

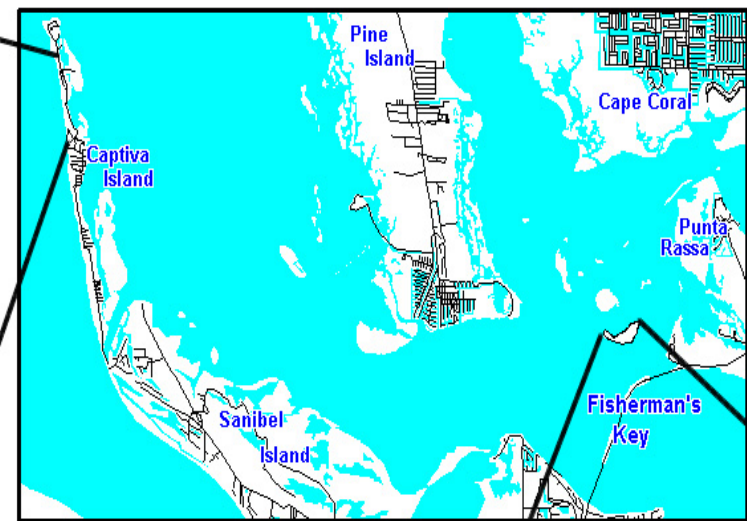
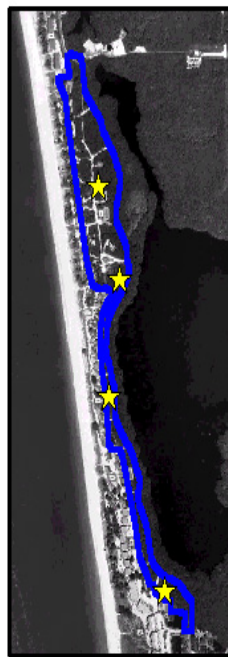
Control Characteristics of Altosid XR-G on Coastal Islands of Lee County, FL

