

# A Grower's Integrated Pest Management Program for Coffee Berry Borer in Hawai'i

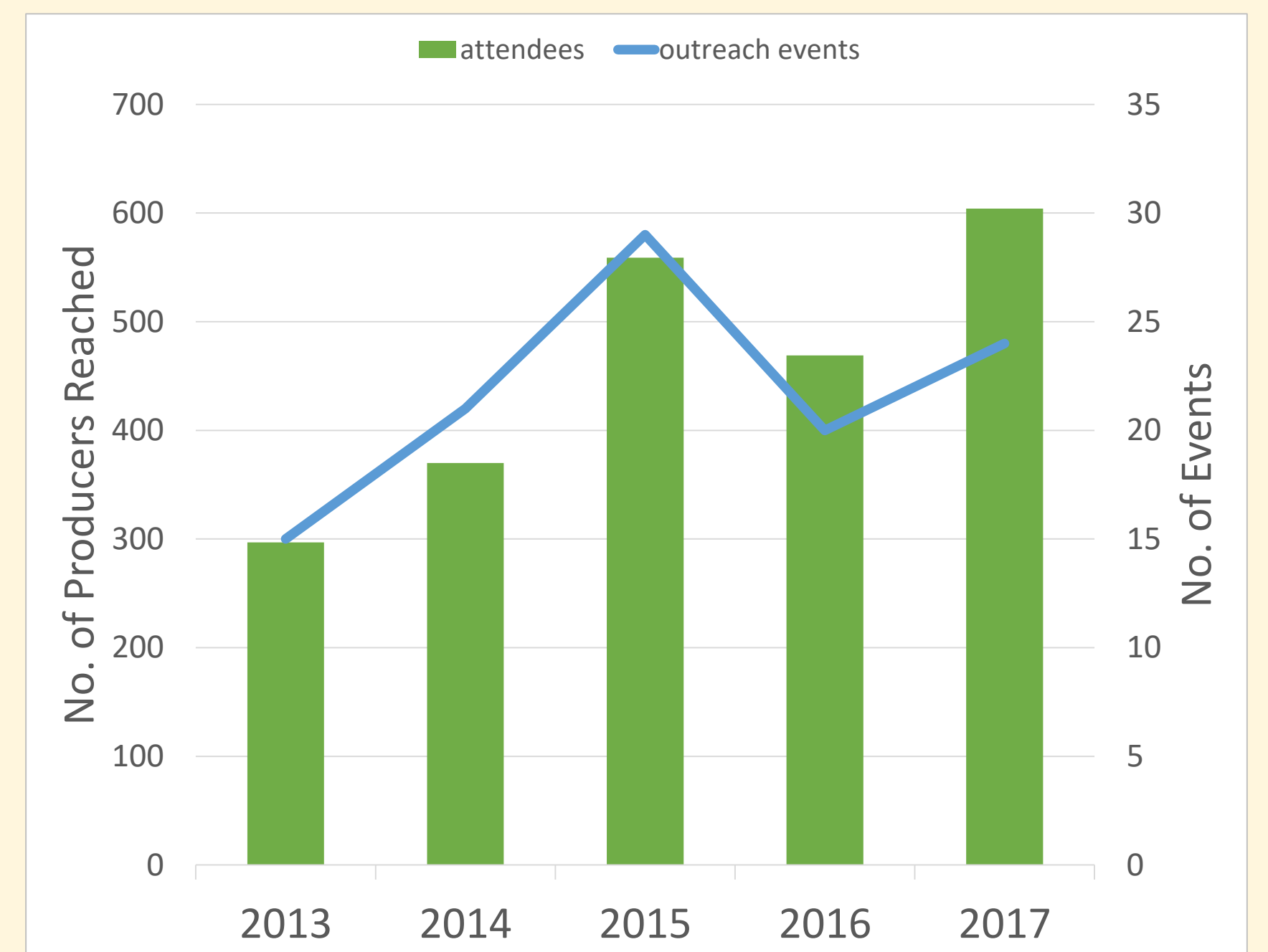
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## CBB IPM in Hawai'i

*Hypothenemus hampei* or Coffee Berry Borer (CBB) is a tiny scolytid beetle that infests coffee berries, damaging and eventually destroying the coffee bean within. CBB was discovered in Kona, Hawai'i in 2010, and is spreading throughout the state's coffee-growing regions. Economic crop loss is total without treatment. CBB can be controlled with proper farming and cultural control techniques in an integrated pest management (IPM) program.



CBB bores into coffee berries to attack the coffee bean. Processors typically reject harvests with more than 25-30% infestation.

**Extension/Outreach.** Growers are trained in the CBB IPM program adapted for Hawai'i. Successful implementation has resulted in reported coffee infestation rates as low as under 1%.

