

A MECHANICAL INSECTICIDE APPROACH TO NON-CHEMICAL, LOW-COST MOSQUITO CONTROL

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Overdependence on the use of insecticides has led to the resistance in mosquito populations and has created significant challenges in controlling mosquitoes globally. In 2016, the City of New Orleans Mosquito Control Board evaluated a pulverized perlite product (Imergard-WP, Imerys, Paris, France) against three species of mosquitoes in the field and in the laboratory. Control of the mosquitoes was strictly mechanical and formulation did not contain a chemical insecticide. Twenty sites were selected, 10 treated (Imergard) and 10 controls (water) with similar structure and yard size. Yards were inspected for breeding-sites and assessed for optimal-application. A two-week baseline survey was taken to attain preliminary mosquito populations. The exterior of residences were treated as well as wood chips which were placed under houses with subsamples pulled weekly for bioassay. Imergard had a 96% mortality rate against *Aedes aegypti*, a mortality rate of 85% against *Aedes albopictus* and a 93% mortality rate against *Culex quinquefasciatus* in the bioassay, eight weeks after application. The study was repeated in Monte Verde, Honduras in 2017. The houses in Monte Verde were substandard and were open to mosquito invasion. This location is an area of active Dengue, chikungunya and Zika virus transmission. Mosquito pressure was monitored by BG Sentinel-2 traps (Biogents AG, Regensburg, Germany) and ovicups. Sites were monitored for ten weeks. Bioassays were conducted with cement chips to mimic housing structures. Mosquito control is not always affordable, accessible, or is restricted. A non-chemical, low-cost option would provide greater access to mosquito control around the world.

BIOGRAPHY

Erin Cloherty is an Entomologist at the City of New Orleans Mosquito, Termite and Rodent Control Board. She has completed her MSPH in Tropical Medicine and Parasitology at Tulane University School of Public Health and Tropical Medicine in New Orleans, Louisiana, USA. She is responsible for many academic and company-sponsored research projects that span multiple disciplines in the USA and internationally. She has lectured on Integrated Pest Management in certification classes for professionals nationally and internationally, to the public and to organizations (AMCA, NPMA). She also does community outreach with our Mosquito Control operations team and collaborates with other city agencies.

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