

CHAPTER II

LITERATURE REVIEW

This chapter discusses the related literatures to the research including Donuts, Ingredients of Donuts, Standard Recipe of Donuts, Making Process of Donuts, and Information about Dragon Fruit, Types of Dragon Fruits and Benefits of Dragon Fruit.

2.1 Donuts

Donut are processed foods made from wheat flour having a round shape and a hole in the middle, given toppings above to make it look sweeter. According to (Student, 2017), Donut is a kind of mini cake with a distinctive shape, which is hollow in the middle like a ring, and round in shape if filled with something, usually a donut filled with sprinkle, or things that smell sweet, with the main ingredient in making donut is wheat flour.



Figure 2.1 Donut

Source: <http://www.indonesiastudents.com/pengertian-donat-dan-sejarahny/>

2.1.1 Ingredients of Donut

There are some ingredients to make a donut such as butter, flour, yeast, milk, egg, salt, sugar

- **Butter**

Butter is a product made from the solid components in milk (fat and protein). Although most often made from cow's milk, butter can be made out of milk from sheep, goats, buffalo, or other mammals (Moncel, 2018). Based on (Foster, 2015), Butter is the dairy product made from churning milk or cream. The churning process separates the butterfat (the solids) from the buttermilk (the liquid). The butter we most often buy is made from cow's milk, although other varieties made from the milk of sheep, goat, yak, or buffalo are also available. While typically pale yellow in color, butter can range from white to deep yellow, depending on the animal's diet. And since, at its core, butter is made from one ingredient, it can be made at home.

- **Flour**

Flour is the powdery substance created when a dry grain is pulverized. This is referred to as the milling process. The most common varieties of flour are made from wheat although any grain can be made into flour, including rice, oats, corn, or barley (Moncel, A Guide to Flour, 2019). **Based on** (Britannica, 2016), **flour** made from wheat grains is the most satisfactory type for baked products that require spongy structure.

- **Yeast**

Yeast is a single-cell organism, which needs food, warmth, and moisture to thrive. It converts its' food (sugar and starch), through fermentation, into carbon dioxide and alcohol. It's the carbon dioxide that makes baked goods rise. There are two types of yeast available for sale. One type is Brewer's Yeast, a wet yeast used primarily in beer making. The other type is Baker's Yeast, which is used as a leavening agent. The two types of Baker's Yeast are fresh or compressed yeast and active dry yeast

(Pellegrinelli, 2017). Based on Bettie (2019), Yeast are single-celled fungus. Yeast is a fungus and it is alive. There are many different types of yeast in the world and while some of them make us sick and some cause food to spoil, others are put to good use in bread, beer, and wine making.

- **Eggs**

According to (Olsen, 2018), eggs contain many vitamins and minerals that are essential parts of a healthy diet, and in many parts of the world, eggs are a readily available, inexpensive source of food. Further, Wilson (2013) said that eggs play an important role in our baked goods. Eggs add structure, leavening, color, and flavor to cakes & cookies.

- **Milk**

Milk is a white liquid produced by the mammary glands of mammals. All mammals, including humans, will normally produce milk to feed their offspring until they are ready for solid food. It contains valuable nutrients, and it can offer a range of health benefits. Calcium, for example, can prevent osteoporosis (LD, 2017). Milk is a highly nutritious liquid formed in the mammary glands of mammals to sustain their newborns during their first months of life (Arnarson, 2019).

- **Salt**

Sodium, which comes from salt, can help to maintain certain functions, but too much can be harmful. Salt contains 40 percent sodium. For every 10 grams (g) of salt we eat, 4 g is sodium (Nordqvist, 2017).

- **Sugar**

According to BBC (2019) Sugar adds more to cakes than a sweet taste. It also affects the texture, color and how well they keep. A light and airy cake texture is usually down to tiny air bubbles becoming trapped

around the rough edges of the sugar crystals, which expand as the cake cooks. Sugar helps cakes stay moist after baking. A completely sugar-free cake will dry out quickly, so wrap cooled cakes in cling film to prevent moisture loss. Based on Stone (2016) Sugar plays an important role in any cake recipe. Without the inclusion of sugar, a cake would be bland and uninspired in relation to flavor, your cake would also be pale in color, squatty and dense. Sugar's effects on cake are quite diverse.

