Topical and Spatial Repellent Efficacy Studies

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25(b) Minimum Risk Mosquito Repellents

- EPA exempt from regulation
- Not so with states
- AAPCO
  - ✓Proof required for all product claims
  - ✓Topical repellents ≥90% efficacy
  - ✓Spatial repellents ≥75% efficacy

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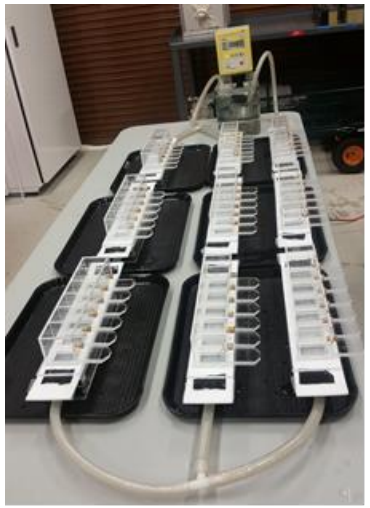
Topical Repellent Study – MosquitoPaQ, LLC

Aedes aegypti



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Actives in MosquitoPaQ Repellents

NBNS-L & NBNS-S: geraniol

ST-S: geraniol, soybean, clove, peppermint, & rosemary oil

STDC-S: rosemary & cedarwood oil

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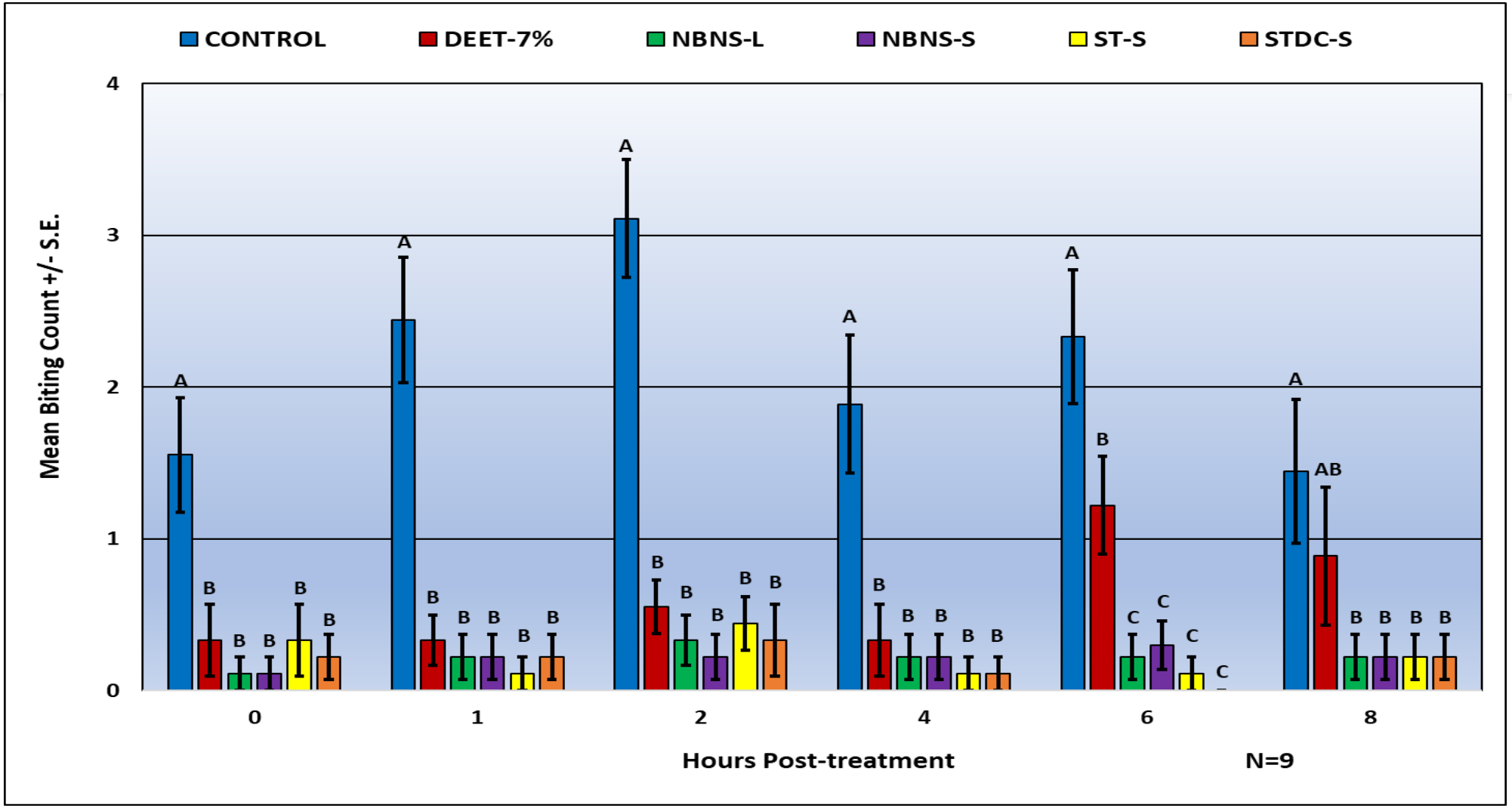
Results – Biting Counts



