



Mosquito Repellent Research at Florida State University

John P Smith



Personal Repellents



Spatial Repellents

MosquitoPaq Outdoor Zone Products



Purpose

- New/existing product testing & development
 - Proof of concept
 - Dose range testing
 - Efficacy
 - Duration
- New formulations of old products
- New modes of action
 - Feeding deterrents



Species in Colony



Aedes aegypti



Culex quinquefasciatus



Aedes albopictus



Aedes taeniorhynchus

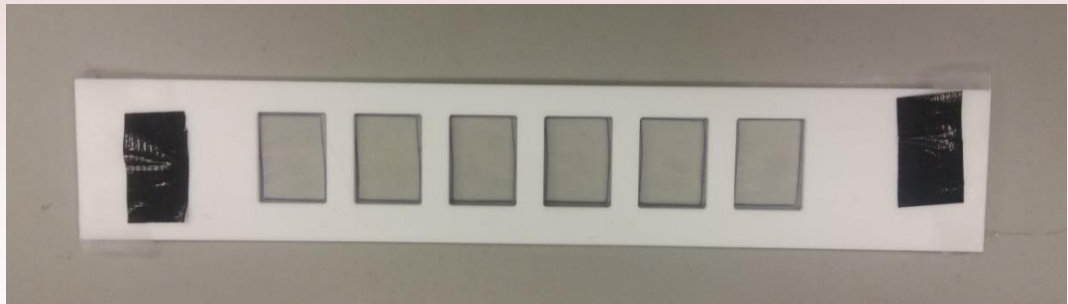
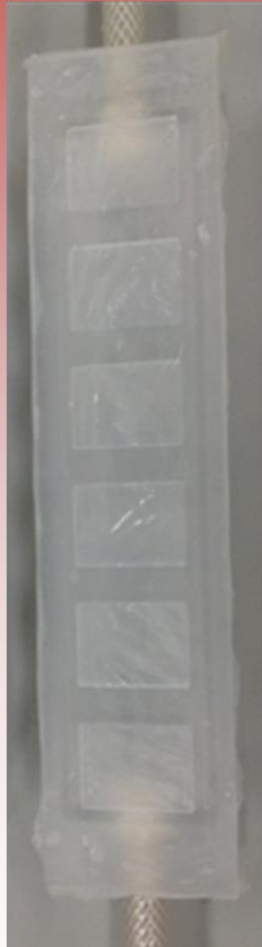


K&D *In vitro* System

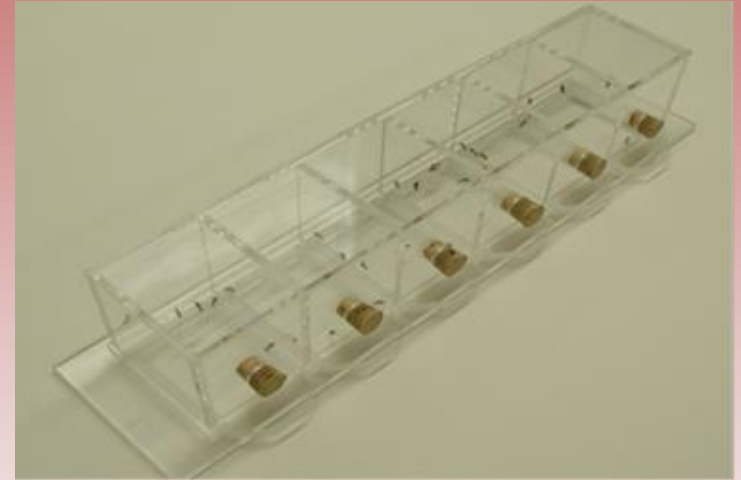
- Surrogate host
- Utilizes blood substitute