2.1.2 Standard Recipe of Donut

For making Donut there is a standard recipe. The ingredients are butter, flour, yeast, milk, egg, salt, sugar, oil. The standard recipe of donut can be seen as follows:

Table 2.1 Table Standard Recipe of Donut from Ajayi

Source: <https://guardian.ng/life/six-steps-to-making-doughnut/>

No.	Ingredients	Measure
1.	Butter	100g
2.	Flour	250g
3.	Yeast	2 tsp
4.	Milk	75mls
5.	Egg	1
6.	Salt	¼ tsp
7.	Sugar	25g
8.	Oil	1/2 kg

2.1.3 Making Process of Donut

There are some steps to make donut. According to (AJAYI, 2018), the steps are, First, mix the flour, sugar and yeast in one bowl. Second, Add milk, butter and egg to the mixture in the bowl. Mix properly until a dough is formed. Third, grease a new bowl and place the dough in it. Leave the dough for about one

hour to rise. Next, transfer the risen dough to a surface. Flatten the dough and cut the dough to your desired shape. After that, leave the shaped dough to rise from five to ten minutes. Preheat the oil (vegetable/groundnut) for frying. The last, place the risen shaped dough into the heated oil. Fry the dough until its golden brown.

Based on the steps, writer concluded, that there are six steps to make donut. First is mix flour, sugar and yeast in a bowl. Second is mix milk, butter, and eggs. Third is leave the dough until rise. Then, flatten the dough and cut hole. Next, leave the dough until 5-10 minutes. After that, preheat the oil for frying. The last, fry the dough until its golden brown.

2.2 Dragon Fruit

One of the tropical plants that grow in Indonesia is dragon fruit. Dragon fruit is a fruit that has a round shape, red skin and a taste is sweet not too strong and has a watery texture. According to (Pertanian, 2016), Dragon fruit is a fruit produced from cactus family (*Cactaceae*) and from the genera *Hylocereus* and *Selenicereus*. The taste of dragon fruit is sweet, cold and refreshing because the dragon fruit contains a lot of water in the flesh of the dragon fruit.

2.2.1 Information of Dragon Fruit

2.2.2 Types of Dragon Fruit

There are 4 types of dragon fruit. Each color of the fruit has special benefits. There are some types of banana in Indonesia according to (Indonesia, 2016):

1. White Dragon Fruit

White dragon fruit also has a distinctive aroma and is different from other types of dragon fruit. White dragon fruit has a high content of acid or vitamin C. Dragon fruit contains substances such as protein, fiber, carbohydrates, iron, vitamins B1, B2, beta-carotene, provitamin A, phosphorus, calcium, niacin and many others.



Figure 2.1 White Dragon Fruit

Source: <http://www.sunpride.co.id/manfaat-dan-jenis-jenis-buah-naga/>

2. Red Dragon Fruit

Red dragon fruit is distinguished from the color of the red flesh. Red dragon fruit is said to be the most dominant among other dragon fruit because it has a fruity aroma rather than sweet and has a sweet taste.



Figure 2.2 Red Dragon Fruit

Source: <http://www.sunpride.co.id/manfaat-dan-jenis-jenis-buah-naga/>

3. Yellow Dragon Fruit

Another difference between yellow dragon fruit and other types is in the size of the fruit and also the size of the tree. It is generally known that yellow dragon fruit trees tend to be shorter than other tree. In addition, the planting period or production of this yellow dragon fruit plant is much longer than the red dragon fruit.



Figure 2.3 Yellow Dragon Fruit

Source: <http://www.sunpride.co.id/manfaat-dan-jenis-jenis-buah-naga/>

4. Black Dragon Fruit

Black dragon fruit is the result of a hybrid of super red dragon fruit that is treated and maintained using black fertilizer or also known as black natural.



Figure 2.4 Black Dragon Fruit

Source: <http://www.sunpride.co.id/manfaat-dan-jenis-jenis-buah-naga/>

2.2.3 Benefits of Dragon Fruit

Fruit has many benefits for the body. According to (Meixner, 2018) here are 7 health benefits of dragon fruit:

1. High in Nutrients

Dragon fruit is low in calories but packed with essential vitamins and minerals. It also contains a substantial amount of dietary fiber. Here is rundown of the main nutrients in a one-cup serving (227 grams) :

- **Calories:** 136
- **Protein:** 3 grams
- **Fat:** 0 grams
- **Carbohydrates:** 29 grams
- **Fiber:** 7 grams
- **Iron:** 8% of the RDI
- **Magnesium:** 18% of the RDI
- **Vitamin C:** 9% of the RDI
- **Vitamin E:** 4% of the RDI

Beyond essential nutrients, dragon fruit supplies beneficial plant compounds like polyphenols, carotenoids and betacyanins.