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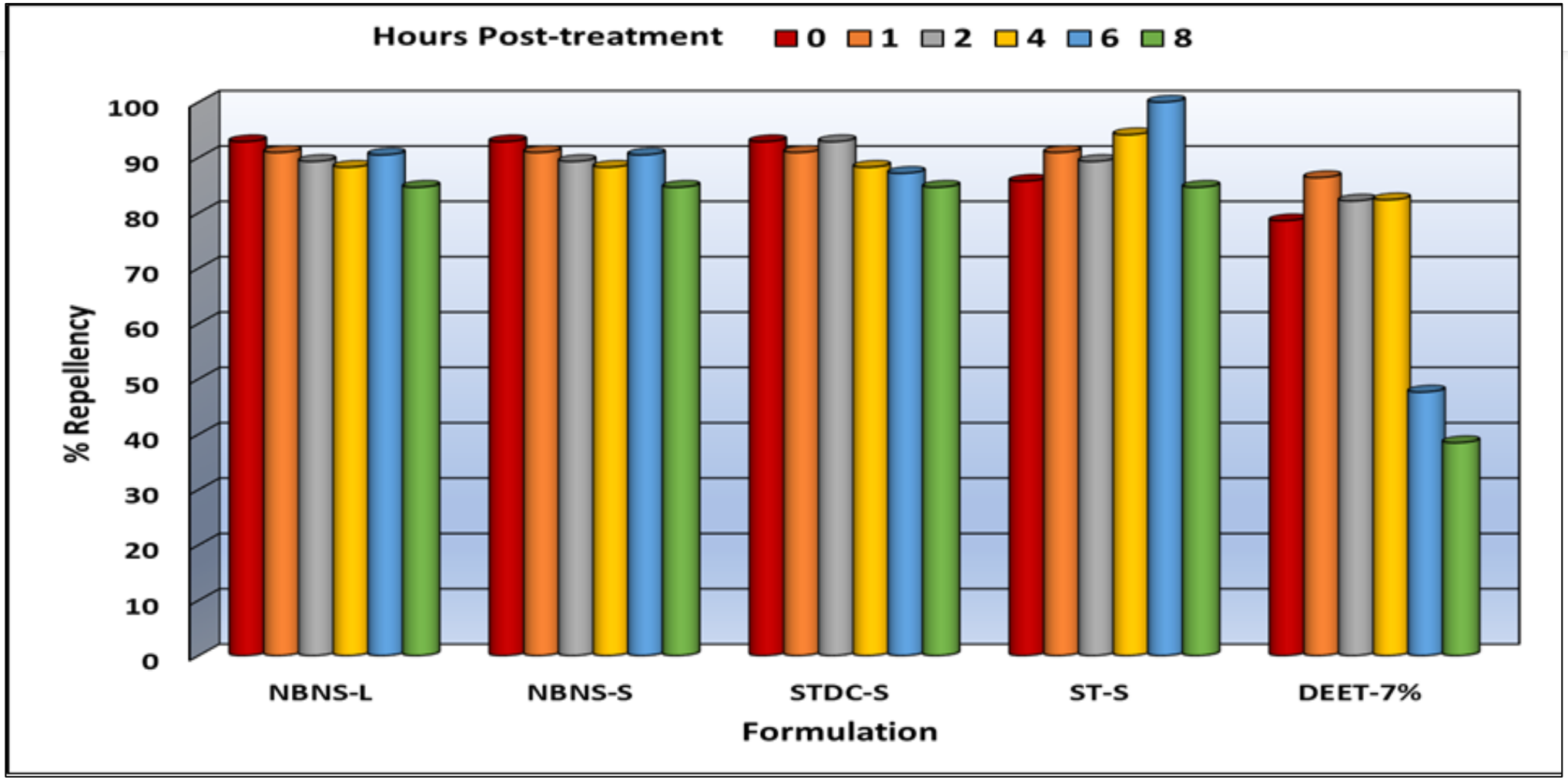
Results - Repellency



