The Impact of CBB in the Flavor of Kona Coffee

Presented by Greenwell Farms

July 2015

CBB Has Changed The Industry

- Lower production of high quality coffee each season
- Complicated shipping and selling between the Hawaiian Islands
- Industry lobbied for relaxed Hawaii Green Bean standards
- Cherry market price more complicated
- State and federal programs created to help farmers overcome this problem

The Project

- Does CBB infestation affect taste?
- If so, at what level of infestation is this affect detectable?
- Can this impact be described?

The Procedure

- Goal of the Project
  - To have qualified and experienced cuppers blind taste test coffee samples with varying degrees of CBB content in order to detect the presence of CBB damage
- Procedure
  - Coffee Used
    - Kona Fancy, hand cleaned to remove all defects including CBB
    - Coffee with slight insect damage sourced from the Kona Fancy and from off grade of the same run.
  - Both types were roasted and ground separately per SCAA-cupping protocol
  - Samples were mixed per ratios below (7.7 grams of coffee and 140 ml of water)

CBB Content	0%	5%	10%	15%	20%	25%
Cleaned Coffee	*7.70*	*7.31*	*6.93*	*6.54*	*6.16*	*5.77*
Slight CBB	*0.00*	*0.39*	*0.77*	*1.16*	*1.54*	*1.93*
Total wt.(Grams)	*7.70*	*7.70*	*7.70*	*7.70*	*7.70*	*7.70*

Cupping Events

- Cuppings done at Olam Specialty Coffee (CA) and Greenwell Farms (HI)
  - The same coffee was used in both locations.

	Olam Specialty Coffee	Greenwell Farms
Cupping Events	*1*	*4*
Total Cuppers	*6*	*10*
Controls Used	*Cleaned and Slight CBB*	*Cleaned*
Cup Size	*5 oz. Rocks Glass*	*Porcelain Bouillon Bowls*
Coffee/Water Ratios	*SCAA- Cupping Protocol*	*SCAA- Cupping Protocol*
Result Types	*CBB Detection Levels*	*CBB Descriptor Analysis*

Cleaned

Slight CBB


Cleaned
Cleaned


Slight CBB
Slight CBB

Cuppers: Olam Specialty Coffee

- Mark Inman, Olam specialty Coffee- Senior Trader (Expired Q-Grade Cert)
- Joshua Marsceau, Olam specialty Coffee, QC Manager (Q-Grade Cert)
- Taylor Sullivan, QC (Q-Grade Cert)
- Kevin Rogers, Nico Winery (Enologist/Head Winemaker)
- Jayme Szefc, Chalk Hill Winery (Enologist/Winemaker)
- Erika Briscoe, Chalk Hill (Sommelier)

Results – Olam Specialty Coffee

CBB Sample	CBB Detected	Descriptors Used
5%	*1/6 Cuppers*	*Flat, Slight Chalky*
10%	*1/6 Cuppers*	*Paper Note, Metallic when cool, Flat*
15%	*3/6 Cuppers*	*Cardboard, Mildew, Metallic, Chalky*
20%	*6/6 Cuppers*	*Very Flat, Mildew, Mold, Dusty, Chalky, Dry, Sharp Finish*
25%	*6/6 Cuppers*	*Papery, Mildew, Stale Aroma, Chalky, Musty, Mineral-like*

*Note: Prior to cupping the CBB samples, four cups of clean coffee were sampled and four cups of slight CBB coffee were sampled. This was done to familiarize the cuppers with the characteristics in slight CBB

Cuppers: Greenwell Farms

- May 7, 2015
  - Chai Neo – Greenwell Farms, Inc
  - Andrea Kawabata – CTAHR
  - Makoto Ikeda – UCC Hawaii
  - Hideki Miki – UCC Hawaii
  - Suzanne Shriner – KCFA

- June 16, 2015
  - Jackie Suiter - Kona Coffee Purveyors
  - TK Yamada - Kona Coffee Purveyors
  - Makoto Ikeda – UCC Hawaii
  - R. Miguel Meza – Isla Custom Coffees
  - Chai Neo – Greenwell Farms, Inc
  - Andrea Kawabata – CTAHR

- June 18, 2015
  - Shawn Steiman – Daylight Mind
  - Suzanne Shriner – KCFA
  - Chai Neo – Greenwell Farms, Inc

