

## C346832 : MAJOR PHARMACOLOGY

KEY WORD : ACUTE TOXICITY/METHYL PARATHION/CHOLINESTERASE/  
PENAEUS MONODON FABRICIUS

SATAPORN SUWANNARUK : ACUTE TOXICITY OF METHYL PARATHION  
ON PENAEUS MONODON. FABRICIUS. THESIS ADVISOR : ASSIS. PROF.  
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7 groups of Penaeus monodon were exposed to methyl parathion at the concentration of 1 to 90 mcg/litre (ppb) and the LC<sub>50</sub> at 96 hours interval was found to be 54 ppb. During exposure to methyl parathion, clinical signs of intoxication occurred in every treated groups. The prawn were restless and showed their fast erratic swimming (hyperexcitability), loss of coordination movement and subsequently equilibrium. Some of them, especially in the high concentration groups died in 6 to 24 hours. The survival prawns of every treated groups were found to be appetit lose and still restless. Clinical sign and mortality rate of intoxicated prawn were dose dependent.

Cholinesterase activity in haemolymph of treated prawn was not correlated with their toxicity, whereas the enzyme activities in nerve and muscle cholinesterase activities decreased with increasing doses of methyl parathion applied.

The pathological examination showed that there were muscle necrosis, F-cell cytoplasm vacuolation, hyperemia and hepatopancreatic cell necrosis in the group treated with methyl parathion 1-50 ppb. No pathological changed was found in the groups exposed to 75-90 ppb.

Concentration of methyl parathion and duration of exposure to insecticide were also discussed to be the main factors.

All of the results suggested that the strong inhibition of cholinesterase in muscle and nervous tissue of Penaeus monodon, due to organophosphate insecticides is a good indicator of their poisoning.