Pruning and Plant Growth Regulator Research

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The following document is a collaborative effort between the University of Hawai‘i at Mānoa College of Tropical Agriculture and Human Resources, Hawai‘i Department of Agriculture, United States Department of Agriculture PBARC, and coffee grower groups. There is much, and sometimes conflicting, information on how to control the coffee berry borer (CBB). We have synthesized the best available information resulting from the January 2013 CBB Summit. The contents of this document are general recommendations which could change as new information becomes available.

Our goal in drafting these recommendations is to provide farmers with general guidelines to better manage coffee berry borer in Hawai‘i. Foreign coffee-producing regions have proven that no single approach will control CBB. Although not all recommendations will necessarily apply to all farmers, we recommend that growers use an integrated pest management approach, using as many of the suggestions as possible and in the order listed for maximum effect. This document starts with field sanitation, the most important step to reducing CBB population. We then follow with recommendations for the rest of the crop cycle, including pruning, field monitoring with traps and sampling, pesticide application, harvesting, and shipping.

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Reducing CBB levels in the field

Without sanitation, coffee berries will always be present in this field.
Coffee Flowering

http://informedfarmers.com/proced-sync-coffee-flowering/
Plant Hormones associated with Coffee Flowering

http://informedfarmers.com/proced-sync-coffee-flowering/

Abscisic Acid (ABA)

Gibberellic Acid (GA)

ABA
Sporadic Rainfall and Coffee Flowering
Goal: Reduce loss during strip pick
Goal: Reduce CBB between seasons
GA treated trees harvested earlier

Ripe and Green Coffee Berries harvested per tree

Ripe berries (kg) each harvest date
Ripe berries in Kona Nov 16, 2012

Untreated Control

300 ppm s-ABA foliar plus GA3 foliar* (1 app)

300 ppm s-ABA drench (4 apps) plus GA3 foliar*
Kona berry harvest if stripping/sanitation completed in December for CBB sanitation

- Untreated Control
- 300 ppm s-ABA drench (4 apps) plus GA3 foliar
- 300 ppm s-ABA foliar plus GA3 foliar

Green
Ripe
Kona Harvest – Strip pick 2015

Green Coffee Berries After Harvest Season

- GA3 Control
- ABA and GA3

~34 kg/A
~80 kg/A
~14 kg/A
Coffee processing

Start here

Green bean/grading

Blind taste test

Parchment Prior to hulling

Berry data

http://www.fincahartmann.com/pgs/coff_proc.html
Green bean grading
Extra Fancy/Fancy desirable

Distribution of green bean per treatment

<table>
<thead>
<tr>
<th>Green Bean Classification</th>
<th>9/11/2012</th>
<th>9/27/2012</th>
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</thead>
<tbody>
<tr>
<td>Peaberry</td>
<td>UTC</td>
<td>UTC</td>
</tr>
<tr>
<td>Extra Fancy</td>
<td>ProGibb</td>
<td>ProGibb</td>
</tr>
<tr>
<td>No. 1</td>
<td>ProGibb</td>
<td>ProGibb</td>
</tr>
<tr>
<td>Select/Prime</td>
<td>ProTone</td>
<td>ProTone</td>
</tr>
<tr>
<td>ProGibb + ProTone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Green bean grading combined harvest data for September 11 and September 27
Cupping Quality

- Commercial cupping of samples from
  - Waialua Estate
  - Kauai Coffee
  - Greenwell Farms
- No difference detected in cupping quality between treatments
Stump prune vs Kona Style
Mahalo to:
Dole Foods Hawaii/ Waialua Estate
Greenwell Farms
Kauai Coffee
Lions Gate Farms
Sugiyama Farm

Collaborators
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