

## History of the New Jersey Light Trap Program in Delaware - Kim Brinson

- A. Historic data
  - 1. 1932 to present
  - 2. Never missed a year
- B. Mosquito surveillance - timing is everything
  - 1. Electricity - rural electrification act of 1935
  - 2. Roads were consolidated and improved
  - 3. Automobiles were becoming more common
  - 4. Tourism!
- C. Traps
  - 1. Mechanical traps developed by Dept of Entomology at the New Jersey Ag Station
  - 2. 1932 - 16 traps throughout the state
    - a) Traps installed at a height of 5.5'
    - b) Operated between 6-7 pm and 7-8 Am
    - c) May through Sept
    - d) Relied on cooperators
      - (1) Operated traps
      - (2) Removed mosquitoes
      - (3) Placed mosquitoes into labeled containers
    - e) Traps set statewide
    - f) Initial survey
      - (1) 72792 *Culex pipiens*
      - (2) 98922 mosquitoes collected
      - (3) Drought year
  - 3. Model C trap
    - a) 2' long by 9" diameter
    - b) Sheet metal
    - c) Vane at one end to keep it directed into the wind
    - d) Light bulb
    - e) Collection jar
- D. The history
  - 1. The 1930s
    - a) 1933 - hurricane
    - b) Collected both males and females
    - c) Hoped to determine location of breeding sites
  - 2. 1940s
    - a) Larviciding began
      - (1) DDT
      - (2) Twice a month
    - b) Identified at University of DE
    - c) 1948 -
      - (1) Attempted a migration study
      - (2) No results
      - (3) Marking mosquitoes by aircraft does not work
    - d) Ditching and clearing continued
    - e) Rainfall discovered to be important
  - 3. 1950s
    - a) Richard Darsie
    - b) 1951 - DDT resistance found
    - c) 1954
      - (1) Huge numbers of mosquitoes

- (2) Aerial DDT
- d) 1956 - EEE outbreak
- e) More flight range studies
  - (1) Drought years
  - (2) Inconclusive
- f) 1959 - severe *Oc sollicitans* problem
- 4. 1960s
  - a) Attempted study of *Oc sollicitans* migration
    - (1) Maybe mosquitoes were coming from NJ!
    - (2) Another drought year
  - b) 1968 - EEE outbreak
- 5. 1970s
  - a) Mosquito control became part of the Division of Environmental Control
  - b) Found out mosquito numbers depended on more than just rainfall
- 6. 1980s
  - a) 1981
    - (1) Evaluated CDC traps vs NJLT
    - (2) NJ traps more effective for *Culex*
  - b) Electronic database
- 7. 1990s
  - a) Program no longer well documented
  - b) Collection and taxonomy data still collected
- 8. 2000s
  - a) 2000 - not a good year for taxonomy
  - b) 2001 - contracted with UD again to ID mosquitoes
  - c) 2003 - subsampling protocol established
  - d) New database
  - e) Started see *Ae albopictus* throughout state
- 9. 2010s
  - a) Used NJLTs to test for WNV
  - b) 2014 - program cutbacks
    - (1) Fewer nights
    - (2) Fewer number of traps
- E. Taxonomists
  - 1. Good consistency
  - 2. Many renown people involved
  - 3. Documented species over time