



New Jersey Vector Surveillance

NEW JERSEY AGRICULTURAL EXPERIMENT STATION
MOSQUITO RESEARCH AND CONTROL

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Introduction

The New Jersey Vector Surveillance Program to monitor the encephalitis viruses and their mosquito vectors was initiated in mid-May of this year. Two populations of Culiseta melanura and two populations of Aedes sollicitans have formed the baseline for assessing EEE and HJ activity in the State. Several changes in methodology have been instituted this year to broaden the overall surveillance effort.

The resting box line for the eastern portion of the State has been moved approximately 6 mi from New Gretna to the town of Greenbank. Mosquito populations in the New Gretna area have been declining over the years and the lower number of Cs. melanura that are available for testing appear to be unreliable as an indicator of EEE activity. Greenbank, located on the Mullica River in lower Burlington County, is surrounded by typical Cs. melanura breeding habitat. Collections from that area have yielded virus in the past and positives have generally appeared much earlier in the season. The Dennisville site will be retained as the main West Coast monitoring area.

Last year's horse cases in Jackson Township pointed out the need for an inland site to monitor Cs. melanura and Coquillettidia perturbans. A resting box line has been established at Jackson to collect Cs. melanura for virus isolation attempts. Cq. perturbans will also be sampled with CO₂-baited traps at Jackson once per week and specimens will be tested for virus throughout the season.

The New Jersey Vector Surveillance Program has utilized sentinel chickens to monitor SLE virus since 1980. This year, sentinel flocks will be used as an added indicator of EEE activity. To date, 12 sentinel flocks have been placed in the State (Table 1) Two additional flocks are planned for this season if cooperators can be found in suitable areas.

Ae. sollicitans will be monitored at West Creek (East Coast) and Dennisville (West Coast) as in the past years. Landing rates will be used to measure population size and ovarian dissections will be employed to assess vector potential. Should EEE virus appear in any of the indicators being used in these investigations, Ae. sollicitans will also be collected for virus isolation attempts.

Table 1. Sentinel Chicken Flock Locations in New Jersey

Location	County	To be Tested for
Jackson	Ocean	EEE Virus Only
Forked River	Ocean	
Greenbank	Burlington	
Leeds Point	Atlantic	
Estelle Manor	Atlantic	
Pond Creek	Cape May	
Dennisville	Cape May	
Iona Lake	Gloucester	
Voorhees	Camden	EEE & SLE Virus
Indian Mills	Burlington	
Cinnaminson	Burlington	
Windsor	Mercer	

The Current Status of EEE and its Mosquito Vectors

New Jersey experienced heavy rains and extensive flooding during the month of May resulting in higher than average early season floodwater mosquitoes. There was no evidence, however, that the abnormal precipitation had any affect on the primary vector species in the EEE cycle.

Resting box collections revealed that Cs. melanura populations peaked at all sites during the middle of June. Parity dissections suggested that the June peak represented a continuous emergence from the overwintering generation of larvae with parity rising slowly as the month progressed. The collections from early July show a rising population with an influx of nulliparous specimens. The numbers to date appear about average for this time of year.

Few results from virus isolation attempts are available at this time due to the lag between collection and assay. No positives have been received from any of the early season material that was submitted.

Aedes sollicitans populations have been relatively low at most sites during the early Spring. The brood that emerged during mid-June reached 100% parity very late in the month. The next major emergence should occur early in the 2nd week of July. Cq. perturbans populations (which are much lower thus far) should peak at approximately the same time.

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