CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

The nutritional value of not-fried mini popiah roll depends on its ingredients. The main ingredients of mini popiah roll are all purpose flour and riceflour. All-purpose flour is a good source of iron and calcium, as it's made up of endosperm of wheat grains. That contains most of the nutritional value, including vitamin B3 (niacin), vitamin B2 (riboflavin), thiamine, and folic acid. It is high inprotein, fibre, fat, and iron, which play a key role in your overall health.

Rice flour is made from milled rice. It can be made from either brown riceor white rice. The flavor of rice flour is neutral and considered hypoallergenic andeasily digestible. Brown rice flour contains protein, vitamin B6, and various minerals. White rice flour contains protein and rich in phosphorus, potassium, and vitamin B12.

4.2 Nutrition Fact

4.2.1 Nutrition Table

The nutritional value of All-Purpose Flour as follows:

Table 4. 1 Nutrition Value of All-Purpose Flour per 100 grams

Calorie (kcal)	364
Saturated fat (g)	0.2
Cholestrol (mg)	0
Sodium (mg)	2
Potassium (mg)	107
Dietary fiber (g)	2.7

Sugar (g)	0.3

Per 100 grams of all-purpose flour contains 364 kcal. It is a mixture of hard wheat, which contains more gluten and soft wheat are ground together to make all-purpose flour. All-purpose flour is versatile, as it contains an average amount of protein. The more protein in the wheat,the more gluten is formed. Gluten provides elasticity to the dough.

Table 4. 2 Nutrition Value of Rice Flour per 100 grams

Calorie (kcal)	366
Saturated fat (g)	0.386
Polyunsaturated fat (g)	0.379
Monounsaturated fat (g)	0.442
Dietary fiber (g)	2.4
Sugar (g)	0.12
Protein (g)	5.95
Calcium (mg)	10
Iron (mg)	0.35
Potassium (mg)	76

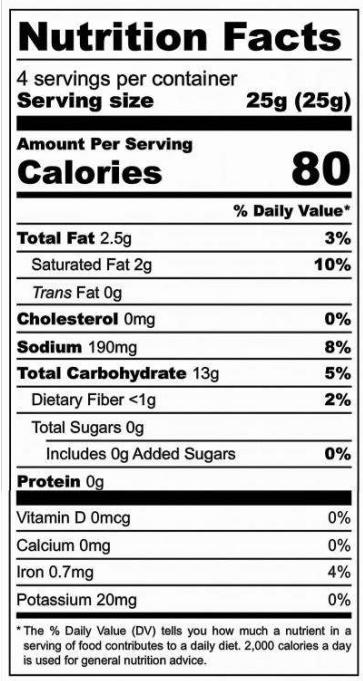
Per 100 grams of rice flour contains 366 kcal. Starch is the most important fraction of this flour and is detrimental to its functionally in foodsystems such as baking, noodles, crackers, dough, and many others. It is also gluten-free and allergen-free. It has a high fiber that has ability to boost metabolism. Rice flour frequently used in Asian cooking due to its thickening properties and ability to add chewy and stretchy textures to various dishes.

4.2.2 Nutrition Calculation

Table 4. 3 Nutrition Value of Mini Popiah Roll per 100 grams

Ingredients	Calories (kcal)	Protein(g)	Carbohydrate(g)	Fat (g)	Fiber(g)	Sugar(g)	Sodium (mg)
All-Purpose Flour (13g)	46	0	9.2	0.2	0.4	0	0
Rice flour(4g)	15	0.2	3.3	0.1	0.1	0	0
Water (31g)	0	0	0	0	0	0	1.2
Salt (1g)	0	0	0	0	0	0	190.0
Dried parsley(1g)	0	0	0.1	0	0	0	0.6
Garlic powder (1g)	3	0.1	0.6	0	0.1	0	0.5
Coconut oil(2g)	20	0	0	2.2	0	0	0
TOTAL/ 4 servings	**84**	**0.4**	**13.2**	**2.5**	**0.6**	**0**	**192.3**

4.2.3 Nutrition Label



Nutrition Facts

4 servings per container

Serving size **25g (25g)**

Amount Per Serving

Calories **80**

	% Daily Value*
Total Fat 2.5g	**3%**
Saturated Fat 2g	**10%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 190mg	**8%**
Total Carbohydrate 13g	**5%**
Dietary Fiber <1g	**2%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0.7mg	4%
Potassium 20mg	0%

* 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 Fact of Mini Popiah Roll

4.3 Food Safety and Packaging

4.3.1 Processing and Storage Temperature

The processing of making this snack is first of all, the spring roll pastry dough will be directly made in large quantities so that it can be usedas ingredients stock. After the dough is made and has become spring roll pastry, these spring roll pastries will be rolled and cut into small pieces. Then this spring roll pastry will be fried in a large airfryer oven at 160 degrees celcius for 25 minutes. Once cooked, the popiah will be cooled toroom temperature and seasoned.

