

CHAPTER IV

RESULT AND DISCUSSION

4.1 Product Result

Wine is a special beverage because it is created from fruit juice that has been fermented for a few weeks or perhaps a year, allowing the drink to take on the flavor of the fruit from which it was created. Kersen Fruit is the sole ingredient used in the creation of this Fruit Wine. Based on the product's sensory test is that the kersen fruit creates a smooth-tasting wine that hides the presence of the 5% alcohol. Because the Kersen fruit has a lot of tiny seeds combined with its own flesh so that it may be eaten, it has a sweet taste that is highly different and distinctive from other fruits. Based on the sensory test results, all panellists have agreed on liking most aspects of the wine from the smell, the sight, and the texture. In term of taste only 3 out of 10 panellists has taken a liking on the flavor. It is likely that the bitter aftertaste is a bother, from these results extra sugar can be added to the ingredients in hoping to mask the bitter taste. However, the color of the wine is quite clean and clear, in accordance with the criteria for wine generally.

4.2 Nutrient Facts

4.2.1 Nutrition Table

The nutritional value of Kersen is as follows:

Table 4. 1 Nutritional value of Kersen

Calorie (cal)	81
Fat (g)	0.6
Carbohydrates (g)	19
Protein (g)	2
Calcium (mg)	104
Potassium (mg)	166
Fiber (g)	4.6
Iron (mg)	0.3

4.2.2 Nutrition Calculation

The nutrition value of ingredients used in the making of Fruit Wine

Table 4. 2 Nutritional Value of Ingredients used in the making of
Fruit

Ingredients	Calories (kcal)	Carbohydrate (g)	Protein (g)	Fat (g)	Fiber (g)	Sodium (mg)
Kersen (150g)	122	29	3	0.9	6.9	0
Granulated sugar (50g)	194	50	0	0	0	0.5
Water (500ml)	0	0		0		60
Yeast (0.2g)	0.8	0.1	0.1	0	0.1	0.1
TOTAL	356.8	88.1	4.1	1.2	9.3	6.4

4.2.3 Nutrition Label

Nutrition Facts	
Portion Size	90 g
Amount Per Portion	
Calories	63
% Daily Value *	
Total Fat 0.2g	0 %
Sodium 12mg	1 %
Total Carbohydrate 16g	6 %
Dietary Fiber 1.4g **	5 %
Sugar 10g **	
Protein 0.6g	1 %
Vitamin D 0mcg **	0 %
Calcium 67mg **	5 %
Iron 0.1mg **	1 %
Potassium 1mg **	0 %
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contribute to a daily diet. 2000 calories a day is used for general nutrition advice.</small>	
<small>** Amount is based on ingredients that specify value for this nutrient and 0 for those that don't.</small>	

Figure 4.1 Nutrition Fact of Fruit wine

4.3 Food Safety and Packaging

4.3.1 Processing and Storage Temperature

The Kersen Fruit that has been processed into liquid are combined with sugar and yeast according to the dosage, added to a bottle, and covered with a silicone lid to create an airtight seal. After 1 to 2 weeks, the yeast will finish consuming the sugar and alcohol will begin to form. Typically, a temperature range of 20 to 26 degrees Celsius is advised for the production of wine.

In terms of temperature, while the wine is still sealed, keep the wine somewhere stays between 45 and 65 degrees Fahrenheit. Even though the bottle cap is still sealed, which means it is definitely airtight, this product should still not be stored in a hot place, exposed to sunlight, and it is recommended that it be stored. in a damp place because it is feared that it will change and damage the color, texture, or taste of the

product itself (Echave et al., 2021). If wine is not immediately eaten after opening, it should be kept in the refrigerator. Wine exposed to the air will continue to oxidize, but the process will be considerably slowed by cold temperatures.

4.3.2 Shelf Life

The shelf life of this fruit wine can be stored for up to six months before opening. Occasionally, wine producers will wait up to twelve months. Fruit wine should not be kept for an extended period of time due to worries about oxidation and spoiling. The first is exposure to oxygen and germs, which can cause bacteria to enter the bottle and turn the alcohol into vinegar-like acetic acid. This can shorten the shelf life of wine. The second is contact with water, which can cause the wine to oxidize and alter its flavor, appearance, color, and scent. Like any other fruit wine, this kersen fruit wine keeps for three to five days after opening. If the wine has an aroma that smells like vinegar, it means that the wine has gone through an oxidation process and is not suitable for further consumption. (Carpena et al., 2020)

4.3.3 Product Packaging

Wine is most frequently packaged in glass around the world (Ferrara et al., 2020). In the wine industry, glass wine bottles are still used. Compared to other packaging types, wine bottles do offer a better gas and vapor barrier protection. When it comes to wine aging, this is significant. Glass bottles are more effective at protecting wine from oxygen permeation than other packaging materials because they let less oxygen through the container. Other packaging materials might be lighter and more affordable than glass, but they might not be able to protect the wine's quality to the same extent (Witrick et al., 2021). There are numerous hues for wine bottles made of glass. The hues of wine

bottles are frequently varietal-specific and can be either chosen based on the protective qualities of the glass, such as the use of dark or amber colored glass to prevent wine oxidation from light, or in culturally traditional bottle colors, such as light green, blue, or clear, based on the varietal requirements or specifications.

