

**THE TOXIC EFFECTS OF PESTICIDES DIMETHOATE AND PROFENOFOS
ON NILE TILAPIA FRY (*Oreochromis niloticus*) AND WATER FLEA
(*Moina macrocopa*)**

Abstract

Acute toxicity test of dimethoate and profenofos were carried out on Nile tilapia (*Oreochromis niloticus*) yolk sac fry and first feeding fry, and water flea (*Moina macrocopa*) using static bioassay at different concentration under laboratory conditions. The LC₅₀ at 24, 48, 72 and 96 hours exposure of Nile tilapia yolk sac fry to dimethoate were 340,12.6 , 330,77.8, 308,74.3 and 292,83µg/L . The LC₅₀ at 24, 48, 72 and 96 hours exposure of tilapia yolk sac fry to profenofos were 2,106.9 µg/L⁻¹., 872.4µg/L⁻¹., 657.4µg/L⁻¹ and 424.1µg/L⁻¹ . The LC₅₀ at 24, 48, 72 and 96 hours exposure of tilapia first feeding fry to dimethoate were 35,729.4µg/L⁻¹ , 32,511. µg/L⁻¹ , 28,245.1 µg/L⁻¹ and 24,767.4µg/L⁻¹ .The LC₅₀ at 24, 48, 72 and 96 hours exposure of tilapia first feeding fry to profenofos were 384.7µg/L⁻¹ , 352.1µg/L⁻¹ , 312.8µg/L⁻¹ and 309.7µg/L⁻¹ . The LC₅₀ at 24, 48, 72 and 96 hours exposure of *Moina* to dimethoate were 1.9 µg/L⁻¹ , 1.4 µg/L⁻¹ , 0.5 µg/L⁻¹ and 0.3 µg/L⁻¹ . The LC₅₀ at 24, 48, 72 and 96 hours exposure of *Moina* to profenofos were 2.3 µg/L⁻¹ , 1.7µg/L⁻¹ , 1.7 µg/L⁻¹ and 1.3 µg/L⁻¹ .

In- situ testing was performed in three vegetable farms in Nakhonchaisri district, Nakhonpathom province and Rangsit farm (an organic farm). The results showed that the feeding rate of the control *Moina* (without any pesticide) was significantly (P<0.05) higher than the feeding rates of *Moina* inside and outside the farm canals in all the farms using pesticide. The feeding rate of *Moina* in canals of Rangsit farm was significantly (p<0.05) higher than the feeding rates of *Moina* in the other 3 farms whose inside canals receive pesticides applied on vegetable plots. Yolk sac absorption of tilapia yolk sac fry was not successful because the result of each farm was showed negative. Therefore no data for yolk sac absorption of tilapia yolk sac fry.

Souvanny Phommakone: s_phommakone@yahoo.com