

Tips for CBB

Integrated Pest Management



Coffee Berry Borer (La Broca) damage can be very serious, or it can be reduced to 2-5% of your crop. With a multi-pronged approach to control, you can greatly minimize loss. It is important to “be your own scientist” when it comes to your farm. Inspect your coffee often. As young cherry matures, the CBB will often wait at the end of the bean. When the bean begins to harden, the beetle will begin to drill. Even if your cherry is green, inspect it regularly. If you see CBB (see KCFA website pictures) on the cherry, consider spraying the fungus. Don’t wait for damage to occur. This is a short list of recommended practices. The best practice? Harvest your coffee; 75% of CBB will be removed.

Field Sanitation

Simple sanitation is vital, and can be cost-effective with a few preventative measures. Many CBB experts consider it the most effective form of control. The beetle can live in raisin for up to 5 months without feeding.

- **Do a “final round” gleaning of the field to break the life cycle. In a well-picked field, it should take approximately 16-24 man-hours to strip old crop from 5 acres. *This is the single most important practice!***
- Remove all raisins before pruning each tree. One bean can host multiple generations.
- All CBB-infested beans or floaters should be placed in black garbage bags and left in the sun for several days. The heat will kill the beetle. Freezing overnight will also work.

Spray the *bassiana* Fungus (commercial Botanigard/Mycotrol)

After 20 years of research around the globe, the fungus is the only recommended pesticide for CBB. It is not a silver bullet, but it will significantly reduce populations. *Direct spray-contact with the beetle is required. We see more beetle movement in the afternoon.*

New recommendations from Colombian farmers show 3 key points

- Spray every 60 days, at a minimum.
- If you have a bad infestation or hot spot, spraying every 2 weeks may be necessary to bring under control.
- Use as much water as possible. They typically spray 100 gallons per acre to saturate soil. This is very challenging with a backpack sprayer so adjust your rates as high as possible.

The following are Best Management Practices for spraying

- Spray downed raisin/soil immediately at end of harvest. Spray soil every 60 days.
- Begin to include foliar spraying when you note beetle on green cherry through to end of harvest, or at 60 days after flowering, whichever comes first.
- Shake the bottle very well. It may require a stirring stick to get spores settled on the bottom.
- The current recommendation is **7 oz of fungus plus 3oz Silwet or Widespread surfactant per acre** to cover both trees and soil. The surfactant is vital to push the fungus into the boreholes. Depending on your tree density and soil, it may take 30-100 gallons of water for coverage.
- Some farmers have noted that increasing the surfactant to 28 oz per acre gets an immediate beetle kill due to suffocation. The fungus then kills larvae and eggs.
- Using a 4-gallon backpack, mix approximately **1 oz fungus plus 1 tablespoon surfactant** with water (for 30 gal/acre coverage).

www.KonaCoffeeFarmers.org
email: info@KonaCoffeeFarmers.org



- Foliar-spray cherries on the tree and the underside of the leaves to the point of runoff. Also spray mulched trees or pulp piles.
- Fungus can be mixed with soap/oil, Neem, EM, some foliar fertilizers, Bt, as well as some herbicides (for soil application only). Roundup/glyphosate may limit fungal growth. Check the compatibility chart on the KCFA website. Avoid foliar treatment using spraypacks that have contained herbicides.
- Rock-covered farms should focus spray on any visible soil or between cracks where beans may lodge. There is no benefit to spraying rocks.
- To protect bees, avoid spraying when flowers are present on the tree.
- Afternoons are best as beetle are on the move
- UV rays impact the spores. The fungus will live on the tree about 2 days in direct sun and up to 15 days in full shade.
- Remember, spores are live, so use water mixture promptly and store bottle in cool location.
- Compared to a backpack sprayer, using a mist blower or motorized ultra-low-volume sprayer may increase kill rate by spreading the fungus deeper into the tree. Motorized sprayers with drag hoses make it very easy to saturate the soil.
- **Monitor your cherry regularly and repeat as needed. There is no harm to multiple treatments and fungus will not affect taste of coffee nor harm workers.**

Worker Education and Practices

- Train your workers to spot *La Broca* (Spanish for CBB) so that they may report trouble areas.
- Train your workers not to discard green beans or raisin out of the picking bucket.
- Do not move cherry bags from infested areas to clean areas within the farm. Consider using mesh "tents" treated with vegetable oil over bags. They will trap CBB leaving the cherry bags.

Maintain Traps

Traps may not greatly reduce pest populations, but will help identify trouble spots on your farm.

- Use along border locations with wild or untended coffee
- Use around mills or processing areas where CBB may be migrating out of fruit.
- Traps are most effective when CBB is on the move. In other regions, this is immediately after the growing season, as well as about 150 days after flowering. We are still learning what is best for Hawaii. Traps work best when placed 3-5 feet off the ground and at least 20 traps per acre.
- Do not hang traps on coffee trees as it pulls CBB into the tree.

Small Processors

About 50% of the beetle will survive through processing and travel on to the parchment stage. That means care must be taken through all stages to prevent reinfestation.

- Use traps in mill and drying areas
- In India, they recommend that the trees closest to the mill be picked last. That ensures escaping beetles do not migrate too far into the fields looking for ripe coffee.
- Mesh tents/screens treated with vegetable oil should be placed over fermentation tanks to trap beetles leaving the tanks.
- Floaters should be bagged and left in the sun or frozen to kill the beetles. Or, dipped in boiling

water for two minutes to kill all stages of the beetle.

- If bringing coffee from other farms, return bags directly to farmer to prevent cross-contamination. Or, boil bags for 2 minutes or soak overnight in soapy water.
- Cover your pulp piles immediately after use. Consider regularly spraying them with Pyrethin.
- Consider additional fungus treatments on soil and trees near to the mill.
- Be sure to dry all coffee to a minimum 10.5% moisture.
- Use Grainpro bags during storage to prevent moisture absorption and pest recontamination.
- **If you buy coffee, talk to your farmers about IPM and be sure they understand all the options.**

Copyright under the Creative Commons Attribution-Non Commercial-NoDerivs 3.0 Unported License.
You may freely share and transmit this KCFA document in its entirety.
Document updated 1/20/12