

CHAPTER II

LITERATURE REVIEW

2.1 Wuluh Blossom

Averrhoa blimbi linn is an Indonesian fruit plant also found on the ground of malaya. It thrives in its yard and is included in a plant that is easy to cultivate. In addition to traditional medicine, wuluh's fruit is often used as a flavoring of food, cooking spices, preservatives, fresh food makers, stain cleaners, filthy body cleaners, rust remover metals, ceramics. The wuluh leaf can treat stomach pains, reummocytes, shelling, and fever-reducing. The fruit of the wuluh can be used to treat whooping cough, acolytes, high blood pressure, bleeding gums, lip ulcers, hole teeth, disturbances and encephalitis (Parikeytes, 2011; Soebiyanto, 2008).

According to the Tourkecytes (2011), the wuluh plant contains sugar compounds, phenolic, calcium ions, amino acids, citrote acids, vitamins and 3- o-h-d-glucoside. Also, the wuluh saplings contain flavonoid and triteroid compounds that can act as antibacterial. Muchthus et al. (2013) says the wuluh berries also contain organic acids. Organic acid can potentially be an antibiotic for salmonella sp. and keeps the microfloradi digestive system stabilized (Gauthier, 2002). The highest organic acid on the wuluh berries is cystic acid (92.6-133.8 mg/100 g), according to Silalahi and Sauland (2015), an additional 0.5% of the fruit juice on rations can add weight.

2.2 Cinnamon

Cinnamon is a spice that is made from the inner bark of trees

scientifically known as cinnamomum. Cinnamon is one of the natural flavor commodities that has not been utilized optimally. One of its derivatives products is essential oil. Essential oils are obtained through the distillation process. The by-product of the distillation process is hydrosol. Hydrosol is an emulsion from essential oil which is bound by water molecules. The hydrosol used in this research was a by-product of processing of cinnamon bark essential oils using Pilot Plant-scale steam distillation. The Pilot Plant-scale steam distillation is using 50 % of destilation tank capacity, with a variety of valve openings ($\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$). The study aimed determine characterization of cinnamon bark hydrosols including total phenol, antioxidant activity of reducing power method, antioxidant activity of radical scavenging (DPPH) method, total flavonoids, and antimicrobial activity against *Pseudomonas* fluorosence; *Aspergillus niger*; *Bacillus plantarum*; *Staphylococcus aureus*; and *E.coli* (Umi,2011).

2.3 Rock Sugar

Rock sugar is especially common in Asian cuisines and is used to sweeten teas, desserts, and even savory dishes. It is less sweet than a comparable volume of granulated, white table sugar, making it an ideal, mild sweetener for many drinks and dishes. Some people believe rock sugar is healthier than white granulated sugar. However, there is no scientific evidence to support that rock sugar has distinct health benefits over granulated sugar. Moreover, rock sugar is often made from refined white sugar, making its chemical composition identical. Rock sugar is a simple carbohydrate. Simple carbohydrates— such as rock sugar, table sugar, syrup, and honey— metabolize quickly in the body. Theyare rapidly broken down into glucose after consumption, causing swift spikes and drops in blood sugar levels. As a result, rock sugar, like table sugar, servesas a quick source of energy for your body's cells, tissues, and organs. Rock sugar typically has a milder sweetness level than a comparable amount of pure table sugar. Since

it is made from a water and sugar solution, it is more diluted than refined sugar. Replacing refined sugar with the same volume of rock sugar crystals could lead to lower sugar intake and fewer calories being consumed, but only if you don't end up adding more rock sugar to increase the level of sweetness (Begum, 2022).

2.4 Scoby

Kombucha is a black tea that has been dissolved by sugar and fermented by using yeast and bacteria mixture and produce slabs on the surface known as SCOBY (Symbiotic Culture of Bacteria and Yeast). The shape of SCOBY kombucha is like white sheet gelatin with a thickness of 0,3-1,2 cm covered by clay membrane, gel texture shapes the SCOBY colony to adjust the breeding ground, growing in a medium that contain glucose like a sugar tea. The microbes in SCOBY work by converting the sugar tea solution into variety of vitamins, acids, complex molecules, and micronutrients. In this study, the researcher conducted a SCOBY formulation of raw kombucha and the use of two different growth media which are sugar solution and sugar tea solution. The sugar concentration used in this research are 25, 35, 45, 55, and 65%. After 14-day fermentation, the result is the formula that can produce SCOBY with good quality is the formula that uses the growth media in the form of sugar tea solution with 25% sugar concentration by using parameters in the form of color, shape, and SCOBY thickness (Cahya, 2020)

2.5 Kombucha

Kombucha is a fermented beverage made from tea and sugar. Kombucha has benefits for the health of the body, this is due to various kinds of content including antioxidants, antibacterial, intestinal detoxification, lowering blood pressure and increasing body immunity. Kombucha is a drink that contains alcohol content at the end of the fermentation process. This is problematic because the majority of Indonesian consumers are Muslims who require halal food standards based on the regulations of the Indonesian Ulema

Council (MUI). The research method used is a laboratory test with a treatment design that is designed based on chemical test procedures. The conclusion of the study is that based on the results of tests conducted at the health laboratory in the city of Tangerang, the results of the ethanol/alcohol content of 0.055 percent in kombucha drinks. Thus the test results have met the MUI regulations where fermented drinks must be below 0.5 percent to be declared a halal drink (Riswanto, 2021)