



2017-2018 Cooperative Extension Outreach Overview & Other CBB-related Projects

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COOPERATIVE EXTENSION

UNIVERSITY OF HAWAII AT MĀNOA
COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES

Outline:

1. Overview of CBB Management in Hawaii
2. CBB-related projects
 - Kona Research Station
 - Greenwell Farms
3. Resources





2010 / 2011

2018

Do we have a better
understanding of CBB
management?



Activity		2012 (n=55)	2013 (n=79)	2014 (n=63)	2015 (n=54)	2016 (n=80)	Impact
Field Sanitation	Strip pick at least 90% of trees	60%	50%	75%	72%	81%	Adoption of field sanitation, the most important activity, and has increased
	Trapping	76%	65%	32%	28%	26%	
Sampling & Monitoring	30 or 12 Trees S&M	0% Introduced in 2012	17%	47%	40%	77%	Adoption of the 30 or 12 trees S&M has increased over trapping
	At least every 4 wks or according to S&M	64%	74%	85%	90%	89%	
Spraying <i>Beauveria bassiana</i>	Use 32 oz per acre	28%	38%	40%	28%	39%	Adoption of greater frequency, but lower rates of <i>B. bassiana</i> application
	CTAHR	66%	61%	72%	86%	68% website; 58% workshops	
Acquiring CBB Info							CTAHR is an important resource for CBB info



30 YEARS
SPECIALTY COFFEE EXPO

2017-2019 CBB-related projects

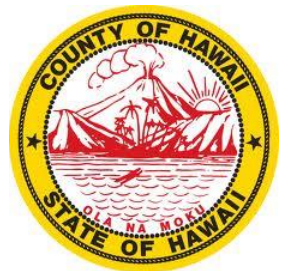
Goals of these projects:

- Increase coffee yields (via nematode-tolerant grafted trees; pruning) that could potentially offset additional farm costs as a result of proper CBB management
- Track and learn about CBB activity and damages in a small plot throughout the entire season from young green berries to harvested cherry
- Learn about the effects of certain CBB management practices in a small plot setting (ie: end-of-season and early-season strip pick, etc)
- Reduce export rejections due to piperonyl butoxide (PBO) and other pesticides



