Mosquito Surveillance Report*

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Introduction

Since 1973, the Mosquito Surveillance Program at the New Jersey Agricultural Experiment Station has provided information on the status of important pest species in various regions of the State. Light trap data, supplied by the county mosquito control commissions, are statistically analyzed at the Experiment Station and current populations are compared with the averages seen in past years. The population data have been presented in graphic form in the Mosquito Surveillance Report with population curves for Ae. sollicitans, Ae. vexans and Culex spp. for each region of the State. At the end of the year, the population curves present an overview of each pest for the entire season.

This year, the Mosquito Surveillance Report will change its format somewhat, to include more general information on the status of important pest groups. Some light trap data will be included, but emphasis will be placed on specific broods, rainfall patterns and temperature records for Northern, Central and Southern regions of the State. Light trap analysis of regional traps will continue throughout the season, but the results will be presented in one final report for publication at the end of the year.

Early Season Aedes

Early season Aedes mosquitoes appear to be lower than average in most parts of the State this year. Inspections revealed relatively high numbers of Ae. canadensis, Ae. stimulans and Ae. excrucians larvae after the melt from our April snowstorm, but the adults have only posed a major problem in the Northwestern portion of the State. There was relatively little rainfall in early May, and in all probability many of the transient breeding areas provided by the snowstorm dried out before the Ae. canadensis could emerge. As a result, Ae. stimulans and Ae. excrucians (which emerge 1-2 weeks earlier) represent the major early season pests this year and are geographically limited to the more northern counties.

As a group, the univoltine Aedes are not attracted to light, thus trap records rarely reflect nuisance levels during the Spring peak. Bite counts, however, suggest that Ae. canadensis are below average for this time of year and the low number of early season complaints bear out this finding.

*This work was performed as a part of NJAES Project 40506, supported by the New Jersey Agricultural Experiment Station and the State Mosquito Control Commission.

Salt Marsh Mosquitoes

Ae. cantator populations were higher than average in most coastal areas this Spring and dominated the biting populations during the month of May. On the Atlantic coast, the species appeared earlier than usual and caused considerable annoyance during the early part of the season. The first heavy brood of Ae. sollicitans hatched in late May as a result of the moon tide of May 22-23. Larval populations were heavier along the Atlantic coast, but the hatch was statewide within the coastal strip. Inclement weather hampered control efforts during the following week and adults were on the wing during the first week of June in most areas.

Floodwater and Culex Mosquitoes

Spring floodwater Aedes were at normal or subnormal levels throughout most of May in all regions of the State, but the rains during the first 2 weeks of June have posed a particular problem. Aedes vexans light trap counts for June generally vary from one to four per trap night but the succession of floodings will probably create populations far in excess of these averages. The wet Spring is somewhat reminiscent of 1975, a year when heavy floodings produced exceptionally high Spring populations of Aedes as well as Culex. During that year drought conditions followed the wet Spring and St. Louis encephalitis entered the State in early August. The Culex populations were about average during May but the levels should increase markedly over the next month. These mosquitoes overwinter as inseminated females and the population level increases at a steady rate as the season progresses.

Reference Collections

This year we are placing an emphasis on improving the mosquito collection here in New Brunswick. Some of the very common mosquitoes in the State, such as Ae. vexans, Ae. sollicitans and even Cx. salinarius, are not adequately represented in our collection. Please notify us if there is a larval source in your area (which will not be controlled immediatel). A list of species needed is attached.

If any county would like to establish a reference collection for their area, the Experiment Station would be pleased to assist in any way possible. Information on proper collecting, rearing, preserving and storage of both larvae and adults will be made available and our staff can be contacted to work in the field with your personnel.

Average Weekly Rainfall for North, Central and Southern New Jersey*

Week Ending	North	Central	South
10 May	0.02"	0.05"	0.02"
17 May	0.07"	0.06"	0.13"
24 May	0.89"	0.95"	0.94"
1 June	2.57"	2.15"	0.90"
7 June	1.22"	0.80"	0.93"

*These data were gathered from 6-8 weather stations in each area and reported in the New Jersey Weekly Digest.

att.

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Cooperating County Mosquito Control Commissions:	Atlantic	Middlesex
	Bergen	Monmouth
	Burlington	Morris
	Camden	Ocean
	Cape May	Passaic
	Cumberland	Salem
	Essex	Somerset
	Gloucester	Sussex
	Hudson	Union
	Mercer	Warren

Project Leader: Dr. Wayne J. Crans

Mosquito species in short supply in the State Reference Collection, Headlee Research Laboratories. Both larvae and adults are needed unless otherwise noted.

Flood water species:

Ae. atlanticus
Ae. dupreei
Ae. mitchellae
Ae. sticticus
Ae. trivittatus
Ae. vexans
P. ciliata
P. discolor
P. ferox
P. varipes
P. cyanescens

Salt Marsh species:

Ae. dorsalis
Ae. sollicitans
Ae. taeniorhynchus
Cx. salinarius
An. atropos
An. bradleyi

Fresh water Swamp species

Cx. pipiens
Cx. restuans
Cx. territans
Cs. inornata
Cs. melanura
Cs. s. minnesotae
Cs. morsitans dyari
Coq. perturbans
U. sapphirina
An. crucians
An. punctipennis
An. quadrimaculatus (larva)
An. walkeri
An. earlei

Treehole species:

Ae. triseriatus
O. signifera
O. alba
T. rutilus septentrionalis
An. barberi

Miscellaneous species:

Ae. atropalpus
W. smithii