

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY

Kombucha is one of the fermented drink that has lots of benefits to human body, other than yogurt and kefir. The main ingredient of kombucha are tea, sugar and SCOBY (Symbiotic Culture of Bacteria and Yeast) for the starter. SCOBY usually has a round shape and gummy texture like nata de coco. It can appear and grow on the surface of kombucha during the fermentation.

In the kombucha making, it goes through 2 fermentation processes. The first fermentation is brewing the sweet tea and add the SCOBY and its starter to get the sour yet still sweet taste during 7 – 10 days in the room temperature. Then in the second fermentation, usually herbs or fruits are added to add flavors and aromatic. In addition, sugar is usually added more to get the fizz.

The bacteria from the culture that is used for the kombucha's fermentation are lactic acid bacteria and acetic acid bacteria like *Lactobaccilus sp* and *Lactococcus sp* so it produces functional acids like lactic acid, acetic acid, nucleic acid and malic acid and becomes probiotic drink. These acids are very important to human digestion, and also can regenerate cells, as well as for detoxification.

Turmeric leaves are usually used for the taste, aromatic, and coloring in cooking. Not only for cooking, it is processed for medicinal herbs because of its health benefits. However, the products that's using turmeric leaves are still not vary and limited, because people mostly only use the turmeric itself rather than utilize the leaf.

The reason why the writer chose turmeric leaves for the main ingredient for kombucha as the product for the research and development was because turmeric leaves has a lot of potential and benefits that a lot of people are not aware. Studies

have reported that turmeric leaves have curcumin, phenolic compounds, and flavonoids that can act as anti-inflammatory, antibacterial and anticoagulant, antioxidant, antitumor, and antidiabetic based on its free-radical-scavenging activity.

Therefore, due to the compounds that contain in the turmeric leaves, it can be processed as a tea for the main ingredients of kombucha, so the benefit can be increased. During the fermentation of kombucha, the phenolic compounds can increase even more. Hence, not only for probiotic drinks, turmeric leaves tea kombucha can be an antioxidant drink. By research, turmeric leaves can be processed as a tea by steam blanching it and dehydrate it in 60 - 65°C for 4 – 6 hours to increase the level of polyphenol.

Depending on the tea, but the longer the fermentation, the lighter the color of the kombucha will be and the phenolic acids that's contained increase. The color of this product is yellow and cloudy and the taste is not too sweet and slightly tangy because the culture transform sugar into amino acids, vitamin B and C. In addition, depending on the amount of sugar that's added in the second fermentation, kombucha can be fizzy because sucrose (sugar) is hydrolyzed into glucose and fructose and changed into ethanol and CO<sub>2</sub>.

## **1.2 THE OBJECTIVES OF STUDY**

1. The purpose of this development is to maximize the use of turmeric leaves without reducing the benefit too much
2. Increasing the health benefit of kombucha
3. Creating a new product to start a new business