

GENETIC ANALYSIS OF TWO POPULATIONS OF *PERIPLANETA AMERICANA*

**¹MARIAH VALENTE BAGGIO-DEIBLER, ²MARCELO DA COSTA
 FERREIRA, ³ANDRESSA DE SOUZA-POLLO, AND ⁴MANOEL VICTOR
 FRANCO LEMOS**

¹Biologist, PhD in Agronomy (Agricultural Entomology), Department of Plant Protection,
 UNESP, Jaboticabal, SP, Brazil.

²Agronomist, Professor, Department of Plant Protection, UNESP, Jaboticabal, SP, Brazil

³Agronomist, Assistant of Academic Support IV, Department of Preventive Veterinary Medicine
 and Animal Reproduction, UNESP, Jaboticabal, SP, Brazil

⁴Biologist, Professor, Department of Applied Biology, UNESP, Jaboticabal, SP, Brazil

Abstract The control in the field of insect large geographical distribution as *Periplaneta americana* species, that is a mechanical vector of several pathogens to man, may be affected by genetic variability among their populations. They can be segregating, resulting in differences in susceptibility to the control agent. One way to get answers on genetic diversity of populations of some species studied, such as American cockroach, with lower cost and faster results is through the use of Random Amplification of DNA Polymorphic (RAPD) technique. The objective of this study was to determine the genetic distance between two populations of *P. americana* species. Twenty females of each area were selected, corresponding to F1 generation of Jaboticabal (Brazil) and Fn generation of Piracicaba (Brazil). Each adult had their third right leg removed for DNA extraction, followed by RAPD-PCR amplification. Out of the 192 tested primers, 14 were considered the most informative and used on the RAPD analysis. The RAPD bands in each sample were coded in binary matrix by PAUP software. Molecular Analysis of Variance (AMOVA) was performed and it was calculated the fixation index (Fst). There were 128 bands generated, of which 113 (88%) were polymorphic. Populations were separated in two groups corresponding to their locations. It was observed more subdivisions in Jaboticabal than in Piracicaba. The existing variation corresponded to 17.69% between cities and 82.31% within populations. The Fst of Jaboticabal was equivalent to 0.108 and 0.074 of Piracicaba. The gene flow (Nm) was higher in Piracicaba (3.15), followed by Jaboticabal (2.05) and between cities (1.16). Data show low differentiation within Piracicaba's population, moderate in organisms from Jaboticabal and high levels of interpopulation segregation, suggesting that the populations are different depending on their geographic location.