K&D *In vitro* System



K&D *In vitro* System



Bioassay Configurations



3-rep



6-rep

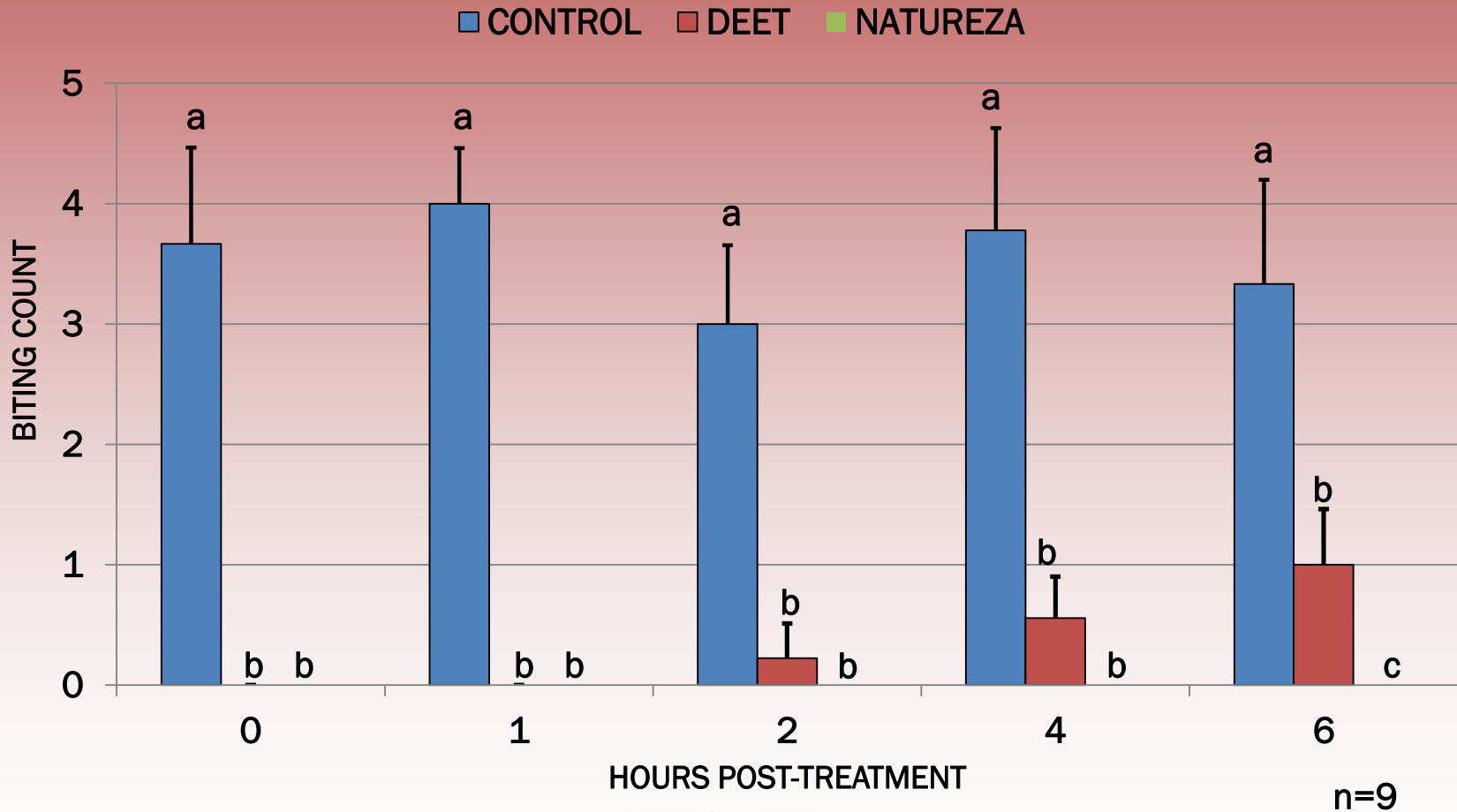


9-rep



