



Polemic of Sustainability of Aloe Vera Supply at Herbavera

This case study was written by Ratih Dyah Kusumastuti, Juliana Rouli*, and Nurmala as a discussion material in class. The authors never assert whether the managerial situation described has been handled effectively. Furthermore, they may also conceal names and other information for confidentiality reasons. The information provided in this case is mostly taken from the public domain.

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Introduction

Amir, the owner of Herbavera, a business specialized in processed aloe vera products located in Sawangan, Depok, was feeling anxious. He had just visited one of his suppliers and received information that the supplier had switched to using non-organic fertilizers in their aloe vera plantation for various reasons. In addition to this supplier, Amir was also informed that other suppliers had also switched to producing non-organic aloe vera. From the start, Amir and his wife have been committed that they will only process organically produced aloe vera. They have a desire to produce high-quality processed aloe vera products that are safe to consume and provide health benefits.

The switch of the suppliers to producing non-organic aloe vera has an impact on the stability and long-term availability of raw materials needed to produce Herbavera's processed products. Amir must immediately find a solution to this problem considering the demand for processed products from several loyal customers continues to come. He must decide whether to find a new supplier or find another way to maintain the steady supply of raw materials. While drinking aloe vera drink, Mr. Amir is thinking about several options that he might be able to take.

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Herbavera Profile

History of Herbavera

Herbavera (<http://herbavera-indonesia.com/>, see Figure 1 in the Appendix) is a product brand of Amyta Berkah Sejahtera, an UMKM/Home Industry, which was established in 2014. Amir and his wife, Yuni (a pharmacist), started an herbal medicine supply business in 2013. However, the business only lasted for about a year due to difficulties in maintaining the supply of goods, the prevalence of counterfeit goods, and time constraints because at that time Amir was still working full time at a State University. In 2014, they tried to process the aloe vera they planted in their yard into aloe vera drink. They distributed the product to Amir's family, neighbors, and friends at the office. The positive response they received encouraged orders for this aloe vera drink.

One of their customers was a midwife who suggested that Amir should apply for a Household Food Industry (PIRT) license right away to boost the credibility of his products. Taking the name of UKM Amyta Berkah Sejahtera, they obtained the PIRT license for aloe vera processed products for Herbavera brand. The license was issued in October 2014.

Subsequently, the business ran with two employees and produced various processed aloe vera drink products. Unfortunately, along the way the business stumbled on some challenges such as being double-crossed by the store where the product was sold, being swindled by the sales staff, and other problems. Nevertheless, Amir's determination to keep pushing forward remained strong, also since his employees depended on the earnings from this business to support their families. At the end of 2019, Amir decided to resign from his job at the State University and focus on developing Herbavera full time.

Currently, Herbavera has nine employees, including Amir and Yuni, and produces 17 types of aloe vera processed products, all of which are Halal certified.

Vision, Mission, and Organizational Structure

Although Herbavera is still a Micro, Small, and Medium Enterprise (MSME) company, it already has a vision and mission that provide focus and long-term guideline of the company.

Vision:

To be a company recognized as a provider of high-quality healthy products, offering exceptional service and accessible to various groups.

Mission

1. Conducting attractive and effective promotions
2. Maintaining the quality of raw materials and production processes
3. Having a trained and standardized team
4. Building good relationships with suppliers, partners and consumers
5. Opening up as many business opportunities and cooperation as possible with various parties.

Organizational Structure

The organizational structure of Herbavera consists of a president director assisted by five directors and several staff. The organizational structure of Herbavera is shown in Figure 2 of the Appendix.

Herbavera Products

Herbavera makes three product categories, i.e., food, beverages, and skin care products. There are a total of seventeen products under the three categories above. The range of Herbavera products can be seen in Table 1 and Figure 3 of the Appendix. The average profit margin of all Herbavera products ranges from 75% to 125%, depending on whether the product is sold through resellers or directly to the customers. The most popular product is Aloe vera Kupas, which sales reach 30-40% of the total sales; however, it has a short expiration date, which is only 5 days. The raw materials and packaging needed by each product can be seen in Table 2 of the Appendix, while the percentage of sales of each product in 2023 can be seen in Table 3 of the Appendix.

