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MANANYA PHIANCHAROEN : EFFECT OF LEAF EXTRACTS FROM SIAM WEED

Chromolaena odorata (L.) ON DETOXIFICATION ENZYMES LEVEL IN DIAMONDBACK

MOTH *Plutella xylostella* L. THESIS ADVISOR : ASSO. PROF. CHARIYA LEKPRAYOON,

THESIS COADVISOR : SURAPHON VISETSON, Ph.D. 148 pp. ISBN 974-636-818-4.

Investigation of siam weed leaf extracts on detoxification enzymes of diamondback moth was conducted in the laboratory. Steam distillation and water soaking extracting methods showed low mortality rate. On the other hand, The soxhlet extraction using ethanol and hexane exhibited 100% mortality (at concentration of 1.50 and 2.00% (w/v))

Evaluation of detoxification enzymes change in diamondback moth was carried out by using the method of soxhlet extraction with ethanol. The concentration of siam weed extracts at concentration of 0.05, 0.25 and 0.50% (w/v) with or without synergists ; diethyl maleate (DEM), piperonyl butoxide (PB) and triphenyl phosphate (TPP) at 0.1% were trialed for their enzymes reaction namely; esterase, glutathione S-transferase and monooxygenase. Three generation of the insect were assayed.

Increased esterase levels by 20, 40 and 90% at the concentration of 0.05, 0.25 and 0.50% were recorded. glutathione S-transferase were increased by 5 and 20% at concentration of 0.25 and 0.50%. In addition monooxygenase were increased by 10 and 30% at concentration of 0.25 and 0.50%

Synergistic action played the important role in all enzyme systems. Most synergists inhibited enzyme reaction. There was 5% reduced glutathione S-transferase activity by using of DEM. Furthermore PB could reduce both esterase and monooxygenase activities by 10%. In addition, TPP inhibited esterase activity by 10-20%.

Manipulative data showed that siam weed extracts could reduce detoxification enzyme activity in diamondback moth *Plutella xylostella* L. and showed high mortality at appropriate extraction technique. Using of synergists could overcome. Their resistant mechanism in via increased reaction in the future.

ภาควิชา.....ชีววิทยา

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