CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

The nutritional value of Jackfruit Sushi dependns on its indgridients. Major ingridients in this product are young jackfruit, and fukumi rice. Jackfruit is a good alternative for fish in sushi due to its high value of carbohydrates, proteins, vitamins, minerals, and phytochemicals, and since unripe jackfruit is unlike the ripe one it is perfect for the alternative because of its meat-like texture and flavour. Jackfruit also has a high value of fiber, and because of that consuming it will give higher satisfaction and a longer time to be full since fiber cannot be digested (Falk, M., 2021).

Fukumi rice is a rice that is made from porang and contains high amount of nutritions such as carbohydrates, proteins, vitamins, minerals, and especially dietary fiber. Because of that fukumi rice is good for people that are trying to lose weight or are on a diet. Fukumi rice also contains low level of glucose so it can also be consumed to decrease diabetes level.

4.2 Nutrition Facts

4.2.1 Nutrition Table

The nutritional value of Young Jackfruit is as follows

Table 4. 1 Nutritional value of Young Jackfruit per 100 g

Calorie (kcal)	95
Carbohydrate (g)	23.2
Protein (g)	1.72
Vitamin (mg)	22.6
Minerals (mg)	400
Fiber (g)	1.5
Fat (g)	0.23

Source: FoodData Central, 2019

Table 4. 2 Nutritional value of Fukumi Rice per 100 g

Calorie (kcal)	98
Carbohydrate (g)	50
Protein (g)	1.64
Minerals(mg)	59.34
Fat (mg)	0.4
Fiber (g)	1.3

Source: Tami W., 2019

It can be seen that the nutritional value of young jackfruit and fukumi rice contains the same nutrients just with different amount from each of the nutrients and the benefits of both product are almost the same such as to help people with their diet, decreasing diabetes level, and helps to lose weight.

4.2.2 Nutrition Calculation

Table 4. 3 Nutritional value of ingridients used in the recipe for Jackfruit Sushi

Ingridients	**Calories (kcal)**	**Carbohydrate (g)**	**Protein (g)**	**Fat (g)**	**Sugar (g)**	**Fiber (g)**	**Sodium (mg)**
Young Jackfruit (100g)	95	23.2	1.72	0.23		1.5	
Fukumi Rice (120g)	98	50	1.64	0.004		1.3	
Cucumber (25g)	4	0.91	0.16	0.03	0.42	0.1	
Carrot (25g)	10	2.4	0.23	0.06	1.14	0.7	17
Chilli sauce (4tbsp)	20	5	0.69	1	0.4	1.9	57
Tomato Sauce (4tbsp)	42	12.1	2.76	0.3	6.66	2.9	63
Mayonnaise (4tbsp)	194	4.92	0.53	19.85	2.6		404
Gim bori (1tbsp)	5	0.33	0.16	0.33		0.1	80
Apple vinegar (1tbsp)	3	0.14			0.06		1
Nori Sheet	5	1	1				
Oil	119			13.5			
Salt							1500

TOTAL	**595**	**100.01**	**8.89**	**35.3**	**11.28**	**8.5**	**2122**

4.2.3 Nutritional Label

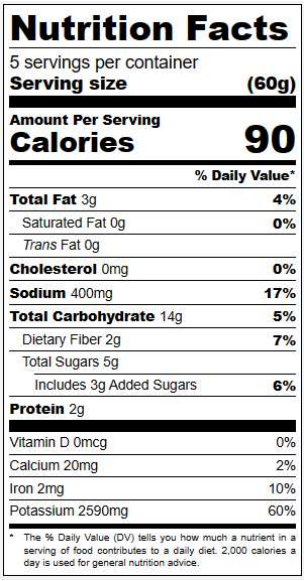

Figure 4. 1 Nutritional Label of Jackfruit Sushi

4.3 Food Safety and Packaging

4.3.1 Processing and Storage Temperature

Jackfruit sushi contains jackfruit as filling. Jackfruit is highly perishable and should be stored in the refrigerator at temperatures between 32°F (0°C) and 41°F (5°C) to maintain its freshness. Other ingridients in this product such as the vegetables like cucumber and carrot, nori seaweed, and condiments like chilli sauce, tomato sauce, and mayonnaise also need refrigeration. Store them at temperatures below 41°F (5°C) to prevent spoilage and maintain food safety (David, 2023). During the preparation of jackfruit sushi, it is essential to maintain proper hygiene and handle the ingridients safely. The processing temperature refers to the temperature at

which the sushi is prepared. In general, room temperature is suitable for the handling the ingridients, such as cooking the rice, cutting the jackfruit, and rolling the sushi.