Marketing

Almost 95% of Herbavera's sales are made through online media, such as WhatsApp, Instagram, and online marketplaces, including Shopee, Tokopedia, and Lazada. Only a small portion of buyers buy directly at Herbavera's production house in Sawangan, Depok. With the online sales method, Herbavera's customers are end users and other businesses, such as beauty salons.

Because Herbavera marketing is done through online media, consequently, Herbavera product promotion is also done for online audiences (see Figure 4 of the Appendix 4). Herbavera's content creator team creates various marketing content that is tailored to Herbavera's main consumer segmentation, namely young people and young families.

New Product Development

Amir and his wife have set a target to create one new product every year. Based on their experience, the idea for developing new products at Herbavera comes from the owner himself and the results of product modifications that they see in online media. The product development process begins with designing a formula and conducting internal tests through trial and error. Next, a prototype product is made, which is then distributed to several neighbors to find out their opinions about the product. These opinions become the input for making improvements. After the most appropriate formula is found, the product begins to be produced and marketed.

Location

The Herbavera production house is located in the Sawangan area, Depok. In the production house, the raw materials are stockpiled, the products are made and the finished products are stored. Managerial activities such as finance, human resources, and marketing are also carried out in this production house. There is also an administration room at the location.

In the production house, there is a peeling room, production room, filling room, packing room, administrative room, office, lobby and display area, and several other rooms. The peeling room, which also functions as a storage place for aloe vera fronds consists of a room measuring 2.1 x 3.9 square meters. Cleanliness and circulation in the peeling room are always maintained so that the quality of fresh aloe vera can be maintained. Fresh aloe vera can be stored in the storage room (without a freezer) for about 2 weeks without reducing its freshness. Furthermore, the production area consists of a room measuring 1.8 x 6 square meters. In the production room there are facilities for making Herbavera products. Product filling into packaging and labeling are carried out in the filling room and packing room. The product display room measures 2.8 x 3.6 meters, which is equipped with a refrigerator and a set of tables and chairs for consumers. The administrative room used to process orders is near the packing room. The office space measures 2.6 x 2.6 square meters and is equipped with office equipment and a laptop. The layout of the production house can be seen in Figure 5 of the Appendix 5.

Production Process

The production process begins with washing and peeling the aloe vera stems. The next steps varies depending on the type of product.

The simplest production process is to make Peeled Aloe Vera. After the aloe vera flesh is cut into slices, followed by a sterilization process by heating. Production time depends on the quantity, for instance producing 1-3 kg of Peeled Aloe Vera only takes 20 minutes.

Beverage products such as Aloe Vera Jelly Juice and Nata de Aloe Vera, require a production time of around 6-7 hours. First, the aloe vera flesh is peeled. Next, the raw aloe vera material is processed in the kitchen by adding water, sugar, and flavoring. After that, the finished drink goes through a sterilization and packaging process.

Meanwhile, the Aloe Vera Jelly is a product that requires the longest production time, because it involves a drying process under the sun for 6 to 7 days.

Business Process

The main business processes at Herbavera are marketing and production. In addition to these two business processes, there are also supporting activities, i.e., office operations, finance, and human resources.

The marketing activity business process begins when consumers choose the product they want to buy and make an order and payment in the marketplace (Tokopedia, Shopee, Lazada, Bukalapak and Tik Tok shop). Next, the marketplace will send an order notification to Herbavera. Herbavera will then prepare the order. If the ordered item is available, delivery will be made immediately. If the ordered item is not available, Herbavera will make the order first. Products that are in stock include Aloevera Jelly Juice, Aloevera Jelly Juice Premium, Nata de Aloevera, Aloe Vera Tea and Aloe Vera Jelly, while other products are made immediately after an order is received (made to order). After the goods are sent and received by the consumer, the marketplace will send payment to Herbavera. The marketing activity business process is illustrated in Figure 6 of the Appendix.

