

Perspectives on *Aedes albopictus* Control in the US – Jim McNelly (Clarke Mosquito Control)

- a) Background
 - i) Common species in Hawaii in 1890s
 - ii) First established mainland population identified – Texas, 1985
 - iii) Likely present 1-3 years earlier
 - iv) Used tire-mediated introduction and dispersal
- b) US Public Health Service
 - i) 1988 – used tire inspection law
 - ii) CDC Division of Quarantine taxed with inspection and control
 - iii) Problems
 - (1) Half of tires enter through ports with no inspection facility
 - (2) CDC only inspects about 6% of tires entering country
 - (3) Infestations already present in 15 states when law was passed
 - iv) State regs
 - (1) Early 1990s
 - (a) State legislation to deal with used tires
 - (b) Funded through surcharges
 - (2) Late 1990s
 - (a) Encourage use of tires and tire-derived products
 - (b) Funding redirected from mosquito control to other projects
- c) Service calls jump considerably after *Ae albopictus* becomes established
- d) Various studies
 - i) Calcasieu Parrish
 - (1) 1988 survey
 - (a) N=86 residents
 - (b) Average residence had 14 containers around site
 - (c) Most were not things considered to be trash
 - (2) Late 1990s
 - (a) Door-to-door campaign was cost effective
 - (b) ~\$3.13 per house
 - (3) Source reduction through community education was unsuccessful
 - (a) Residents will dispose of trash
 - (b) Tend to forget non-trash containers
 - ii) Guatemala survey
 - (1) >83% containers are trash
 - (2) ~50% of this was tires
 - iii) Florida study
 - (1) Combination of larviciding and adulticiding
 - (2) Repeated every 3 weeks
 - (3) Largely unsuccessful
 - (4) Concluded that source reduction was needed
 - iv) Removal of dumped tires reduces albopictus problem
 - v) Los Angeles, CA
 - (1) *Ae albopictus* introduced in “lucky bamboo” shipments
 - (2) Initiated a comprehensive surveillance program
 - (3) Embargo on wet shipments of “lucky bamboo”
 - (4) Control
 - (a) Treat with larvicide

- (b) Adulticide cargo containers
 - (5) Mixed success
- e) Design of Community Based Interventions
 - i) Lloyd et al 1994
 - ii) Considers:
 - (1) Vector ecology
 - (2) Subculture of community
 - (3) Cultural background
 - iii) Designed for control of *Ae aegypti*/dengue in other countries
 - iv) Integrated control and surveillance
 - v) Moving away from chemical control
 - (1) Integration of biorationals and biotechnology
 - (2) Involve community
 - (3) Source reduction
 - vi) Mixed results depending on various areas
 - vii) Sustainability is critical
 - viii) Message must be varied
 - ix) Requires a successful merger between top-down and bottom-up approaches
- f) Perspective
 - i) Control – reducing density
 - ii) Management – rigorous delineation of principle parameters and justification provided through cost effectiveness analysis
 - (1) Vector density
 - (2) Ecology
 - (3) Socio-economic
 - (4) Geospatial
 - iii) Eradication – is it even possible