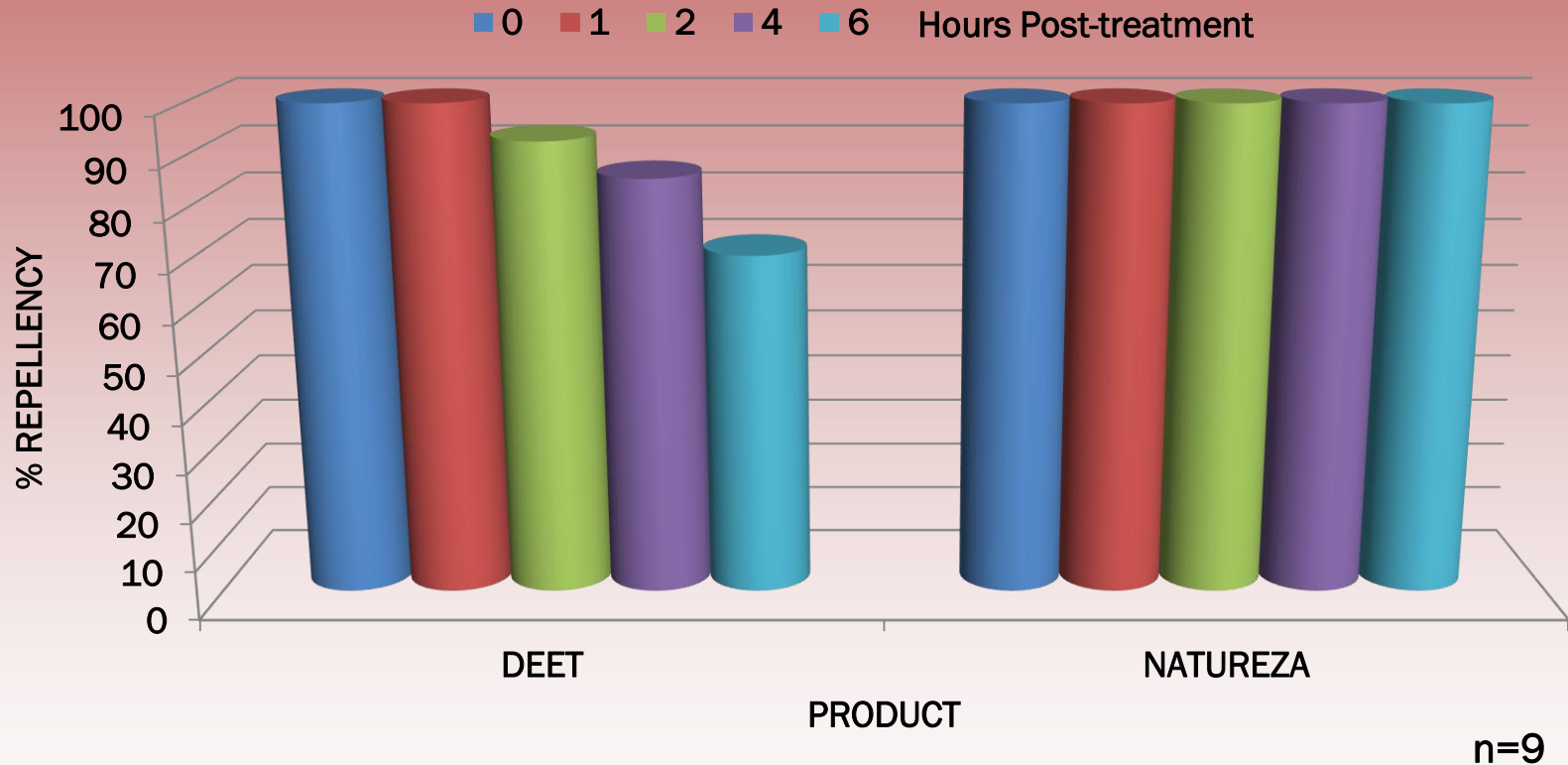
Biting Counts - *Aedes aegypti*

Average 3-Minute *Aedes aegypti* Biting Counts in Control, Off! Active, and Natureza Repellent Treatments



