CHATPER 3

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

3.1 Conceptual Framework

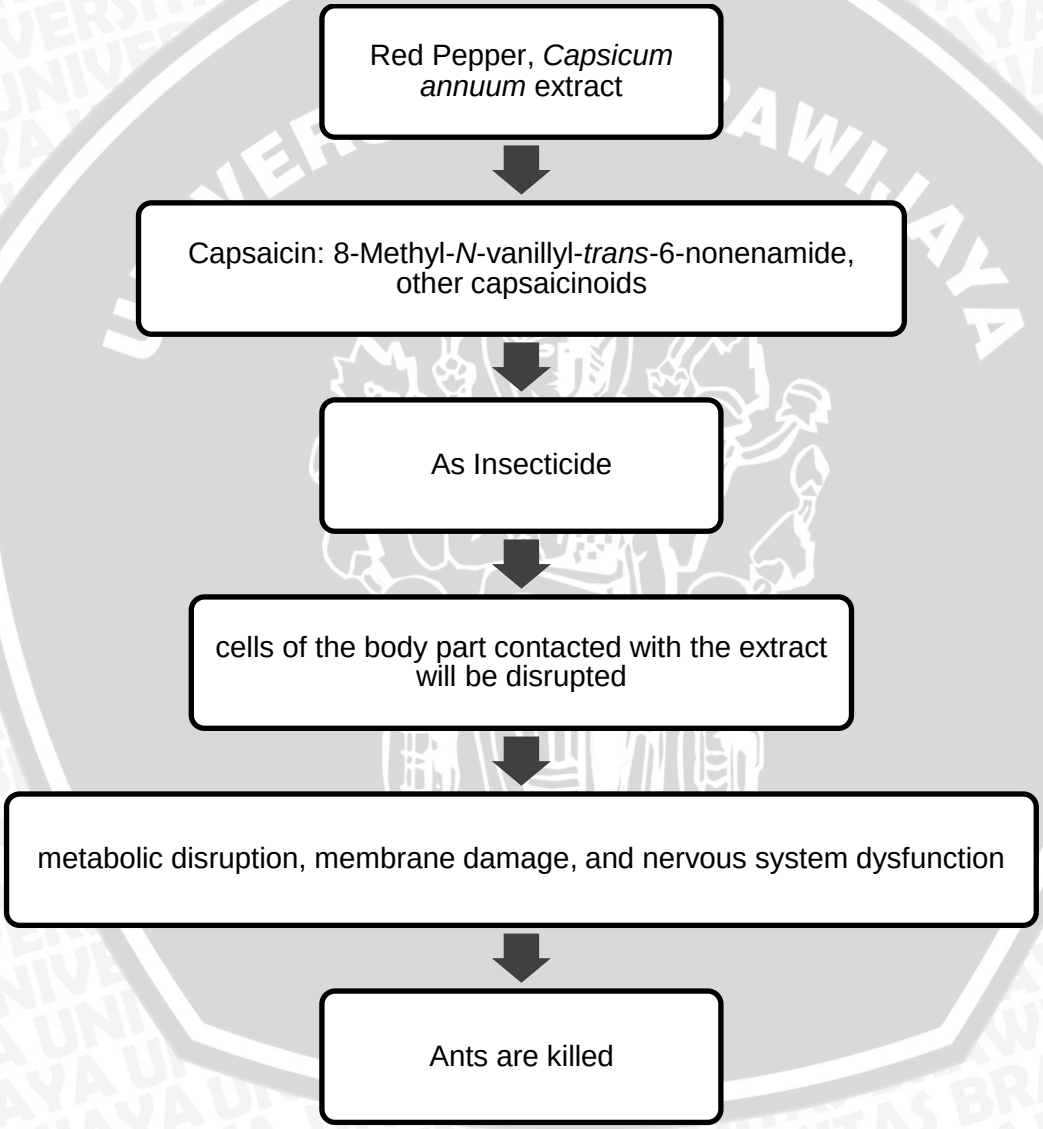

Figure 3.1 Conceptual Framework of the study of the Potential Insecticidal Effect of Red Pepper, *Capsicum annuum* towards Fire Ants, *Solenopsis sp.*

3.2 Explanation

In this conceptual framework, capsaicin, active substance of *Capsicum annuum* is extracted. Capsaicin, also known as 8-Methyl-*N*-vanillyl-*trans*-6-nonenamide and other capsaicinoids contained in red pepper are known to have insecticidal effect on fire ants. The mechanism of action of capsaicin is that it causes the cells of the body parts contacted to be disrupted, metabolic disturbances, membrane damage and nervous system dysfunction, hence, fire ants are killed.

3.3 Hypothesis

1. Red pepper, *Capsicum annuum* has the potential to be fire ants, *Solenopsis sp*. insecticide.
2. The higher the concentration of the *Capsicum annuum* extract used, the greater the potential for the fire ants, *Solenopsis sp*. to be killed.
3. The longer the usage of duration of insecticide, the greater the potential insecticidal effect.