

CHAPTER II

LITERATURE REVIEW

2.1. Purple Sweet Potato

Purple sweet potato (*Ipomoea batatas* L. Poir) is one of the local food ingredients that grows a lot in Indonesia. Purple sweet potatoes have purple flesh and skin color due to the presence of anthocyanin pigments (Fatimatuzahro et al., 2019). Anthocyanins are polyphenol derivatives which are natural plant pigments found in fruits and vegetables.

Anthocyanins are useful in preventing cancer or cancer cell growth. Anthocyanin color pigments have the ability to modulate the activity of various targets in carcinogenesis through direct interaction or modulation of gene expression and also inhibit the growth of cancer cells (Kurniasari et al., 2021).

Anthocyanins are components of cell vacuoles, abundant constituents of flavonoids, which give flowers, vegetables, or fruits the various colors (red, purple, and blue). Purple sweet potato is known as a healthy food that can also be used as a natural food coloring. Purple sweet potato anthocyanin has many health benefits including as an antioxidant, antihypertensive, and also protective for the liver and retina (Zhang et al., 2009).

Purple sweet potato contains vitamins and minerals. The Vitamins contained in purple sweet potatoes are vitamin C, vitamin A (beta-carotene), vitamin B1 (thiamin), and riboflavin, while the minerals they contain are iron (Fe), phosphorus (P) and calcium (Ca) (Rosidah, 2014). The superiority of purple sweet potato compared to other sweet potatoes is that it contains carbohydrates and has a higher anthocyanin content (Amelia, 2022). Seeing these advantages, it is necessary to carry out further processing to produce better quality of purple sweet potato product.

2.2. Cookies

Cookies are one of the most popular complementary food in Indonesia. The level of consumption of cookies in Indonesia in 2021 will reach 1.83 kg/capita/year. This figure shows a positive growth of 165% compared to 2014 which only reached 0.69 kg/capita/year (Food Security Agency, 2021).

Cookies quality is related to taste, texture, and appearance which can affect consumer acceptance (Ratnawati et al., 2020). The texture of cookies that are not hard can be produced by using ingredients that contain fat. Other ingredients that can be used to improve texture apart from ingredients that contain fat, one of which is starch. One of the advantages of cookies is that they have a long shelf life because they have a low water content (less than 10%) (Rakhman, 2017).

Cookies have several types, which are grouped based on the method of makeup. There are eight types of cookies, namely bagged cookies, dropped cookies, rolled cookies, molded cookies, ice box cookies, bar cookies, sheet cookies, and stencil cookies (Wayne, 2017).

Egg drop cookies are included in the type of dropped cookies because because the main ingredient used is egg and in the process of molding the dough, the dough is put into a papping bag then sprayed/dropped onto a baking sheet little by little with a uniform size (Kurniawati, 2021). Egg drop cookies have a crunchy and soft texture, flat round shape like a button and has a smooth surface texture.

In Indonesia its rarely to find gluten-free cookies for baby complementary food.

2.3. Purple Sweet Potato Flour

The Process of purple sweet potato flour are cleaning, trimming, slicing, drying. and milling process. The process of processing purple sweet

potato flour involves crushing the sweet potato and removing the water content up to 7% through the drying process (Dhani, 2020).

Purple sweet potato flour is a source of carbohydrates in the ingredients for dough substitutes for wheat flour. The starch contained in purple sweet potato is high, namely 74.57%. Starch is a carbohydrate component that has 2 parts, namely the water-soluble part called amylose and the insoluble part is amylopectin (Nisah, 2017). In general, starch contains more amylopectin than amylose, which affects the solubility and degree of starch gelatinization. The ratio of amylose and amylopectin in purple sweet potato flour is almost the same as that of wheat flour. Wheat flour contains 28% amylose and 72% amylopectin (Sukerti et al., 2013) while purple sweet potato flour contains 24.79% amylose and 49.79% amylopectin.