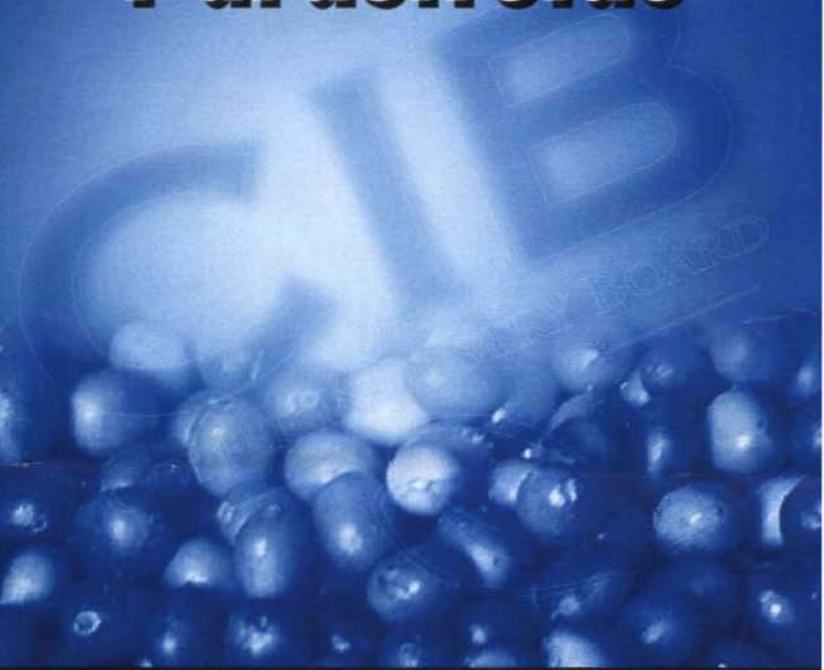


All About Parasitoids



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COFFEE INDUSTRY BOARD



All About Parasitoids

The Coffee Berry Borer *Hypothenemus hampei* (Ferrari) is the insect pest that causes the greatest economic damage to coffee plantations worldwide. The female borers and larvae attack the coffee fruits.

In most countries, insecticides have been widely used to control *H. hampei*. Chemical use is limited, however, because they contaminate the environment, and the borer has developed a resistance to endosulfan, one of the main products used to control the pest.

The Coffee Industry Board has been developing Integrated Management Strategies to control the Coffee Berry Borer. One of these strategies is the use of African insects called parasitoids.

Activities to introduce the parasitoid include:

- Developing mass rearing methodology
- Laboratory and field studies of the insect's biology
- Releasing the parasitoids in fields infested with the berry borer

Since 1999, the following species have been introduced:

- *Phymastichus coffea*, called the *Cephalonomia stephanoderis* or Ivory Coast wasp.
- *Prorops nasuta* Waterston, the Ugandan wasp.
- *Phymastichus coffea*, the wasp from Togo.

The first two wasps feed on the larvae, prepupae and pupae of the coffee berry borer, while the third is a parasite of the adult female borer.

Principal characteristics of the wasps:

***Cephalonomia stephanoderis* Betrem.**

This wasp was discovered in 1961 on the Ivory Coast. The female enters mature coffee fruits and feeds on the borer in its prepupal or pupal stages. After 2 to 3 days, the wasp lays eggs on the body of the borer. When the eggs hatch, the larvae then feed on the borer. Once this process has ended, the larvae spins a web capsule and pushes itself inside.

Since March 1999, this wasp has been released at three different altitudes in Jamaica. Up to July 2002, they were still present in the fields. This suggests that the wasps have successfully adapted to local conditions.

***Prorops nasuta* Waterston**

Discovered by Waterston in 1923, this wasp is similar in biology and habits to the *C. stephanoderis*. Unfortunately for Jamaica, this parasitoid did not survive laboratory conditions.

Phymastichus coffea

This wasp was discovered in 1986 and introduced to Jamaica in 2001. It attacks the female adult borer and lays its eggs on the borer's body. It has been released in the field at different altitudes and is being investigated in the laboratory.

CONCLUSION

Since the arrival of the coffee berry borer in Jamaica, several chemical and manual methods have been tried to control infestation levels. Biological control agents such as the African wasps are helping in that fight.