During the milling process, it is important to maintain a controlled temperature to ensure the quality and preservation of the rice. The ideal temperature for rice processing is typically around 25-35 degrees celcius (77-95 degrees Fahrenheit). This temperature range helps to prevent excessive heat buildup, which could damage the rice grains or affect their texture and taste. Once the rice is processed, it needs to be stored properly to maintain its quality nd prevent spoilage. The recommended temperature for rice storage is around 10-15 degrees Celcius (50-59 degrees Fahrenheit). This temperature range helps to inhibit the growth of mold, bacteria, and insects, which can spoil the rice. Additionally, storing rice in a cool place helps to maintain its freshness and extends its shelf life (Zhao, Q., 2021).

Once the jackfruit sushi is prepared, it needs to be stored at the appropriate temperature to maintain its quality and safety. The storage temperature primarily depends on the ingridients used in the sushi.

4.3.2 Self life

Sushi is a popular dish made from seafood and rice. It is usually served raw, but can also be cooked. Lots of people wonder if you can eat leftover sushi, the shelf life of sushi can be vary depending on the type of sushi and how it is stored (Trenor *et al*, 2022). For this project the sushi used is vegetarian sushi made with unripe jackfruit as a substitute for fish. It is important to note that jackfruit has a relatively short shelf life once it is been cut or exposed to air. It is recommended to consume sushi within a few hours of preparation to ensure the best taste and quality. To extend the shelf

life of the sushi, it is recommended to store it in the refrigerator. By doing so, the shelf life can be extende to two to three days.

4.3.3 Product Packaging

Packaging is an essential element both for the seller and the customer. While the seller use it as a tool to distribute, store, and promote; the customer uses it as important identification and usage tool. Good packaging makes it possible for the seller to transport the product from the manufacturing unit to the final selling point and then to the customer (Pahwa, A., 2023).

Jackfruit sushi will use plastic or biodegradable sushi trays or boxes that are specifically designed for sushi packaging. The packaging that is chosen must be able to be securely sealed to maintain its freshness and maintain contamination. This can be achieved through the use of lids, plastic wraps, or resealabe packaging. It is also important that the package that will be used must have a clear display. A clear display will allow customers to see the contents easily. Transparent wrappers or lid will be able to showcase the product and encourage customers to buy the product. A proper labeling on the product is also important on a product packaging. A proper label will give clear information about the product that is being sold, such as the product name, ingridients, nutritional informations, allergen warning, and any other important information.

The packaging that is going to be used for this product is a plastic sushi tray. The reason it was chosen for this product is because the price for the packaging is very affordable, and it serves its purpose well on holding individual sushi rolls securely. The lid that is used for this packaging is a transparent lid so that it can showcase the product to the customers.

Figure 4. 2 Plastic sushi tray

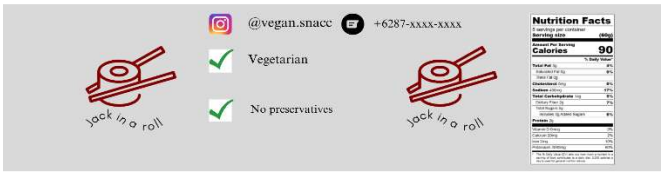

Figure 4. 3 Logo and package label

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 consist of labour cost, raw material cost, packaging cost, and utility cost. The labour cot is considered based on monthly working days, which are 25 days per month. As for raw material, the quantity of raw materials is counted as 10 recipes per day or 250 recipes per month, which are 50 portions per day or 1,250 portions per month.

