



Abstract

The present study was performed to evaluate the current status of insecticide resistance against pyrethroids (deltamethrin, cypermethrin and lambda-cyhalothrin) and organophosphate (temephos) in different populations of Lahore (Model town, Mishri shah, Sadar Cantt, Walton and Valencia). The susceptibility of larval and adult population was tested following standard WHO guidelines. Against temephos all field populations of Lahore showed less mortality than susceptible laboratory strain having RR_{50} ranging from 10-20 RR_{90} from 7.75-12.25. In larval populations against pyrethroids low to moderate level of resistance was found with RR_{50} : 0.3-1 and RR_{90} : 1-15 and in adult population moderate to high resistance was present with percentage mortality < 98%. To study metabolic basis of insecticide resistance content of monooxygenase, esterase (carboxyesterase and acetylcholinesterase) and glutathione S transferase of resistant field populations was measured and compared with susceptible laboratory strain. Statistical significant increase in enzyme level was found in all field populations than laboratory strain. The value of acetylcholinesterase was 1.2 to 2.5 fold higher, esterase was 1 fold higher, monooxygenase was 3.9 to 4.7 fold higher and GST was 1.9 to 2.6 fold higher in field populations than laboratory strain. This study clearly depicts the presence of resistance against most commonly used insecticides (pyrethroids and organophosphate) in larval and adult population of Lahore.