**Jonathan A. Hornby
and
Bill Opp
Lee County Mosquito Control District**

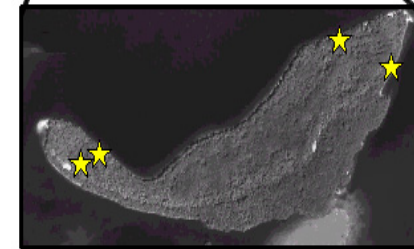
Contributors

- **Zoecon**
- **Dr. David Dame**
- **AdaptCo Inc.**

Captiva Island



Fisherman's Key



Patricio Island



- Applications were made to 3 Islands

Application Procedures

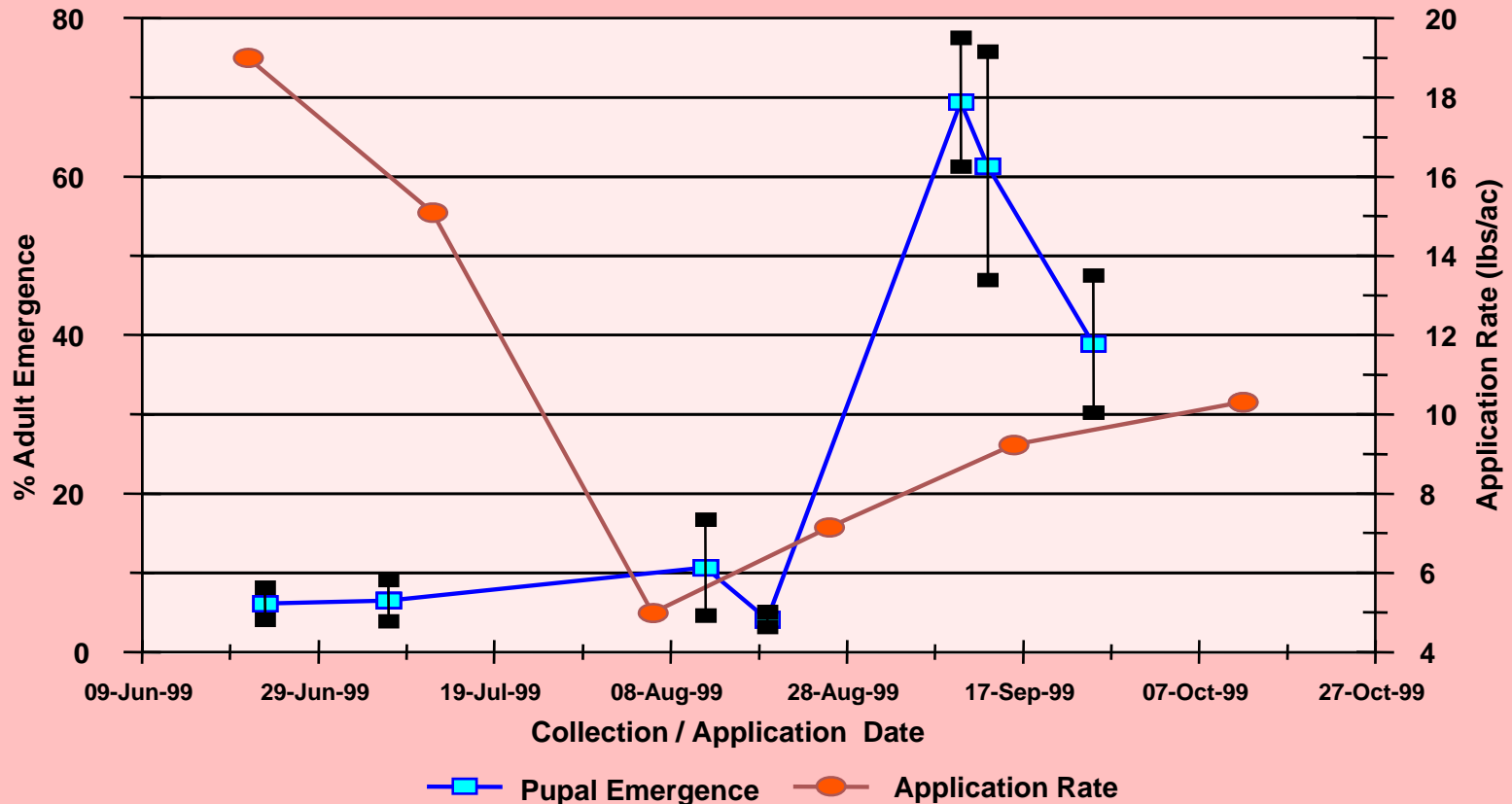
- Targeted Application Rate = 8 lbs/ac
- Applications were made aurally with a modified Isolar system using GPS
- Applications were made on a 21 day schedule following the initial brood

Data Collected

- Application Rate as defined by granule collections in 2 m² nets.
- Efficacy as adult emergence from field collected pupae.

Response of *A. taeniorhynchus* to

Altosid XR-G: FISHERMAN'S KEY



Error Bars = 95% Confidence Interval

- A preexisting reduced susceptibility was indicated by an initial 6.1% adult emergence, despite a high application rate of 19 lbs/ac.
- Population variance increased with a significant decrease in susceptibility.
- Four applications were made prior to a significant decrease in susceptibility.