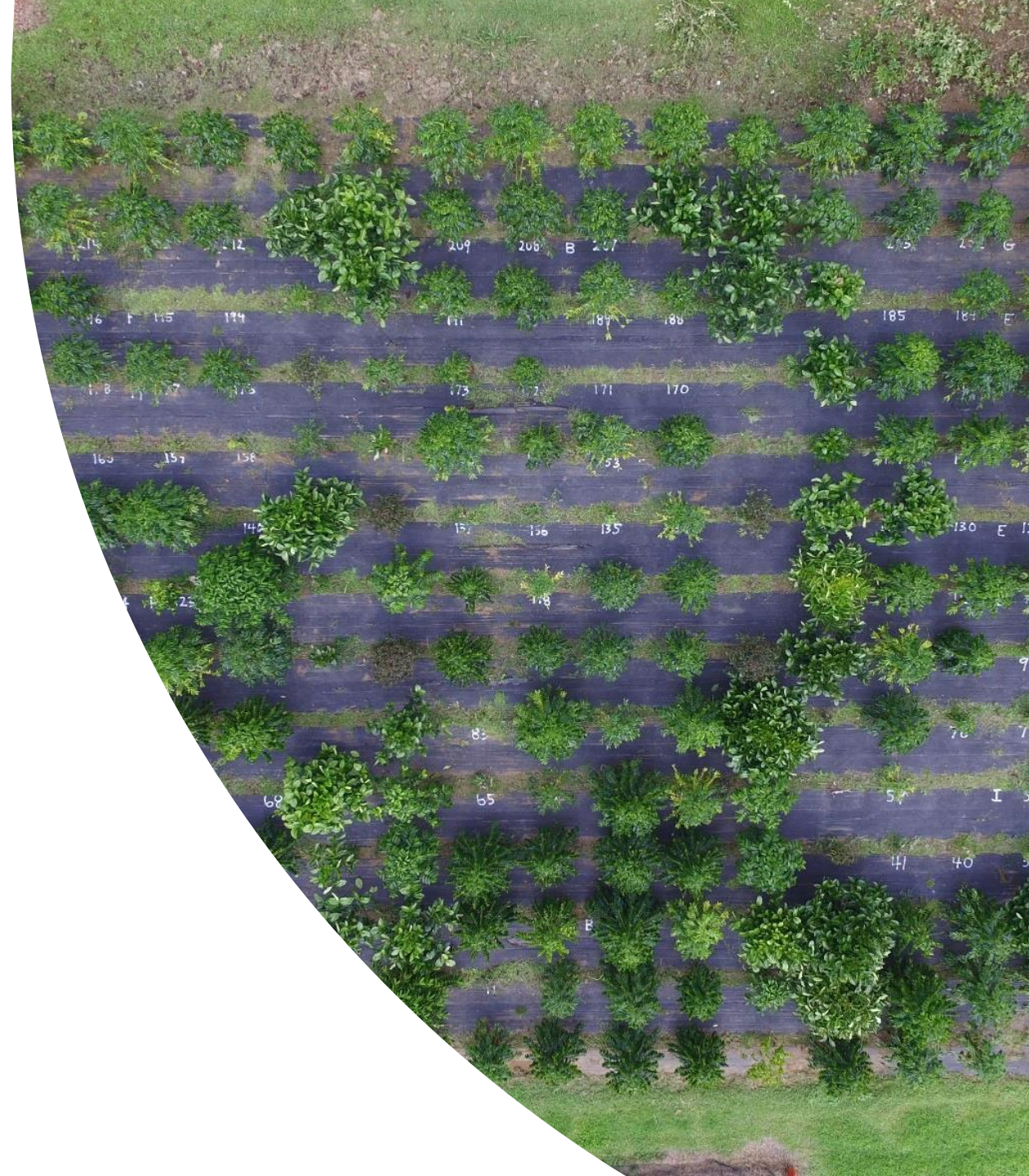
The Long-term Responses of Coffee Rootstocks to Root-knot Nematode in Kona

- Coffee root-knot nematode (*Meloidogyne konaensis*) affects:
 - health,
 - yield, and
 - survivability of coffee trees
- More extensive problem than understood (2004 – 34% of BI farms affected)
- County of Hawaii grant with USDA ARS DKI PBARC and CTAHR faculty, staff and volunteers



2016 - 2019 seasons

- Yield data per tree and by rootstock treatment
- Two seasons of CBB sampling & monitoring data
 - Green berries to harvested cherry
 - Berry infestation and bean damage
- Cupping data for each treatment
- Third season of data





Preliminary findings

- Control plants suffering decline and death
 - > 50%; 10+ yrs post-planting
- Field sanitation is critical
 - strip pick after harvest and as needed
- Early hotspots remained hotspots
- Varietal/species (ie: flowering) variability adds to difficulty of controlling CBB
- Spray early in the season
 - time spray with first flowering or remove early berries, then time with first major bloom
- CBB control is difficult after green berries are mature

Demonstration of Pruning Techniques to Increase Farm Profitability for Coffee Producers

- Pruning can be used to assist with the control of CBB
- HDOA R&D grant with USDA ARS DKI PBARC and the Kona Research Station – 2017-2019 seasons
- Demonstrate coffee pruning techniques intended to increase coffee producers' profitability by increasing farm revenue through improved yields





Stump with nurse vertical



Double vertical hedge



Single vertical hedge (L)
Kona Style (R)

