

Mid Atlantic Mosquito Control Association

2013 Conference Notes

Control Techniques for Reduction of *Aedes albopictus* and *Ae aegypti* Populations - Chris Lesser

- a) Needed an effective and rapidly deployable control strategy for domestic mosquitoes
 - i) Quality of life issues
 - ii) Disease vectoring issues -
 - (1) Dengue in FL
 - (2) Control strategies for this system just don't work anywhere
- b) Traditional habitat
 - i) Remote/rural
 - ii) Isolated areas
 - iii) Easy access
 - iv) Nocturnal
 - v) Concentrated breeding
- c) Domestic
 - i) Diffuse
 - ii) Amongst residents
 - iii) Difficult to access
 - iv) Urban/endophilic
 - v) Daytime biter
- d) Domestic mosquito control
 - i) Sanitation and source reduction
 - ii) Far too many breeding sites to get effective control
 - (1) Public won't do it
 - (2) Can't use forced sanitation in the US
 - (3) Education is quickly forgotten
 - (4) Access can be very difficult
 - (5) Labor intensive and time consuming (20 min minimum per house)
- e) Research objective
 - i) Study location - Manatee County
 - ii) Treatments
 - (1) Larvicide
 - (2) Adulticide
 - (3) Both
 - (4) Neither
 - iii) Use ovitraps for surveillance year-round
 - (1) 30 sites
 - (2) Randomly placed
 - (3) Counted eggs and any hatched larvae
 - iv) Methodology
 - (1) Each area treated once a week
 - (2) Started in mid-July
 - (3) Products applied by ULV spray truck

- (a) Altosid 5%
 - (b) 30:30 permethrin/PBO
- v) Results
 - (1) Collected baseline data
 - (2) Larvicide plus Adulticide treatments showed best reduction
- f) Application
 - i) 25000 acres needing treatment
 - ii) Need 2 trucks
 - iii) Becomes cost and time prohibitive
- g) What about aerial applications of larvicides?
 - i) Used altosid 5% from a helicopter
 - ii) 3 treatments
 - iii) Large drop in population size - 73% reduction
 - iv) Reduction in complaints
 - (1) Ovitrap count > 30 COMPLAINTS
 - (2) Ovitrap count <30 no complaints
 - v) Lower cost than truck spraying
 - vi) More doable than source reduction
 - vii) Has desired effect
- h) What about aerial application of adulticides?
 - i) Studies from SE Asia show good control of Ae aegypti, but with much higher application rates allowed in the US
 - ii) Doesn't work well when aegypti are endophilic (Caribbean study)
 - iii) What product would work best?
 - iv) Study
 - (1) Methods
 - (a) Malathion - seeing resistance to permethrin products
 - (b) 1300 acre spray block
 - (c) 20 minutes before sunset
 - (d) Completed before sun set
 - (2) Landing counts results - 78 to 97% reduction seen
 - (a) Temporary reduction
 - (b) Older adults being removed from population
 - (c) Effective for reduction of dengue transmission
 - (3) High level of public acceptance
 - i) Publications - WingBeats 2011