**Response of *A. taeniorhynchus* to
Altosid XR-G: PATRICIO ISLAND
1999**

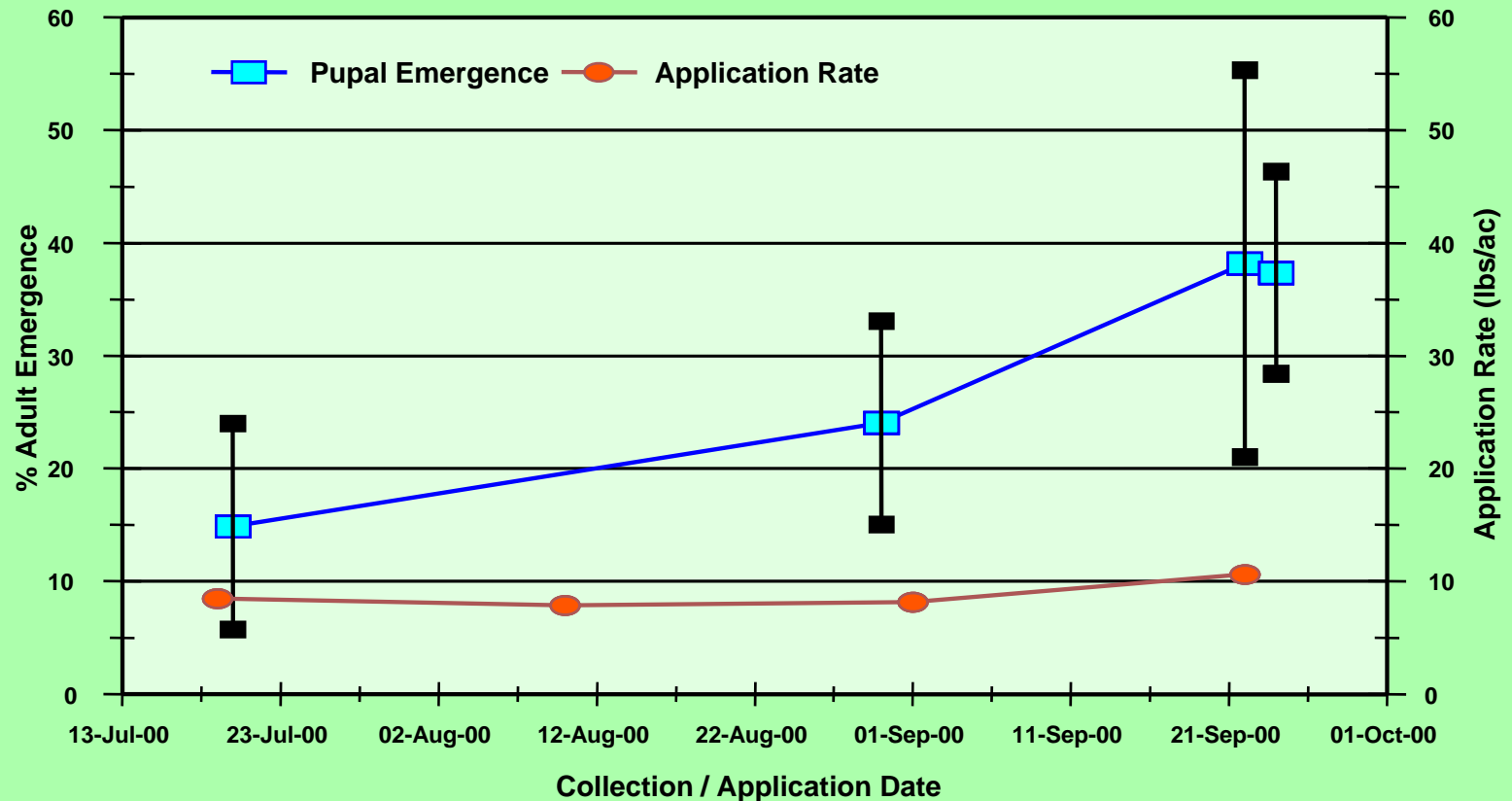
- No adult emergence occurred in collected samples