Popiah roll is a type of crispy, crunchy, savory, and dry snack. A good storage temperature for this snack is to keep it in a dry and cool placeat room temperature or you can also put it in the refrigerator so that it stayscrunchy and last long. If the snack is consumed and doesn't run out, it canbe stored again by closing the zip packaging tightly so that no air gets in. This snack can be stored for several months if not

consumed immediately.

4.3.2 Shelf Life

Mini popiah roll is categorized as dry food, like chips in general. The best-by date on crackers is usually 6-9 months after the packaging date. It can still ate past that date, but the crackers may have lost their texture or flavor. If it is repacked in airtight containers to protect against moisture, it can last for years past the best-by date.

4.3.3 Product Packaging

Food packaging is used to protect the food along the supply chain.Otherwise, the handling of food product could be pricey and inefficient. Moreover, food packaging is to preserve the food from possible hazards such as physical, chemical, or even microbiological, that can impact on quality and safety of the food itself. Selecting food packaging material hasto consider cost, quality of product, and its ability to protect the food.

Mini popiah roll is a ready-to-eat snacks that can be directly consumed for daily. Zipper standing pouch packaging is made of 3 layers laminated plastic material with PET / alumunium foil / PE. The first layer PET is Polyethylene. Middle layer is high barrier material alumunium foil. The inner layer is LLDPE for heat seal the zipper. Stand up pouch is also have characteristics of perfect moisture proof, oxygen resistance, light resistance, easy sealing, easy storage, non-toxic, and aseptic.

For 100 grams popiah roll will use a 13cm x 19cm packaging size. This packaging has a zip on top of it so the snacks that have been consumedwill not soggy and last long. The packaging design itself will be costumized and given a nutrition label.

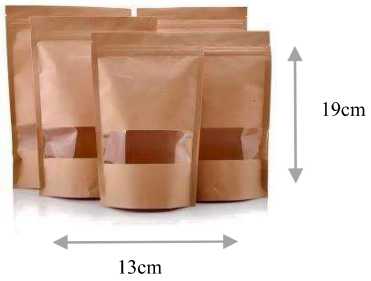


Figure 4. 2 Zipper Standing Pouch 13cm x 19cm

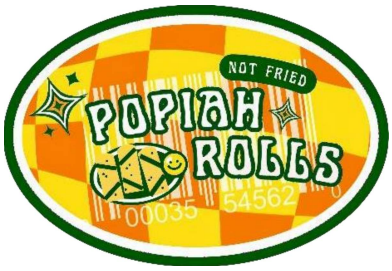


Figure 4. 3 Logo

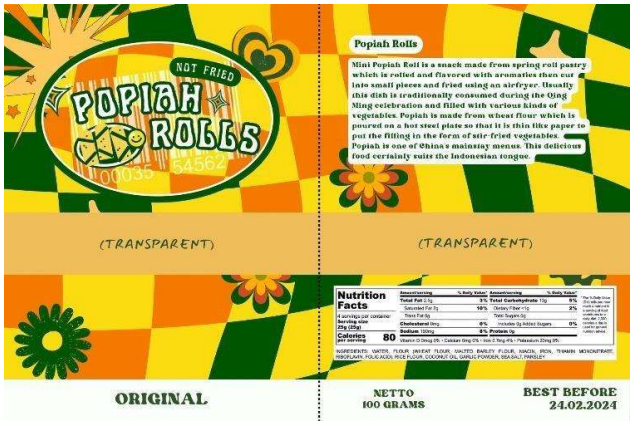


Figure 4. 4 Packaging Design

4.4 Financial Aspects

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

Product cost is calculated based on the total of all cost per month. The costs consists of labour cost, raw material cost, packaging cost, and utility cost. The labour cost is considered based on monthly working days,which are 25 days per month. As for raw material, the quantity of raw materials are counted as 35 recipes per day or 875 recipes per month, which are 105 packs per day or 2.625 packs per month.

