

## POPULATIONAL STRUCTURIZATION OF *CULEX QUINQUEFASCIATUS* (DIPTERA: CULICIDAE) POPULATIONS IN BRAZIL

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**Abstract** Microsatellites have been widely used in phylogenetic studies of various groups of insects. This study analyzed the genetic panorama of the urban species of mosquito *Culex quinquefasciatus* present in Brazil. Nine populations of *Cx. quinquefasciatus* mosquitoes from all regions of Brazil and one from Argentina were investigated by six microsatellite loci previously utilized successfully in *Culex pipiens*. A deviation from Hardy-Weinberg equilibrium was observed in 60% on the analyzed loci ( $p < 0.05$ ). The dendrogram of genetic distance among all populations showed two distinct clusters: one cluster from Rio Branco, Belem, Teresina and Pontes e Lacerda, located in the North and Midwest of Brazil, and a second cluster formed with the populations from Santa Vitória, Chapecó, Rio Pinheiros and PET located in the South and Southeast of Brazil. The population of La Plata showed distinct genetic patterns due to hybridization between *Culex quinquefasciatus/pipiens* and colony population has low heterozygosity for being more than 20 years in the laboratory, for these reasons they were segregated not grouping with any other population. The grouping of populations in clusters defined in the North-South axis, and the segregation of populations from La Plata and colony indicates significant genetic differences between populations of *Cx. quinquefasciatus* mosquitoes in Brazil. The segregation of La Plata population revealed significant genetic differences from those collected in Brazil. A better understanding of the genetic structure of mosquito populations may help anticipate distribution of diseases and play a decisive role in epidemiological interventions. FAPESP: 2008/57468-6 and 2012/19117-2.