

CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

Chocolate flavoured ravioli is unique and delicious snack that combines the concept of traditional Italian ravioli with Indonesian traditional snack. A chocolate ravioli is filled with a sweet coconut known as Unti Kelapa, instead of the savoury ingredients such as cheese or meat.

The pasta dough used for chocolate flavoured ravioli is made with flour, eggs, and carob powder. Carob powder is used as a chocolate substitute which gives a rich chocolate flavour, a brown colour and health benefits. Carob powder provides important sources of vitamins E, D, C, Niacin, B6, and Folic Acid; lower amounts are provided for Vitamins A, B2, and B12. Carobs are functional foods that are low in fat, high in dietary fibre, or good sources of minerals (Papaefstathiou et al., 2018). The dough is then rolled out and cut into circles. The filling is then placed in the center of each piece of dough, and the edges are sealed by pressing them together using ravioli cutter. 1 recipe can be made into 3 portions.

4.2 Nutrient facts

4.2.1 Nutrition table

The nutrition value of carob powder is as follows

Table 4.1 Nutritional Value of Carob Powder per 100 grams

Calories (kcal)	233
Fat (g)	0
Carbohydrate (g)	87
Protein (g)	6.7
Calcium (g)	0.347

Carob powder is a valuable source of vitamins E, D, C, Niacin, B6, and folic acid; vitamins A, B2, and B12 are provided in lower levels. (Youssef, ElManfaloty, & Ali, 2013)

The nutrition value of all-purpose flour is as follows

Table 1.2 Nutritional Value of All Purpose Flour per 100 gram

Calories (kcal)	351.3
Fat (g)	0
Carbohydrate (g)	77
Protein (g)	10
Calcium (g)	0
Fiber (g)	3.3

The nutrition value of coconut is as follows

Table 4.3 Nutritional Value of Coconut per 100 grams

Calories (kcal)	467
Fat (g)	33
Carbohydrate(g)	47
Protein (g)	0
Calcium (g)	0.013
Fiber (g)	6,7
Sodium (g)	0.167

4.2.2 Nutrition Calculation

Ingredient	Calories (kcal)	Fat (g)	Carbohydrate (g)	Protein (g)	Fiber (g)	Calcium (g)
All-purpose flour(204g)	716.652	0	157.08	20.4	6.732	0
Carob powder(68g)	158.44	0	59.16	4.556	0	0.236
Egg(150g)	180	12	0	18	0	0
Water(65ml)	0	0	0	0	0	0
Castor sugar(35g)	135.45	0	35	0	0	0.002
Milk(1tbs)	9	0.5	0.7	0.5	0	0.018
Salt(1/2tsp)	0	0	0	0	0	0
Coconut(200 gr)	934	66	94	0	13.4	0.026
Palm sugar(125gr)	416.25	0	0	0	0	0
Pandan(2pcs)	4.5	0	1.2	0	0	0
Total	2179.67	78.5	347.14	43.456	20.132	0.285

4.2.3 Nutrition Label

Nutrition Facts	
2 servings per container	
Serving size	(50g)
Amount Per Serving	
Calories	360
<small>% Daily Value*</small>	
Total Fat 13g	17%
Saturated Fat 0g	0%
<i>Trans</i> Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 58g	21%
Dietary Fiber 9g	32%
Total Sugars 6g	
Includes 0g Added Sugars	0%
Protein 7g	14%
Vitamin D 0mcg	0%
Calcium 47.5mg	4%
Iron 0mg	0%
Potassium 0mg	0%
<small>*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.</small>	

Figure 4.1 Nutrition Label

4.3 Food Safety and Packaging

4.3.1 Processing and storage temperature

Chocolate flavoured ravioli snack production consists of several operation units that are sorted in specific order. Those operation units are mixing, kneading, resting, shaping, and cooking/ baking. The mixing step, also named kneading, is the most crucial step. The main objectives of this operation, beyond the simple homogenization of the ingredients, are the hydration of gluten proteins, allowing the formation of a continuous viscoelastic network, determining the gas holding capacity during fermentation and baking (Asaithambi et al., 2020). Baking is a form of cooking performed in an oven. It transforms semi-solid dough into an eatable product under the influence of heat (Arepally et al., 2020). Each of operation units have individual intentions in order to prepare ravioli to proceed to the next step. Not only the processing units, but also the ratio and quality of ingredients will determine the end-product quality and its nutritional

value (Mursidi et al.,2019). The best temperature to store baked chocolate flavoured ravioli snack is in room temperature.

However, the storage must be airtight.

4.3.2 Shelf life

This product has a short shelf life because the ingredients for this product is easily to get contaminated with bacteria. To prevent from easy spoilage, storing correctly and clean surrounding area like the utensils for the product making must be sterilized. Therefore, it's important to ensure that the ravioli is stored in an airtight container to maintain its quality. Airtight packaging also prevents it from absorbing moist. This product can last for up to 1 month in an air tight container. However, other factors such as storage conditions can also affect the shelf life. High humidity place and exposed direct sunlight can reduce this product shelf life.