The business process of production activities varies for each product. For example, the production process of Aloe Vera Jelly Juice begins with the process of peeling the aloe vera stems in the storage and peeling room. Next, the aloe vera stems are taken to the production room and cut into small pieces. The next step is to add sugar and natural flavors. Then, the drink is sterilized using the boiling method. The final step is packaging and labeling. The business process of Aloe Vera Jelly Juice production is presented in Figure 7 of the Appendix.

Sales and Production Capacity

In early 2020, Herbavera sales reached a turnover of around IDR 25 million to 30 million per month. Meanwhile, in early 2023, the monthly turnover fluctuated, ranging from IDR 45 million to IDR 60 million.

As of early 2023, on average, Amir bought 1-2 tons of aloe vera fronds/month or an average of around 300-500 kg per week. Aloe vera frond orders are picked up or delivered by the supplier. Aloe vera fronds will be stored in the storage room. Aloe vera fronds can last for one month without losing their freshness as long as there are no rotten fronds in one batch.

Suppliers

Herbavera's suppliers are aloe vera farmers who have plantations in the Depok and Bogor areas. Herbavera only uses organic aloe vera, so the supplier selection process is carried out carefully to ensure that the aloe vera trees planted in the supplier's orchards are cultivated organically. Based on data from the West Java Government, in 2021, the amount of aloe vera harvest (organic and non-organic) in the province was around 130 tons, with the three main producing areas being Bogor (55.8 tons), Sumedang (22 tons) and Cianjur (21.95 tons).

Industry Analysis

Potential of Food Processing Industry

The food and beverage industry in Indonesia has experienced significant growth over the past ten years (2002-2022), despite being impacted by the Covid-19 pandemic. In 2021, the food and beverage industry in Indonesia increased by 2.54 percent from the previous year, reaching a total of IDR 775.1 trillion. According to the report of the Central Statistics Agency (BPS), the Gross Domestic Product (GDP) of the national food and beverage industry, wherein the Based on Current Prices (ADHB) figure, reached IDR 1.12 quadrillion. This value contributed 38.05 percent to the non-oil and gas processing industry, or around 6.61 percent of the national GDP which reached IDR 16.97 quadrillion.

Referring to the 2009 Indonesian Standard Classification of Business Fields (KBLI), the food and beverage processing industry is a sector of economic activity that converts raw materials into finished goods or semi-finished goods through mechanical, chemical, or manual processes, before being delivered to end consumers. The food and beverage processing industry in Indonesia is considered a mature sector.

Although many businesses in this industry are small or micro businesses, there are also several large companies that dominate the market that have been listed on the Jakarta Stock Exchange, for example PT Indofood Sukses Makmur Tbk, PT Garudafood Putra Putri Jaya Tbk., and several other companies. In addition to local companies, foreign brands and companies such as Nestle, Kraft Foods, and Unilever also have a strong market share in Indonesia.

Although several large companies dominate the food and beverage processing industry in Indonesia, this sector is still wide open for micro, small, and medium-scale entrepreneurs (MSMEs). The majority of micro and medium-scale entrepreneurs (MSMEs) in Indonesia operate in the food and beverage processing industry. According to data from the Central Statistics Agency (BPS), the number of micro and small businesses in the food sector reached 1.51 million business units in 2020, taking a proportion of 36% of all national micro and small businesses in 2020, which totaled 4.21 million business units (BPS, 2021).

Aloe Vera Industry Potential

Aloe vera has various benefits that have been recognized and used in various fields. The following are some of the main benefits of Aloe vera (Tunas Hijau, 2023; Medical News Today, 2023), namely for skin care, natural moisturizer, as antioxidant and anti-aging, relieve skin irritation, hair care, digestive support, and wound healing.

Aloe vera can be eaten directly or processed into various processed products. Some examples of popular aloe vera processed products:

1. Drinks: aloe vera is often used as the main ingredient in healthy and refreshing drinks.
2. Cosmetic products: Aloe vera gel has good moisturizing and healing properties for the skin, so it is often used in cosmetic products, such as lotions, face creams, and others.
3. Food supplements: Aloe vera is also available in the form of food supplements. Aloe vera gel can be dried or processed into powder which is then packaged in capsule or tablet form.
4. Hair care: Aloe vera is also often used in hair care products. Aloe vera extract or gel is added to shampoo, conditioner, or other hair care products.
5. Food and sweets: Some foods and sweets also use aloe vera as an additional ingredient.