- June 24, 2015
  - Paul Massard – Honolulu Coffee Company
  - Chai Neo – Greenwell Farms, Inc

Table 1. Descriptors Assigned to Coffee Samples

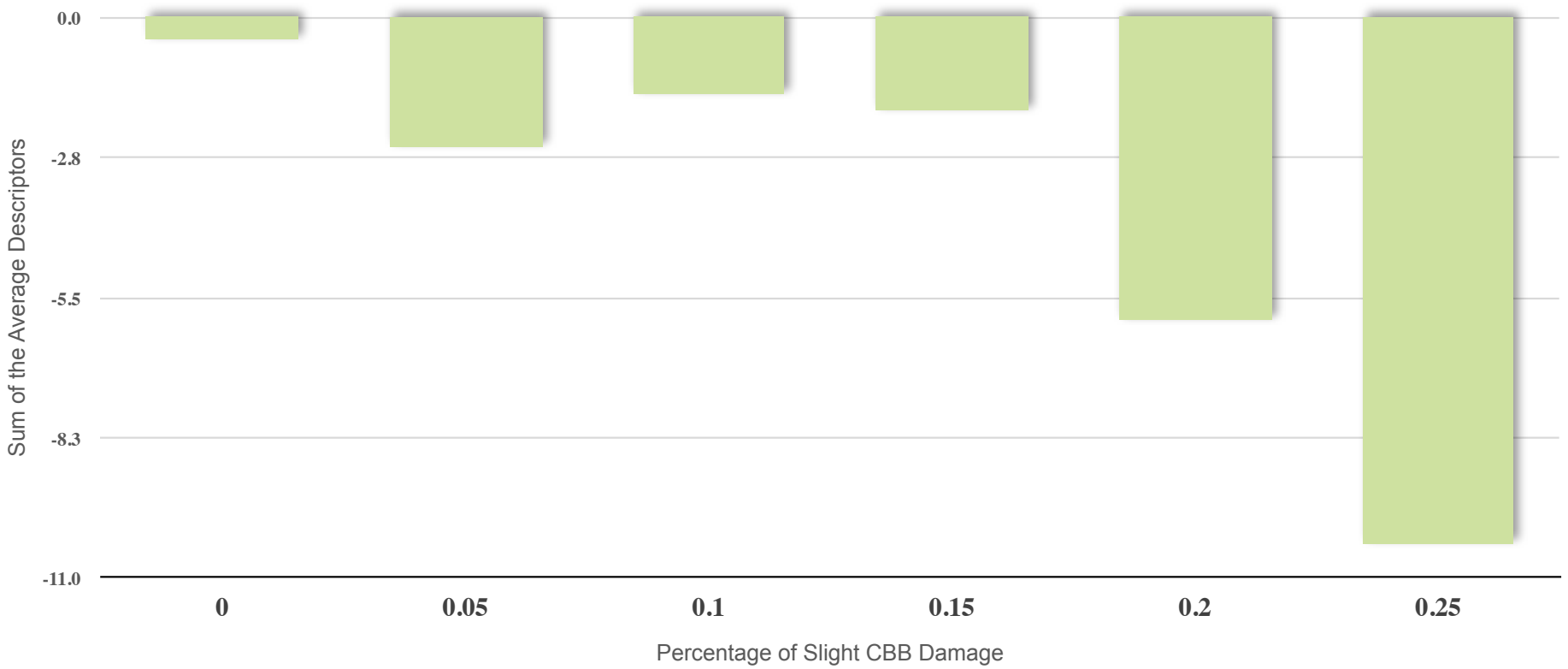
Negative Descriptors			
Astringent	-1	Natural Soft Acidy	-1
Bite	-1	Not Clean	-1
Bite aftertaste	-1	Not Clean Cup	-1
Bitter	-1	Not Smooth	-1
Boring	-1	Old Flat	-1
Bread	-1	Poor Aroma	-1
Chalky	-1	Poor Fragrance	-1
Decrease Aroma	-1	Pungent	-1
Decrease Chocolate Notes	-1	Quaker like	-1
Decrease Complexity	-1	Rough	-1
Decrease fragrance	-1	Rough Acidity	-1
Decrease sweetness	-1	Rough Finish	-1
Dry	-1	Rough Vegetal	-1
Dry Aftertaste	-1	Salty Aroma	-1
Dry Finish	-1	Slight Bite	-1
Dry Sensation	-1	Slight Bitter	-1
Dull	-1	Slight Chalky	-1
Flat	-1	Slight Dry	-1
Flat Aftertaste	-1	Slight Earth	-1
Flat Fragrance	-1	Slight Harshness	-1
Funky	-1	Slight Moldy	-1
Gamey Fragrance	-1	Slight Pungent	-1
Harsh	-1	Slight Rough	-1
Harsh Aftertaste	-1	Slight Sour	-1
Leather	-1	Some Astringent	-1
Less Sweet	-1	Some Bitter	-1
Little Sour	-1	Some Bitterness in Finish	-1
Loss of Brightness	-1	Some Plastic	-1
Low Acidity	-1	Sour	-1
Low Body	-1	Thin Body	-1
Metallic	-1	Unmemorable	-1
Metallic Finish	-1	Unpleasant	-1
Mild	-1	Very Astringent	-1
Mild Body	-1	Vinegar Taste	-1
Mild Flavor	-1	Weak	-1
Moldy	-1	Weak Flavor	-1
Musty	-1	Woody	-1

