Annona muricata Extract for the Control of Aedes aegypti Mosquito

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Dating more than fifty years, controlling the Aedes aegypti mosquito in Costa Rica has been a major problem; this mosquito is the vector for the dengue virus and lately the Chikungunya virus. Its living habits are what make this mosquito so dangerous. To date only two chemical methods are available to control it, however, both represent a health hazard. A bioinsecticide to control the vector mosquito was developed during this project; it is based on Annona muricata (soursop) seeds. Ethanol extracts were obtained from the macerated A. muricata seeds and a breeding stock was set up using larvae originated in El Roble, Puntarenas. The idea of growing the soursop in vitro in order to maximize the secondary metabolite production yield is proposed. The outcome was brownish oily extracts, the bioassays conducted with the bioinsecticide resulted an effectiveness of 100% mortality of the larvae in different development stages. Certain studies have reported that this species contains active ingredients known as acetogenins, which have great insecticidal potential. Two assays are conducted during this research, inoculating A. muricata tips, although the soursop plant reproduction protocol has not been standardized yet, we expect progress and positive results with the production of secondary metabolites through plant Biotechnology; thus obtaining a larger amount of the material required to manufacture the bioinsecticide. It is concluded that the bioinsecticide prepared is effective in controlling the larvae of this insect; therefore it can be deemed to have great potential for the public health of this country and for further reference and use in other countries where these diseases are found.

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