



In vitro Bioassay of a New Florida "Green" Product Registered for Adult Mosquito Control

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Non-toxic Adult Mosquito Control



- EPA 25(b) minimum risk insecticide
- Matrix24 Laboratories
- Florida Registered
- Mode of Action: Attractant/feeding deterrent



EverSafe™



Objectives

- Conduct proof of concept laboratory study to substantiate product efficacy
- Determine if field testing warranted



Target Species



Source: Bioinformatics Resource for Invertebrate Vectors of Human Pathogens

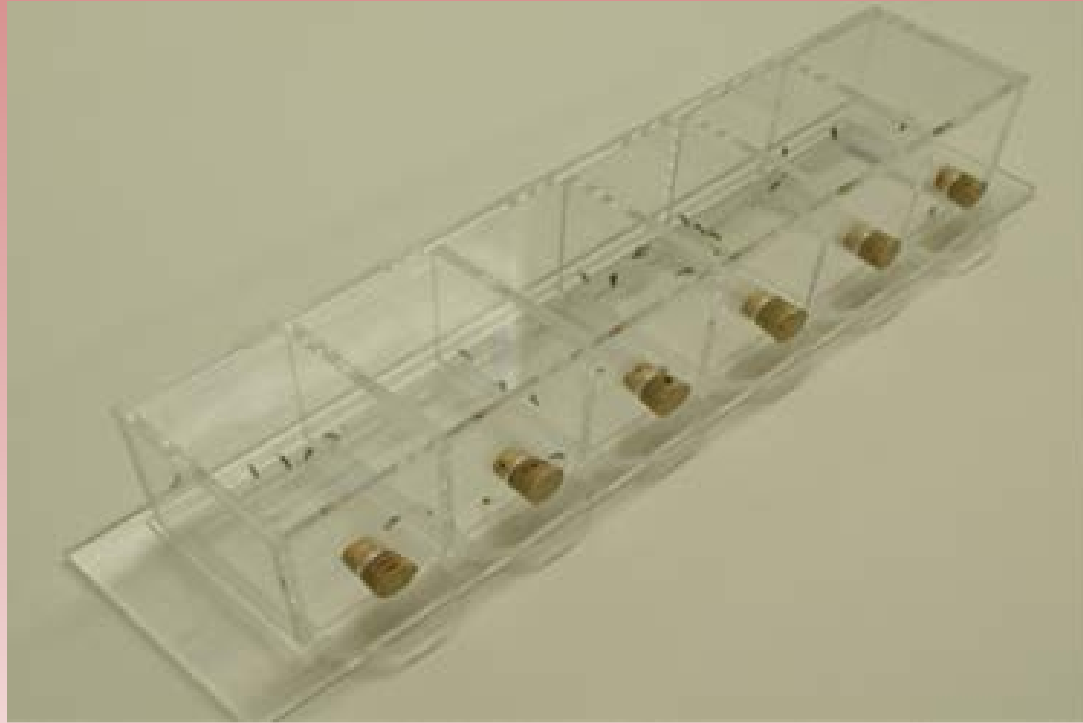
Aedes aegypti



K&D Bioassay System



K&D Upper Module



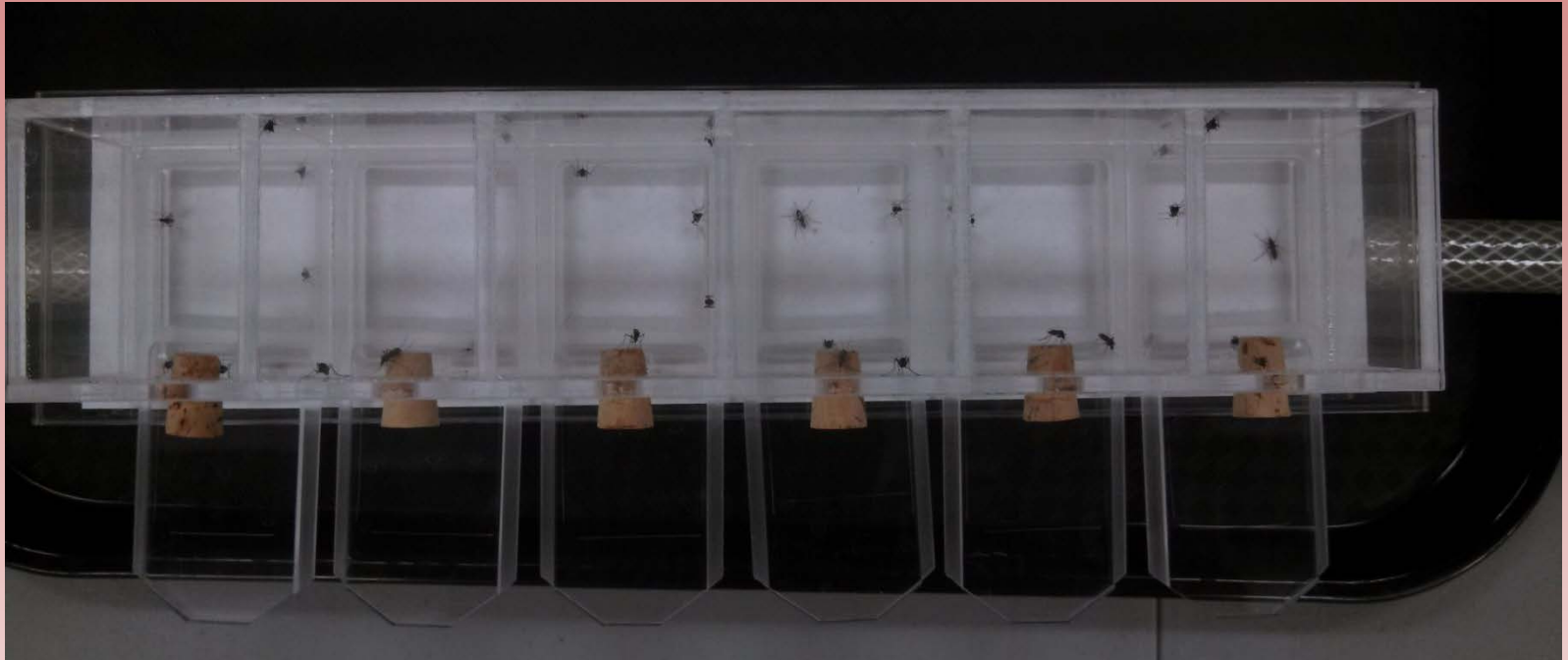
