

การเสาะหาสารต้านการกินของหนอนผีเสื้อกิน ไข่ฝิ่งขนาดใหญ่ *Galleria mellonella*

จากพันธุ์ไม้ไทยบางชนิด

นางสาวพุทธลักษณ์ ไช้ประภาย

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SEARCHING FOR ANTIFEEDANT COMPOUNDS AGAINST
GREATER WAX MOTH *Galleria mellonella* LARVAE FROM SOME
THAI PLANTS

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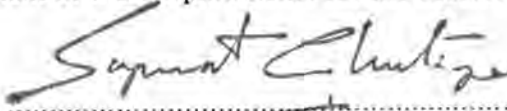
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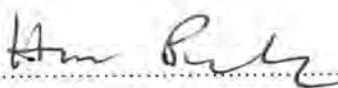
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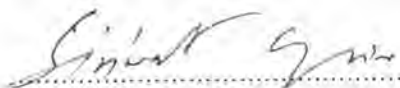
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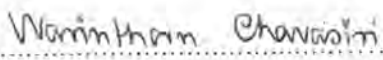
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พุทธลักษณะ ไช้ประกาย : การเสาะหาสารต้านการกินของหนอนผีเสื้อกินไข้ฝิ่งขนาดใหญ่
Galleria mellonella จากพันธุ์ไม้ไทยบางชนิด (SEARCHING FOR ANTIFEEDANT
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ได้ทดสอบฤทธิ์ต้านการกินของหนอนผีเสื้อกินไข้ฝิ่งขนาดใหญ่ *Galleria mellonella* เบื้องต้นของ
 สิ่งสกัดเอทานอลจากพันธุ์ไม้ไทย 17 ชนิด จากผลการทดสอบเบื้องต้นได้เลือกส่วนแห้งของไพลมาศึกษา
 เพิ่มเติม โดยการใช้การทดสอบฤทธิ์ทางชีวภาพเป็นตัวชี้ นำ สามารถแยก veratraldehyde และ curcumin ได้
 จากสิ่งสกัดเฮกเซนและสิ่งสกัดไดคลอโรมีเทนตามลำดับ สารที่แสดงฤทธิ์ทางชีวภาพอื่นพบว่าอยู่ในสิ่งสกัด
 เอทิลเอซิเตด นอกจากนี้ยังได้ศึกษาความสัมพันธ์ของสูตรโครงสร้างและฤทธิ์ทางชีวภาพของ
 veratraldehyde และสารที่เกี่ยวข้องพบว่า piperonal และ 3,4-dihydroxybenzaldehyde แสดงฤทธิ์ต้านการ
 กินต่อหนอนผีเสื้อกินไข้ฝิ่งขนาดใหญ่ 96.9% และ 73.6% ตามลำดับ ที่ระดับความเข้มข้น 0.25% โดย
 นำหนักสารต่อน้ำหนักอาหารหนอน

ภาควิชา
 สาขาวิชา เเคีโนโลยีทางชีวภาพ
 ปีการศึกษา ๒๕๕๐

ลายมือชื่อนิสิต พุทธลักษณะ ไช้ประกาย
 ลายมือชื่ออาจารย์ที่ปรึกษา วรินทร์ ชวศิริ
 ลายมือชื่ออาจารย์ที่ปรึกษาร่วม

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Preliminary studies on antifeedant activity of seventeen ethanolic crude extracts from some Thai plants were conducted against the greater wax moth *Galleria mellonella* Linn. According to the preliminary results, the rhizomes of *Zingiber cassumunar* Roxb. looked promising and were chosen for further investigation. By using antifeedant activity as a bioassay guide, veratraldehyde and curcumin were isolated from hexane and dichloromethane crude extracts, respectively. Other active principles were confirmed to be in the ethyl acetate fraction. Moreover, the structure and activity relationship study of veratraldehyde and related compounds provided information on the other two active compounds, piperonal and 3,4-dihydroxybenzaldehyde against *G. mellonella*, 96.9 % and 73.6 %, respectively at dose level 0.25 % wt by wt.

ภาควิชา.....	ลายมือชื่อนิสิต..... พงศลักษณ์ ไชยประภาพร
สาขาวิชา เทคโนโลยีอาหารชีวภาพ.....	ลายมือชื่ออาจารย์ที่ปรึกษา..... อภิพร ชวสวิง
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List of Abbreviations

°C	degree celsius
cont.	continue
¹³ C NMR	carbon 13 nuclear magnetic resonance
cm ⁻¹	unit of wavelength
d	doublet (NMR)
dd	doublet of doublet (NMR)
DMSO	dimethylsulfoxide
Fig.	Figure
g	gram (s)
GC-MS	gas chromatograph-mass spectrometry
¹ H NMR	proton nuclear magnetic resonance
h	hour
IR	infrared
J	coupling constant
kg	kilogram (s)
m/z	mass per charge
min	minute (s)
mL	milliliter (s)
mg	milligram (s)
m.p.	melting point
No.	number
ppm	part per million
R _f	rate of flow
s	singlet (NMR)
wt by wt	weight by weight
δ	chemical shift