1. Start-Up Capital

Table 4. 4 Start-Up Capital

Tools and Equipment	Quantity	Price (/unit)	Sub Total
Cutting board	1	Rp 30.000,00	Rp 30.000,00
Scissor	1	Rp 50.000,00	Rp 50.000,00
Pan	1	Rp 300.000,00	Rp 300.000,00
Cooking brush	1	Rp 10.000,00	Rp 10.000,00
Chopstick	1	Rp 10.000,00	Rp 10.000,00
Large bowl	1	Rp 50.000,00	Rp 50.000,00
Small bowl	2	Rp 20.000,00	Rp 40.000,00
Blender	1	Rp 200.000,00	Rp 200.000,00
Air fryer oven	1	Rp 3.000.000,00	Rp 3.000.000,00
Stove	1	Rp 300.000,00	Rp 300.000,00
Digital scale	1	Rp 50.000,00	Rp 50.000,00
Spatula	1	Rp 20.000,00	Rp 20.000,00
TOTAL			**Rp 4.060.000,00**

2. Labour Cost

Table 4. 5 Labour Cost

Occupation	Personnel	Salary (/month)	Sub Total
Worker	1	Rp 3.000.000,00	Rp 3.000.000,00
Administration officer	1	Rp 3.000.000,00	Rp 3.000.000,00
Cleaning and helper officer	1	Rp 2.000.000,00	Rp 2.000.000,00
TOTAL			**Rp 8.000.000,00**

3. Packaging Cost

Table 4. 6 Packaging Cost

Packaging	Quantity	Price (/unit)	Sub Total
Zipper Standing Pouch	105 pcs	Rp 2.000,00 (/pcs)	Rp 210.000,00
Plastic Bag	105 sheets	Rp 10.000,00 (/100 pcs)	Rp 10.500,00
TOTAL (/day)			**Rp 220.500,00**
TOTAL (/month)			**Rp 5.512.500,00**

4. Utility Cost

Table 4. 7 Utility Cost

Facility	Quantity	Price (/unit)	Sub Total
Water	750 L	Rp 2.000,00 (/m3)	Rp 1.500,00
Electricity	10 kWh	Rp 1.500,00 (/kWh)	Rp 15.000,00
TOTAL (/day)			**Rp 16.500,00**
TOTAL (/month)			**Rp 412.500,00**

5. Raw Material Cost

Table 4. 8 Raw Material Cost

Raw Materials	Quantity	Price (/unit)	Sub Total
All purpose flour	5.250 g	Rp 12.000,00 (/kg)	Rp 63.000,00
Rice flour	1.750 g	Rp 10.000,00 (/kg)	Rp 17.500,00
Salt	175 g	Rp 9.000,00 (/kg)	Rp 1.700,00
Water	14.000 ml	Rp 30.000,00 (/galon)	Rp 22.000,00
Parsley flakes	70 g	Rp 10.000,00 (/19 g)	Rp 36.800,00
Garlic powder	525 g	Rp 15.000,00 (/130 g)	Rp 60.600,00
Cooking oil	525 ml	Rp 30.000,00(/2 liter)	Rp 7.900,00

Raw Materials	Quantity	Price (/unit)	Sub Total
Seasoning powder	1.050 g	Rp 8.000,00 (/70 g)	Rp 120.000,00
TOTAL (/day)			**Rp 329.500,00**
TOTAL (/month)			**Rp 8.237.500,00**

6. Rent Cost

Table 4. 9 Rent Cost

Facility	Size	Price	Sub Total
Land	15 m x 5 m 10 m x 5 m	Rp 3.000.000,00 (/month)	Rp 3.000.000,00
Building			
TOTAL (/month)			**Rp 3.000.000,00**

7. Total Cost

Fixed Cost = Labour Cost and Rent Cost

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

Total Cost (/month) = Labour + Raw Material + Packaging + Utility + Rent Cost

= Rp 15.000.000,00 + Rp 8.237.500,00 + Rp 5.512.500,00 + Rp 412.500,00 + Rp 3.000.000,00

= **Rp 32.162.500,00**

4.4.2 Selling Price

$$\text{Product Price} = \frac{Total\ Cost\ (/month)}{Total\ Product\ Units(/month)}$$

$$= \frac{Rp\ 32{,}162{,}500}{2{,}625\ packs}$$

= **Rp 12,252 / portion**

Product Selling Price = Product Price + (Product Price x Profit %)

= Rp 12.252,00 + (Rp 12.252,00 x 50%)

= Rp 12.252,00 + Rp 6.126,00

= Rp 18.378,00 ≈ **Rp 18.500,00**