

Kriengkrai Jumroerma 1992 : Corn Weevil (*Sitophilus zeamais* Motsch.) and the Effects of Some Organophosphorus Insecticides as Post-harvest Grain and Seed Protectant in Field Corn. Doctor of Philosophy (Entomology), Major Field Entomology, Department of Entomology. Thesis Advisor : Assoc. Prof. Dr. Pensook Tauthong. 131 pages.

Corn weevil, *Sitophilus zeamais* Motsch. is a major pest of corn and some cereal crops in storage. The infestation begins in the field. The weevils can damage stored grain or seed by feeding, lowering germination, producing off-odours, causing heat and creating conditions favorable to the growth of molds.

The infestation is initiated in the field 90 days after planting, and is favored by an average moisture of 43.39 %. The longer the harvesting time, in the case of Suwan 2602, and the more open husk cover, the greater the infestation.

The rate of oviposition and survival were highest on corn of 16 % moisture content at 25°C and 80 % RH.

Pirimiphos methyl, methacrifos and chlorpyrifos methyl are organophosphorus insecticides, which cause no hazard to consumers because their residues are almost destroyed in cooking. Methacrifos, pirimiphos methyl and chlorpyrifos methyl, at the rate of 5 mg/kg, were 100 % effective in destroying *S. zeamais* for 6, 10 and 12 months respectively. Burned leaves, stunted or twisted stem and folded leaves occurred in seedlings treated with these insecticides, especially the highest rate of abnormal seedlings, 7.4 %, was observed in the treatment of 320 mg/kg chlorpyrifos methyl. They had some effects on internal structure of corn seedlings and germination but the vigor of treated seeds were better than untreated seeds.

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April 23, 1992