

ABSTRACT

DISTRIBUTION OF ELEVATED CARBOXYLESTERASES IN *CULEX PIFIENS* COMPLEX MOSQUITOES OF CALIFORNIA

Culex pipiens complex mosquitoes, in samples taken along a north-south axis from Shasta to Riverside counties during 1999-2002, showed the presence of the elevated carboxylesterases A2B2 and B1 in all populations except one. These populations represented three members of the *Cx. pipiens* complex based on morphology and behavior, suggesting that gene flow between them has occurred, resulting in the spread of the genes encoding resistance. All populations with high levels of elevated esterase had A2B2 and B1 allele frequencies that did not differ significantly from those predicted by Hardy-Weinberg equilibrium. This suggests that the genes coding for these esterases do not differ greatly in their selective advantage. These data suggest that resistance to organophosphate insecticides is either present, or may be rapidly selected for with the use of OPs.

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