## Key Components of IPM

### Field Sanitation



### Efficient Harvesting



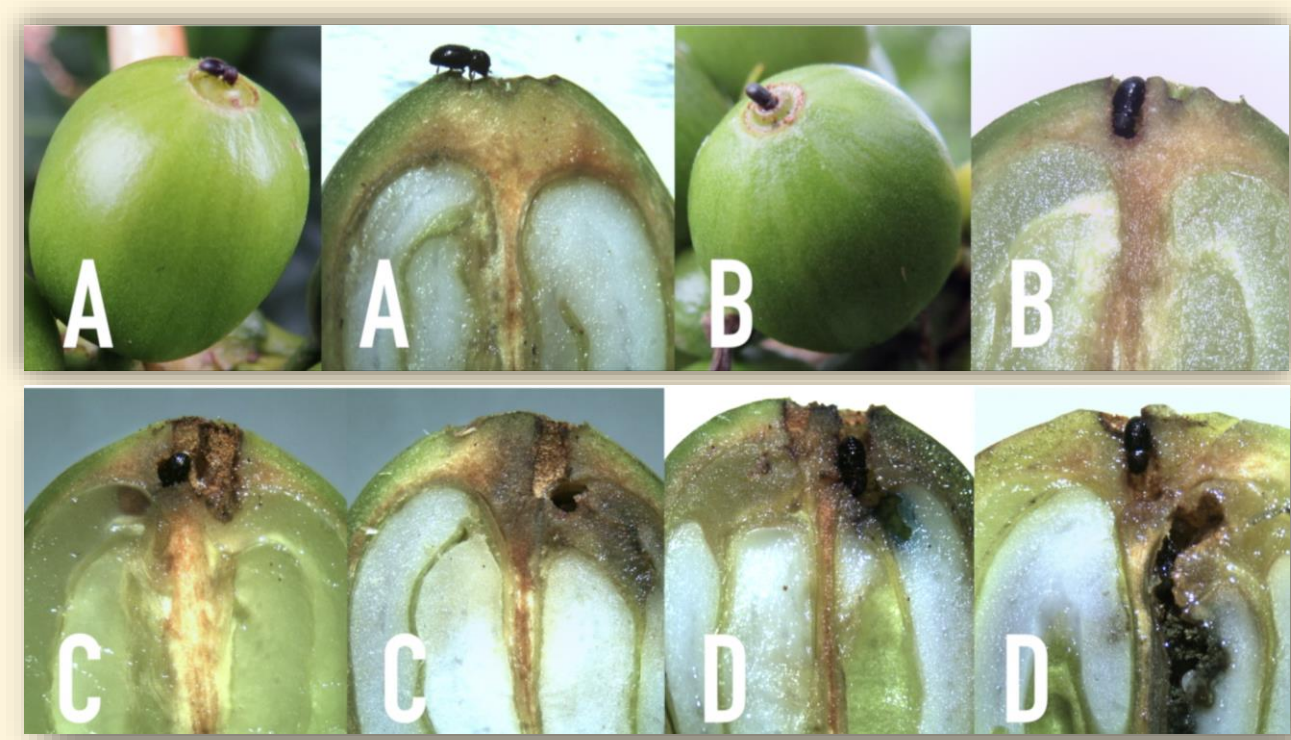
Careful harvesting minimizes dropped fruit that subsequently harbor CBB. Removing over-ripe, dried berries (above), and any fruit between seasons (left), breaks the breeding cycle of CBB. Starting the crop season with as low an infestation rate as possible is critical to managing the pest.

### Block Pruning

Coffee branches (verticals) in Kona are typically pruned on a 3-year cycle, with verticals of multiple ages on a tree. Modifying the cycle to prune all the verticals at once can break the CBB cycle.



## Sampling & Monitoring



Tally of CBB from Dissected Berries	
Classical Date	
ABR Date	ABR Date
ABR Method	ABR Method
Total # of Dissected Berries	
Calculations Used to Determine When to Spray	
% Infestation	ABR Index
% ABR Index	ABR Index
% CBB	ABR Index

## Biopesticide/Chemical Use



As in many other IPM programs, scouting to time pesticide applications is important. Coffee berries need to be sampled to find the level of CBB activity, then dissected to determine the degree of damage (top left). Results determine whether the farmer should spray (bottom left). Few pesticides are cleared for coffee. An entomopathogenic fungus, *Beauveria bassiana*, is the main insecticide currently in use (above).

## Biocontrol

Biocontrol agents could be promising, but need to be cleared for entry into the US and Hawai'i. Flat bark beetles, *Cathartus quadricolis* and *Leptophloeus sp.* (below), have moderate success in attacking CBB in dried berries remaining on the tree.



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