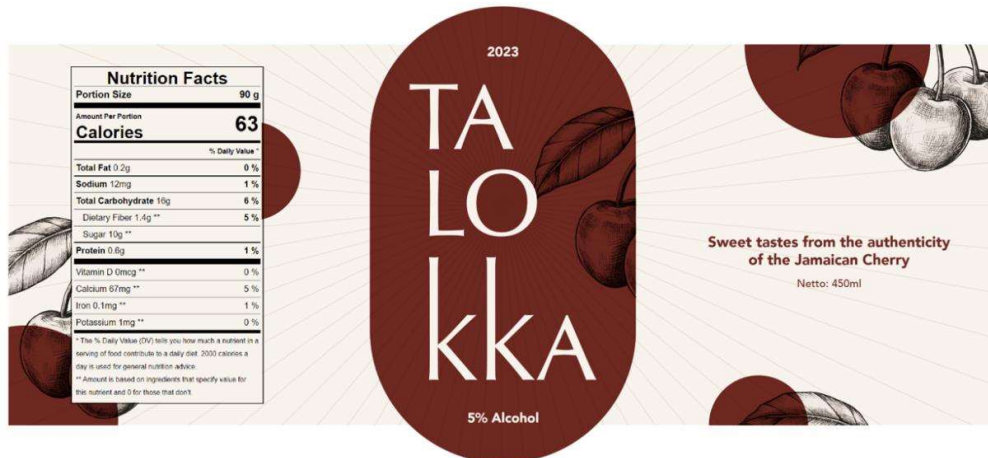


Figure 4.2 Glass Bottle Packaging

4.4 Financial Aspects

4.4.1 Product 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 estimated cost of producing 10 bottles of wine per week is as follows. This indicates that 40 bottles of wine can be produced in a month.

1. Start-Up Capital

Table 4. 3 Start-Up Capital

Tools and Equipment	Quantity	Price (/unit)	Sub Total
Glass Bottle 1L	10	Rp 25,000.00	Rp 250,000.00
Airlock	10	Rp 15,000.00	Rp 150,000.00
Refractometer	1	Rp 200,000.00	Rp 200,000.00
Rubber Silicon	10	Rp 18,000.00	Rp 180,000.00
Digital Scale	1	Rp 70,000.00	Rp 70,000.00
Gold Scale	1	Rp 55,000.00	Rp 55,000.00
Cutting Board	1	Rp 25,000.00	Rp 25,000.00
Knife	1	Rp 200,000.00	Rp 200,000.00
Strainer	1	Rp 50,000.00	Rp 50,000.00
Funnel	1	Rp 10,000.00	Rp 10,000.00
Bowl	2	Rp 25,000.00	Rp 50,000.00
Spoon	2	Rp 5,000.00	Rp 10,000.00
Sauce Pot	1	Rp 200,000.00	Rp 200,000.00
TOTAL			Rp 1,450,000.00

2. Packaging Cost

Table 4. 4 Packaging Cost

Packaging	Quantity	Price (/unit)	Sub Total
Glass Bottle	10	Rp 26,000.00	Rp 260,000.00
Seal	10	Rp 1,500.00	Rp 15,000.00
Sticker Logo	10	Rp 500.00	Rp 5,000.00
TOTAL (/week)			Rp 280,000.00
TOTAL (/month)			Rp 1,960,000.00

3. Utility Cost

Table 4. 5 Utility Cost

Facility	Quantity	Price (/unit)	Sub Total
Water	2 m ³	Rp 2,100.00/ m ³	Rp 4,200.00
Gas	500 gr kg	Rp 19,000.00/3	Rp 3,170.00
TOTAL (/day)			Rp 7,370.00
TOTAL (/month)			Rp 147,400.00

4. Raw Material Cost

Table 4. 6 Raw Material Cost

Ingredients	Quantity	Price (/unit)	Sub Total
Kersen	1,500 gr	Rp 150,000/kg	Rp 225,000.00
Water	5 liter	Rp 7,000/5 liter	Rp 7,000.00
Sugar	500 gr	Rp 15,000.00/1 kg	Rp 7,500.00
Yeast	2 gr	Rp 30,000.00/10 gr	Rp 6,000.00
Alcohol	50 ml	Rp 2,000.00/ 100 ml	Rp 1,000.00
TOTAL (/Week)			Rp 246,500.00
TOTAL (/Month)			Rp 986,000.00

5. Total cost

$$\begin{aligned}
 \text{Variable Cost} &= \text{Raw Material, Packaging, Utility Cost} \\
 \text{Total Cost (/month)} &= \text{Raw Material} + \text{Packaging} + \text{Utility} \\
 &= \text{Rp } 986,000.00 + \text{Rp } 1,960,000.00 + \text{Rp } 147,400.00 \\
 &= \text{Rp } 3,093,400.00
 \end{aligned}$$

4.4.2 Selling Price

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

$$\begin{aligned}
&= \frac{\text{Rp } 3,093,400.00}{40} \\
&= \text{Rp } 77,335.00 \\
&= \text{Rp } 78,000.00 \\
\text{Product Selling Price} &= \text{Product Price} + (\text{product price} \times \text{profit percentage}) \\
&= \text{Rp } 78,000.00 + (\text{Rp } 78,000.00 \times 100\%) \\
&= \text{Rp } 78,000.00 + \text{Rp } 78,000.00 \\
&= \text{Rp } 156,000.00 \\
&= \text{Rp } 159,000.00/ \text{Bottle}
\end{aligned}$$