Positive Descriptors			
Almond	1	Lemon	1
Aroma Ok	1	Little Honey	1
Balanced	1	Med Body	1
Bright	1	Med to High Body	1
Bright Acidity	1	Nice	1
Brown Sugar	1	Nice Acidity	1
Caramel	1	Nice Balance	1
Cherry	1	Nutty	1
Chocolate	1	Ok	1
Chocolate Note	1	Ok Acidity	1
Citrus	1	Ok Cup	1
Clean	1	Pleasant Acidity	1
Clean Aftertaste	1	Roasted Nuts	1
Complex	1	Saturated Sweetness	1
Enjoyed Best	1	Semi Sweet Choc	1
Enough Body	1	Slight Chocolate	1
Fairly Clean	1	Slight Floral Smell	1
Floral	1	Slight Sweet	1
Fragrant	1	Smooth	1
Fruit	1	Smooth Acidity	1
Fruit Candy	1	Smooth Body	1
Fruity	1	Soft Floral	1
Fruity Linger	1	Some acid	1
Good	1	Some fruit	1
Good Acidity	1	Some Honey	1
Good Body	1	Some Sweet	1
Good Flavor	1	Spicy	1
Good Fragrance	1	Sweet	1
Grapefruit Acidity	1	Sweet Aroma	1
Hazel Nut	1	Sweet Lemon	1