Altosid XR Briquet Locations

1989 - 1994



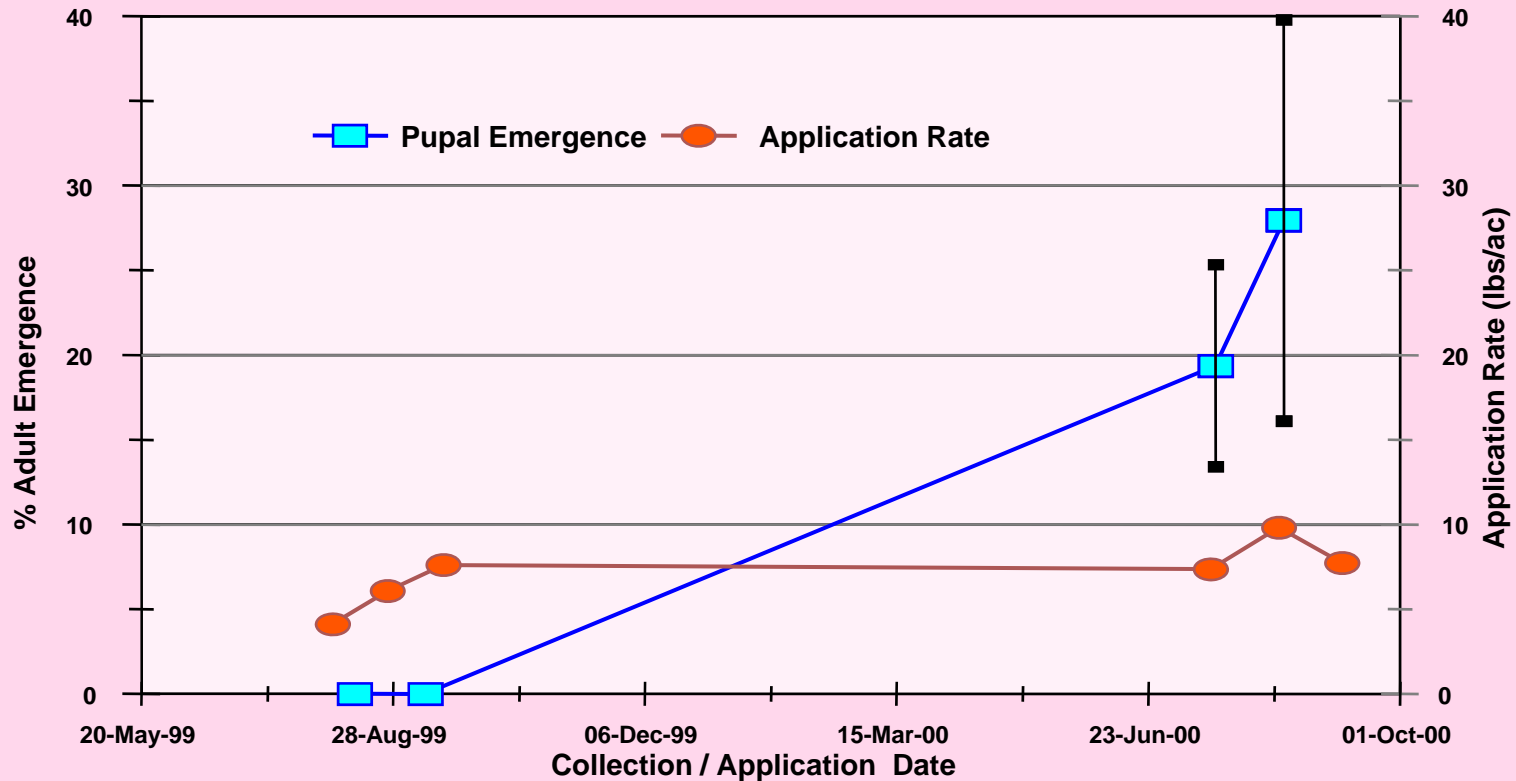
Response of *A. taeniorhynchus* to Altosid XR-G: CAPTIVA ISLAND



- Preexisting reduced susceptibility was indicated by a 15% adult emergence on the first exposure.
- Population variance was wide throughout the season.
- Four applications were made prior to a significant decrease in susceptibility.

