Adding CRB Breeding Site Material to Barrel Traps Does Not Increase Trap Catch

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Addition of CRB breeding material substrate to barrels supporting pan traps equipped with lures, UVLEDs and cones did not increase trap catch.

1 Introduction

This experiment was run to test the idea that CRB breeding site material added as substrate in a barrel beneath a pan trap increases attractiveness of the trap, resulting in increased trap catch.

2 Methods

We used 31 pan traps sitting upon empty barrels already in operation at the Yigo experiment station. These traps were equipped with lures, UVLEDs and cones. For substrate, we chipped decaying coconut material from sanitation of the station, including a dead standing coconut which was generating adults. The pile of chipped substrate was thoroughly mixed using a back hoe. About half of the barrels were filled with substrate. These were selected by ordering trap locations by trap catch over the month previous month and then selecting all the odd ranked locations. Barrels at these locations were filled with substrate.
The experiment was run from July 22 and February 5, 2015. For trapping periods ending July 22 through December 12, 2014, pan traps were equipped with cones. Cones were removed for the remaining trapping periods.

Analysis was done using an IPython notebook (http://nbviewer.ipython.org/url/guaminsects.net/anr/sites/default/files/barrelSubstrate.ipynb)

3 Results

Addition of breeding material substrate beneath pan traps did not change the trap rate (Table 1, Fig. 1, Fig. 2).

<table>
<thead>
<tr>
<th></th>
<th>without substrate</th>
<th>with substrate</th>
<th>p-value (t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>with cones</td>
<td>0.250</td>
<td>0.217</td>
<td>0.505</td>
</tr>
<tr>
<td>without cones</td>
<td>0.243</td>
<td>0.237</td>
<td>0.931</td>
</tr>
</tbody>
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Figure 1: Number of beetles caught per trap between July 22 and December 12, 2014.
Figure 2: Number of beetles caught between September 8, 2014 and February 5, 2015 in traps without cones.