Surround WP and its ability to control CBB and increase coffee yields – a summary

Shawn Steiman, PhD and Elsie Greco, PhD

Purpose
To test Surround WP as a viable CBB control option and increaser of coffee yields.

Experimental setup
2 year project on 4 cooperating farms. From 6 weeks after flowering, farmers sprayed 6-tree experimental units with Surround WP every 2 weeks until harvest was complete. This treatment was compared with unsprayed trees. One farm also sprayed Mycotrol O (*Beaveria bassiana*; sprayed monthly) on trees and Mycotrol O + Surround WP on trees. All treatments were replicated 3 times on each farm.

Data collected
Every 3-4 weeks, 4 branches were randomly selected and the percent CBB infestation was calculated by counting the number of cherries with holes and dividing by the total number of cherries on the branch. After counting the infestation, all ripe cherries were harvested and weighed. These values were summed at the end of the season for a total weight of cherry for all the trees in the experimental unit.

Results

Average infested berries for 6-tree units[a]

Farm	Treatment	Infested berries (%)	
		Year	
		2011	2012
1	Control	21.4 A	28.2 A
	Kaolin	31.2 A	15.3 B
2	Control	33.8 A	73.3 A
	Kaolin	13.7 B	53.0 B
3	Control	18.9 A	34.1 A
	Kaolin	15.4 A	13.6 B
4	Control	4.7 A	25.8 A
	Mycotrol O	3.0 AB	14.9 B
	Kaolin	1.0 B	5.8 C
	Kaolin + Mycotrol O	0.6 B	1.6 C

[a]Different letters within a column and farm are significantly different at $p < 0.05$.

Notes: In 2011, farms 1 and 3 did not spray biweekly with regularity.

Coffea Consulting
546A, 12th Ave, Honolulu, HI, 96816
steiman@coffeaconsulting.com • 808-223-0982
http://coffeaconsulting.com

Average yield of 6-tree units[a]

Farm	Treatment	Yield (kg)	
		Year	
		2011	2012
1	Control	5.4 A	10.6 A
	Kaolin	4.3 A	13.9 A
2	Control	30.7 A	35.6 B
	Kaolin	46.1 A	41.2 A
3	Control Kaolin	NA	NA
4	Control	12.4 AB	13.4 A
	Mycotrol O	9.2 B	16.7 A
	Kaolin	22.2 A	24.8 A
	Kaolin + Mycotrol O	18.6 AB	23.3 A

[a]Different letters within a column and farm are significantly different at $p < 0.05$.

Notes: In 2011, workers on farm 3 harvested the trees, distorting the yield calculation. In 2012, the trees on farm 3 suffered overbearing and dieback, distorting the yield calculation. In 2012, some dead trees were found in some experimental units of farm 4.

Discussion and Conclusion

- Surround WP reduces CBB infestation 28-79% with adequate coverage.
- Maintaining adequate coverage is essential.
- Surround WP seems to increase yields but it is rarely statistically significant due to high variation in yields from poor experimental design.

Recommendations

- Use Surround WP to control CBB
- Explore concentrations and frequency to determine optimum use
- Consider the weather when spraying *B. bassiana* and Surround WP; using them each during different times of the year may be ideal. During heavy rain periods, B bassiana may be better than Surround WP. During dryer times, vice versa.

Questions

Shawn Steiman, steiman@coffeaconsulting.com, 808-223-0982
Elsie Greco, eburbano@hawaii.edu, 808-956-2450

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