Collagen on K&D Lower Module



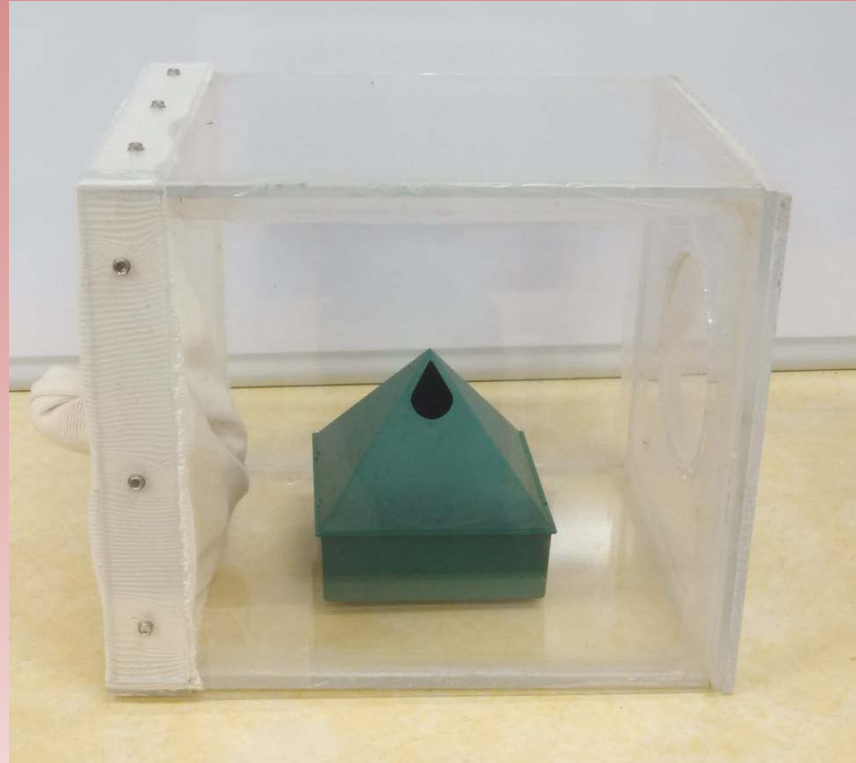
Bioassay Set Up



Bioassay in Progress



Treatment and Control



Experimental Design

- Treatments (assigned randomly to module chambers)
 - EverSafe
 - Non-treated Control
- 18 replications/treatment
- 3 repetitions of experiment
- Response variable = Biting count means
- Independent variables = Repetition, Replication, Treatment, Row, Column, Module, and Chamber
- Ambient temp and humidity recorded by data logger



Data Analysis

- Data fit normal distribution
- ANOVA - Main effect means tested for significant differences at $\alpha=0.05$
- % Deterrence calculated:
(Control-Treatment)/Control X 100

