

An evaluation of *Beauveria bassiana* as a natural control agent of the coffee berry borer, *Hypothenemus hampei* (Ferrari), in Jamaica.

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Abstract

As part of an effort to diversify the control options available for use as part of a national integrated borer management (IBM) programme, the Coffee Industry Board (CIB) has been exploring the potential of *Beauveria bassiana*, which has been observed infecting the coffee berry borer (CBB) in Jamaica, as a control agent. The current study was done to assess the level of CBB infestation, the rates of infection by *B. bassiana* of CBB infesting coffee beans, as well as the level of bean damage in CBB infested beans with or without *B. bassiana* at two agro-ecologically different coffee farms.

There was no significant difference ($P = 0.020$) in the level of CBB infestation was at Baron Hall ($40.2 \pm 1.6\%$) and at Mountain Hill ($44.3 \pm 1.7\%$). However, the *B. bassiana* infection rate of the CBB infesting the berries was significantly different ($P = 0.007$; $11.0 \pm 0.8\%$ and $23.5 \pm 1.5\%$ at Baron Hall and Mountain Hill, respectively). The level of bean damage was significantly ($P = 0.001$) lower at Mountain Hill (21.3% of infested berries) where the *B. bassiana* infection rate was $23.5 \pm 1.5\%$ compared to Baron Hall (50.0% of infested berries) where the *B. bassiana* infection rate was $11.0 \pm 0.8\%$. CBB mortality was 20.3% in infested berries with no evidence of *B. bassiana* infection, compared with 100% mortality in beans with evidence of *B. bassiana* infecting the CBB.