

พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

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: MAJOR ENVIRONMENTAL SCIENCE

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CHIDHATHAI PETCHUAY : LETHAL AND SUBLETHAL EFFECTS OF CHLORPYRIFOS, CARBARYL AND

ETOFENPROX IN SINGLE SOLUTION ON WATER FLEA *Moina macrocopa* Straus. THESIS ADVISOR : ASSOC. PROF.

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Acute toxicity tests of three insecticides, chlorpyrifos, carbaryl and etofenprox in single solution were conducted on water flea, *Moina macrocopa* Straus, under static condition. The observed mortality data of the these testes were analyzed for median lethal concentration at 95 % confidence limit (mean, range). The 48-h LC_{50} values were 0.075 $\mu\text{g/l}$ (0.072 - 0.078), 17.84 $\mu\text{g/l}$ (17.01 - 18.6) and 7.64 $\mu\text{g/l}$ (7.37 - 7.9) for chlorpyrifos, carbaryl and etofenprox, respectively. The sublethal effects of three insecticides were conducted under static renewal condition. The estimation for maximum acceptable toxicant concentration (MATC) of water flea was based on Biesinger and Christensen method with 16 % reproductive impairment. The MATC values of chlorpyrifos, carbaryl and etofenprox were 0.019 $\mu\text{g/l}$, 4.12 $\mu\text{g/l}$ and 1.47 $\mu\text{g/l}$, respectively. Based on the overall results, it may be concluded that chlorpyrifos toxicity was remarkably higher than etofenprox and carbaryl in respective order. Moreover, the three insecticides also exhibited quite obvious effects on the reproduction by reducing the numbers of young produced, parthenogenesis capacity and longevity of the water fleas in F1 to F5 for all concentrations of chlopyrifos in particular at $p < 0.05$. Whereas, etofenprox and carbaryl showed significantly difference especially between a control and the maximum concentration group.

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