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Spatial Repellents:
Citronella and Cedar Oil - *Aedes aegypti*

- Tiki Torch Fuel – citronella & cedar oil
- 3 –Wick Candle - citronella
- Programmable Misting Device - citronella

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Methods: Semi-field Study

- Treatment & Negative Control (2X2 Latin Square)
- 3.7m(W) X 7.4m(L) X 2.4m(H)= 54.5 m^3
- 20X20 mesh screen (0.841 mm)

Experimental Setup

- Treatment initiated 15-min.
- 100 females released
- 15-min. acclimation

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Biting Counts

- 1-minute
- 0, 1, and 2 hours post-treatment

Switching Treatments Between Screen Houses

- Mosquitoes and experimental treatment removed
- Treatment vapors exhausted by fan for 15 minutes
- Treatments switched between screen houses
- New batch of mosquitoes released

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Number of Tests

- 2 tests/day
- Study repeated 3 times

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Environmental Conditions

- Data loggers recorded weather conditions
- 24-35°C; 46-97%RH
- Wind varied 1-6 mph N & S

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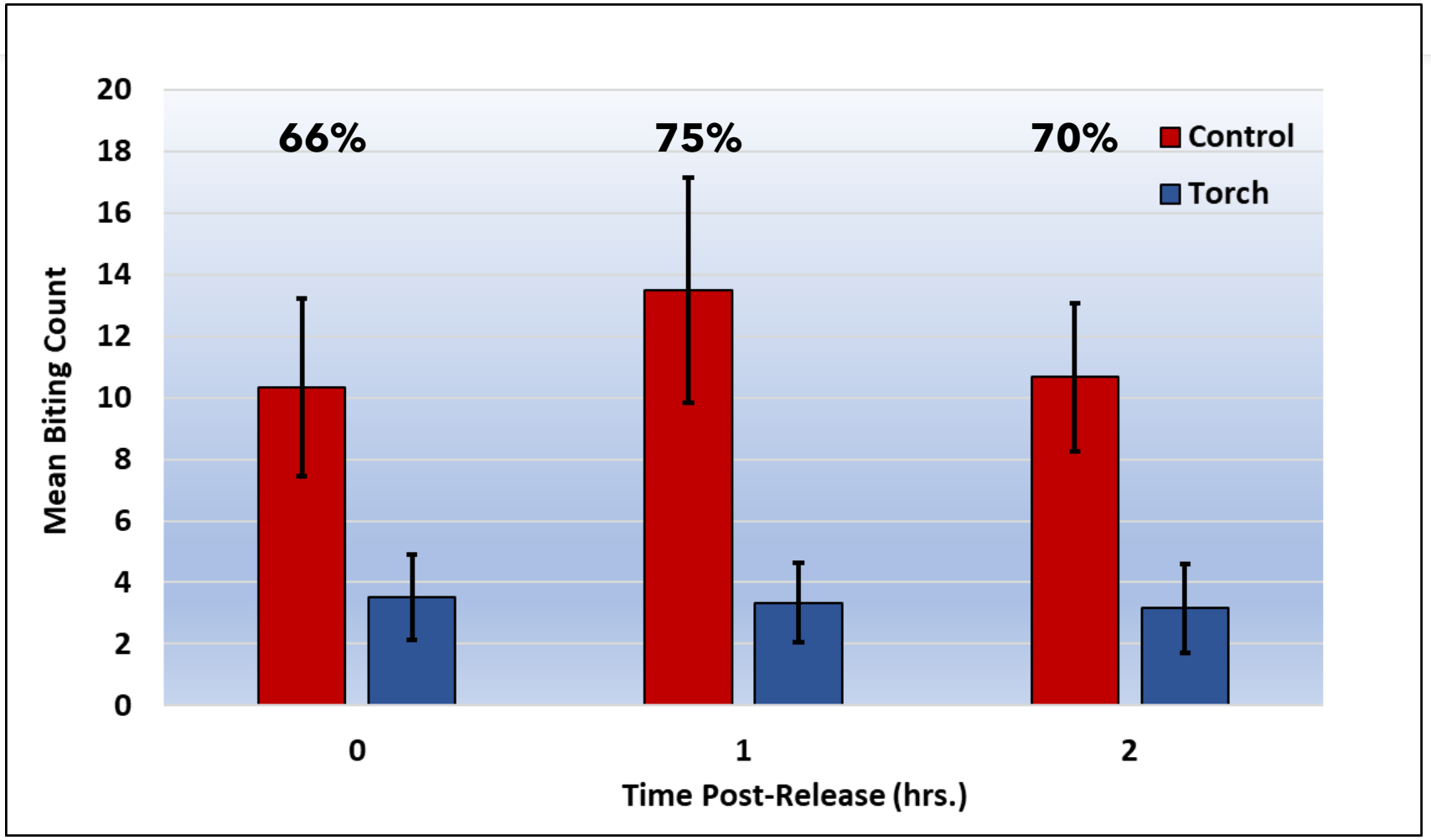
Tiki Torch Results – Biting Counts & Repellency