Problems faced by Herbavera

The main raw material for Herbavera is aloe vera. Initially, the supply of aloe vera for Herbavera came from five aloe vera farmers in the Sawangan (Depok) and Bogor areas. From the start, Amir and his wife have committed to only using organically cultivated aloe vera, because it tastes better and takes longer to rot. By having 5 suppliers, Amir is letting his suppliers know and understand that Herbavera really

wants high quality, and they should be serious about supplying organic aloe vera to Herbavera. However, along the way, Amir saw some inconsistency in the quality of the aloe vera supplied (the mass and dimensions of the aloe vera were inconsistent). Moreover, at the beginning of the pandemic, Amir found that some of his suppliers had started to switch to producing non-organic aloe vera. Amir really emphasizes the healthy image of his product, that Herbavera is only produced using organic aloe vera in order to maximize the benefits of the plant for people who consume it, so the reduction in organic aloe vera suppliers raises the issue of availability of a stable long-term supply. After having a long discussion with Yuni and her employees, Amir found several options that could be taken to overcome the problem.

Option 1. Finding new suppliers

Herbavera can find new suppliers to address the shortage of organic aloe vera supply. Aloe vera plants are easy to cultivate, and as such aloe vera farmers are found in various regions. However, it is obvious, the further the location of the plantation is from Herbavera's production location, the higher the logistics costs will be. In addition, it is not easy to find farmers who cultivate aloe vera organically and able to meet the quality standards and quantities desired by Herbavera.

Option 2. Partner exclusively with one of the existing suppliers

Herbavera can also explore the possibility of partnering exclusively with one of the farmers who has the largest farm land and remains committed to producing organic aloe vera. Having one supplier will facilitate the process of supplier management and quality control. However, having only one supplier will increase the risk of supply disruption, if something happens to this single supplier. For example, based on Amir's experience working with previous aloe vera suppliers, one of the obstacles he faced was the sustainability of supply, because aloe vera farmers generally do not pass along the cultivation of their crops to their successors. This indicates that if the farmer is no longer able to cultivate the crops, the supply of aloe vera will grind to a halt.

Option 3. Cultivating their own aloe vera

Herbavera can also cultivate organic aloe vera independently. Amir and his team have been thinking about this option since Herbavera was first established. Amir is thinking about opening a land area of between $\frac{1}{2}$ - 1 hectare. Because the cost of land is quite expensive, Amir plans to rent empty land in the Sawangan area of Depok or in Bogor. Empty land in the Sawangan area of Depok and in Bogor can be rented with a lease period of between 1 and 5 years. Herbavera wants to rent for at least 5 years, and if the results are good, they will continue the lease for the next 5 years. It is estimated that the initial capital needed for land processing and aloe vera seeds will be around IDR 350 million for 1 Ha of land in the first year. This cost includes land rental costs, and aloe vera can be harvested after one year. By renting or buying its own farm land, Herbavera can cultivate aloe vera itself, so that it can ensure the quality of the aloe vera produced is as desired. However, this option will require a lot of capital and finding land to rent or buy will take a lot of time. In addition, Mr. Amir has no experience in planting organic aloe vera, so there is still a risk of crop failure or low harvest yields for the first few years of planting.

Closing and discussion questions

Amir sees that his current business has good prospects in the future, as indicated by the increasing sales trend.

However, the shift of several supplier farmers to producing non-organic aloe vera has caused instability in the supply of the main raw material. In addition, Amir is also faced with the problem of shrinking aloe vera plantation land in Depok and Bogor areas due to the conversion into residential land. This makes it increasingly difficult to find suppliers of organic aloe vera, or land that can be used as aloe vera plantations in the future. Amir must immediately find a solution to ensure the availability of aloe vera supplies because demand continues to come in, especially from online marketplaces.

