### **CHAPTER I**

#### **INTRODUCTION**

### **1.1. Background of Research**

Allah Subhaanaahu wa ta'ala said in the Quran:

"And He produces for you grains with it, and olives, and date-palms, and grapes, and all kinds of fruits. Surely in that is a sign for people who think" (QS: An-Nahl 11).

Based on Al-Quran, we can know that Allah has created everything in this world in terms of taste, colour, smell, chemical content, usefulness, even toxicity level of a plant. Therefore, the human being as the Caliph in the world have a duty to know and think more deeply about the benefits of the plants there are so able to utilize all the favours which Allah has sent down, either as a food or ingredient of the drug.

Medicine with plant or biochemical called herbal medicines or traditional medicine that is an implementation of plants that Allah created, often represented as Thibbun Nabawi (Khasanah and the Munawwaroh, 2017). This medicine has been going on ancient and conserved empirically. Legalization in Indonesia is still in the tolerant system when health services based on modern medicine, but the use of some traditional medicine is not banned by law (Ditjen Pen, 2014).

Consumers improvement in the application of herbal plants occurs because it's not binding a receptor so it has fewer side effects than a drug with chemical synthesis. However, it doesn't mean an herbal plant has no adverse side effects when usage isn't correct. It concerns the accuracy of the dose, the manner, time of use as and the selection of the raw substances in accordance with indications. (Ditjen Pen, 2014). Then the subacute toxicity test, become an herbal preparations urgency as preclinical testing (BPOM, 2005).

African Bitter Leaves as herbal medicine has been tested empirically and theoretically as an antioxidant, antimutagenic, anti-cancer, antidiabetic (Atangwho, et al., 2010; Felicia.,2015; Handayani, et al., 2016; Putra, Rizki, 2016), lower levels of serum creatinine as insulin secretion support (Suryati, et al., 2016), inotropic and konotropik positive effects as analgesic (Lubis,2015). Based on research by Ijeh and Chukwunoso (2010), African Bitter Leaves the presence of saponins, flavonoids, glycosides, sesquiterpene lactones and steroids. In addition, the results of chemical screening have been experimented by Kharimah (2016) and ethanol extracts of African Bitter Leaves the presence of alkaloids, tannins, polyphenols, monoterpene, sesquiterpenes, steroids/triterpenoid saponins, and quinones. These compounds that became the main ingredients have an effect and give benefits in herbal medicine in African Bitter Leaves.

Modern medicine or herbal medicine as a drug has a pharmacokinetics phase when a drug making liver organs as the major metabolite in the body, so the toxicity of the drug is more impact on the liver. Because the liver has a central role in metabolizing a substance into the body, the liver will change the structure of the lipophilic nature of the drug be hydrophilic to be removed as a urine or bile. The excretion of a substance by the bile collected a xenobiotics in the liver and effected hepatotoxic (Rhowe, 2012).

Then the liver histopathology after using African Bitter Leaves infuse as the herbal preparations need to be test, to know the toxic effect that occurs in the cells of hepatocyte after it is used. In addition, for Muslims halal and good as bad from drug in the organs of the body is important so that it needs to be experimented this subacute toxicity test by examining microscopic histopathology of liver cells. This experiment can be used as a reference of the safety herbal preparations as standard herbal medication. The urgency of halal drug usage is also good in accordance with Al-Quran in Al-Maidah (87-88):

"O you who believe! Do not prohibit the good things God has permitted for you, and do not commit aggression. God does not love the aggressors (87). And eat of the lawful and good things God has provided for you; and be conscious of God, in Whom you are believers (88)" (QS: Al-Maidah 87-88).

## 1.2. Formulation of the Problem

Formulation of the problem in this research are:

- 1. How does the influence of African Bitter Leaf infuse against liver histopathology in mice strains BALB/C?
- 2. How is the damage that occurs in liver histology granting African Bitter Leaves Infuse?

# 1.3. Objective of Research

The purpose of this research are:

- 1. Knowing how the influence of African Bitter Leaf infuse of liver histopathology in mice strains BALB/C.
- 2. Knowing the damage that occurs in liver histology granting African Bitter Leaves Infuse.

# 1.4. Benefits of Research

- The theoretical benefits of this research for the University is the result of the research can be used as a reference for further research. For students, of this research results can be used as reference for research advanced.
- 2. The practical benefits of this research for Health Company is the results of this research can be used as additional preclinical data of African Bitter Leaves infuse as the herbal plant that can be potentially developed as a standard herbal medicine. Whereas for the community, the results of this research can be important information about the potential toxicity of African Bitter Leaves a a medicinal herb.