Application of Agroindustrial Residues in the Combat of the Arbovirus-Vector Mosquito (Aedes aegypti), Phase II

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Aedes aegypti is the vector of dengue, chikungunya, yellow fever and zika, which are some of the world’s biggest problems. The only effective way to combat them is to eradicate their transmitter, since the current insecticides cause environmental contamination and diseases. Another current problem is the disposal of residues such as coffee and grape peels, and tilapia scales, which contaminate environment when discarded. Because of this, it was decided to test natural products that could combat the mosquito. This work aims to evaluate the larvicide, pupicide, ovicide and lethal effects of agroindustrial residues against Aedes aegypti. The production of the insecticide solutions was carried out from alcoholic extracts at 99.8%, which were rotaevaporated and applied at different concentrations, ranging from 25 to 40 mL/L. The bioassays followed, in the majority, the methodology described by the World Health Organization (WHO), with some adaptations. The data obtained were subjected to a two-way analysis of variance and the means were compared by Tukey's Test ($p<0.05$). Also, a Probit Analysis was performed to determine the lethal concentration values (CL99). The conclusion was that the solutions made from residues have a fast insecticidal effect against Aedes aegypti eggs, larvae and pupae. Furthermore, the solutions do not present phytotoxicity, were well accepted by the population and have a long residual effect. This way, not only the number of arboviroses transmitted by the insect is reduced, but also environmental contamination and diseases caused by synthetic insecticides are avoided. Thus, this study presents social, environmental and scientific value.

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