

ABSTRACT

Intensive use of biological/chemical insecticides can rapidly increase the insecticide resistance in mosquitoes. In the present study, resistance of dengue vector *Aedes aegypti* (larvae and adults) was evaluated against different control agents by biological and chemical insecticides. Early 4th instar larvae were collected from Misri Shah (slum area) Lahore, province Punjab, Pakistan, during May 2009-January 2010. Larvae were identified by morphological features and reared up to adults in the laboratory under standardized conditions. For larval bioassays, early 4th instar larvae of susceptible (laboratory-reared) colony were subjected to a range of known concentrations (100, 40, 20, 10, 5, 2.5 and 1.25 ppm) of *Bacillus thuringiensis israelensis* (*Bti*) WDG for fixed time period (60 minutes) to find diagnostic dose. Results indicated that field collected early 4th instar larvae were 10 times more resistant than susceptible population with respect to dose. Resistance against deltamethrin 1.5% EC and cypermethrin 10% EC in *Aedes aegypti* adult females was evaluated by CDC bottle bioassays. Field collected females were 30% and 40% more resistant against deltamethrin and cypermethrin respectively. The resistance level was expressed as resistance ratio (RR) of lethal time at 50% death determined in field and susceptible strain. Current study indicated RR LT₅₀ 1.97 against *Bti* (WDG) in early 4th instar larvae while deltamethrin and cypermethrin indicated 1.95 and 1.47 in *Aedes aegypti* females. In conclusion, *Aedes aegypti* larvae were found highly resistant against *Bti* WDG and adult females were least resistant against cypermethrin. In comparison of percent mortalities there was no significant difference between the two insecticides against adult females.