

Evaluation of Coffee berry borer (*Hypothenemus hampei*) damage in *Coffea canephora* plantations in Central highlands of Vietnam

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Introduction

Coffee berry borer (*Hypothenemus hampei*) is a small beetle native to Africa which recently spread to all coffee growing regions [1]. The beetle is tolerant to caffeine (a natural pest repellent) and therefore can lay eggs inside coffee cherries for their offspring to feed on the beans. This pest has infected 740,000 ha of *C. canephora* in Vietnam, potentially decreasing the production of the second world coffee producer. Even though coffee berry borers have been observed in coffee cherries and beans, no study has quantified its impact on cherry yield and bean quality. In this study, we investigated berry borer presence and damage in Vietnamese Central Highlands and tested the effect of potential of alcohol-baited funnel traps for its control.



Figure 1: Brocap trap (left) and coffee cherry bunch affected by CBB (right)



Figure 2: Setting up the Brocap trap

Materials/Methods

The controlled experiment consisted of random split plot design with 2 repetition plots. Two plots had BROCAP traps to catch *Hypothenemus hampei* and two plots did not have traps (control). The number of berry borers captured by the trap was counted every two weeks from April to August. The number of cherries infected on randomly selected branches and trees was monitored in the same period. Bean samples from across 70 farms of the Central Highlands were visually inspected to measure the defect rate induced by insects.

Results/Discussion

Counting trapped berry borer showed a peak in April 2023 with 994 borers in May 2024 with 61 borers per trap. In 2024, the number of infested cherries counted on trees within the control plot showed a 3.1% cherry infestation rate while plots with traps showed a 0.9% infestation rate. Across the 70 farms, the average defect rate induced by insects was 0.2% but we could not identify whether these defects come from CBB. Infested cherries usually floats and are removed from the processing batch.

Conclusion/Perspectives

Results in Central Highlands of Vietnam show that *Hypothenemus hampei* is present with a trapping peak in April. Cherry infestation was low but can still significantly affect tree yield and farmers' income, as 3.1% of 10 T cherries represent 60kg of green beans which has an estimated value of 300 USD at current price (06/10/2025). However, bean infestation across 70 farms shows CBB might not be a big issue as damages by insects were low as infested cherries likely fell to the ground before harvest or are discarded after harvest.

References:

Johnson, M. A., Ruiz-Diaz, C. P., Manoukis, N. C., & Verle Rodrigues, J. C. (2020). Coffee Berry Borer (*Hypothenemus hampei*), a Global Pest of Coffee: Perspectives from Historical and Recent Invasions, and Future Priorities. *Insects*, 11(12), 882. <https://doi.org/10.3390/insects11120882>