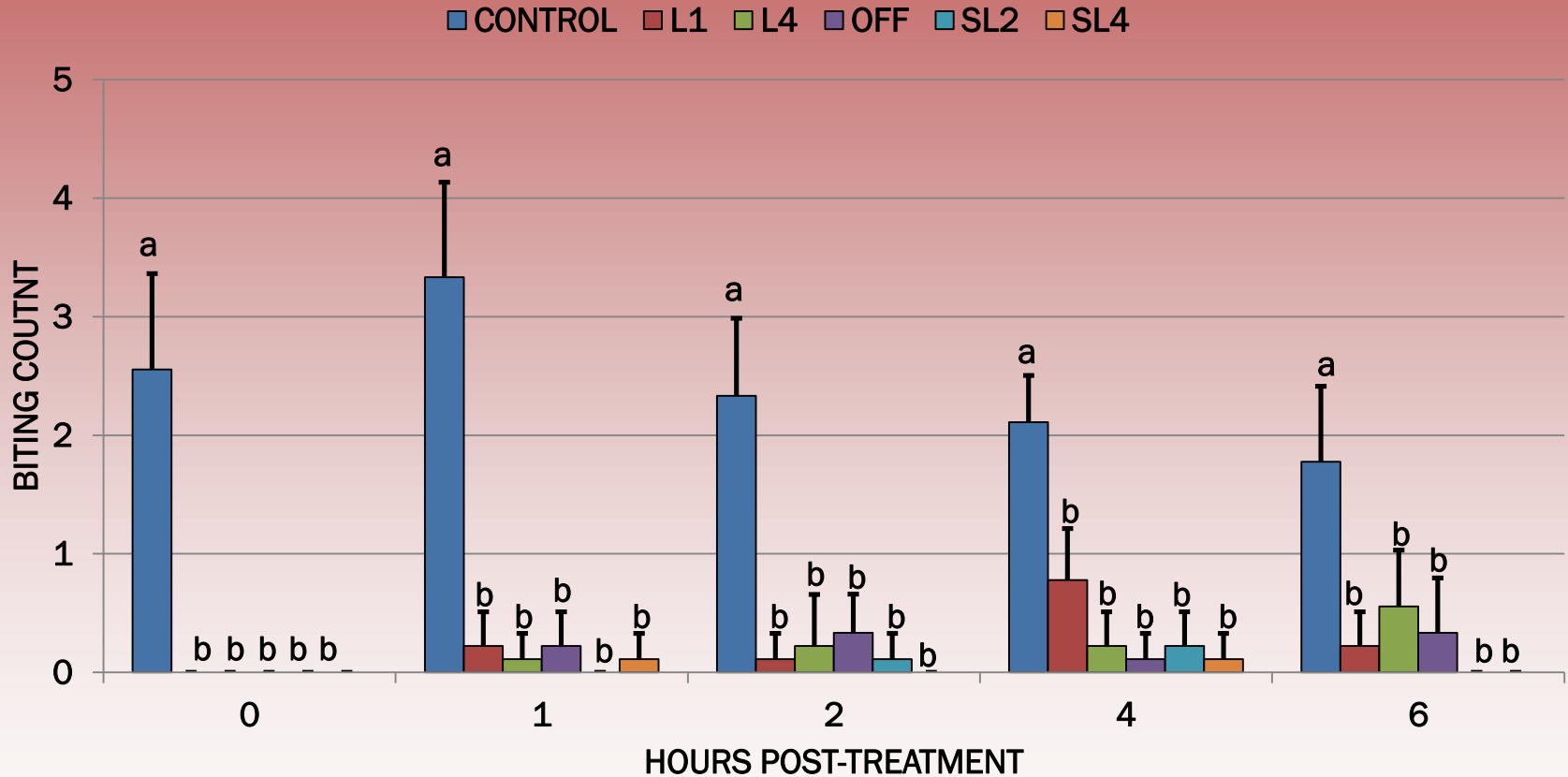
% Repellency – *Aedes aegypti*

Comparative Repellency of Natureza to Off! Active 15% DEET at Five Time Intervals Against *Aedes aegypti*



