THESIS TITLE : Persistence of *Bacillus thuringiensis* var. *israelensis* tablet formulation against *Aedes aegypti* (L.) larvae in different kinds of water.

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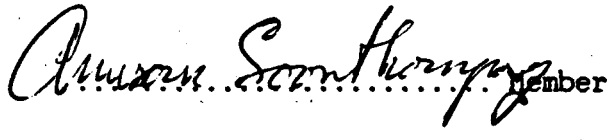

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Abstract

Bacillus thuringiensis var. *israelensis* (*B.t.i.*) in tablet formulation was tested against *Aedes aegypti* (L.) larvae under laboratory conditions.The objectives of this study were to determine the concentrations of *B.t.i.* in three kinds of water ,namely rain water,tap water and underground water, to investigate the persistence of *B.t.i.* toxicity towards the mosquito larvae, and to examine

the larvicidal activities larvae when replenished the bacterial agent in those water.

Results indicated that the Lethal Concentrations at 50 % mortality(LC_{50}) of *B.t.i.*towards *Ae. aegypti* larvae in those waters, namely rain water, tap water, and underground water were found to be 0.2991 mg/l, 0.4062 mg/l, and 0.4078 mg/l, respectively. The toxicities of *B.t.i.* against *Ae. aegypti* larvae as illustrated in LC_{95} were observed at the concentrations of 0.7926 mg/l in rain water,0.9839 mg/l in tap water, and 1.1834 mg/l in underground water. In addition, larvicidal activities of *B.t.i.* had lasted longer in rain water than in both tap water and underground water. The killing activities of *B.t.i.*towards mosquito larvae at 50 % mortality were 18 days and not effective in 43 days after exposure in rain water and were 17 days and not effective in 42 days after exposure in tap water, whereas were 12 days and not effective in 36 days when tested in underground water, respectively. This study also demonstratedthat the residual toxicities of *B.t.i.*after replenishment in those water when the percentage of killing activities was below 50 had lasted longer than the initial filling. The persistence of *B.t.i.* toxicities against mosquito larvae at 50 % mortality were about 26 days and ineffective in 62 days in rain water, and about 23 days and ineffective in 57 days in tap water, whereas 14 days and ineffective in 36 days in underground water.