Happy Holidays Coffee Growers!

Thank you all for participating in this year's survey, workshops, field days and Risk Management School! It's been a pleasure working with you all and we hope to interact with more of you in the years to come. There were some amazing turnouts this year, and among the highlights was Luis Aristizabal's presentations, demonstrations, and farm visits.

As we finish the 2012-2013 season and move into the new coffee season, here are some positive highlights from the CTAHR survey and some tips for starting the 2013-14 season with less CBB.

***Strip harvest of all red, green and raisin cherry:**

Many farmers found that stripping trees at the end of the harvest season was the most effective sanitation tactic. At the end of the 2011-12 season 60% of farmers stripped all remaining cherry on 100% of their trees, 80% stripped 75% of their trees and only 8% did nothing. This is a great improvement from 2010-11 when only 37% stripped their trees.

In 2012, 84% percent of farmers said they would strip and destroy all cherry after the harvest, up from 60% in 2011. The goal is to encourage ALL farmers to strip ALL of their trees. Removal of all cherry should be done prior to pruning.

By removing ALL red, green, and raisin cherry from your trees at the end of harvest, your CBB population can be reduced by 80% for the coming season. This assumes that 20% of the CBB were not in the cherry but seeking cherry.

Bag (or double bag) all cherry to inhibit CBB from escaping and reinfesting your farm. Leave the bag for at least 2 weeks in direct sunlight to heat and destroy all CBB. Alternatively, bury cherry under at least 4 inches of dirt, or pile cherry, spray with *Beauveria* or an approved pesticide for coffee to kill CBB, and cover with a tarp.

***Trapping**

The best CBB monitoring systems are you, your workers, and traps. Watch for swarming of CBB or an increase in trap catch. In 2012, farmers indicated that most CBB were caught between February and May. Set out traps at the end of harvest or by January to monitor CBB movement and hot-spots in the coming months for your location.

Traps made from milk cartons with inward bent "flaps" for the CBB to hit and fall into the kill solution were the most popular trap. "Wall and fall" type traps like the Brocap trap are also effective. There has been an increase in trap usage by some farmers who report using up to 25 traps per acre. Farmers serviced traps every 4-8 weeks depending on the size of the bait container, evaporation rate, and time allowable. In 2012, 97% used soapy water and 3% used pest strips to kill CBB in the collection cup. Biodegradable glycol and pet-friendly anti-freeze may also be available for kill solutions.

Remember that although attractant solution still appears in the bait container, there isn't necessarily methanol and ethanol (3:1 or 1:1) in the container. The remaining solution could just be water or a weak solution that no longer attracts CBB. Remember that in addition to CBB, black twig borers, and tropical nut borers are caught in traps, and only a trained specialist can distinguish CBB from BTB or TNB.

We do not have evidence that trapping is an effective control measure, yet, it is satisfying to see dead CBB. Don't let the time and cost of managing traps prevent you from spraying Beauveria or doing an excellent job of stripping your trees at the end of the season.

Spray *Beauveria bassiana

The commercial products Botanigard ES and Mycotrol O are available to coffee farmers for CBB control. To kill the beetle, the active fungal ingredient in the solutions, *Beauveria bassiana*, must directly contact CBB or be picked up by CBB while spores are alive. UV light and low humidity are detrimental to *Beauveria* effectiveness. To curb CBB population explosions, begin monitoring and if necessary begin spraying early in the season, and spray as often as needed.

CBB develop from egg to mated adult in as little as 24 days. Spraying greater than 4 weeks apart may allow a generation to repopulate your coffee. Remember that each female can produce up to 120 eggs in her lifetime. If one beetle is allowed to survive on your farm, within 24 days you may have 120 beetles on your farm. 48 days later, you could have 14,400 CBB, and in 72 days, 1,728,000 beetles. If you don't time your sprays appropriately, populations can explode very quickly.

In 2012, nearly half of farmers surveyed, began spraying *Beauveria* in February or March, a time period earlier than in 2011. Approximately 10% of farmers sprayed year-round. There was a slight increase of farmers spraying *Beauveria* in 2012 (79%) compared to 2011 (75%). The greatest number of farmers sprayed *Beauveria* every 4 weeks, a frequency 2 weeks greater than in 2011.

In 2012, 66% of farmers sprayed 16 ounces or less of commercial product per acre of coffee. Compared to 2011, the rate of *Beauveria* sprayed per acre per application decreased, while total *Beauveria* usage per acre per year increased due to more applications. Up from 2011 when 40 % of farmers felt spraying was good to very good, in 2012 more than half of farmers surveyed felt B*eauveria* was effective.

Remember to avoid spraying during full bloom and when bees are otherwise actively foraging.

It is important to know your inputs and outputs, and accurate farm records will better allow you to determine financial gains and losses.

If you have questions, please call 808-322-4894 or email andreak@hawaii.edu.

Best wishes to everyone and have a safe and happy holiday season!

Sincerely,

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