Biting Counts – *Aedes aegypti*

Average 3-Minute *Aedes aegypti* Biting Counts by Treatment

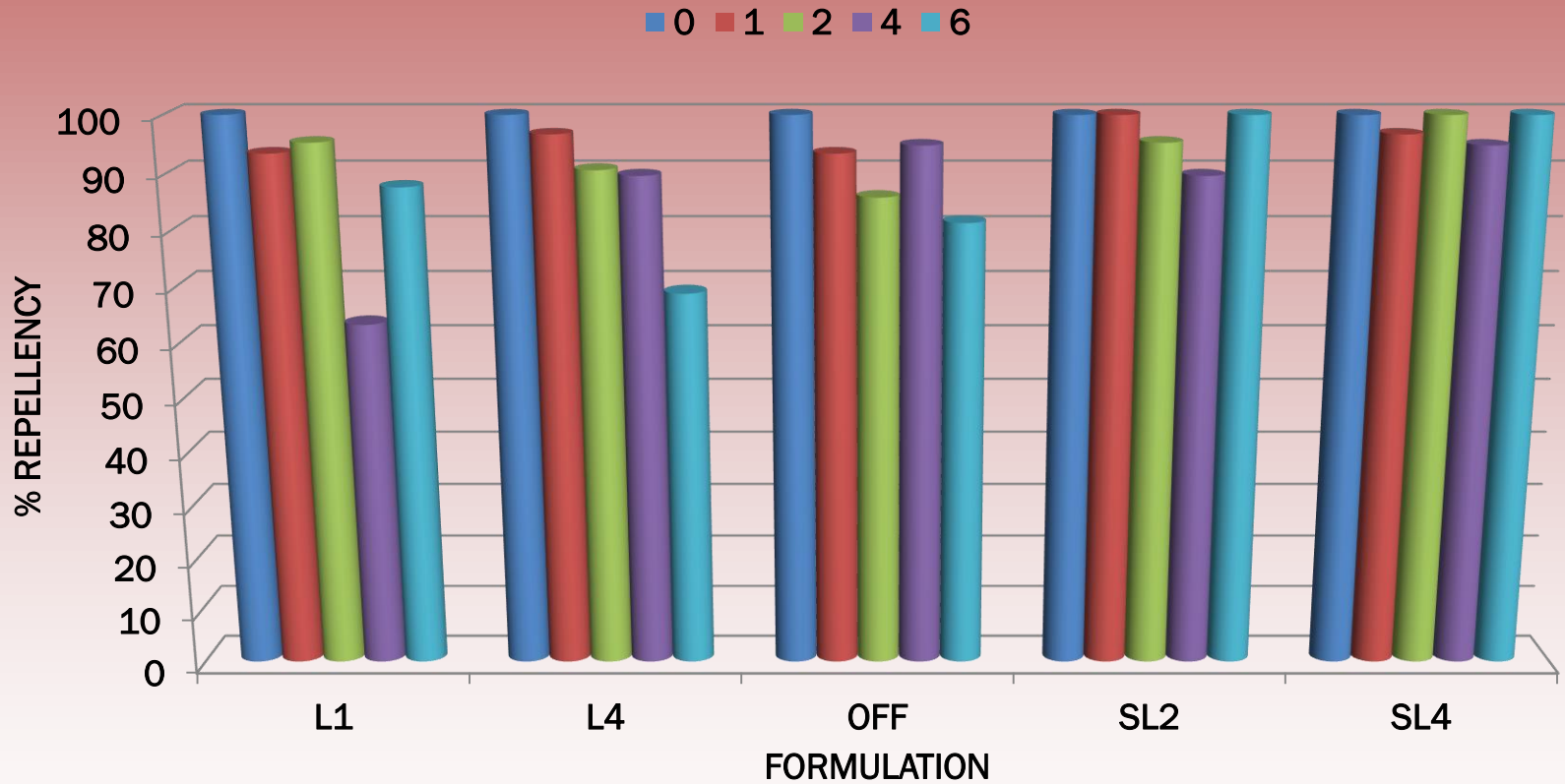


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% Repellency – *Aedes aegypti*

