

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

In agriculture, synthetic insecticides are widely use to protect crop production such as carbamate and organophosphate. These chemicals affect to insects by inhibiting acetylcholinesterase enzyme of insects. Acetylcholinesterase (AChE) is a key enzyme which catalyzes the hydrolysis of the neurotransmitter, acetylcholine to inactive choline and acetate in the nervous system of animal and insects [1]. In the case of insects, accumulation of acetylcholine in the nerve synapse cause paralyzation of the muscle and leads to death. Now, there is increasing public concern about the health and environmental effects of highly residual synthetic insecticides, the studies for alternative sources of insecticides are necessary. This has led to an increased interest in identifying new plants sources for secondary metabolites possessing toxicity to insects. There are many reports show that alkaloids from plants can inhibit acetylcholinesterase such as phytostigmine, galantamine, sanguinine. Therefore, studying a new plant source which contained of alkaloids such as *Dasymaschalon sp.* is interesting.

In this research, isolation of alkaloids from *Dasymaschalon glaucum* and their acetylcholinesterase inhibitory activities will be focused.

### 1.2 Research objectives

1. To isolate and identify structure of alkaloids from *D. glaucum*.
2. To study acetylcholinesterase inhibitors of alkaloids from *D. glaucum* by TLC bioautographic technique.