

Siva Nopparat 2014: Efficacy of Entomopathogenic Bacteria for Diamondback Moth Management in Chinese Kale Safety Production System. Master of Science (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Mr. Jaruwat Thowthampitak, Ph.D. 167 pages.

Most farmers were misapplication of pesticides caused of health and environment problems and increased cost. The importance problem is insect resistance for insecticide. Biological control can be used as alternative strategy to resolve this problem. The objective of this study is isolated bacteria from Chinese kale soil from Suphanburi and Lopburi province that were diamondback moth control and induced plant growth parameter and plant defense mechanism. Under laboratory conditions, five strains of bacteria L41, L33, L30, 4A and 4M showed the mortality of 16.67 – 36.67 % to brown plant hopper at 72 hrs after treatment. The strain L33 showed the lowest egg production. Greenhouse condition, strain L30 showed the highest mortality 62% at 72 hrs after treatment. Moreover, these five strains of bacteria induced plant growth parameter (stem height and root length). In farmer field trial conditions, collect the population of diamondback moth by quadrat after bacterial suspension sprayed. The result showed each strain of bacteria were damage the diamondback moth not significantly when compared with conventional treatment. In addition, all of bacterial strain induced plant growth parameter and increased the enzymes production (proteinase, peroxidase and  $\beta$ -1,3 glucanase). From this study, these bacteria were shown the efficacy for use in chinese kale production and should be studied to determine the application for insect control and environment conservation.

---

Student's signature

---

Thesis Advisor's signature

\_\_\_\_/\_\_\_\_/\_\_\_\_