

**UNIVERSITI TEKNOLOGI MARA**

**THE EXTRACTION OF *DERRIS ELLIPTICA*  
LEAVES**

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## ABSTRACT

*Derris elliptica* (*D. elliptica*) is a liana that can grow up to 16 meters long climbing other plants. The leaves are pinnate, 15 – 30 cm long and mostly having 7 – 15 leaflets. The flower is inflorescence with rusty pubescence calyx and pinkish corolla. The fruit is oblong with narrow wing on both sides. The plants from *Derris* genus have been used as insecticides and piscicides (fish poison) for long time. *D. elliptica* is proven to have insecticidal, larvicidal, antimicrobial and piscicide activities. These biological activities are mostly due to the active ingredient of the plant called rotenone (**1**), a chemical that is widely used today as commercial insecticides products. However, there are also other chemical constituents in the plant besides rotenone (**1**) that have significant toxicity which could be useful in phytochemistry. The exact chemical constituents of *D. elliptica* leaves are still unknown, thus this research will include the phytochemical screening of *D. elliptica* leaves to identify the possible compounds which could be alkaloids, flavonoids, rotenoids, sterols, tannins and triterpenoids. The four compounds that were managed to be isolated and partially characterised are proposed to be triterpenoids.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Introduction of *D. elliptica*.

Many plants of the Fabaceae family, especially those of *Derris* genus, *Lonchocarpus*, *Millettia*, *Mundulea* and *Tephrosia* are well known for their fish poisoning and pesticide activities (Athipornchai, 2008).

The plants of *Derris* genus are made up of about 70-80 species of woody vines and trees (Bailey *et al.*, 1976). They can be found in tropical and semitropical zones. They are used as insecticides and fish poisons with long history (Lu & Liang, 2009). The genus is well-known as a rich source of rotenoids which have fish poisoning, insecticidal and some antitumor activities (Chun *et al.*, 2003). The plant of *Derris* genus comprised of around 80 species that are spread mainly in the tropical and subtropical regions of the world (Wu *et al.*, 2012).

*Derris* family has been proven to be as potent as many conventional synthetic pesticide, it has not appeared on the market for about 20 years because of the highly effective alternative synthetic pesticides that have been introduced (Rattanapan, 2007). However, with the prolong use of the synthetic pesticide there is an emergence of resistant insects, threat for contamination of food and high production cost has caused it to come back into the market during 1995 (Visetson & Milne, 2001).