1. Start-Up Capital

Table 4. 4 Start-Up Capital

Tools and Equipment	Quantity	Price(/unit)	Sub Total
Stock pot	1	Rp 350,000	Rp 350,000
Sauce pan	1	Rp 100,000	Rp 100,000
Frying pan	2	Rp 105,000	Rp 210,000
Large mixing bowl	1	Rp 90,000	Rp 90,000
Small mixing bowl	2	Rp 50,000	Rp 100,000
Knives	2	Rp 100,000	Rp 200,000
Spatula	2	Rp 20,000	Rp 40,000
Spoon	10	Rp 2,000	Rp 20,000
Fork	10	Rp 2,000	Rp 20,000
Cutting board	2	Rp 30,000	Rp 60,000
Plastic box	2	Rp 50,000	Rp 100,000
Serving plate	20	Rp 25,000	Rp 500,000
	TOTAL		**Rp 1,790,000**

2. Labour Cost

Table 4. 5 Labour Cost

Occupation	Personnel	Salary (/month)	Sub Total
Cook helper	1	Rp 2,850,000	Rp 2,850,000
Cleaning service	1	Rp 1,500,000	Rp 1,500,000
	TOTAL		Rp 4,350,000

3. Packaging Cost

Table 4. 6 Packaging Cost

Packaging	Quantity	Price (/unit)	Sub Total
Plastic sushi tray	20 pcs	Rp 1,060 (/pc)	Rp 21,200
Plastic bag	20 pcs	Rp 30,000 (/50 pcs)	Rp 12,000
	TOTAL (/day)		**Rp 33,200**
	TOTAL (/month)		**Rp 830,000**

4. Utility Cost

Table 4. 7 Utility Cost

Facility	Quantity	Price (/unit)	Sub Total
Water	750 L	Rp 2,000 (/m^3)	Rp 1,500
Electricity	10 kWh	Rp 1,500 (/kWh)	Rp 15,000
	TOTAL (/day)		**Rp 16,500**
	TOTAL (/month)		**Rp 412,500**

5. Raw Material Cost

Table 4. 8 Raw Material Cost

Raw Materials	Quantity	Price (/unit)	Sub Total
Young jackfruit	1 kg	Rp 39,500 (/kg)	Rp 39,500
Cucumber	250 gr	Rp 12,500 (/kg)	Rp 3,125
Carrot	250 gr	Rp 20,000 /(kg)	Rp 5,000
Chilli sauce	600 ml	Rp 22,500 (/275 ml)	Rp 49,090
Tomato sauce	600 ml	Rp 22,000 (/275 ml)	Rp 48,000
Mayonnaise	600 ml	Rp 32,500 (/275 ml)	Rp 70,909
Fukumi rice	1,2 kg	Rp 61,500 (280 gr)	Rp 263,571
Gim bori	150 gr	Rp 11,500 (/30 gr)	Rp 57,500
Apple vinegar	300 ml	Rp 80,000 (/500 ml)	Rp 48,000
Nori sheet	10 pcs	Rp 64,000 (/12 pcs)	Rp 53,333
Oil	200 ml	Rp 25,000 (/L)	Rp 5,000
Salt	50 gr	Rp 10,000 (/kg)	Rp 500
	TOTAL (/day)		**Rp 643,528**
	TOTAL (/month)		**Rp 16,088,200**

6. Rent Cost

Table 4. 9 Rent Cost

Facility	Size	Price	Sub Total
Land	15m x 5m	Rp 3,000,000 (/month)	Rp 3,000,000
Building	10m x 5m		
	TOTAL		**Rp 3,000,000**

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 4,350,000 + Rp 16,088,200 + Rp 830,000 + Rp 412,500 + Rp 3,000,000

= **Rp 24,680,700**

4.4.2 Selling Price

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

$= \frac{Rp\ 24{,}680{,}700}{1{,}250\ portions}$

= Rp 19,744.56

Product Selling Price = Product price + (Product price x Profit percentage)

= Rp 19,744.56 + (Rp 19,744.56 x 50%)

= Rp 19,744.56 + Rp 9,872.28

= Rp 29,616.84 ≈ Rp 30,000.00