Discussion questions:

1. Describe Herbavera's current supply chain.
2. Conduct a SWOT (strengths, weaknesses, opportunities, threats) analysis for supply chain management at Herbavera.
3. What are the advantages and disadvantages of Herbavera's current sourcing strategy?
4. Explain the supply chain risks faced by Herbavera, and their mitigation.
5. There are several methods that can be used by the company to determine procurement strategies, for example the Kraljic portfolio matrix. Determine the quadrants of the Kraljic matrix for the various raw materials and packaging listed in Table 2 and determine the appropriate purchasing strategy for each raw material and packaging.

6. Regarding the sustainability of aloe vera supply, in your opinion, of the three sourcing options mentioned in the case, which one should be chosen? What are the advantages and disadvantages of each option? Are there other options besides these three options?

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APPENDICES



Figure 1. Herbavera website display

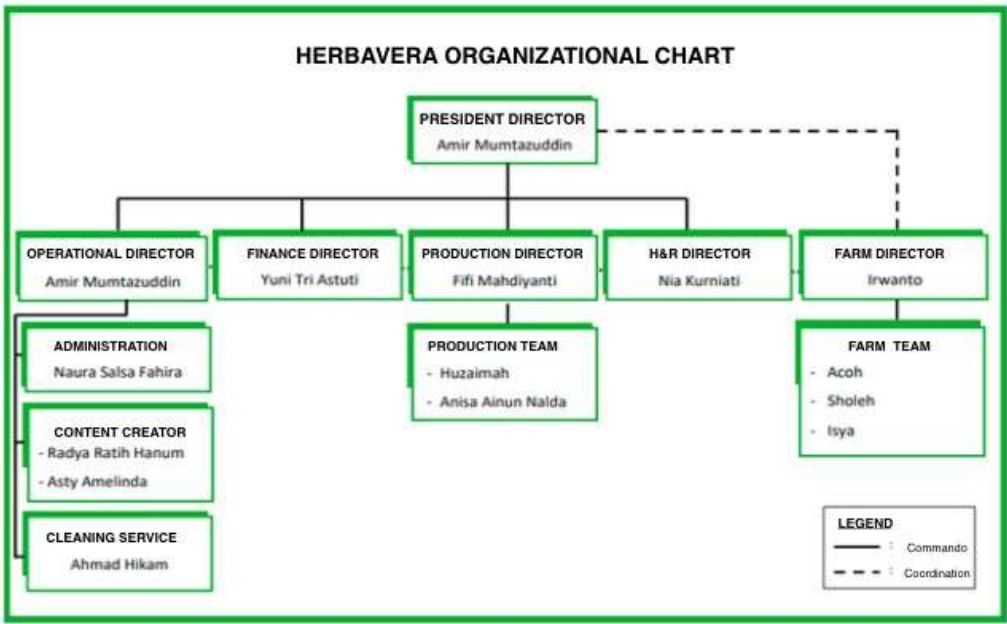


Figure 2. Herbavera Organizational Structure
Source: Herbavera



Figure 3. Herbavera Product Range
Source: Herbavera



Figure 4. Herbavera Promotion on Instagram.
Source: Herbavera

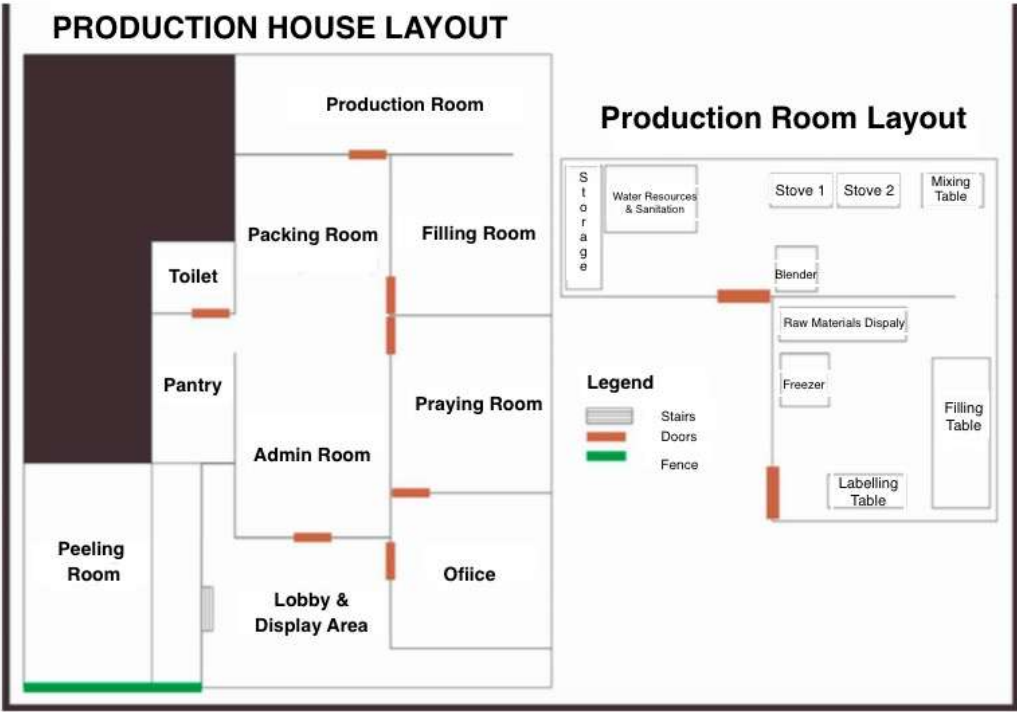


Figure 5. Layout of Production House
Source: Herbavera

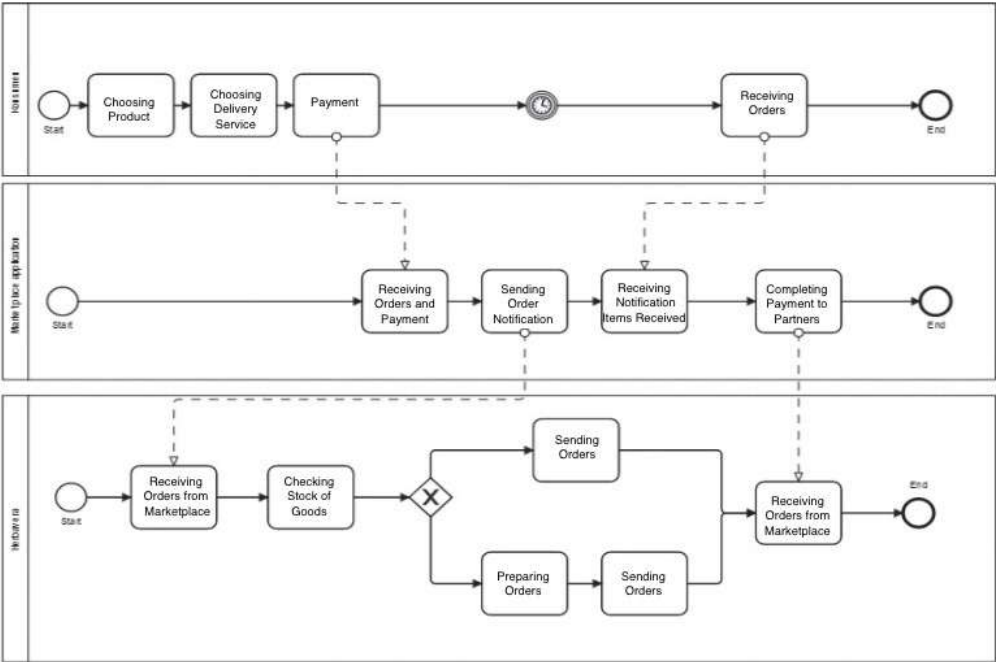


Figure 6. Marketing Activity Business Process Model
Source: Herbavera and reprocessed

