

Mosquito Control Tools in the United States: Meeting the Challenge

Joseph M Conlon

Technical Advisor

American Mosquito Control Association



Mosquito Control Organizations

- **Independent Districts** **734**
 - **Budgets: \$50K - \$34 Million**
 - **Total budgets > \$650 Million**
 - **Population protected > 190 Million**
- **Misc Agencies < \$50K**
1105



IPM - Larval Control

- **Larvicides**
 - **Bti**
 - **Bs**
 - **Methoprene**
 - **Monomolecular Films**
 - **Temephos**
 - **Spinosad**
- **Habitat removal/modification**
- **Larviparous fish**



IPM – Adult Mosquito Control

- **Adulticides**
 - **ULV**
 - Naled, malathion, chlorpyrifos
 - Pyrethroids
 - Etofenprox
 - **Residual – pyrethroids**
- **Screening**
- **Repellents**
- **Traps**



Resistance Issues

- **Harris County Texas – resmethrin (Scourge©)**
 - 0.003 lbs AI/acre – no control
 - 0.007 lbs AI/acre – 40% control
 - Recovered resmethrin mortality at 0.007 lbs AI/acre within one year of malathion rotation
- **California**
 - *C. tarsalis* – resmethrin, permethrin and pyrethrum
 - Contra Costa, Fresno, Merced, Riverside, Sacramento
 - *C. pipiens* – pyrethrum, permethrin, deltamethrin and lambda-cyhalothrin
 - Marin



Challenges

- **Clean Water Act**
 - Degradation products
 - *de minimis* ULV deposition
 - Biologicals
- **Endangered Species Act Issues**
- **Inerts/synergists**
- **Costs**



The Future

- **More organic/”natural”**
- **More refined detection capabilities**
- **Hazard vs. Risk assessment**
- **Precautionary Principle**



Needs

- **Self-limiting detox - rapid degradation by soil/water contact**
- **New modes of action/new classes**
- **“Natural”**
- **Formulation flexibility**
- **Area repellents**



Needs

- **Mosquito-specific – no non-target**
- **No inerts**
- **Non-residual/no synergists**
- **Non genetic**
- **No endocrine disruption**
- **Low resistance potential – for professional use only**

