

CHAPTER I

INTRODUCTION

1.1. Background of Research

Teenage age is the peak of the growth phase (Khomsan, 2004). In this phase, the peak of growth in height, bone mass and weight (Notoatmodjo, 2010). Therefore nutrition is a major requirement for adolescents. One of the important components of nutrients is calcium (Santrock, 2011). Calcium is the main mineral constituent of bone, calcium needs when the growth period will increase (Mann, 2002). Calcium deficiency inhibits growth, studies in China said that adolescents with low calcium consumption have a shorter stature (Aiping, et al., 2017). Research at Islamic boarding schools in Bogor said that 69% of their students lacked calcium intake (Masturoh, 2012). In addition to calcium, fiber is an essential component needed by teens, less in fiber consumption causes problems with digestion or constipation in general (Fajri, 2016). Constipation is a problematic state of defecation in 2 weeks (Greenwald, 2010). Lack of fiber consumption in adolescents due to improper lifestyle and eating habits (Proverawati, 2010).

According to Riskesdas 2018, 93.5% of the population > 5 years consumed vegetables and fruits under the recommendation. (Ministry of Health 2018). Research on 80 teenagers showed an average daily fiber intake of ± 7.6 g / day (Fajri, 2016). Another study at the boarding school said that fiber consumption each day female students is ± 7.5 g / day (Dwinoviya, 2018). The dietary fiber requirements for 13-18 years old girl is 30 g / day. The easiest source of fiber found around the community is vegetables and fruits (Santoso, 2011).

Papaya (*Carica papaya L*) is a source of fiber and calcium. According to the statistics center, the yield of papaya fruit in 2016 in Central Java was 865,759 quintals (BPS, 2018). Beside that papaya has a sweet and refreshing taste. Every 100 grams of papaya contains 46 kcal of energy, 0.5 g of protein, 12 g of fat, carbohydrate 12.2 g, fiber 1.6 g, calcium 23

mg, iron 1.7 mg, sodium 4 mg (TKPI 2017). (Papaya is rich in antioxidants β - carotene, vitamin C and flavonoids). Besides papaya contains karpoina, which is an alkaloid as anti-amoebic and laxative worms. Papaya can facilitate digestion and defecation (Kalie, 2008).

For the prevention of wasting papaya, processing is carried out. Papaya processed products commonly found are dodol papaya, dried or wet sweets, syrup, jam and jelly. Besides, that papaya can be processed into the flour so that it can produce more varied products and relatively long shelf-life (Nurani, 2006). One of the preparations that can be produced from papaya flour is Cookies. Cookies are the product has a shape and sweet taste in general, made from soft dough which produces a crunchy texture when broken (SNI 2011). Long-lasting cookies are stored for a long time and are more practical for consumption (Indrawani, 2010). In previous studies, cookies that were added to papaya flour were less favoured (Ananda, 2016). To improve taste and enrich the nutritional content of cookies can be added dates. Dates contain protein, fiber, glucose, vitamins, fiber levels in dates around 2-4%, glucose levels around 50-57%. (Jahromi et al., 2007). Dates also have diverse mineral content (Al-Farsi, 2008).

Rasulullah SAW said :

حَدَّثَنَا عَبْدُ اللَّهِ بْنُ مَسْلَمَةَ بْنِ مَعْمَرٍ حَدَّثَنَا يَعْقُوبُ بْنُ مُحَمَّدٍ بْنِ طَحْلَاءَ عَنْ أَبِي الرَّجَالِ مُحَمَّدِ بْنِ عَبْدِ الرَّحْمَنِ عَنْ أُمِّهِ عَنْ عَائِشَةَ قَالَتْ قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَا عَائِشَةُ بَيْتٌ لَا تَمْرَ فِيهِ جِيَاعٌ أَهْلُهُ أَوْ جِيَاعٌ أَهْلُهُ قَالَهَا مَرَّتَيْنِ أَوْ ثَلَاثًا

Having told us Abdullah bin Maslamah bin Qa'nabi, has told us Ya'yub bin Muhammad bin Thahlaa 'from Abu Rijal Muhammad bin Abdurrahman, from his mother from yah Aisha, he said; Rasulullah SAW said: "O' Ayesha! The house in which there are no dates, the occupants will be hungry. O yah Ayesha! The house where there are no dates, the occupants will be hungry. "He said it two or three times (HR. Muslim, Sahih Muslim: No.3812).

Based on the hadist above, dates are fruits that are recommended to be consumed by the Prophet. Dates are also one of the types of fruits written in Al-Qur'an. Dates have a variety of nutrient content, there are 23 kinds of amino acids contained in dates proteins including proline, aspartate, glycine, histidine, valine and leucine (Assirey, 2014). If it eaten when breaking the fast, when the stomach is empty, it will eliminate hunger and restore the body's freshness quickly (Rostita, 2009). This study will use papaya flour and dates juice as an alternative supplement for boarding students. Then the problem statement is obtained as follows.

1.2. Formulation of the Research Problem

1. Is there effect of substitution papaya flour and dates puree in dietary fiber content of cookies
2. Is there effect of substitution papaya flour and dates puree in calcium content of cookies
3. Is there effect of substitution papaya flour and dates puree in acceptability of cookies.

1.3 Objectives Research

1.3.1 General Objectives

Analysing the effect of substitution papaya flour and dates puree in dietary fiber , calcium content and acceptability of cookies

1.3.2 Specific Objectives

1. Analyzing dietary fiber content of cookies with papaya flour and dates puree substitution.
2. Analyzing calcium content of cookies with papaya flour and dates puree substitution.
3. Analyzing acceptability of cookies with papaya flour and dates puree substitution

1.4 Benefits of Research

1.4.1 Theoretic Benefits

It is expected to provide useful scientific information for the development of food science and technology, especially regarding the use of papaya flour and dates puree for processed products.

1.4.2 Practical Benefits

1. It is expected to provide information about the opportunities for using papaya for making flour and dates puree as an additional ingredient in making cookies
2. It is expected to be an additional innovation in the production of a product and increase the high economic value of papaya flour and dates puree
3. It is hoped that it can provide an alternative solution for processing papaya into flour to be a product

1.5 Authenticity and Formers Research

Table 1.1. Authenticity and Formers Research

Researched	Title Research	Year	Research Different
Theresia Endang, Widoeri Widyastuti, Ignatius Srianta dan Lily Arsanti Lestari	Tepung Pepaya (<i>Carica Papaya L</i>) Sebagai Pencegah Konstipasi : Kajian In VIVO Pada Caecum dan Feses Tikus Sprague Dawley	2008	Discussing about papaya flour used for prevent constipation
Iftikhar,F., Kumar.,& Altaf,U	Development and Quality Evaluation of Cookies Fortified With Dates Paste (<i>Phoenix dactylifera L</i>)	2013	Discuss about effects of Fortified dates paste on Quality and sensory Cookies

Researched	Title Research	Year	Research Different
Ceni Dwi Ananda	Uji Daya Terima dan Nilai Gizi Biskuit yang Dimodifikasi dengan Tepung Buah Pepaya (<i>Carica papaya L</i>)	2016	Substitution used only papaya flour and nutritional value tested for protein and crude fiber
Boshra Varastegani, Wahidu Zaman, Tajul A. Yang	Investigation on Physicochemical and Sensory Evaluation of Cookies Substituted with Papaya Pulp Flour	2015	About a physical sensory of cookies (thickness and hardness)