Comparative Treatment Repellency at Five Time Intervals
Against *Aedes aegypti*



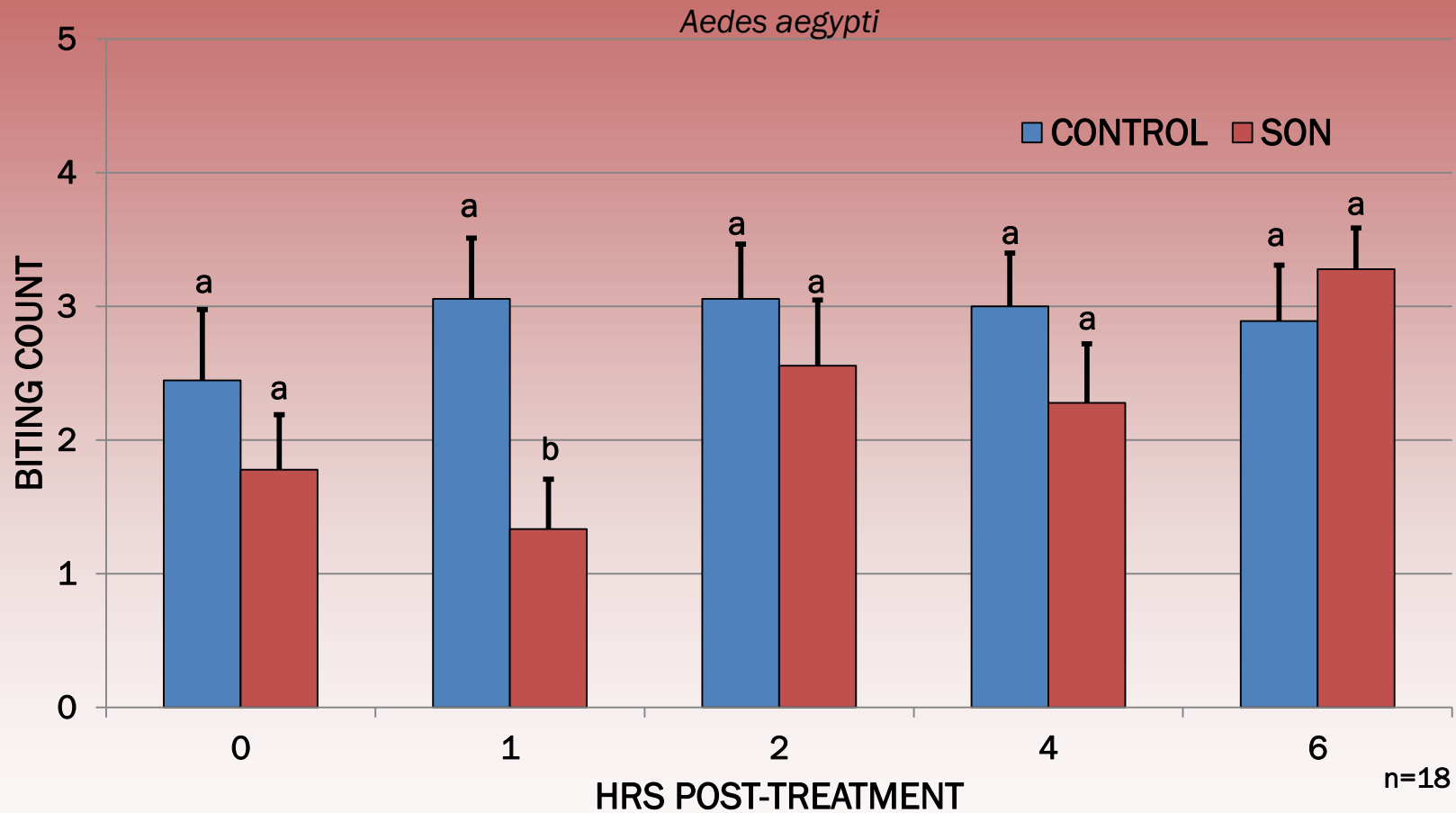
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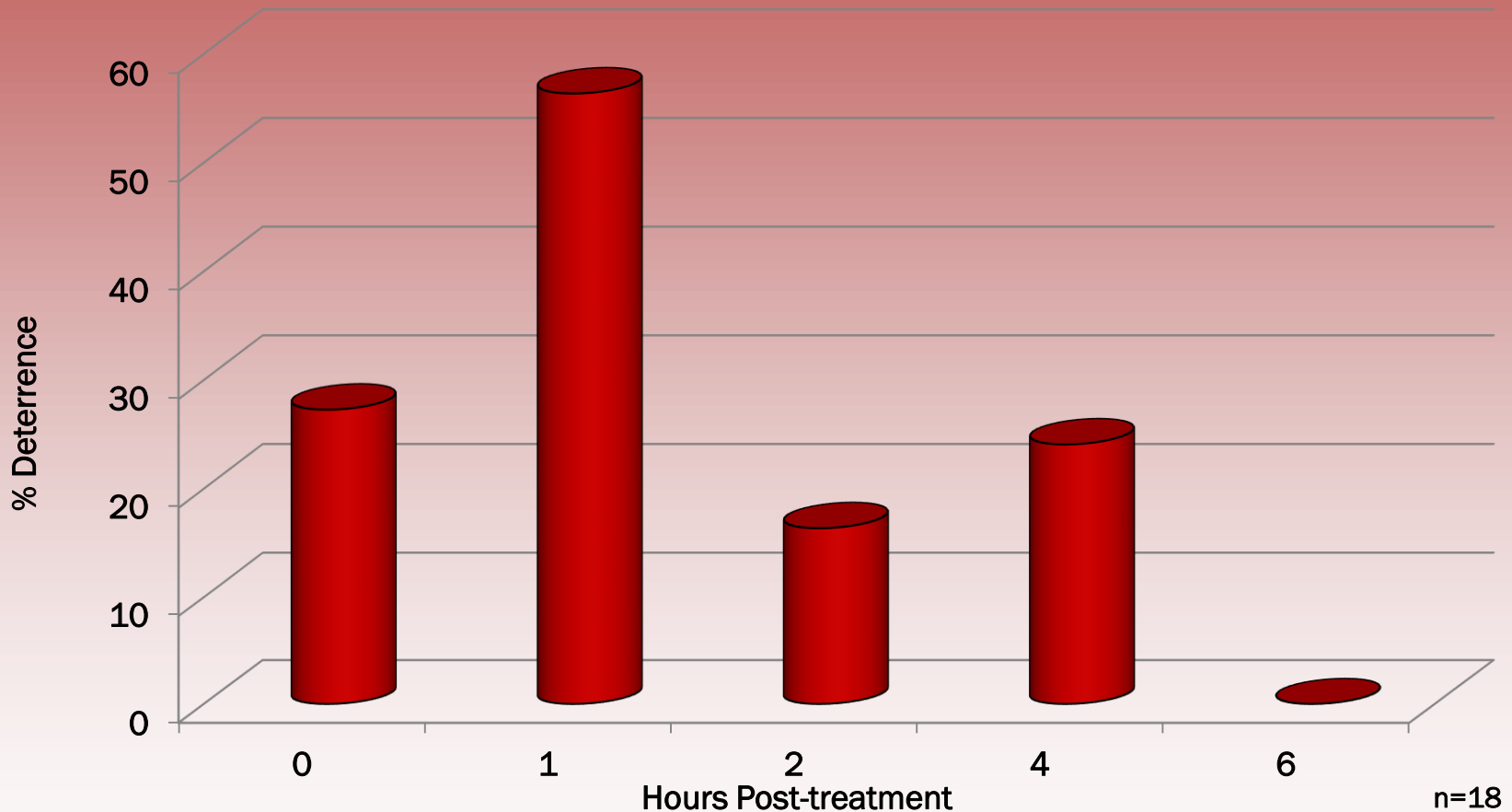
Treating Mosquitoes with Feeding Deterrents



Mean 90-Second Biting Count When Exposed for 1 Hour to 6-hr Activated SON



% Biting Deterrence by Time Interval



Outdoor Screen Test



Conclusions

- PHES at FSU provides commercial and experimental repellent testing services.
 - <http://pherec.org> Click on “Repellent Testing”
- Several proprietary blends of essential oil provide comparable repellency to DEET
- Feeding deterrents may hold promise as spatial repellents. More field testing required to confirm lab findings.



Thanks for your attention!



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