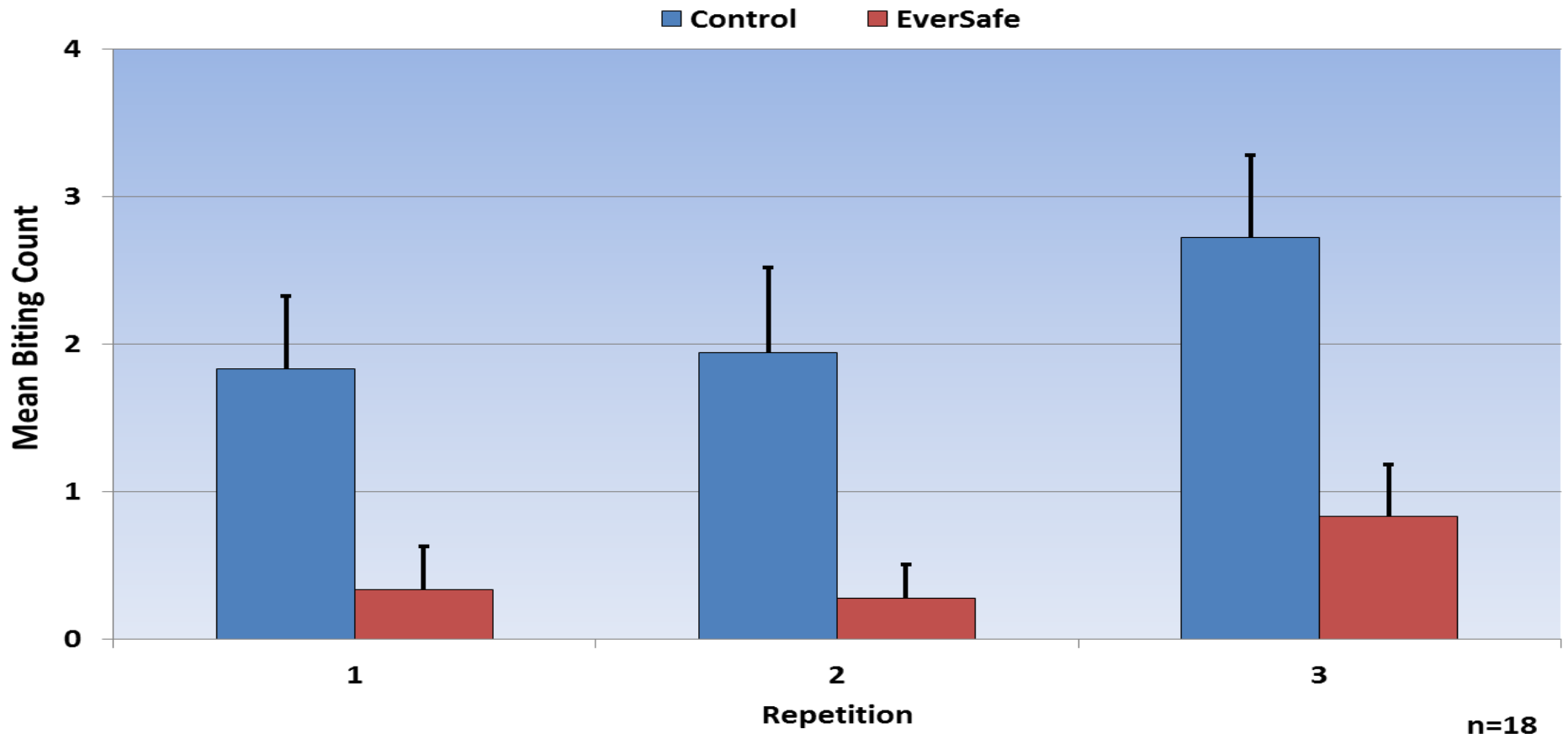


ANOVA Results

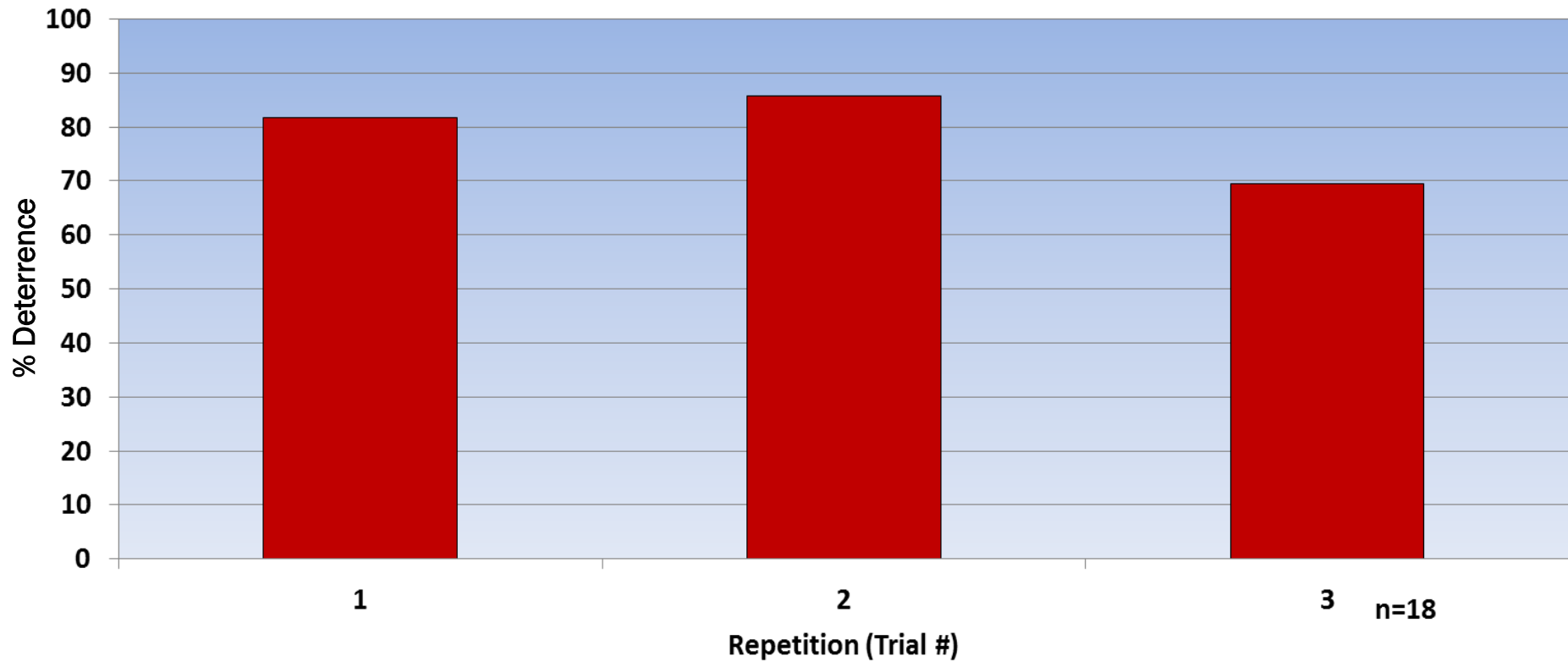
- Significant difference among repetitions
- Each repetition analyzed separately
- Highly significant differences ($p < 0.001$) between EverSafe and Non-treated Control in all repetitions
- No significant difference among other independent variables



Biting Count Data



% Deterrence



Conclusions

- In the laboratory, EverSafe significantly reduced the biting activity of *Aedes aegypti*
- Evidence warrants field testing
- Next step...outdoor screen house evaluation



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