

## ABSTRACT

In the present study, *Culex quinquefasciatus* were sampled from five different areas of Lahore District of Pakistan i.e. GC University Lahore, Mohlanwal, Jaman, Noorpur Bhatta A1 and Yohanabad. Bioassays were performed to check the level of resistance in *Culex quinquefasciatus* against pyrethroid in these five selected populations of Lahore District. Results of the bioassays of present study showed that individuals of all populations were susceptible to 5% of deltamethrin. Mortality response of *Culex quinquefasciatus* was observed till 24 hrs at different doses and it was found that rate of mortality was higher after 12 hrs of insecticide exposure. In the present study it was also observed that in five tested populations of Lahore District resistance has not developed against pyrethroid but level of estrases was high in GC University Lahore but low in Jaman population. Yohanabad-2, GC university Lahore and Noorpur Bhatta A1 populations showed high estrases activity against alpha naphthyl acetate (Substrate A) while Mohlanwal and Jaman population against beta naphthyl acetate (Substrate B) indicating that former three populations have high levels of estrases A while later two <sup>have</sup> higher levels of estrase B. Moreover, all five populations display a large variation in the levels of both estrases A and B. Band pattern of estrases A was same in all the five populations. Only one band (A1) was observed in all populations. For estrase B band pattern was similar in Yohanabad-2, GC university. In these two populations there were two bands (B1 & B3) which were present at the same position suggesting that there are only two different genes producing estrases B. In the population of Noorpur Bhatta A1, Mohlanwal and Jaman three bands were present. Third band (B2) which was present in these three population was absent in Yohanabad-2, and GC university population.