



COFFEE BERRY BORER SEMINAR

## *Interaction Coffee Berry Borer and Robusta Coffee: Control Implications*

César A.D. Teixeira  
 Researcher A – DSc  
 Entomology  
 EMBRAPA RONDÔNIA


 Ministério da Agricultura, Pecuária e Abastecimento  

 GOVERNO FEDERAL

### *Hypothenemus hampei & Coffea canephora: How control is applied to Robusta coffee*



**Premium coffee years:**

- Producers use chemical insecticides, mainly Endosulfan.

**Low-value coffee years:**

- Producers harvest coffee earlier – unripe fruits.

**Implications**

- Low-quality product
- Product acceptance problems in marketing
- Contamination of the environment





 Ministério da Agricultura, Pecuária e Abastecimento  

 GOVERNO FEDERAL

### *What EMBRAPA considered significant*




**Fact 1:** Although the fruit contains two seeds, generally only one of them is colonized.



**Hypotheses:**

H0. Germination occurs in seeds of fruits that have escaped CBB attack.

H1. Germination is facilitated by boring of fruits by CBB.


 Ministério da Agricultura, Pecuária e Abastecimento  

 GOVERNO FEDERAL

### *How to test these hypotheses?*

Germination in healthy fruits x mature bored and green bored (200 fruits/category)



**Conclusion**

Germination of bored fruits: Speeded up in green bored and delayed in mature bored = 1 sapling/fruit


 Ministério da Agricultura, Pecuária e Abastecimento  

 GOVERNO FEDERAL

### *Fact 2:*

Natural germination of coffee occurs in fruits/seeds lying on the ground.

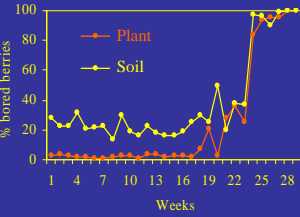
**Hypotheses:**



H0. Falling of fruits occurs at the beginning of fruiting and, later, when fruits are more mature.

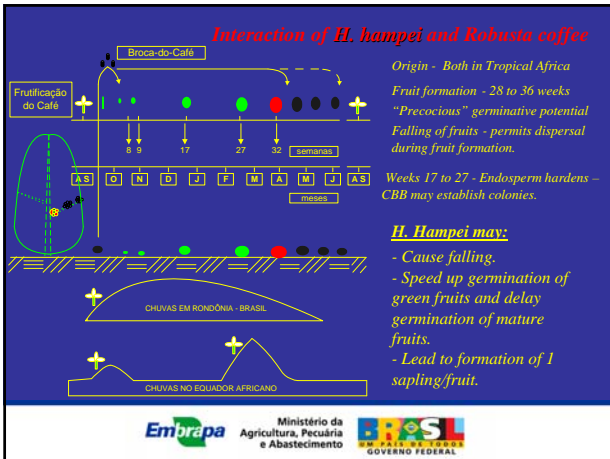
H1. Falling occurs continually during fruiting.

**Conclusion**

- Falling occurs continuously.
- During fruiting, there are more bored fruits on the ground than on the trees => CBB "causes" falling.
- Green fruits show germinative potential and may be scattered on the ground.
- *H. hampei* can facilitate germination even before maturation.




 Ministério da Agricultura, Pecuária e Abastecimento  

 GOVERNO FEDERAL



### What EMBRAPA considers necessary – 1

Considering that Endosulfan is a prohibited insecticide in various regions of the world, including Europe:

- Encourage the selection of new environmentally sustainable molecules for use in CBB Management.

Embrapa Ministério da Agricultura, Pecuária e Abastecimento GOVERNO FEDERAL

### What EMBRAPA considers necessary – 2

Considering that the "soil environment" is significant for the development of CBB during the coffee fruit formation period:

- New research projects should include and/or prioritize CBB Management techniques in this environment.

Embrapa Ministério da Agricultura, Pecuária e Abastecimento GOVERNO FEDERAL

### What EMBRAPA considers necessary – 3

Considering that soil is the natural environment in the development of entomopathogenic fungi and that shaded areas (as found under coffee trees) are favourable to the survival and efficiency of these fungi:

- Fungi should be considered the priority organisms for CBB Management programmes.

Embrapa Ministério da Agricultura, Pecuária e Abastecimento GOVERNO FEDERAL

### What EMBRAPA considers necessary – 4

Preliminary testing in Rondônia, using up-to-date equipment and methodology for application of the *Beauveria bassiana* fungus in the upper part of coffee trees showed that:

- Management level reached with application of fungus in soil environment alone (on trees) did not differ significantly from application to upper part of coffee trees only.

Embrapa Ministério da Agricultura, Pecuária e Abastecimento GOVERNO FEDERAL

Cosar A. D. Toliveira – DSe  
Embrapa Rondônia  
cosar@cpafro.embrapa.br

## THANK YOU!

Embrapa Units

Porto Velho

Embrapa Ministério da Agricultura, Pecuária e Abastecimento GOVERNO FEDERAL