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## ABBREVIATIONS

ABPV	Acute Bee Paralysis Virus
AFB	American Foulbrood disease
ANOVA	Analysis of Variance
bp	base pair
BQCV	Black Queen Cell Virus
CBPV	Chronic Bee Paralysis Virus
DWV/KV	Deformed Wing Virus/Kakugo Virus
°C	degree Celsius
DGGE	Denaturing Gradient Gel Electrophoresis
DNA	Deoxyribonucleic acid
dNTP	Deoxynucleotide triphosphate
DWV	Deformed Wing Virus
U	Enzyme unit
EDTA	Ethylenediaminetetraacetic acid
EFB	European foulbrood disease
EMBL	European Molecular Biology Laboratory
g	gram
h	hour
HCl	Hydro Chloric acid
IAPV	Israeli Acute bee Paralysis virus
LSV-1	Lake Sinai Virus 1
LSV-2	Lake Sinai Virus 2
LSD	Least Significant Difference
L	liter
KBV	Kashmir Bee Virus
km	kilometer
MgCl <sub>2</sub>	Magnesium chloride
mRNA	messenger RNA

μg	microgram
μl	microliter
μm	micrometer
μM	micromolar
mg	milligram
ml	milliliter
mm	millimeter
mM	millimolar
min	minute
M	molar
Ng	nanogram
NCBI	National Center for Biotechnology Information
OTU	Operation Taxonomic Unit
RDP II	Ribosomal Database Project II
PBS	Phosphate Buffered Saline
PCR	Polymerase Chain Reaction
KCl	Potassium chloride
KH <sub>2</sub> PO <sub>4</sub>	Potassium hydrogen phosphate
PCA	Principal Component Analysis
RNA	Ribonucleic acid
SBV	Sacbrood Virus
Sec	Second
H'	Shannon index
SBPV	Slow Bee Paralysis Virus
NaCl	Sodium chloride
Na <sub>2</sub> HPO <sub>4</sub>	Sodium hydrogen phosphate
C <sub>s</sub>	Sorenson's pairwise similarity coefficients
rpm	revolutions per minute
rRNA	ribosomal RNA
sp.	species
SD	Standard Deviation

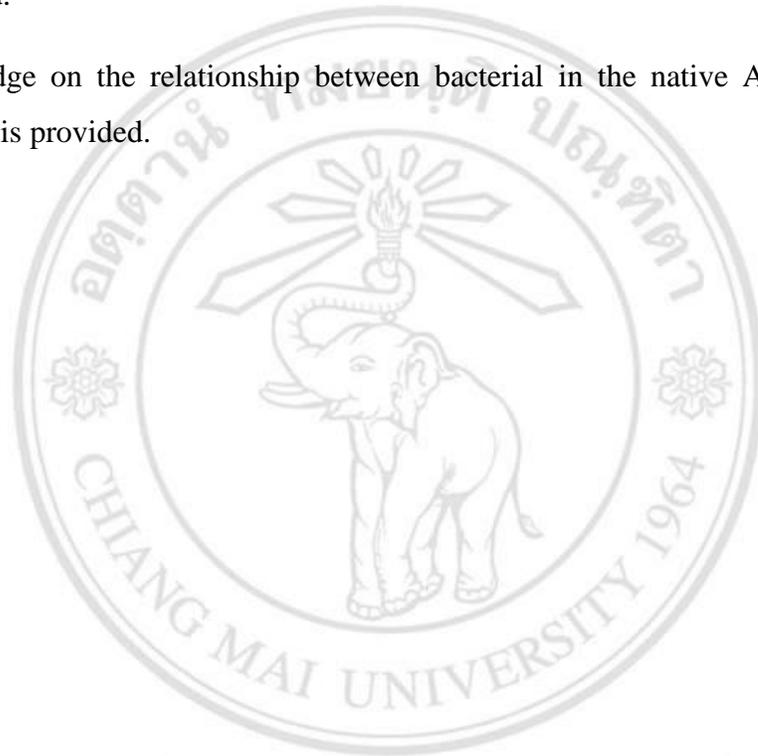
2D	Two-dimension
3D	Three-dimension
UPGMA	Unweighted Pair Group method with Arithmetic Mean
VDV-1	<i>Varroa destructor</i> virus
V	volt
w/v	weight per volume



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## STATEMENT OF ORIGINALITY

- 1) Bacterial community structure in midguts of *Apis dorsata* and *Apis florea* is studied. This information may lead to the survival of the native Asian honey bees in Thailand.
- 2) Knowledge on the relationship between bacterial in the native Asian honey bee midguts is provided.



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## ข้อความแห่งการริเริ่ม

- 1) วิทยานิพนธ์เล่มนี้ได้ศึกษาโครงสร้างชุมชนชีพของเชื้อแบคทีเรียในลำไส้ส่วนกลางของผึ้งหลวงและผึ้งมิม ข้อมูลในการศึกษานี้สามารถนำไปสู่องค์ความรู้ของการอยู่รอดของผึ้งสายพันธุ์พื้นเมืองของประเทศไทย
- 2) องค์ความรู้ในแง่ความสัมพันธ์ระหว่างเชื้อแบคทีเรียในลำไส้ส่วนกลางของผึ้งสายพันธุ์พื้นเมืองของภูมิภาคเอเชียได้ถูกนำเสนอไว้ในวิทยานิพนธ์เล่มนี้



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