4.3.3 Product packaging

Food packaging can retard product deterioration, retain the beneficial effects of processing, extend shelf-life, and maintain or increase the quality and safety of food. In doing so, packaging provides protection from 3 major classes of external influences: chemical, biological, and physical. (Marsh, 2019). Food packaging is used to protect the food along the supply chain. Otherwise, the handling of food product could be pricey and inefficient. Selecting food packaging material has to consider cost, quality of product, and its ability to protect the food (Alamri et al., 2021)

This chocolate flavoured ravioli is a snack that will be marketed online. So, a packaging that can prevent the product from being crushed is needed. This product will use plastic jar that is made

using Polyethylene Terephthalate (PET) because it is lightweight, transparent, strong, and food safe (Nistico, 2020).

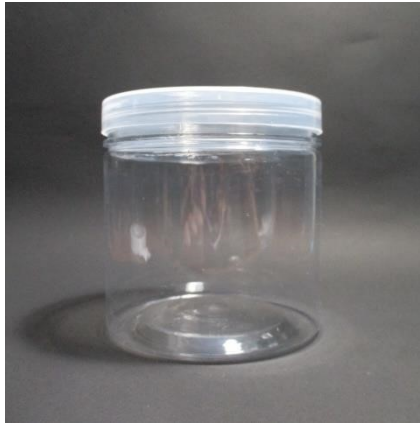


Figure 4.2 Plastic Jar

ingredients: flour,
carob,coconut,palm
sugar,egg,pandan, sugar

best before





**SWEET
RAVIOLI**



Nutrition Facts	
2 servings per container	
Serving size	(50g)
Amount Per Serving	
Calories	370
<small>% Daily Value*</small>	
Total Fat 13g	17%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 55g	21%
Dietary Fiber 9g	32%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 7g	14%
Vitamin D 0mcg	0%
Calcium 47.49mg	4%
Iron 0mg	0%
Potassium 0mg	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.

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Figure 4.3 Logo

4.4 Financial Aspect

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 consist of labour cost, raw material cost, packaging cost, and utility cost. The raw material cost counted for 10 recipes per day or 30 portion per day. The working days is 6 days in a week.

1. Start-up Capital

Table 4.4 Start-up Capital

Tools	and Quantity	Price/unit(Rp)	Sub total
Equipment			
Oven	1	600.000	Rp 600.000
Bowl	2	6000	Rp 12.000
Digital scale	1	80.000	Rp 80.000
Pasta maker	1	250.000	Rp 250.000
Rolling pin	2	35.000	Rp 70.000
Sauce pan	1	175.000	Rp 175.000
Spatula	1	50.000	Rp. 50.000
Ravioli cutter	1	50.000	Rp 50.000
Total			Rp 1.287.000

2. Labour cost

Table 4.5 Labour Cost

Occupation	Personnel	Salary/month(Rp)	Total
Cook	2	2.000.000	Rp 4.000.000

Total	Rp 4.000.000
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3. Packaging cost

Table 4.6 packaging Cost

Packaging	Quantity	Price/unit(Rp)	Sub total
Plastic jar	30	2.500	Rp 75.000
Plastic bag	30	160	Rp 4.800
Label sticker	30	250	Rp 7.500
Total			Rp 87.300
(per day)			
Total			Rp 2.095.200
(per month)			

4. Utility cost

Table 4.7 Utility cost

Facility	Quantity	Price/unit(Rp)	Sub total
Water	2000L	2.100 /m ³	Rp 4.200
Electricity	30 kwh	1.500	Rp 45.000
Total (per day)			Rp 49.200
Total			Rp 1.180.800
(per month)			

5. Raw material cost

Table 4.8 Raw Material Cost

Ingredient	Quantity	Price/unit (Rp)	Total
All-purpose flour	204g	14	Rp 2.856
Carob powder	68g	78	Rp 5.304
Egg	150g	14	Rp. 6.300
Water	65ml	2,3	Rp 150
Sugar	35g	14	Rp 490
Milk	15ml	17,5	Rp 262,5
Salt	3g	18	Rp 54
Coconut	200g	24	Rp 4.800
Palm sugar	125g	28	Rp 3.500
Pandan	2pcs	500	Rp. 1000
Total (1 recipe)			Rp 24.717
Total (per day)			Rp 247.170
Total (per month)			Rp 5.932.080

6. Total cost

Fixed cost = labour cost

Variable cost = raw material cost, packaging cost, and utility cost

Total cost(/month) = labour + raw material+ packaging+ utility
 = Rp 4.000.000 + 5.932.080 + Rp 2.095.200
 + Rp1.180.800
 = Rp 13.208.080

4.4.2 Selling price

Product price

= total cost (per month) : total product

= Rp13.208.080 : 720

= Rp 18.344

Product selling price

= product price + (product price x profit percentage)

= Rp 18.344 + (Rp 18.344x 50%)

= Rp 18.344 + 9.172

= Rp 27.516

= Rp 28.000

