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**CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY
OF ESSENTIAL OILS FROM THAI LAURACEOUS PLANTS**

MISS CHOMKAMON UBONNUCH

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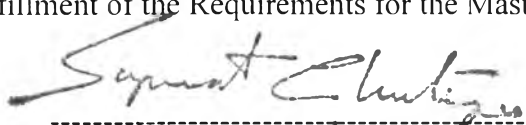
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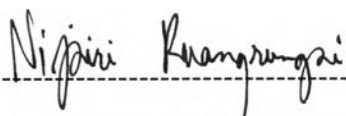
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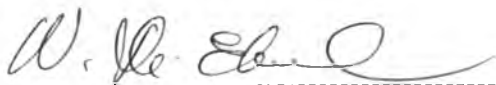
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ชมกมล อุบลนุช : องค์ประกอบทางเคมีและฤทธิ์ต้านจุลชีพของน้ำมันระเหยจากพืชในวงศ์ LAURACEAE (CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OILS FROM THAI LAURACEOUS PLANTS) อาจารย์ที่ปรึกษา : รศ.ดร. นิจศิริ เรืองรังษี, อาจารย์ที่ปรึกษาร่วม : ผศ.ดร. นงลักษณ์ ศรีอุบลมาศ , 191 หน้า, ISBN 974-331-267-6.

จากการศึกษาพืชในวงศ์ Lauraceae ของไทย จำนวน 15 ต้น ในแง่ของปริมาณและชนิดขององค์ประกอบของน้ำมันระเหย โดยใช้วิธีการกลั่นด้วยไอน้ำและเทคนิคทางโครมาโทกราฟี/แมสสเปกโทเมตรี ผลการศึกษาพบว่ามีความหลากหลายขององค์ประกอบทางเคมีและปริมาณ โดยพบว่าองค์ประกอบส่วนใหญ่อยู่ในกลุ่มออกซิเจนเตตโรโนเทอร์ปีนและในแง่ปริมาณจะอยู่ในช่วงร้อยละ 0.08-3.0 นอกจากนี้ยังได้ทำการศึกษาพืชต่างประเทศในวงศ์ Lauraceae ที่นำมาปลูกในไทยอีกจำนวน 1 ต้น ซึ่งได้ทำการเปรียบเทียบในด้านปริมาณและองค์ประกอบ พบว่าองค์ประกอบส่วนใหญ่ที่วิเคราะห์ได้ไม่มีความแตกต่างกันมากนักแต่ปริมาณจะต่ำกว่าและเมื่อนำน้ำมันระเหยไปทดสอบฤทธิ์ในการต้านจุลชีพต่อเชื้อ *Staphylococcus aureus* ATCC29213, *Enterococcus faecalis* ATCC29212, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC27853, *Bacillus subtilis* ATCC6633 *Candida albicans* ATCC10231 and *Microsporum gypseum* (clinical isolate) พบว่าน้ำมันระเหยส่วนใหญ่มีฤทธิ์ต้านแบคทีเรียและต้านเชื้อรา *Candida albicans*.

ภาควิชา เกษษวิชา
สาขาวิชา เกษษวิชา
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ลายมือชื่อนิติ ใจเกษม อุบลนุช
ลายมือชื่ออาจารย์ที่ปรึกษา น.น. เรืองรังษี
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม น.น. นงลักษณ์ ศรีอุบลมาศ

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CHOMKAMON UBONNUCH : CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OILS FROM THAI LAURACEOUS PLANTS. THESIS

ADVISOR : ASSOC. PROF. NIJSIRI RUANGRUNGSI, Ph.D., THESIS CO-ADVISOR : ASSIST. PROF. NONGLUKSNA SRIUBOLMAS, Ph.D., 191 pp., ISBN 974-331-267-6.

Content and composition of essential oils from fifteen species of Thai Lauraceous plants were investigated by hydrodistillation. The results obtained from GC/MS analysis showed diversity of their chemical components and their quantities. Oxygenated monoterpenes are most commonly found in essential oils of these particular species. The content of these compounds were found to be between 0.08 to 3.0 %. Essential oils of one species of Western Lauraceous plants cultivated in Thailand were also studied. Results have shown similarity of their constituents to previous report from western country, but with less amount. Screening for antimicrobial activity of essential oil from these plants against *Staphylococcus aureus* ATCC29213, *Enterococcus faecalis* ATCC29212, *Escherichia coli* ATCC25922, *Pseudomonas aeruginosa* ATCC27853, *Bacillus subtilis* ATCC6633 *Candida albicans* ATCC10231 and *Microsporum gypseum* (clinical isolate) was carried out, and it was found that most of the essential oils from Thai Lauraceae plants exhibited antibacterial activity and antifungal activity (*Candida albicans*).

ภาควิชา..... เกษตรเขต
สาขาวิชา..... เกษตรเขต
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ลายมือชื่อนิสิต..... ชัยมงคล อุดมบุตร

ลายมือชื่ออาจารย์ที่ปรึกษา..... น.ส. นีจสิริ รุ่งรุ่งศรี

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม..... ผศ. นองลูกสนา ศรีอุบลมาส



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LIST OF ABBREVIATIONS

AOAC	=	Association of Official Analytical Chemists
cm	=	Centimeter
°C	=	Degree celsius
Fig	=	Figure
g	=	Gram
GC	=	Gas chromatography
GC-MS	=	Gas chromatography-Mass spectrometry
h	=	hour
HPLC	=	High performance liquid chromatography
i.d.	=	Internal diameter
m	=	Meter
MeOH	=	Methanol
mg	=	Milligram
min	=	Minute
μl	=	Microliter
ml	=	Milliliter
mm	=	Millimeter
MW	=	Molecular weight
No.	=	Number
RT	=	Retention time
sp	=	Species
v/w	=	Volume by weight
wt	=	Weight