**BACKGROUND INFORMATION**

- A vector can transmit a particular pathogen to different hosts
- *I. scapularis* can act as vectors for many different diseases such as babesiosis, anaplasmosis and Lyme Disease
- Many people have a fear of using DEET and seek out more natural remedies.
- *Nepeta cataria* contains nepetalactone, which is the chemical component responsible for repellency.
- Proven to repel different insects such as: cockroaches, house flies, and mosquitoes

**HYPOTHESIS**

Catnip oil is an effective repellent against the black-legged tick, *Ixodes scapularis*.

**METHODS & MATERIALS**

**Field Work:**
- Tick suits were worn at all times for safety precautions
- Ticks were collected by a dragging method (Left)
- A cloth would be dragged for 20 m
- The cloth would be examined for ticks
- Ticks would be transferred into a glass vial by using forceps

**Lab Work:**

**RESULTS**

- Horizontal assays were conducted in a plastic Petri dish
- A filter paper was cut into two parts: treated (contained catnip oil), and untreated (no catnip oil)
- The centermost line is the baseline
- An O-ring was placed on top of the filter paper

- 5 nymphs were used per assay
- 3 replicates per concentration
- Each assay was conducted for 20 minutes

**Concentrations Used:** (μL)

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1</th>
<th>50</th>
<th>75</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>300</td>
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<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Comparisons:**

- 6 minutes vs. 20 minutes
- Compared data from the 6 minute mark and 20 minute mark
- Saw no significant differences in behavior between the two

**Two Proportions Test:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Treated</th>
<th>Untreated</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Berjé</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>MG</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>DEET</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

Number of total comparisons: 10
Results: *p > 0.05*

**Final Comparison:**

- Catnip oil is as effective as DEET at the 6 minute mark
- No differences found in repellency between three sources of catnip oil
- No increase in repellency as concentration increases.

**CONCLUSIONS**

**ACKNOWLEDGEMENTS**

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