

C626721 : MAJOR BIOTECHNOLOGY

KEY WORD: *Apis cerana* / GENETIC VARIATION / MITOCHONDRIAL DNA / PCR / SEQUENCING

LINDA BUGHARUANG : ANALYSIS OF GENETIC VARIATION OF *Apis cerana* IN THAILAND BY USE OF POLYMERASE CHAIN REACTION AMPLIFIED MITOCHONDRIAL DNA SEQUENCES. THESIS ADVISOR : ASSIST. PROF. PATCHARA VERAKALASA, Ph.D., THESIS CO-ADVISOR : ASSO. PROF. SIRIPORN SITTIPRANEED, Ph.D., ASSO. PROF. CHARIYA LEKPRAYOON, 94 pp. ISBN 974-636-764-1

Apis cerana is a native honey bee of Thailand and many countries in Asia. The geographical variation among intraspecific species of *Apis cerana* collected from 17 locations in 10 provinces in Thailand, which included Chiangmai, Uttaradit, Sakonnakhon, Ubolratchathani, Buriram, Chanthaburi, Prachuapkhirikhan, Chumphon, Suratthani and Phuket, were studied based on the nucleotide sequence differences in the noncoding intergenic region of mitochondrial DNA which was flanked by the cytochrome oxidase I (COI) gene on the 5' end and the cytochrome oxidase II gene (COII) on the 3' end. The noncoding intergenic region was amplified using the polymerase chain reaction and sequenced. Among the 97 nucleotides, there were 9 variable sites and the nucleotide substitutions showed transitions bias. Phylogenetic analysis of the sequences resulted in a parsimony tree that could geographically divide *Apis cerana* in Thailand into two populations : the northern population (honey bees collected from Chiangmai to Chanthaburi) and the southern population (honey bees collected from Prachuapkhirikhan to Phuket).

ภาควิชา.....

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