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MICROBIOLOGIA
APLICADA**

ANAIS

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Editado por

Andreza Francisco Martins

Amanda de Souza da Motta

Patricia Valente da Silva

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SUSCEPTIBILITY OF *Culex quinquefasciatus* LARVAE TO IMIDAZOLIUM SALTS

Harry Luiz Pilz Júnior^{1,2}; Stephanie Jansen²; Jonas Schmidt-Chanasit^{2,3}; Gertrudes Corção¹; Henri Stephan Schrekker⁴; Onilda Santos da Silva¹

harrypilz@gmail.com

¹ Department of Microbiology, Immunology and Parasitology, Institute of Basic Health Sciences, Universidade Federal do Rio Grande do Sul, Rua Sarmiento Leite 500, Porto Alegre, RS, 90050-170, Brazil

² Department of Arbovirology, Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany

³ Faculty of Mathematics, Informatics and Natural Sciences, Universität Hamburg, Hamburg, Germany

⁴ Laboratory of Technological Processes and Catalysis, Institute of Chemistry, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves 9500, Porto Alegre, RS, 91501-970, Brazil

Culex quinquefasciatus is a mosquito species distributed worldwide in tropical and subtropical regions. This species is competent to transmit lymphatic filariasis and serves as an intermediary host of arboviruses from birds to humans in urban areas. In Brazil, there are several reports about populations of these mosquitoes that became resistant to various classes of insecticides, including chemical and biological. Therefore, the search for new molecules for its control is of great importance. In this context, studies have shown that imidazolium salts (IS) are excellent for controlling larvae of *Aedes aegypti*. Thus, the objective of this work was to analyze the impact of these salts on *Cx. quinquefasciatus* larvae. The IS **C₁₈MImCl**, **C₁₆MImMeS** and **C₁₆MImCl** were chosen and tested at eight different concentrations (0.156 µg/mL - 20 µg/mL) in laboratory-reared larvae. This study was conducted in triplicates (1,800 larvae each) in 4 replications. *Ae. aegypti* larvae were used as a positive control group (LC₉₉: 10 µg/mL), while only water served as negative control. Mortality was monitored for 24 and 48 hours, which confirmed the toxic effect of the IS against larvae. The LC₅₀ values were determined from a logistic regression: 1.98 µg/mL for **C₁₈MImCl**; 0.46 µg/mL for **C₁₆MImMeS** and 0.76 µg/mL for **C₁₆MImCl**. Regarding the controls, the positive and negative ones presented 100% and 0% mortality, respectively. ANOVA 2-way statistical analysis showed a significant higher toxicity for **C₁₈MImCl** in comparison to the other IS (p = 0.0367). These results suggest that the tested IS are very effective for the control of *Cx. quinquefasciatus* larvae, which is the first demonstration for the larval susceptibility of this mosquito species to IS.

Keywords: Vector control; *Culex*; Chemical control; Arbovirus