

## Strip Picking and Raisins

1. **If the predatory beetles feed in raisins, wouldn't I be killing them by strip picking my coffee at the end of the harvest season?**
  - a. Yes, you may be killing the predatory beetles in coffee that is strip-picked. HOWEVER, PLEASE DO NOT STOP STRIP-PICKING TO SAVE THESE BEETLES. These flat bark beetles will not solve our CBB problem on their own. It is more important that you continue to implement CBB Integrated Pest Management recommendations such as strip picking and spraying pesticides to kill CBB. Rearing and releasing flat bark beetles may help to increase field populations of these predatory beetles, which may feed on CBB in raisins that are missed during the strip-pick, or in neighboring feral or unmanaged coffee farms.

## Pesticides and Other Products

1. **Are flat bark beetles killed by *Beauveria bassiana* products like Botanigard ES?**
  - a. We are currently testing the effects of *B. bassiana* on *Cathartus quadricollis*. Please DO NOT STOP SPRAYING for CBB to “save” these predatory beetles! Continue to implement CBB IPM recommendations on your coffee farm. Preliminary results suggest that Botanigard ES plus Widespread Max surfactant do not harm *Cathartus*.
2. **What effect does Pyronyl have on flat bark beetles?**
  - a. We hope to continue testing the effect of other pesticide products like Pyronyl, which is frequently used in coffee fields, on flat bark beetles as funding allows.
3. **Are flat bark beetles affected by the use of BAM?**
  - a. We hope to continue testing the effect of other products like BAM, which are used in coffee fields, as funding allows.

## Flat Bark Beetles and CBB Population Control

### **Do flat bark beetles actually help to reduce CBB populations in the field?**

- a. Through genetic testing, we can confirm that flat bark beetles are consuming CBB in the field. Sleeve test studies will be conducted to help understand just how much flat bark beetles help to reduce CBB populations.

## Predators of Flat Bark Beetles

### **What predated on flat bark beetles?**

- a. We are unsure at this time.

## Flat Bark Beetle Host Plants

### **1. What do the beetles eat in the off season when there is no coffee on the farm?**

- a. Flat bark beetles also predate on [Tropical Nut Borer \(\*Hypothenemus obscurus\*\) \(TNB\)](#) in [stick-tights](#) in macadamia nut trees. They may also feed on CBB in feral and unmanaged coffee in neighboring areas. Flat bark beetles are fairly strong fliers and will move around. We would like to study and understand their other food sources with additional funding.

### **2. Where do flat bark beetle adults and larvae live? In raisins?**

- a. We are unsure of all their host plants and preferences. So far, we know that the adults can be found predated on CBB in over-ripe cherry and raisins in the tree and TNB in macadamia nut stick-tights. We do not know if they “live” in cherry, raisins and macadamia nuts or if they just visit them to feed or explore. We would like to study and understand where flat bark beetles live with additional funding.

### **3. Where do flat bark beetle adults and larvae feed? In raisins?**

- a. We are unsure of all their host plants and preferences. So far, we know that the adults feed on CBB in over-ripe cherry and raisins in the tree and on TNB in macadamia nut stick-tights. We would like to

study and understand where flat bark beetles feed with additional funding.

#### **4. Understanding the life cycle of flat bark beetles**

- a. A researcher has been hired to study the life cycle of flat bark beetles in their natural habitat (e.g. coffee orchards, macadamia nut orchards) and to learn where FBB lay their eggs, live and feed as larvae, and pupate. For now, one [publication](#) indicates that *Cathartus* has a life cycle of about 18 days when raised on cut maize. *Cathartus* prefer about 80°F. Temperatures higher or lower than this may decrease reproduction and extend their developmental period. We hope additional funding will allow us to study the life cycle of these beetles.

### **Flat Bark Beetle Prey**

#### **1. Do flat bark beetles prey on Black Twig Borer (BTB)?**

- a. Although we have observed flat bark beetles inside a branch that was infested by BTB, genetic and feed studies have not yet been conducted to confirm that *Cathartus* and *Leptophloeus* feed on BTB.

#### **2. Do flat bark beetles prey on Banana Moth larvae (caterpillars or pupae)?**

- a. We are unsure if flat bark beetles feed on banana moth caterpillars or larvae and have not observed any FBB feeding on lepidoptera young.

#### **3. Do flat bark beetles prey on Termites?**

- a. We are unsure if flat bark beetles feed on termites and have not observed any FBB feeding on termites.

### **Flat Bark Beetle Preferences**

#### **1. Do flat bark beetles prefer of sun or shade?**

- a. We are unsure, but these flat bark beetles seem to like the dark and drier environments; possibly the reason we find them in drier [over-ripe cherry and raisins](#), rather than moist green and ripe cherry in the tree.

**2. Does rainy weather affect the predators?**

- a. Current research shows that these flat bark beetles seem to like drier conditions, which may be a reason why we see them in drier old cherry and raisins more than in moist, green and ripe cherry. However, we are unsure of the actual effect of rain on the predator beetles.

**3. Study organic versus GMO corn**

- a. We do not know if flat bark beetles have a preference for organic vs GMO corn, but will consider this as a research topic.

**Send the Project an email and keep your research ideas and questions coming!**  
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