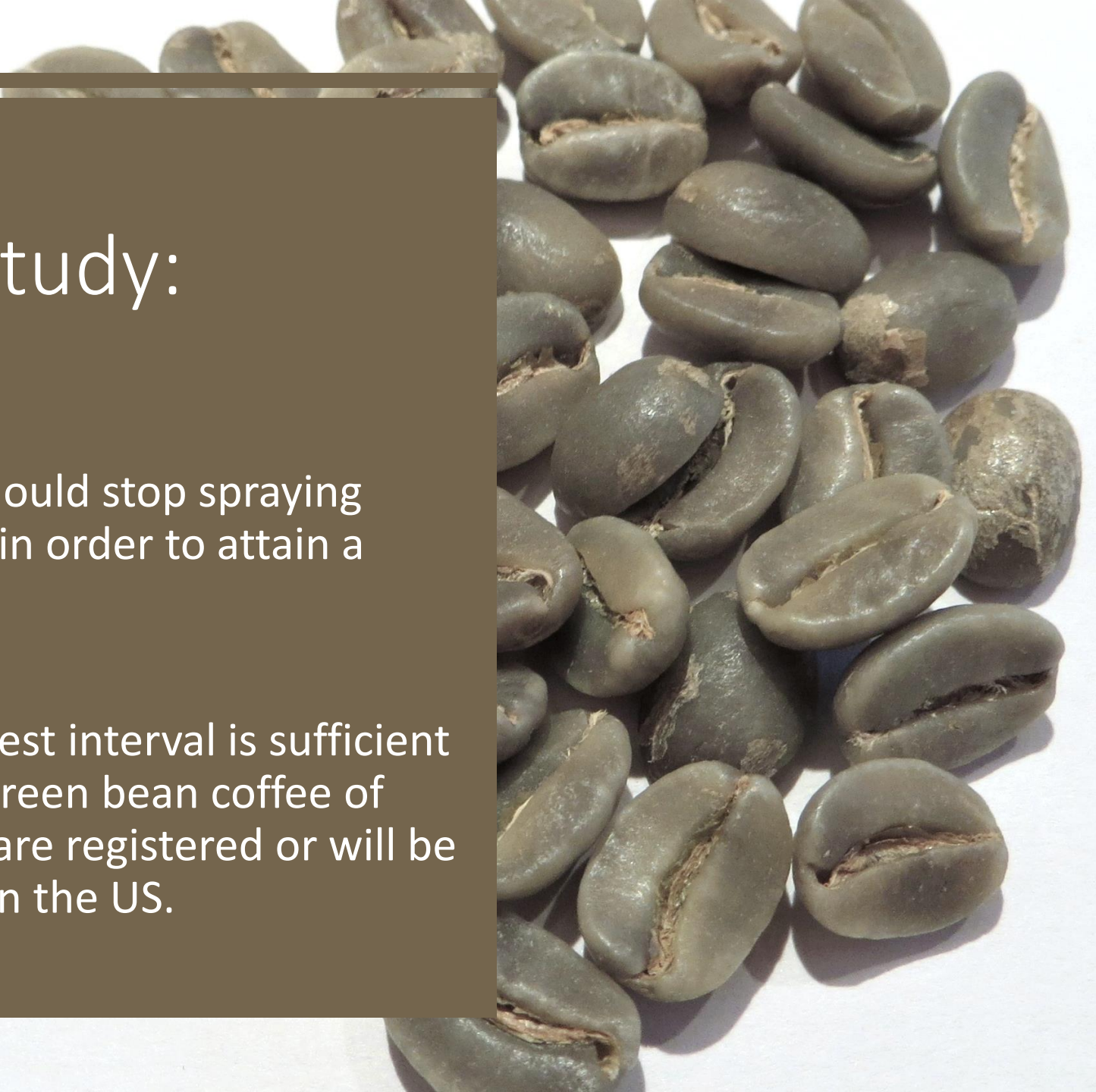
Insecticide residue tolerance on green beans

- 2018-2019 season
- USDA TASC grant with UH IR-4 Program and Greenwell Farms
- Problem:
 - risk of Hawaii green coffee rejections in the foreign market due to insecticide residues exceeding MRL tolerances
- Objective:
 - reduce export rejections and the risk by meeting MRL tolerances of green coffee export markets



Two-part residue study:

- Part 1:
 - Determine when growers should stop spraying insecticides containing PBO in order to attain a zero residue level of PBO.
- Part 2:
 - Confirm if a 14 day pre-harvest interval is sufficient for no violative residues in green bean coffee of four other insecticides that are registered or will be registered for use in coffee in the US.



Resources:

- Kona Cooperative Extension
- HawaiiCoffeeEd.com
- Coffee associations
- Fellow farmers
- Researchers in Hawaii and abroad
- Workshops & field days
- Farm visits
- ADSC samples
- UH Master Gardener program





Questions?

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