Decision Tree Analysis of Coffee Berry Borer in Hawai’i

A. John Woodill  Stuart T. Nakamoto  Andrea Kawabata  PingSun Leung

University of Hawai’i at Manoa
Model Design

April

May

Spray

Don’t Spray

Cost of Spraying: $100
Benefit of Spraying: 2% Inf. Rate
Cost of not Spraying: 5% Inf. Rate

Cost: $
CBB Inf.: %
## Model Design

<table>
<thead>
<tr>
<th>Initial Infestation</th>
<th>Month</th>
<th>Time</th>
<th>Growth (%)</th>
<th>Spray Growth (%)</th>
<th>Harvest %</th>
<th>Harvest (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>Dec</td>
<td>Period 1</td>
<td>35.0%</td>
<td>35.00%</td>
<td>0%</td>
<td>-</td>
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<td></td>
<td>Jan</td>
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<td>35.0%</td>
<td>35.00%</td>
<td>0%</td>
<td>-</td>
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<tr>
<td></td>
<td>Feb</td>
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<tr>
<td></td>
<td>Mar</td>
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<td>Jun</td>
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<td>-</td>
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<td>35.00%</td>
<td>100%</td>
<td>12,525.00</td>
</tr>
</tbody>
</table>
Example 1: Initial Infestation Level

Low Initial Infestation Level

- Initial Infestation: 1 %
- Final Infestation: 7.6 %
- Net Benefit: $15,478.09

High Initial Infestation Level

- Initial Infestation: 6 %
- Final Infestation: 45.7 %
- Net Benefit: $8,716.95
Example 1: Initial Infestation Level

High Initial Infestation Level #2

- Initial Infestation: 15%
- Final Infestation: 90.8%
- Net Benefit: -$3,161.42
Example 2: Impact of Subsidy

No Subsidy
Pesticide Cost: $70.35

Subsidy
Pesticide Cost: $15

Subsidy Benefit: $947.17
Conclusion

Summary of Findings

- Baseline decision tree model
- Calibrate to specific farm type
- Ability to test scenarios

Need feedback on reasonableness of results under scenarios and more accurate parameter knowledge from a farm level perspective.
Conclusion

Thank You!

Contact:
- A. John Woodill: johnwoodill@gmail.com
- Stuart T. Nakamoto: snakamo@hawaii.edu
- Andrea Kawabata: andreak@hawaii.edu
- PingSun Leung: psleung@hawaii.edu