



Genetic differences based on AFLP markers in the mosquito species *Anopheles darlingi* collected in versus near houses in the region of Porto Velho, RO, Brazil

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ABSTRACT. *Anopheles darlingi* is the most important malaria vector in Central and South America. After a dramatic reduction of malaria cases in the whole Brazilian territory, with the lowest abundance being attained by 1970, the disease resurged in the Amazon region, where it is now a great public health concern. Consequently, better knowledge about vector species became urgent. We examined the genetic diversity and population structure of *A. darlingi*, sampled in four localities in the State of Rondônia, Brazil, using 139 amplified fragment length polymorphism marker loci. In each locality, samples were collected in two environments: a peri-domicile one (in the balconies of houses) and an extra-domicile environment (about 15 m from the house). Estimates of expected heterozygosity, Shannon diversity index and percentage of polymorphic loci showed medium to high values, with the samples from the areas closer to Porto Velho exhibiting the smallest values. There was evidence of small population differences, evaluated by F_{st} , genetic distance and analysis of molecular variance. Comparison between peri- and extra-domicile samples showed greater values of

F_{st} and genetic distance than between pairs of localities, indicating influence of environmental conditions on the genetics of populations.

Key words: Malaria vector; *Anopheles darlingi*; AFLP; Amazon region; Genetic variability; Population differences