

**PHYTOCHEMICAL STUDIES ON  
DAUN KADOK  
(*Piper sarmentosum*)**



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Date : 28 February 2004

**Head**  
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Dear Professor,

**FINAL RESEARCH REPORT “PHYTOCHEMICAL STUDIES ON DAUN  
KADOK (*Piper sarmentosum*)”**

With reference to the above, I am pleased to submit three copies of the Final Research Report entitled, “Phytochemical Studies on Daun Kadok (*Piper Sarmentosum*)”.

Thank you.

Yours sincerely,



**KHONG HENG YEN**  
The Leader  
Research Project

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## ABSTRACT

A phytochemical studies on the leaves of 'Daun Kadok' (*Piper sarmentosum*) was carried out. The sample was macerated in hexane followed by ethyl acetate and methanol to afford the crude extracts. The crude methanolic extract was then purified using chromatography techniques to afford asarone (2,4,5-trimethoxypropenylbenzene). The structure of this compound was determined by spectroscopic methods such as Gas chromatography-mass spectroscopy (GC-MS), infrared (IR) and nuclear magnetic resonance ( $^1\text{H}$  NMR).

Asarone, as a main component in most of the plants, has been proven and reported to be used extensively in medicine worldwide, such as for stomach cramps, dysentery, asthma, anthelmintic, as insecticide, tonic, stimulant and has therapeutic effects on SARS. Therefore, since 'Daun Kadok' could be a potential botanical source of asarone, it could become an economically valued species for providing pharmaceutical products from the biodiversity of Sarawak.

# CHAPTER 1

## 1 INTRODUCTION

*Piper* is one of the largest genus under the Piperaceae family. *Piper sarmentosum* Roxb., is a terrestrial herb, 1-2 feet high, jointed at the nodes, with thin, dark green and ovate leaves. The latter means it is often mistaken for its cousin *Piper betel* leaf plant. *P.sarmentosum* grows well on damp soil in secondary forest. It is very popular and widely used as traditional medicines and food.

*Piper sarmentosum* is known as 'Daun Kadok' in Malaysia. In Thailand, it is known as 'Cha-plu'; whereas in Indonesia, it is known as 'Sirih duduk', 'Akar bugu' or 'Mengkadak'. Phytochemical studies on other *Piper* species have resulted in the isolation of physiologically active compounds such as alkaloids, amides, pyrones, dihydrocalcone, flavanoids, lignans and neolignan, which are potential for the development of a new drug and medicine. Thus, these active compounds may likely be found in *Piper sarmentosum* and can be isolated for natural pharmaceutical products and medicinal use.