

POSTER SUMMARY

MICROSATELLITE MARKERS TO ANALYSE GENETIC DIVERSITY OF POPULATIONS OF *BEAUVERIA HOPLOCHELI*, A FUNGUS USED AS A BIOINSECTICIDE TO CONTROL THE WHITE GRUB, *HOPLOCHELUS MARGINALIS*, IN SUGARCANE FIELDS IN REUNION ISLAND

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Abstract

Hoplochelus marginalis Fairmaire (Coleoptera: Melolonthidae) endemic from Madagascar was introduced in the seventies into Réunion Island where this white grub rapidly became a serious pest of sugarcane. Several strains of an entomopathogenic fungus belonging to the genus *Beauveria* (Ascomycota: Hypocreales) were isolated from *H. marginalis* in Madagascar and introduced into Reunion. We have recently demonstrated that these strains corresponded to a new species, *Beauveria hoplocheli*. A commercial product (Betel®) based on this fungus has been used for three decades in Réunion for the biological control of *H. marginalis*. To assess the sustainability of the biological control, tools are needed to monitor the evolution of the bioinsecticide in the field soils. Microsatellites are useful tools to evaluate the genetic diversity of populations and to follow their evolution. However, only microsatellites developed for *B. bassiana* and *B. brongniartii* are available. The aim of this work was to develop, specifically for *B. hoplocheli*, microsatellite markers that will enable the study the genetic diversity of populations present in the soils of Reunion Island. DNAs of 12 strains were pooled to achieve a DNA microsatellites enriched bank. The bank allowed the identification of 359 sequences containing microsatellites for which it was possible to design PCR primer pairs flanking the microsatellite sequence. Over the 100 pairs of primers tested on five strains, 24 produced a single polymorphic amplicon. After evaluation on 13 strains, 22 pairs of primers that could be multiplexed in three PCR reactions were validated.

Keywords: entomopathogen, fungi, SSR, cockchafer, biocontrol, *Saccharum* spp