

**CHARACTERIAZTION AND EVALUATIONS OF  
DETOXIFICATION MECHANISMS OF ARSENIC  
RESISTANT BACTERIA AND THEIR EFFECTS  
ON ARSENIC ACCUMULATION IN CARROT**

**YUPA CHROMKAEW**

**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
IN SOIL SCIENCE AND NATURAL RESOURCES MANAGEMENT**

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**GRADUATE SCHOOL, CHIANG MAI UNIVERSITY  
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