Table 2. Average Descriptor Values

			Descriptors Used						Assigned Values						Average
CupperNo	Sample	CBB	D1	D2	D3	D4	D5	D6	V1	V2	V3	V4	V5	V6	Value
0616-01	Sample 1 6/16	10%	Sour	Astringent					(1)	(1)					(1.0)
0616-01	Sample 2 6/16	5%	Fragrant						1						1.0
0616-01	Sample 3 6/16	15%	Fragrant	Pungent	Astringent				1	(1)	(1)				(0.3)
0616-01	Sample 4 6/16	0%	Flat	Slight Pungent	Very Astringent				(1)	(1)	(1)				(1.0)
0616-01	Sample 5 6/16	25%	Sour	Astringent					(1)	(1)					(1.0)
0616-01	Sample 6 6/16	20%	Bread						(1)						(1.0)
0616-02	Sample 1 6/16	10%	Smooth	Good Acidity					1	1					1.0
0616-02	Sample 2 6/16	5%	Dry	Not Smooth	Woody	Poor Fragrance			(1)	(1)	(1)	(1)			(1.0)
0616-02	Sample 3 6/16	15%	Poor Fragrance	Poor Aroma					(1)	(1)					(1.0)
0616-02	Sample 4 6/16	0%	Good Fragrance	Not Smooth					1	(1)					-
0616-02	Sample 5 6/16	25%	Bitter	Not Smooth					(1)	(1)					(1.0)
0616-02	Sample 6 6/16	20%	Smooth						1						1.0
0616-03	Sample 1 6/16	10%	Ok	Nice Acidity					1	1					1.0
0616-03	Sample 2 6/16	5%	Ok	Nice Acidity	Slight Bitter				1	1	(1)				0.3
0616-03	Sample 3 6/16	15%	Ok	Old Flat	Bitter	Astringent			1	(1)	(1)	(1)			(0.5)
0616-03	Sample 4 6/16	0%	Ok	Flat	Slight Bitter				1	(1)	(1)				(0.3)
0616-03	Sample 5 6/16	25%	Flat	Nice Acidity	Bitter				(1)	1	(1)				(0.3)
0616-03	Sample 6 6/16	20%	Flat	Bitter					(1)	(1)					(1.0)
0616-04	Sample 1 6/16	10%	Metallic	Pungent	Rough	Flat			(1)	(1)	(1)	(1)			(1.0)
0616-04	Sample 2 6/16	5%	Slight Rough	Metallic Finish					(1)	(1)					(1.0)
0616-04	Sample 3 6/16	15%	Musty	Rough Finish	Intense Acidity				(1)	(1)					(1.0)
0616-04	Sample 4 6/16	0%	Nutty	Smooth	Grapefruit Acidity				1	1	1				1.0
0616-04	Sample 5 6/16	25%	Pungent	Rough	Soft Acidity				(1)	(1)					(1.0)
0616-04	Sample 6 6/16	20%	Slight Pungent	Metallic					(1)	(1)					(1.0)
0616-05	Sample 1 6/16	10%	Slight Sour	Slight Bitter	Salty Aroma	Gamey Fragrance	Less Sweet	Quaker like	(1)	(1)	(1)	(1)	(1)	(1)	(1.0)
0616-05	Sample 2 6/16	5%	Soft Floral	Sour	Vinegar Taste				1	(1)	(1)				(0.3)
0616-05	Sample 3 6/16	15%	Salty Aroma	Natural Soft Acidy	Some Bitterness in Finish				(1)	(1)	(1)				(1.0)
0616-05	Sample 4 6/16	0%	Nutty	Floral	Fruity	Sweet	Lemon	Caramel	1	1	1	1	1	1	1.0
0616-05	Sample 5 6/16	25%	Brown Sugar	Floral	Cherry	Acidity	Flat	Leather	1	1	1		(1)	(1)	0.2
0616-05	Sample 6 6/16	20%	Salty Aroma	Sweet Lemon	Rough Vegetal	Astringent	Flat		(1)	1	(1)	(1)	(1)		(0.6)
0616-06	Sample 1 6/16	10%	Decrease sweetness	Decrease Chocolate Notes	Slight Dry	Smooth	Clean	Ok Cup	(1)	(1)	(1)	1	1	1	-
0616-06	Sample 2 6/16	5%	Decrease sweetness	Decrease Chocolate Notes	Decrease Complexity	Clean	Ok Cup		(1)	(1)	(1)	1	1		(0.2)
0616-06	Sample 3 6/16	15%	Slight Moldy	Decrease sweetness	Woody	Decrease Aroma	Not Clean		(1)	(1)	(1)	(1)	(1)		(1.0)
0616-06	Sample 4 6/16	0%	Saturated Sweetness	Chocolate Note	Clean	Smooth	Slight Dry		1	1	1	1	(1)		0.6
0616-06	Sample 5 6/16	25%	Decrease Complexity	Decrease sweetness	Decrease Aroma	Slight Dry	Harsh		(1)	(1)	(1)	(1)	(1)		(1.0)
0616-06	Sample 6 6/16	20%	Slight Moldy	Flat Fragrance	Aroma Ok	Not Clean Cup			(1)	(1)	1	(1)			(0.5)

Results – Greenwell Farms



Conclusions

- Cuppers could detect CBB between 10%-15% and unanimously agree that CBB of 20% or higher had a significant impact on flavor
- Impact is subtle
- CBB has negative impact and is harmful to high quality coffee
- Further studies and cupping events should be pursued regarding CBB's impact on high quality Hawaiian coffees.

Special Thanks

Project Coordinators

Chai Neo, Mark Inman

Cuppers

Andrea Kawabata, Chai Neo, Erika Briscoe, Hideki Miki , Jackie Suiter, Jayme Szefc, Joshua Marsceau, Kevin Rogers, Makoto Ikeda, Mark Inman, Miguel Meza, Paul Massard, Shawn Steiman, Suzanne Shriner, Taylor Sullivan and TK Yamada

Locations

Olam Specialty Coffee and Greenwell Farms