cost

Facility	Quantity	Price (/unit)	Sub Total
Water	800 L	Rp 2,000(/m3)	Rp 1,500
Electricity	12 kWh	Rp 1,500 (/kWh)	Rp 15,000
TOTAL (/day)			Rp 16,500
TOTAL (/month)			Rp 511.500

5. Raw Material Cost

Table 4. 8 Raw material cost

Raw Materials	Quantity	Price(/unit)	Sub Total
Soybean	1,375 gr	Rp 5,000 (250g)	Rp 35,000
Mocaf Flour	250 gr	Rp 3,000 (250g)	Rp 22,000

Baking powder	150 gr	Rp 2,000 (50g)	Rp 12,000
Salt	150 gr	Rp 2,000 (50g)	Rp 12,000
Stevia	150 gr	Rp 4,000 (50g)	Rp 10,000
Milk	1500 ml	Rp 10,000 (500ml)	Rp 30,000
Vegetable oil	600 ml	Rp 8,000 (100ml)	Rp 20,000
Vanilla extract	150 ml	Rp 6,000 (50ml)	Rp 18,000
Eggs	1 kg	Rp 15,000 (1kg)	Rp 30,000
Water	1000 ml	Rp 2,000 (100ml)	Rp 20,000
Heavy whipped cream	1000 ml	Rp 15,000 (500ml)	Rp 35,000
TOTAL (/day)			Rp 244,000
TOTAL (/month)			Rp 7,654,000

6. Rent Cost

Table 4. 9 Rent cost

Facility	Size	Price	Sub Total
Land	15 m * 15 m	Rp 2,500,000	Rp 2,500,000
Building	15 m * 10 m	(/month)	
TOTAL (/month)			Rp 2,500,000

7. Total Cost

Fixed Cost = Labour Cost and Rent Cost

Variable Cost = Raw Material Cost, Packaging Cost and Utility Cost

Total Cost = Labour + Raw material + Packaging Cost + Utility Cost

= Rp 18,461,700

4.4.2 Selling Price

Product Price = Total cost (/month / Total Product Units)

= Rp 11,910.77

Product Selling Price = Product Price + (Product price * Profit Percentage)

$$= \text{Rp } 11,910.77 + (11,910.77 * 30 \%)$$

$$= \text{Rp } 11,910.77 + \text{Rp } 3,753,23$$

$$= \text{Rp } 15,500$$