CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

Wine is a drink that has a few unique aspect such as taste, aroma, and, body. The fermentation process was carried out for 7 days to get the following results. In terms of aroma, the tropical wine that is made has a dominant pineapple fragrance with quite distinctive flavors of pineapple and star fruit, and also has a bright yellow color but is not clear due to the strong concentration of pineapple used. This wine has a fairly bold texture and has a tropical fragrance which makes this wine suitable for consumption or pairing with seafood menus. In addition, from the results of experiments conducted, it was found that the alcohol yield was 5%. from the results of the sensory tests, the panelists liked the smell, sight, and texture of tropical fruit wine, but the taste tended to be bland.

4.2 Nutrition Fact

4.2.1 Nutrition Table

The nutritional value of pineapple is as follow:

Table 4.1 Nutrition Value of Pineapple Juice per 100 ml

Calorie (cal)	53
Fat(g)	0.1
Sodium(mg)	2
Carbohydrate(g)	13
Sugar(g)	10
Protein(g)	0.4
Calcium(mg)	13

Potassium(mg)	130

Table 4.2 nutrition Value of Starfruit per 100ml

Calorie (cal)	31
Fat(g)	0.3
Sodium(mg)	2
Carbohydrate(g)	6.7
Sugar(g)	4
Protein(g)	1
Calcium(mg)	3
Potassium(mg)	133

4.2.2 Nutritional Calculation

Table 4.3 Nutritional Value of Ingredients used in The Recipe for Tropical fruit wine

Ingredients	**Calories (cal)**	**Carbohydrate (g)**	**Protein (g)**	**Fat (g)**	**Sugar (g)**	**Fiber (g)**	**Sodium (mg/250g)**
Pineapple (250ml)	133	32	0.9	0.3	25	0.5	5
Starfruit (250ml)	78	17	2.6	0.8	10	7	5
Sugar (50gr)	194	50	0	0	50	0	0.5
Yeast (0.2gr)	0.8	0.1	0.1	0	0	0	0.1
TOTAL	405.8	99.1	3.6	1.1	85	7.5	10.6

4.2.3 Nutrition Label

Nutrition Facts

5 servings per container

Serving size **100 (500ml)**

Amount Per Serving

Calories **70**

	% Daily Value*
Total Fat 1g	**1%**
Saturated Fat 0.1g	**1%**
Trans Fat 0g	
Sodium 0mg	**0%**
Total Carbohydrate 99g	**36%**
Dietary Fiber 1g	**4%**
Total Sugars 15g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**

Not a significant source of cholesterol, 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 Fact of Tropical Fruit Wine

4.3 Food Safety and Packaging

4.3.1 Processing and Storage Temperature

This tropical wine is made through several processes, the most important thing to do is sterilize all the equipment from the cutting board to the fermentation bottle, the way to sterilize tools is by immersing them in hot water or you can use medical alcohol for sterilze it, the goal is to prevent contamination. Next step is processing fruits into juice and then mixing it with yeast and sugar and then the sealing process ,seal the bottle containing the juice with a silicone cap and an airlock. Fermentation process will run and will take 7 to 14 days. Yeast will eat the sugar in the juice and will turn into 2 types of substances, namely Co_2 and ethanol. Make sure to put the bottle in dry place, away from direct sunlight.

Normally the storage process during fermentation and post-fermentation can be carried out at room temperature. Things to pay attention when storing ready to drink bottle are keeping wine away from direct sunlight, damp rooms and also away from items that have a strong aroma. For opened bottle, you can save in the fridge(1^{o}C-5^{o}C) for 1 months.

4.3.2 Shelf Life

Normally, wine can be stored at any time as long as the wine is not unsealed and not exposed to sunlight. Tropical wine products can last for more or less 6 months due to several external and internal factors, namely the packaging used is not packaging that uses proper cork, in order to maintain quality and also taste, the best consumed tropical wine is 1 months for opened bottle and 6 months for unopened bottle.

4.3.3 Product Packaging

Food packaging serves purposes of food product safety and easy handling and transport by preventing chemical contamination and enhancing shelf life, which provides convenience for consumers. Various types of materials, including plastics, glass, metals, and papers and their composites, have been used for food packaging. (Mohammad Saleh & Qasem Akram Ahmed, n.d. 2021).

This product requires airtight packaging so that no air enters the packaging, besides that airtight packaging is also needed to extend the life of the product

Figure 4.2 Logo

The packaging used to package this tropical wine product is a glass bottle that can hold up to 500 ml of liquid wine. with very thick glass and a lid made of wooden cork screw and seal shrink plastic so that air cannot enter the package.

Figure 4.3 Liquor Bottle 500ml

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 raw material cost, packaging cost, and utility cost. The quantity of raw materials is counted as 22 barrel per month. Per barrel can stored 5 litre of wine and produce 10 bottles.

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
Juicer	1	Rp 720,000	Rp 720,000
Large bowl	2	Rp 100,000	Rp 200,000
Knife	1	Rp 200,000	Rp 200,000
Spoon	5	Rp 5,000	Rp 25,000
Digital Scale	1	Rp 75,000	Rp 75,000
Silicone Cap	5	Rp 20,000	Rp 100,000
Airlock	5	Rp 19,500	Rp 97,500
Cutting Board	1	Rp 49,900	Rp 49,000
Refractometer	1	Rp 145,000	Rp 145,000
Gallon bottle(5liter)	5	Rp 20,000	Rp 100,000
	TOTAL		**Rp 1,861,500**

2. Packaging Cost

Table 4.5 Packaging Cost

Packaging	Quantity	Price(/unit)	Sub Total
Glass Bottle (500Ml)	10	Rp 16,000	Rp,160,000
Sticker Label(A3)	1	Rp 10,000	Rp 10,000
	TOTAL(/day)		**Rp 170,000**
	TOTAL(/Month)		**Rp 3,740,000**

3. Utility Cost

Table 4.6 Utility Cost

Facility	Quantity	Price(/unit)	Sub Total
Water	100 L	Rp 1,050(/m3)	Rp,105
Electricity	0,5 Kwh	Rp 3,000(/kWh)	Rp 1500
	TOTAL(/day)		**Rp 1,605**
	TOTAL(/Month)		**Rp 35,310**

4. Raw Material Cost

Table 4.6 Raw Material Cost

Packaging	Quantity	Price(/unit)	Sub Total
Pineapple	2 pc/3 kg	Rp 24,900(/pc)	Rp 48,900
Starfruit	3 kg	Rp 18,000(/kg)	Rp 54,000
Sugar	600 g	Rp 13,500(Kg)	Rp 8,100
Yeast	2 g	Rp 30,000(/10g)	Rp 6,000
	TOTAL(/day)		**Rp 117,000**

TOTAL(/Month)	**Rp 2,574,000**

5. Total Cost

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

Total Cost(/month) = Raw Material + Packaging + Utility
= Rp 2,574,000 + Rp 3,740,000 + Rp 35,310
= Rp 6,349,310

4.4.2 Selling Price

Product Price $= \frac{Total\ Cost\ (/month)}{Total\ Product\ Units\ (/month)}$
$= \frac{Rp\ 6{,}349{,}310}{220\ Portions}$
= **Rp 28,860,5 / Portion**

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

= Rp 28,860,5 + (Rp 28,860,5 x 150%)
= Rp 28,860,5 + Rp 43,290,75
= Rp 72,151.25 ≈ Rp 75,000.00