2. May Help Fight Chronic Disease

Free radicals are unstable molecules that cause cell damage, which may lead to inflammation and disease. One way to combat this is by eating antioxidant rich foods like dragon fruit. Antioxidants work by neutralizing free radicals, thus preventing cell damage and inflammation. Studies suggest that diets high in antioxidants may help prevent chronic diseases such as heart disease, cancer, diabetes and arthritis.

Dragon fruit contains several types of potential antioxidants, including:

- **Vitamin C:** Observational studies have found correlations between vitamin C intake and cancer risk. For example, a study in 120,852 people associated higher intakes of vitamin C with lower rates of head and neck cancer
- **Betalains:** Test-tube studies indicate betalains can combat oxidative stress and may have the ability to suppress cancer cells
- **Carotenoids:** Beta-carotene and lycopene are the plant pigments that give dragon fruit its vibrant color. Diets rich in carotenoids have been linked to a reduced risk of cancer and heart disease. Importantly, antioxidants work best when eaten naturally in food, rather than in pill form or as a supplement. In fact, antioxidant supplements may have harmful effects, and taking them without medical supervision is not recommended. On the other hand, dragon fruit is highly recommended.

3. Loaded with Fiber

Although fiber is probably most well known for its role in digestion, research has suggested it may also play a role in protecting against heart disease, managing type 2 diabetes and maintaining a healthy body weight. However, it's important to note that high-fiber diets can have drawbacks, especially if you're accustomed to a low-fiber diet. To avoid stomach discomfort, increase your intake of dietary fiber gradually and drink plenty of fluids.

4. Promotes a Healthy Gut

Like all fibers, your gut cannot break them down. However, the bacteria in your gut can digest them. They use the fiber as fuel for growth, and you reap the benefits. In particular, dragon fruit mainly promotes the growth of two families of healthy bacteria: lactic acid bacteria and bifidobacteria.

Regularly consuming prebiotics may reduce the risk of infection in your digestive tract and diarrhea. This is because prebiotics promote the growth of good bacteria, which researchers believe may out compete the bad.

5. Strengthens Your Immune System

Your body's ability to fight infection is determined by several different factors, including the quality of your diet. The vitamin C and carotenoids in dragon fruit may boost your immune system and prevent infection by protecting your white blood cells from damage.

The white blood cells in your immune system attack and destroy harmful substances. However, they are extremely sensitive to damage by free radicals. As potent antioxidants, vitamin C and carotenoids can neutralize free radicals and defend your white blood cells against harm.

6. May Boost Low Iron Levels

Dragon fruit is one of the few fresh fruits that contain iron. Iron plays a crucial role in transporting oxygen throughout your body. It also plays an important role in breaking down food into energy. To combat low iron levels, it's important to consume a variety of iron-rich foods. Rich sources of iron include meats, fish, legumes, nuts and cereals. Dragon fruit may be another great option, as one serving contains 8% of your recommended daily intake (RDI). It also contains vitamin C, which helps your body absorb iron.

7. Good Source of Magnesium

Dragon fruit offers more magnesium than most fruits, with 18% of magnesium, or roughly one ounce. Despite this seemingly small amount, the mineral is present in every one of your cells and takes part in over 600 important chemical reactions within your body.

2.3 Booklet

Booklets come in many shapes and sizes but are generally smaller than books at approximately 4 to 48 pages, with soft covers and simple saddle-stitched binding. A typical booklet style is a stack of 2 or more sheets of letter size paper, folded in half. The number of pages is always divisible by 4, such as 4 pages, 8 pages, 12 pages (Bear, 2019).

2.3.1 Characteristics of Booklet

According to (Sitepu, 2012) the main elements or parts physically contained in the book, namely:

1. Skin (cover) and contents of the book

The skin of the book (cover) is made of paper that is thicker than the paper content of the book, the function of the skin of the book is to protect the contents of the book. Book skin consists of the front skin or face skin, the back skin of the contents of a book if more than 100 pages are bound with glue or sewing thread but if the book is less than 100 pages does not use the back skin. In order to be more attractive, the skin of the book is designed attractively, such as giving illustrations that match the contents of the book and using names.

2. Preliminaries

This front page contains the title page, blank page, main title page, table of contents and introduction, each front page number of the textbook uses small Roman numerals.

3. Text section

The text section contains material to be delivered to students, consisting of chapter titles and subtitles, each new section and chapter is made on the next page and given a page number beginning with number 1.

4. The back

The back of the book consists of bibliography, glossaries and indices, but the use of glossaries and indices in the book only if the book uses many terms or phrases that have special meaning and are often used in the book.