

The online version of this update is available at <http://eepurl.com/dokAbD>

Dear Coffee Producers,

Please monitor your farms for coffee berry borer infestation and bean damage. Rain and/or an increase in humidity, coupled with the presence of coffee berries, can encourage CBB activity. To make an informed decision, you should understand when your first flowering occurred, the quantity of berries from this first bloom, CBB infestation, beetle positioning (A/B, C/D, alive, dead or absent), and your farm's spray threshold level. Be prepared, monitor/sample your crop, and decide to spray your coffee or physically remove and destroy mature green berries to control CBB early in the season.

Economic research shows that early-season CBB control can lead to lower costs and damage rates during harvest when CBB integrated pest management recommendations are followed. Strip-picking, monitoring and spraying should be thought of as an investment towards your harvested crop.



Here are tools and videos that can help you monitor and sample your crop, as well as determine CBB infestation and positioning, damage to the bean(s), and if you may need to spray for CBB control:

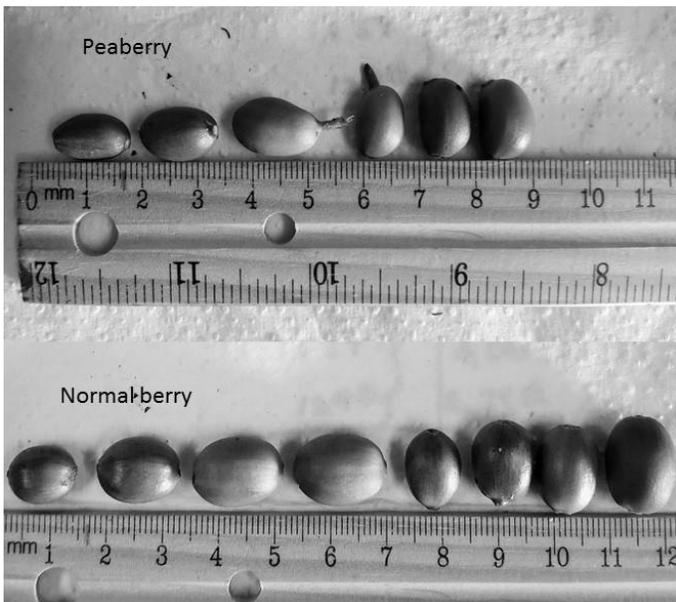
- CBB integrated pest management document (English): <http://bit.ly/2ocCnJb>
 - CBB integrated pest management document (Spanish): <http://bit.ly/2tIA3IO>
 - HawaiiCoffeeEd.com - field monitoring webpage: <http://bit.ly/2Bxj2Vv>
 - 30 trees sampling and monitoring for CBB - Part 1 - in the field: https://youtu.be/jb8hVOID5_A
 - 30 trees sampling and monitoring for CBB - Part 2 - dissection and decision-making: <https://youtu.be/GioL-leogFU>
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Kona Research Station Coffee:

Below are some observations and information from one of the coffee plots at the Kona Research Station in Kainaliu. What we see and experience at the station, may not reflect completely with your farm, but by sharing, my hope is that you will also log observations, keep records, and determine the best methods to manage CBB on your farm.

The coffee plot discussed below, was strip-picked in late Dec and Jan. A second round of strip-picking was needed because it was difficult to see green berries at the end of the season. We returned to the field to remove these missed berries when they ripened.

- Dec. 19 & 20, 2017 - rain in Kainaliu
- Jan. 1, 2018 - first bloom in this plot; only a small amount of berries set
- Jan. 26 & 27 - rain
- Feb. 5 - first major bloom
- Feb. 15 - rain
- Feb. 27 - second major bloom
- Mar. 12 & 13 - rain
- Third major bloom anticipated around Mar. 22



Why we decided to remove berries from the Jan. 1st flowering vs. spray:

- Last year, we did not remove berries from the early bloom and observed that these areas became hotspots where we had difficulty controlling CBB.
- So few berries developed from this early bloom that if we removed the berries, we could then postpone the spray application and distribute the cost of spraying (time and product) among a much larger quantity of coffee berries.
- Berries from this Jan. 1st flowering were about 75 days old (time since bloom) and were observed becoming infested with CBB - validated with sampling. Photo (below) shows sizes of berries that were removed.

Data for removed green berries:

- Mar. 14, 2018 - 30 trees sampling conducted
- 18.2% of the berries were infested by CBB - hole(s) present on berry
- Dissection of the infested green berries resulted in:
 - A/B Alive - 48.4%
 - A/B Dead - 1.6%

- Absent - 12.9%
- C/D - (mostly in C) 37.1%
- Mar. 14 - removed green berries; picking took 2 hours for a 5th of an acre area
- Weight of green berries - 1,758 g or 3.9 lbs
- Estimated weight of green berries converted to cherry - 7.8 lbs
- Converted to cherry weight, these green berries were just 0.3% of last year's total cherry harvest weight
- Berries disposed

In the C and D positions, CBB are very difficult to kill with spraying because they are protected within the bean. In part, our decision to remove the green berries from the Jan. 1st bloom, was because overall, the amount of berries from the Jan. 1st bloom did not warrant the cost of spraying, though my spray threshold had been met. In addition, there was nearly 7% bean damage (C/D positioning) on these young berries. If the berries had been left in the field to ripen, CBB would continue damaging the bean(s) and populating the field for 4 more months.



At a monthly reproductive rate of 33 CBB per female, and a 10:1 ratio of females to males, that's potentially 810,000 new CBB arising from these berries in four months. At a high reproductive rate of 120 CBB per female, that's over 136 million new CBB in the field!

Next steps for CBB management in our station's coffee plot:

- Continue to monitor the remaining young, green berries
- Check spray equipment and be ready to spray when monitoring says to spray

-Andrea