CHAPTER 1

INTRODUCTION

A. Background

Nutritional problems in Indonesia is currently entering the problem of double burden nutrition, which isunresolved completely (Supariasa, 2016). Overweight and obesity are global health problems that increas in the community at various ages. Obesity is not only an excess nutrient problem but also expressed as a chronic disease that occurs over a long period time(Hardinsyah& Supariasa, 2016). Some people worldwide, the problem of obesity and obesity is precisely killing more than of the underweight (WHO, 2015) .

According to Purwandari's research, thereisa relationship between obesity and blood glucose, whenbody mass index (BMI)level increases so blood glucose will increase (Purwandari, 2015). In overweight people, insulin activity in fatty tissues and muscles decreases. The circumstances will affectblood sugar levels.However, insulin resistance occurs in obesity. Insulin resistance occurs increased glucose production and decreased using of glucose, resulting in increased use of blood glucose (Fitria, 2013).

Dates are one of fruit that contain glucose and fructose and have a relatively low glycemic index value. Ajwah (*Phoenix dactylifera L)* is one of the fruits that have many benefits for human health and has high nutrition. Ajwah has a glycemic index that is 55.9 so as not to increase blood glucose levels rapidly (El-Mergawi, 2018). Dates containing carbohydrate, glucose, fructose, sucrose, magnesium, calcium, phosphorus, folate, protein, iron, vitamin A, thiamine (B1), riboflavin (B6), niacin (B3), pantothenic (B5), pyridoxine (B6) and folic acid (B9). It was proven that 70% of carbohydrate-owned dates derive from fructose and glucose (Al-Alawi, 2017). The excellent phytochemicals profile placed ajwah at the top among other date varieties. Recently, new in vitro and in vivo studies prove

the effectiveness of Ajwah (Khalid, 2017)

Ruslan (2015) expressed in his research, Ajwah has the same advantages with brown rice that can suppress blood glucose levels and inhibit the absorption of glucose so that it helps in controlling blood glucose levels in people with diabetes mellitus diseases (DM). The date pulp contains high fiber around6.4 – 11.5%. The presence of this high fiber content, beneficial to prevent diseases namelybowel cancer, diabetes, and liver disease (Soebahar, 2015).

Different results were found by Febrianti (2018), Ajwah with the dates of 3, 5, and 7 there were no statistically significant differences in blood glucose levels. From the study, the introduction dose in the optimal mice is 7 dates, which the researcher relates it with the hadith of the Prophet. While according to other studies,conducted by Khalida (2017) there are differences in the influence of extracts date fruit water (Phoenix dactylifera) dose of 0.91mg/kgWeight mice and administration of glucose solutionsDose 0.91 mg/kgWeight mice against levels. Blood glucose during the two-hour post fastingMeasured at 30 minutes, 60, 90, 120 onMice *(Mus musculus*) induced aloksan.

This study, using date type of 'Ajwah' because of the previous review and nutrition composition in Ajwah. The consumption of Ajwah is recommended in an odd numbersuch as 1, 3, 5 or 7 datesbecause indeed Allah SWT loves odd numbers. There is hadith which suggests to consume an odd number of dates. 'Namely whosoever eats 7 number of dates will be spared from poison' (Saheeh Muslih No 3813).

Theoretically,excessive consumption of sweet fruit will increase blood glucose levels, but in this research, author will try to see difference date consumption of odd numbers as much as 7 dates and even 6 dates. Whether consumption in odd still controls blood sugar than the even number of 6. The provision of this even date will be made proof and seen the difference that the dates of the odd number is better. Therefore, the researcher raised the title " Effect Of Date Fruit 'Ajwah' In Odd Number And Even Number

To Blood Glucose Of Normal And Overweight People".

B. Formulation of the Problem

Based on the background, the researcher formulates the problem in the study, is anyeffect of date fruit 'Ajwah' in odd number and even number toward blood glucose of normal and overweight people?

C. Purpose of Research

1. General Purpose

Analyzing effect of Ajwah*(Phoenix dactylifera L*) inoddnumber and evennumber to fasting blood glucose on normal and excess nutrition status.

2. Special Purpose
   a. Analyzing the effect of an odd number (7 fruits) Ajwah (*Phoenix dactylifera L*) on normal and overweight nutritional status
   b. Analyzing theeffect of an even number (6 dates) Ajwa (*Phoenix dactylifera L*) on normal and overweight nutritional status.

D. The Benefits of Research

1. Theoretical Benefits

   The results of this research are expected to be a reference for research in the consumption of safe and healthy dates for human beings with normal and overweight nutritional status.

2. Practical Benefits
   a. Improving public, normal and overweight respondents's knowledge that the consumption of dates in odd numbers (7 dates) is better as the prophet recommended.
   b. Increasing the knowledge of respondents overweight that the consumption of dates in an odd number (7 dates) better and controlling blood glucose as recommended by the Prophet.

E. The Authenticity of the Research

Table 1. The Authenticity of the Research

Title	Methods	Result	Difference
The influence of date extract (*Phoenix dactylifera*) to post fasting blood glucose levels in mice (*Mus musculus*) that is inducted by Alloxan (Kholidha, 2017)	An experimental study with the design of ontrol time series. Liquid date extract is given on a squeaky per oral basis. There are 3 treatment groups with each group of 6 mice. After a week at the induction of Alloxan, mice were destroyed 16 hours and taken fasting blood glucose, and then given date extracts. Blood glucose posprandial in the check in minutes to 30. 60, 90, and 120	There is a difference in the influence of fruit extract of date palm dose 0.91 mg/ kg weight mice and administering glucose dose 0.91 mg/kg weight mice against blood glucose levels for 2 hours postprandial	The subject is mice (*Mus musculus*) Using Date Palm Extract

Title	Methods	Result	Difference
Effect of administering various dosages Ajwah Date Meat Extract *(Phoenix dactylifera*) on blood glucose levels Mice *(Mus musculus*) Pregnant (Febrianti, 2018)	It uses quasi-experiment design using 4 treatment groups, a control group, and three treatment groups, and each of the 6 mice was pregnant in each group	Ajwah datedoes not give a significant influence on blood glucose levels mice	The sample used in mice Use gestational diabetes for pregnancy Variables dependent only blood glucose mice
Glycemic indices, glycemic load and glycemic response for seventeen varieties of dates grown in Saudi Arabia (Al Geffari, 2016)	The available carbohydrate content of Tamer stage dates was determined using standard laboratory methods. Healthy subjects (ten males and nine females) received 50 g of glucose (on three separate occasions) and 50 g equivalent of available carbohydrates from the seventeen varieties of date (each once)	The results provide reliable GI and GL values for 17 common date varieties in Saudi Arabia. The identification of date varieties with lower glycemic responses may help lower the GI of the diet of both healthy and diabetic Saudi individuals	Variables dependen and variable independent