

MOSQUITO ABATEMENT

ST. TAMMANY PARISH

2021 Statewide Insecticide Resistance Surveillance Justification

LDH Proposal

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Insecticide resistance is one of the primary obstacles to effective vector management around the world. Akin to antibiotic resistance in medicine, insecticide resistance builds in populations exposed to insecticides in response to lethal pressure. Insecticides become less effective at managing mosquito populations over time in areas with resistance, increasing the risk of local pathogen transmission. Resistance surveillance provides mosquito management entities with data regarding the efficacy of their insecticides, and can prevent the otherwise inevitable development of resistance.

Performing a one-time survey of resistance status across an area is useful, but continued surveillance over time is optimal, as resistance waxes and wanes from year-to-year. Many mosquito control entities, particularly those with few staff or limited funding, may not be able to perform routine resistance surveillance due to lack of time, training, or monetary capacity. Resistance may go unnoticed as a result, with the public paying for the use of (and shouldering the vectorial burden of) largely ineffective insecticides.

Statewide resistance surveillance programs have recently begun forming in multiple states, including Florida, California, and Louisiana. These programs provide a means for smaller mosquito management entities to obtain resistance information for free. Entities that are able to perform resistance surveillance benefit from independent verification of results and resistance-informed neighbors, considering mosquitoes don't follow district boundaries. Finally, these programs allow for development of a centralized resistance database for historical archiving and comparisons in space and time.