Papaya Pest Management

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Objectives

• Develop management strategies that target multiple pests in papaya

• Seek treatments that have minimal environmental and non-target impacts
Pests targeted

- Papaya thrips – *Thrips parvispinus*
- Spider mites – *Tetranychus* spp.
- Papaya mealybug – *Paracoccus marginatus*
- White peach scale - *Pseudaulacaspis pentagona*
Treatments

• Farmer’s standard practice (Applaud, Vendex, Provado, Sulfur)

• Kaolin clay – Surround WP (50 lb/50 gal)

• Horticultural Oil – Pure Spray Green (1 %)
Data collection

- October 2011 to June 2012
- Pest monitoring done at monthly intervals for 7 months & weekly intervals at harvest period
- Harvest period – 9 weeks
Sampling

• New leaves – Thrips & mites
• Flowers – Thrips & mites
• Old leaves – Mealybug & mites
• Tree trunk – White peach scale
Pest density on new leaves

- Papaya thrips
- Other thrips
- Mites

# individuals per new leaf

<table>
<thead>
<tr>
<th>Condition</th>
<th>Papaya thrips</th>
<th>Other thrips</th>
<th>Mites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>0.3 ± 0.1</td>
<td>0.05 ± 0.02</td>
<td>0.03 ± 0.01</td>
</tr>
<tr>
<td>Kaolin</td>
<td>0.45 ± 0.05</td>
<td>0.25 ± 0.02</td>
<td>0.2 ± 0.1</td>
</tr>
<tr>
<td>Standard</td>
<td>0.35 ± 0.05</td>
<td>0.15 ± 0.02</td>
<td>0.1 ± 0.05</td>
</tr>
</tbody>
</table>
Pest density in flowers

Mean number of thrips per flower

- Oil
- Kaolin
- Standard

- Papaya thrips
- Other thrips
Pest density on old leaves

![Graph showing pest density on old leaves for different treatments: Oil, Kaolin, and Standard. The graph indicates that Kaolin has the highest pest density, followed by Standard, with Oil having the lowest. The y-axis represents the number of individuals per old leaf, ranging from 0.0 to 3.0.]
Pest density on tree trucks

![Graph showing the comparison of pest density on tree trucks for Oil, Kaolin, and Standard treatments. The bar graph indicates a significantly higher pest density on the Kaolin treatment compared to Oil and Standard.]
Yield by treatment (kg/tree)

* Unmarketable fruit: fruit with thrips damage and/or presence of scales on fruits
Yield by fruit size

Small
< 0.4 kg/fruit

Medium
0.4 – 0.59 kg/fruit

Large
> 0.6 kg/fruit
Conclusions

• Oil provided the best control against thrips, mites and white peach scale
• Kaolin clay did not provide good control against any of the pests evaluated
• Oil and standard practice had similar total marketable yield
• Oil treatments had the lowest unmarketable yield
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