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## LIST OF ABBREVIATIONS

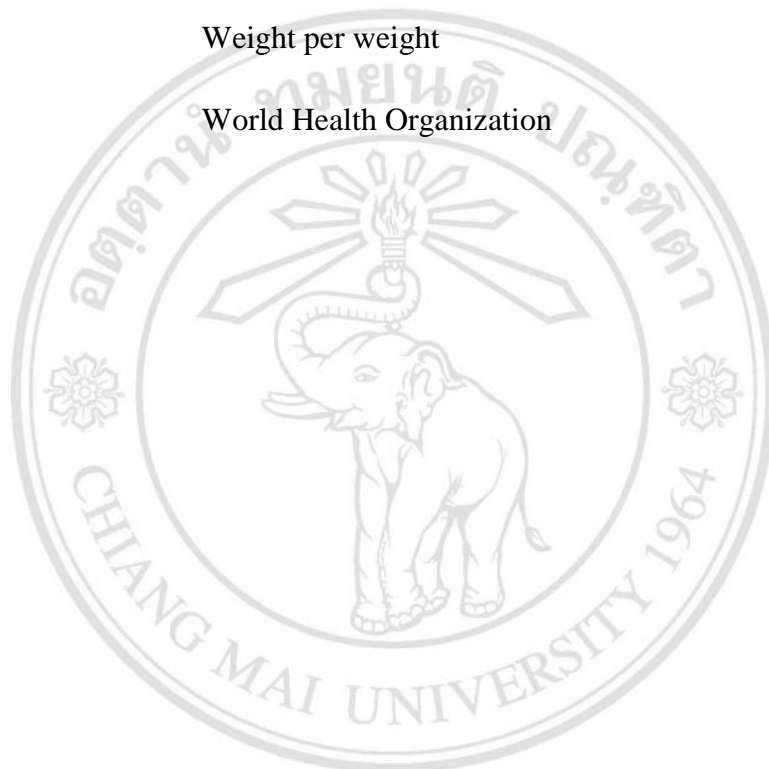
AT	Ambient temperature
cm	Centimeter
cm <sup>2</sup>	Square centimeter
CMU	Chiang Mai University
CS	Collecting site
e.g.	For example
et al.	And others
etc.	et cetera
F	Formulation
FDA	Food and Drug Administration
g	Gram
GC	Gas chromatography
h	Hour
IU	International Unit
kg	Kilogram
L	Liter
LC <sub>50</sub>	Median lethal concentration
m	Meter
mg	Milligram

## LIST OF ABBREVIATIONS (continued)

min	Minute
ml	Milliliter
mm	Millimeter
MS	Mass spectrometry
MPT	Median complete protection time
NIH	National Institute of Health
nm	Nanometer
No	Number
pH	Potential of hydrogen
ppm	Part per million
RD <sub>95</sub>	Repellent dose
s	Second
SE	Standard errors
spp.	Species
μl	Microliter
μm	Micrometer
USEPA	United States Environmental Protection Agency

## LIST OF ABBREVIATIONS (continued)

v/v	Volume per volume
v/w	Volume per weight
w/w	Weight per weight
WHO	World Health Organization



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## LIST OF SYMBOLS

$\pm$	Plus minus
$-$	Minus
$=$	Equals
$\times$	Multiply
$\sim$	Approximately
$\%$	Percentage
$^{\circ}\text{C}$	Degree Celsius

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## ข้อความแห่งการริเริ่ม

1. วิทยานิพนธ์นี้ได้รายงานฤทธิ์ป้องกันยุงกัดของสารสกัดจากพืชสมุนไพรโกฐเชียง (*Angelica sinensis*) เป็นครั้งแรก
2. วิทยานิพนธ์นี้สามารถเตรียมผลิตภัณฑ์นาโนอิมัลชันจากสารสกัดเฮกเซนโกฐเชียง พร้อมทั้งพัฒนาเป็นตำรับเจลขับไล่ยุงที่มีประสิทธิภาพสูงและมีเสถียรภาพทางด้านกายภาพและชีวภาพ
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## STATEMENTS OF ORIGINALITY

1. In this thesis, the mosquito repellent potential of *Angelica sinensis* extracts was reported for the first time.
2. In this thesis, nanoemulsions of *A. sinensis* hexane extract (AHE) was prepared and developed as AHE-nanoemulsion gel, with high repellency as well as physical and biological stability.
3. In this thesis, repellent activity of AHE-nanoemulsion products were investigated and reported against various mosquito vectors under laboratory and field conditions.

The seal of Chiang Mai University is a circular emblem. It features a central illustration of an elephant standing and facing left. Above the elephant is a five-pointed star. The entire emblem is encircled by a border containing the university's name in Thai script at the top and 'CHIANG MAI UNIVERSITY 1964' in English at the bottom.

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