

**EFFECTS OF BOTANICAL EXTRACTS  
ON PHYSICAL AND BIOCHEMICAL  
CHANGES IN THE PYRETHROID  
SUSCEPTIBLE AND RESISTANT  
STRAINS OF *Aedes aegypti*  
(DIPTERA: CULICIDAE)**

**JITRAWADEE INTIRACH**

**DOCTOR OF PHILOSOPHY**

**IN PARASITOLOGY**

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**GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY  
JULY 2018**

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**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
IN PARASITOLOGY**

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THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
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IN PARASITOLOGY

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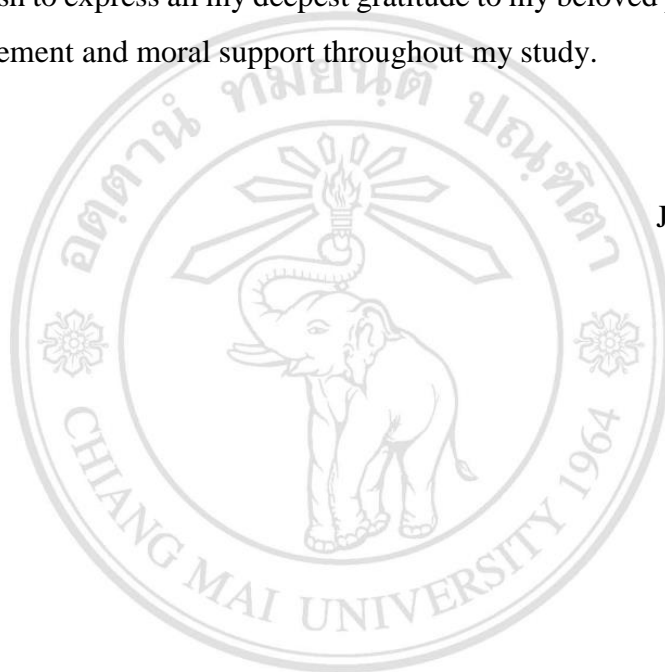
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