CHAPTER II

LITERATUR REVIEW

2.1 Ingredient Review

2.1.1 Dates

Phoenix dactylifera (date palm) is a flowering plant belonging to the palm family Arecaceae which is widely cultivated for its fruit consumption. Dates are a staple food for people in the Middle East and North Africa. It is now mostly cultivated in many tropical and subtropical regions around the world. In addition, it is now consumed as food in various parts of the world, especially Europe. Date palm trees can grow 21–23 m long, with leaves that grow up to 4–6 m and have around 150 leaves. . Trees usually grow singly or in groups from a single root system. Currently there are more than 100 million date palms cultivated globally, the majority of which are in the Middle East (around 90%). Therefore, they are today strongly associated with the Muslim Arab world, although historically, theyhave been associated with Judaism and early Christianity, partly because these trees were widely cultivated as a food source in ancient Israel. It is a tradition to eat dates first to break the fast during the Muslim fast of Ramadan. For Muslims around the world, dates have religious significance and are mentioned in many places in the Qur'an. (hussa a,2019)

Figure 2.1 Dates

Dates are reported to contain 6.5%–11.5% total dietary fiber (up to 90% of which is insoluble and 10% soluble dietary fiber), about 1% fat, 2% protein, and 2% ash. Dates are also rich in phenolic antioxidants. Likewise, soft dates consist mostly of invert sugars (fructose and glucose) with little or no sucrose, while dry dates have a high proportion of sucrose. Therefore, fruits are classified based on the type of sugar into invert sugar types which mostly contain glucose and fructose (eg Barhi and Saidy), mixed sugar types(eg Khadrawy, Halawy, Zahidi, and Sayer), and sugar types sugar cane whichmostly contains sucrose (eg Deglet Nour and Deglet Beidha). Dates contain various important nutrients so they are very nutritious. Ripe fruit contains mostly sugar (80%), with smaller amounts of protein, fiber and trace elements including boron, cobalt, copper, fluorine, magnesium, manganese, selenium and zinc. Given the rich nutritional and antioxidant content of dates,there have been efforts to develop functional foods from dates.

2.1.2 Shitake Mushroom

Shiitake mushroom Lentinula edodes (Berk.) Pegler is a type of foodmushroom its production at the world level, ranks second only to champignonmushrooms and produced primarily in China, Japan, and Korea. Besides its main benefits as food ingredients, these mushrooms capable of producing bioactive metabolites can be used as a medicinal ingredient. Poucheret et al.(2006) suggests that shiitake mushrooms can be used as a medicinal ingredient and has been widely researched in several countries including Japan, China, Korea and Brazil. The bioactive metabolites of the fungus, can be obtained from mushroom fruiting bodies, biomass mycelium or from supernatant/ the medium filtrate. Smith et al. (2002) stated also that in China,shiitake mushroomshave been used as medicine since thousands of years ago, especially for the treatment of infectious diseases, cancer, cardiovascular, and to improve immune system.

Figure 2. 2 Shitake Mushroom

Mushrooms are generally considered a beneficial product with many uses in the food and health industries. Shiitake (Lentinula edodes) is one of the most widely cultivated and consumed mushrooms throughout the world. The increasing complexity of medical science and phenomena such as antibiotic resistance have driven the search for alternatives for the treatment and prevention of disease. Shiitake mushrooms are rich in nutrients and contain many minerals (Potassium, Manganese, Magnesium, Iron, and Phosphorus) and vitamins (pro-vitamin D2, vitamins B1, B2, B6, B12, and niacin) which make them a potential nutritional source. Shiitake mushrooms contain essentialmacro and micro nutrients as well as many bioactive compounds, including polysaccharides, antioxidants, dietary fiber and ergosterol. Bioactive compounds can be useful for maintaining the health of users and preventing them from disease. Shiitake mushrooms contain phenolics, polysaccharides, sterols, which play a role in body function thereby improving individual health.(ishtiaq ahmad,2023)

Product Review Jerky is meat that is cut thinly and usually dried using low heat or driedin the sun, which produces a quite chewy jerky texture due to the drying process. However, it should not be too tough or hard to eat. As for the color itself, jerky should have a rich, dark color, which indicates it has been well- marinated and cooked properly. Indonesian jerky has various types and uniqueflavors, including salty, sweet and spicy, for example balado jerky, green chilijerky and many

more. Jerky is valued not only for its taste but also for its nutritional benefits. It is typically high in protein and low in fat, making it a popular choice among health-conscious consumers (Brown & Miller, 2019). Research has shown that jerky can provide essential amino acids and micronutrients, contributing to overall dietary quality (Johnson, 2021).

However, beef, the main protein in jerky, is associated with two conditions: allergic to red meat, and there are people who have a lifestyle that does not consume animal products or are usually called vegans. Jerky made from dates and shitake has become an innovative choice for consumers lookingfor a healthy snack free from animal products. With increasing awareness of the importance of a healthy diet and demand for animal-free products this product meets that needs.

This product was created in response to market demand for snacks thatare healthy, nutritious, and suitable for those who have red meat allergies or people who choose a vegan lifestyle. Research shows that this date jerky has the same texture, shape and taste as sweet jerky originating from SouthSulawesi. This jerky is also designed using dates which are rich in vitamins and minerals which can help meet daily nutritional intake. Apart from that, this product also uses shitake mushrooms which contain Ergothioneine, an antioxidant compound thatcan reduce the risk of prostate cancer, makes it a healthier choice for consumers.

2.2 Process Review

In making jerky from dates, the drying method is an important stage that affects the quality of the final product. Drying aims to reduce the water content in dates and shitakes, resulting in a dry and chewy texture. In the past,people dried jerky in a traditional way by exposing it directly to sunlight, whichhad several disadvantages, such as the dried meat being contaminated with dustand insects that were around, then the drying time also took longer and also it is difficult to control the drying temperature with sunlight, which can cause inconsistent drying results and potentially reduce the nutritional quality of food. The drying method used in making dates jerky is a dehydrator. Drying is undoubtedly the oldest method and is still widely used today among the many food preservation techniques. Water is removed from food through evaporation or sublimation, thereby reducing water availability for microbial, enzymatic, or chemical reactions that can cause food degradation (Guiné & Dets, 2018).

The drying method (dehydrator) can maintain the nutritional quality of raw materials, especially the protein content of dates which is sensitive to heat. The temperature used to dry dates and shitake mushrooms is 70 degrees Celsius for approximately 36 hours. According to research by Liu et al. (2019),the drying method effectively maintains the nutritional content and enzyme activity in raw materials, resulting in a more nutritious final product. This drying method allows better control over drying time and temperature. This is important to avoid excessive drying which can result in loss of nutrients and changes in the taste of the product.