Response of *A. taeniorhynchus* to

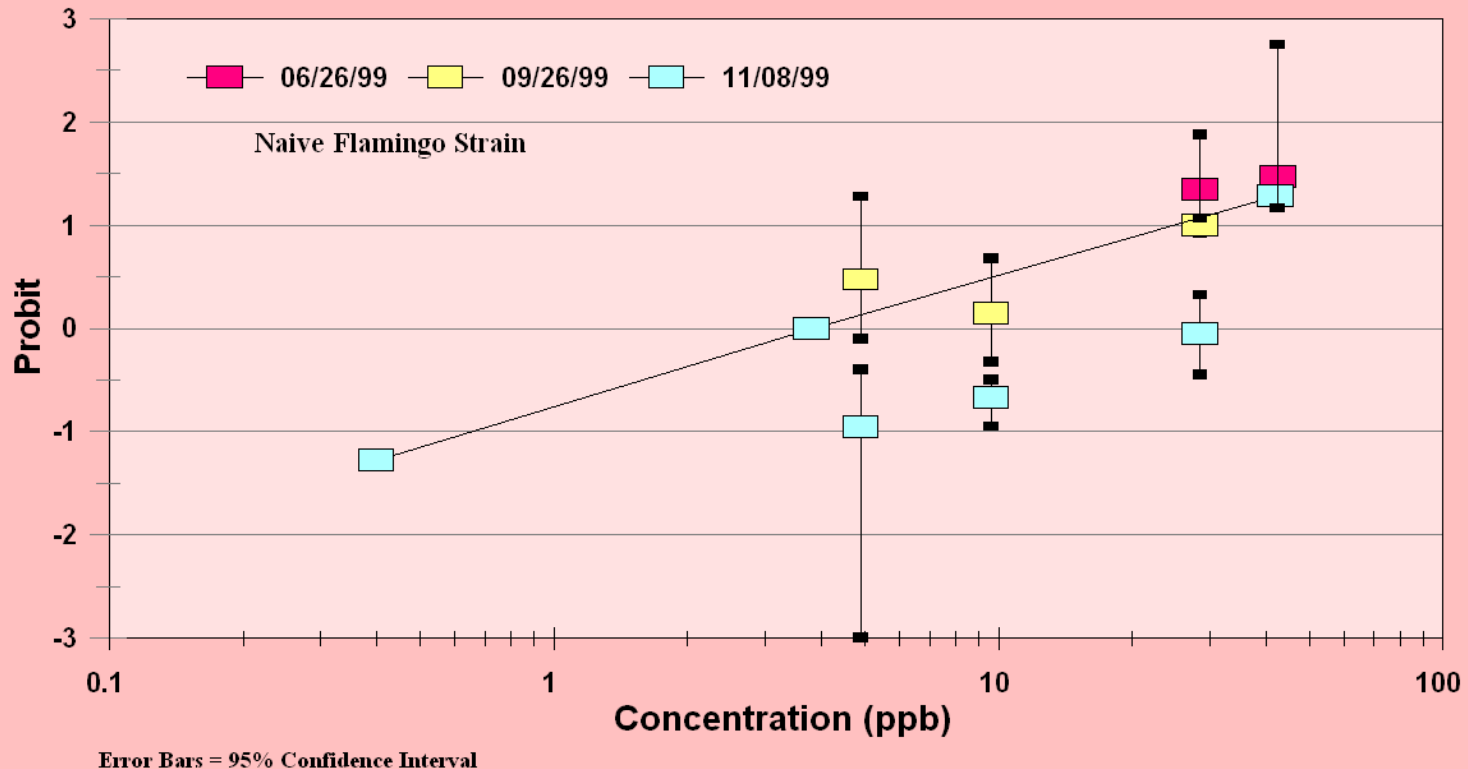
Altosid XR-G: PATRICIO ISLAND



Error Bars = 95% Confidence Interval

- No preexisting reduced susceptibility.
- Four applications were made prior to a significant decrease in susceptibility.

Methoprene Susceptibility Transition Fisherman's Key



- Initial susceptibility and from previous year indicate it was equivalent to the naive Flamingo Strain.
- Following 5 applications of Altosid XR-G, susceptibility is unchanged according to the bioassay.
- Following 6 applications of Altosid XR-G, susceptibility is significantly lower than the naive strain.

Conclusions

- Reduced susceptibility to methoprene will occur with continuous use of Altosid XR-G on islands similar to those of Lee Co., FL.
- Reduced susceptibility to methoprene is exhibited following the fourth application of Altosid XR-G on islands similar to those of Lee Co., FL.
- Evaluation of reduced methoprene susceptibility is revealed by the emergence of field collected pupae before it is revealed by laboratory single-level challenge bioassay.