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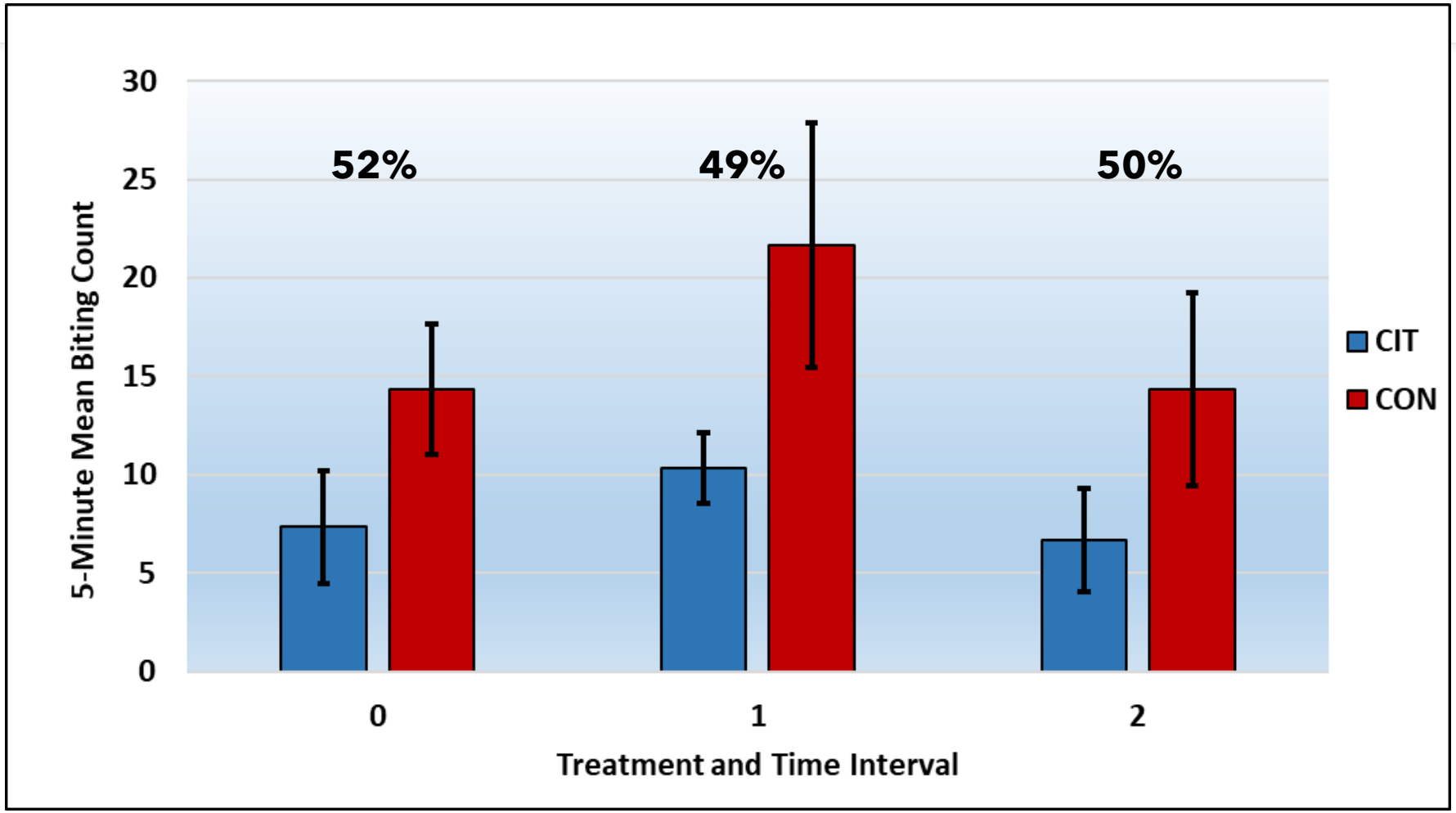
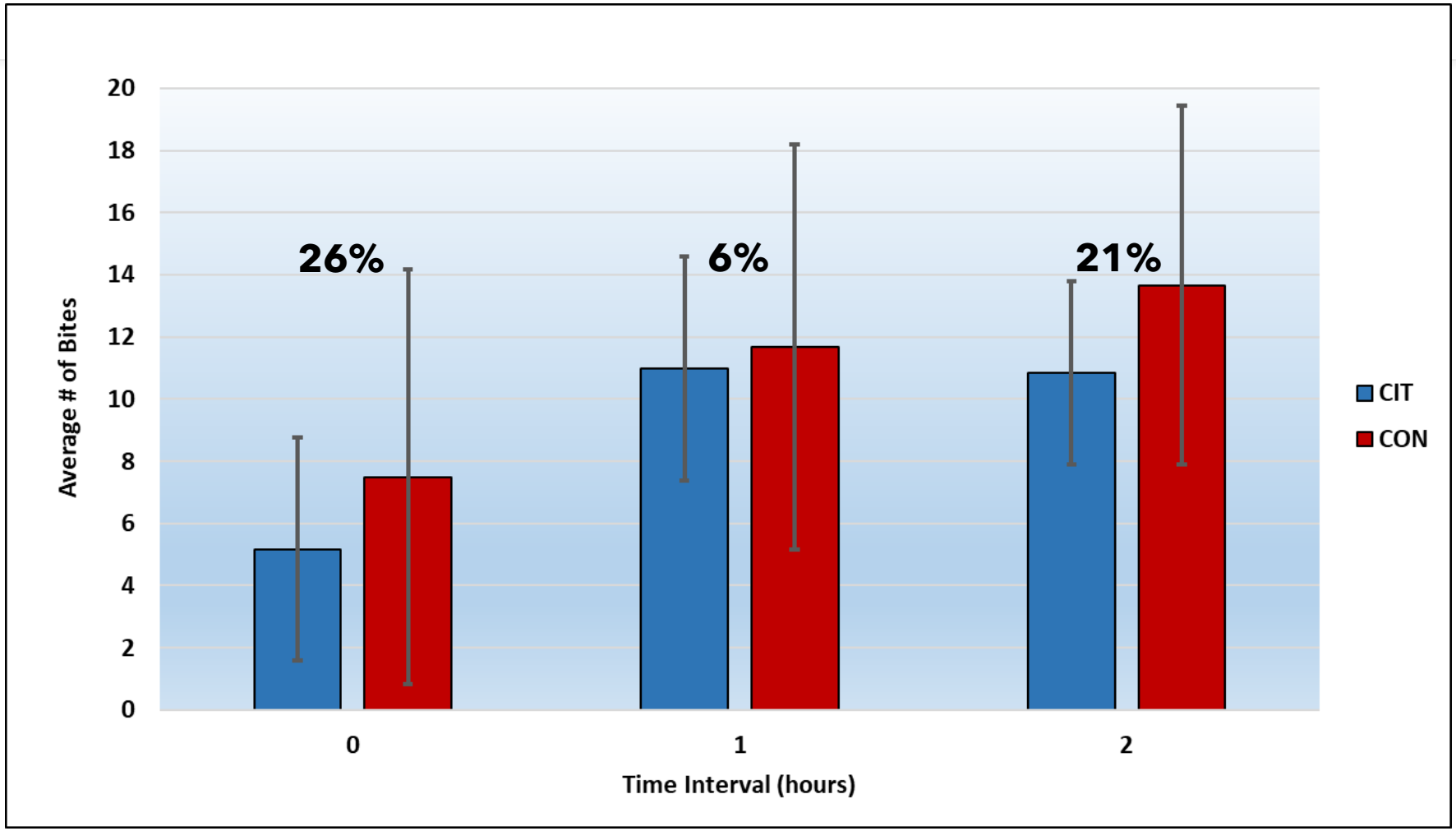
3-Wick Candle Test

Candle Results – Biting Counts & Repellency



Misting Device Test

Misting Device Results – Biting Counts & Repellency



Conclusions

1. All MosquitoPaQ topical formulations performed as well as 7% DEET for 4 hrs. and significantly better at 6 hrs.
2. Field tests are warranted.
3. The tiki torch fuel, 3-wick candle, and misting device failed to provide “efficacious” repellency (≥75%)
4. Increasing treatment density may improve efficacy.

Contact

https://mosquitoresearchlab.com

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