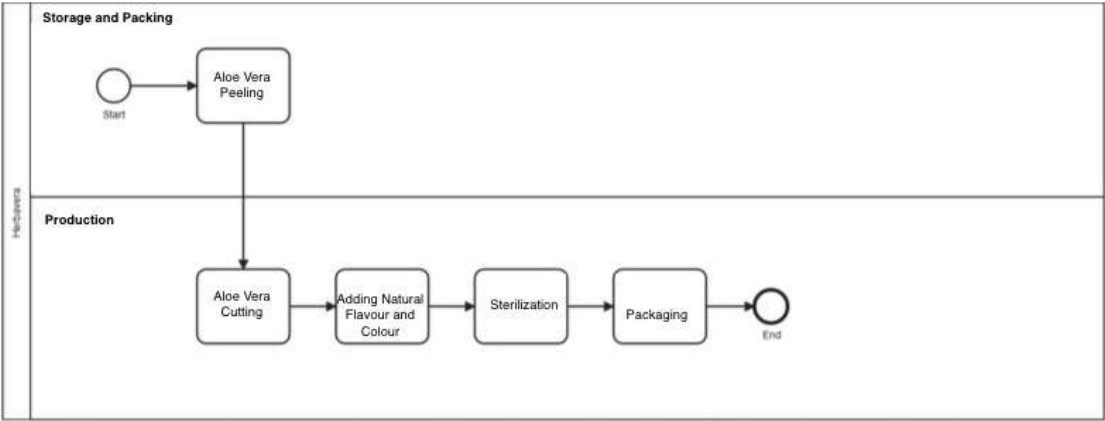


Figure 7. Business Process Model of Production Activities: Aloe vera jelly juice
Source: Herbavera and reprocessed

Table 1. Herbavera Products

Beverage	Food	Additional Products
Aloevera Jelly Juice	Aloe Vera Sweets	Aloevera Gel
Premium Aloevera Jelly Juice	Aloe Vera Jelly	Aloevera Leaf
Nata de Aloevera	Aloe Vera Chocolate	Aloe Vera Seeds
Delicious Aloevera	Palm Fruit Sweets	
Aloevera Peel	Mixed Aloe Vera and Palm Fruit Sweets	
Aloevera Tea	Aloe Vera Pudding	
Aloevera Syrup		
Aloevera Topping		

Source: Herbavera

Table 2. Raw Materials and Packaging

Raw Materials		Packaging and Labels	
No	Ingredients	No	Materials
1	Aloe Vera Leaf	1	Plastic bottle packaging
2	Aloe Vera Skin	2	Plastic cup packaging
3	Aloevera Plant Seeds	3	Nylon packaging
4	Palm Fruit	4	Plastic pouch packaging
5	Chocolate Stem	5	Plastic jerry cans
6	Chocolate Color	6	Plastic jars
Food Additive Raw Materials		7	Plastic clip
No	Material	8	Small plastic spoons
1	Sugar	9	Tea bags
2	Jelly powder	10	Drip sachets
3	Flavor	11	Jelly plastic
4	Benzoate preservative	12	Jelly ribbons
5	Basil seeds	13	Plastic wrap
6	Powdered drink	14	Cardboard
7	Lemons	15	Labels
8	Coloring agent		
9	Aroma agent		
10	Emulsifier		

Source: Herbavera

Table 3. Percentage of Sales of Each Product in 2023

No.	Products	Sales Percentage
1	Aloevera Peel	36.2%
2	Aloevera Gel	15.2%
3	Candied Palm Fruit	14.4%
4	Aloevera Leaf	12.0%
5	Aloevera Jelly Juice	5.5%
6	Seedlings	5.1%
7	Aloevera Topping	2.9%
8	Premium Aloevera Jelly Juice	1.9%
9	Nata de Aloevera	1.7%
10	Candied Aloevera	1.5%
11	Mixed Sweets	1.3%
12	Aloevera Jelly	1.2%
13	Aloevera Tea	0.5%
14	Aloevera Chocolate	0.4%
15	Delicious Aloevera	0.2%
16	Nata de Aloevera Cup	0.1%
17	Aloevera Pudding	0.0%

Source: Herbavera (2023)