

CHAPTER II

LITERATURE REVIEW

2.1 Carica Dieng Fruit



Figure 2. 1 Carica Dieng Fruit

Carica Dieng Fruit is called dwarf papaya because of its tiny size. Carica Dieng Fruit always hangs from a stem and is shaped like a starfruit. Carica Dieng Fruit is a fruit brought by Dutch colonialists in World War II from the Andes highlands, South America (Dinas Pariwisata dan Kebudayaan Kabupaten Banjarnegara, 2022). Carica Dieng Fruit (*Vasconcellea pubescens*) is a plant found only in Dieng Plateau, Wonosobo, Central Java. Carica Dieng Fruit or Mountain Papaya contains anti-diabetic flavonoids, alkaloids, polyphenols, cysteine proteases, and papain (Sasongko *et al.*, 2020). Also Machfud & Abdurrafi (2022) explain in Kejajar District, Wonosobo, Jawa Tengah Carica plant grow well. The height of the planting location has an impact on the growth of carica plants as well. The better planting site, the greater grade Carica Dieng Fruit will be produced. According to Atmanto *et al.* (2020) Carica fruit is a fruit commodity that is not easily found in other regions in Indonesia, but thrives in the Dieng highlands of Wonosobo Regency. Carica fruit has a unique flavor, distinctive smell and chewy flesh. Carica fruit is also an agricultural commodity that

does not last long or is damaged very quickly when stored fresh.

According to Sasongko *et al.* (2020), Carica Dieng Fruit contains calcium, sugar, and vitamins A and C, so it is perfect to be eaten by people whose stomach is weak against other fruits. It has properties to improve the digestive system. Carica Dieng Fruit contains a lot of *Papain* enzymes, which speed up the digestive process (Dinas Pariwisata dan Kebudayaan Kabupaten Banjarnegara, 2022).

2.2 Yoghurt

Yoghurt is generally defined as a cultured milk product using *Streptococcus thermophilus* and *Lactobacillus delbrueckii subsp bulgaricus* (Savaiano & Hutkins, 2021). One example of a fermented milk product with many uses that has known by the public is yoghurt. A product made from milk that has been fermented or reconstituted with the help of the lactic acid bacteria *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, and or other suitable lactic acid bacteria with or without the inclusion of other food ingredients and approved food additives (Rohman & Maharani, 2020).

According to Meybodi *et al.* (2020) Standard Yoghurt is a fermented milk-based food with thermophilic and homofermentative strains of *Lactobacillus bulgaricus* and *Streptococcus thermophilus* starter microorganisms. However, because this strain is not acid-resistant, it cannot survive and colonize the gastrointestinal tract. Its ability to metabolize lactose has positive health effects, particularly in individuals with lactose malabsorption. Yoghurt's bacterial inhabitants also provide enzymes. Lactase is required to break down lingering sugar. The Yoghurt's milk content when compared to the degree of preservation of fresh milk, Yoghurt has a greater level of durability because it includes lactic acid, which may make Yoghurt more durable and sourer. Lactate is a natural preservative that may be used in Yoghurt. One of the most physiologically functional foods that people

eat is Yoghurt. It is an excellent source of vitamins, minerals, and proteins (Hendarto *et al.*, 2019). Santosa *et al.* (2022) explain yoghurt is fermented milk which is very healthy. Made from milk fermented with bacteria that produce acid. Yoghurt tends to taste sour generally, so it's less preferred.

2.3 Fermentation

Fermentation or leavening is a process of energy production in cells under anaerobic conditions (without oxygen) that leads to organic biochemical transformations through the action of enzymes. Fermentation is a type of anaerobic respiration, but there is a more precise definition that describes fermentation as anaerobic respiration in the absence of an external electron acceptor (Khan Academy, n.d). Bread, wine (beer), and cheese are products that undergo fermentation (Molnar, n.d.). According to Hidayanto (2017), The term "fermentation" has its etymological roots in the Latin word "fervere," which translates to "to boil." The etymology of this term originating from Latin can be linked to the state of a fluid exhibiting bubbling or boiling. The process of fermentation can be defined as a chemical transformation of an organic substrate facilitated by enzymes synthesized by microorganisms. Historically, fermentation has been predominantly linked to carbohydrates and is a commonly employed process in modern times (Xiang *et al.*, 2019).

According to Sharma *et al.* (2020) despite the broad scope of the definition of fermentation, it encompasses the transformation of proteins and fats through the metabolic processes of microorganisms. Setiawati & Puspitojati (2020) explain about the main purpose of producing milk fermentation is to prolong shelf life of milk due to microorganism. Products made from professionally fermented milk such yoghurt and kefir.

