**Mosquito Monitoring: Pesticide Resistance Monitoring**

Mosquito monitoring acts as an early warning system for viruses entering the area

* Mosquito-borne arboviral illnesses have a very high mortality rate - 50% for people symptomatic with Eastern Equine Encephalitis (EEE)
* Once a positive pool is identified, towns can pro-actively respond to reduce human risk
* If the State declares an Arboviral Public Health Threat, the State can initiate a response including mosquito control efforts
* Pesticide resistance monitoring allows town and the State to make informed decisions about control products

Pesticide Resistance Monitoring

* Maine previously had an insectary in collaboration with the University of Southern Maine, but that was shut down in 2020 due to the COVID-19 pandemic.
* Pesticide Monitoring is currently coordinated through the Northeast Regional Center for Excellence in Vector-Borne Diseases (NEVBD) based out of Cornell University which is funded by federal CDC through December 2022.
	+ For the current 2022 mosquito season, pesticide resistance monitoring is funded by NEVBD with no cost to Maine
	+ For the 2023 season Maine will need to pay for pesticide resistance monitoring, likely still through the lab at Cornell University
	+ Costs are not yet determined as they are still assessing their capacity and how to maintain the lab operations once the federal CDC funding ends.
	+ Current estimate is $15,000-$20,000 for the season. This would include:
		- Collections every two weeks
		- Four sites per county, four-five counties
		- Mid July – September
	+ These costs only include the testing itself, not the staffing time/effort to collect the samples

NEVBD currently tests:

* *Culex pipiens* and *Aedes albopictus*
* Up to 14 pesticides
	+ 11 adulticides: Chlorpyrifos, Deltamethrin, Etofenprox, Fenthion, Malathion, Naled, Permethrin, Prallethrin, Pyrethrum, Resmethrin, Sumithrin
	+ 3 larvicides: Bti, *L. Sphaericus,* Methoprene

For more information on NEVBD Resistance Monitoring Program <https://ecommons.cornell.edu/handle/1813/66868>