

# CARIBBEAN SCIENCE & INNOVATION MEETING

Coopérer sur les problématiques communes aux territoires caribéens



Santé humaine  
animale et  
végétale



Risques  
naturels



Energies  
renouvelables



Biodiversité  
naturelle et  
anthropisée



Economie  
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# ABSTRACTS BOOK

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Université  
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Pôle Guadeloupe



CARISCIENCE



## NATURAL *WOLBACHIA* INFECTION ACROSS GUADELOUPE MOSQUITO POPULATIONS.

Pagès N.<sup>1,2</sup>, Re J.<sup>1,2</sup>, Aprelon R.<sup>1,2</sup>, LeBihan M.<sup>1,2</sup>, Gardès L.<sup>1,2</sup>, Venail R.<sup>3</sup>, Jacquet-Cretides L.<sup>1,2</sup>, Giraud-Girard K.<sup>1,2</sup>, and Meyer D.F.<sup>1,2</sup>

<sup>1</sup>CIRAD, UMR ASTRE, F-97170 Petit-Bourg, Guadeloupe, France;

<sup>2</sup>ASTRE, CIRAD, INRA, Univ Montpellier, Montpellier, France.

<sup>3</sup>AviaGIS, 2980 Zoersel, Belgium

**Abstract:** Mosquitoes have the potential to transmit a large variety of pathogens to humans and other vertebrate hosts. No effective technique has been found to properly control and reduce the density of mosquito populations in a sustainable manner. Endosymbionts, particularly *Wolbachia*, represent a promising alternative to control medically important mosquito species and reduce their disease transmission capacity.

The presence of *Wolbachia* endosymbionts was screened in mosquito populations of Guadeloupe Island (French West Indies). Mosquitoes were collected across 39 sites that were representative of major biotopes in Guadeloupe and were categorized into natural, rural and urban landscapes. Natural and rural landscapes showed higher mosquito species diversity when compared to urban landscapes. The presence of *Wolbachia* was revealed by *real-time PCR* in six mosquito species belonging to five genera: *Deinocerites*, *Culex*, *Mansonia*, *Ochlerotatus* and *Uranotaenia*. *Wolbachia* was detected in mosquitoes collected at sites attributed to the three landscape categories. However prevalence of *Wolbachia* infection was heterogeneous among mosquito species and collection sites. Phylogeny based on *Wolbachia* surface protein (*wsp*) sequences showed that *Wolbachia* isolates from field collected mosquitoes were distributed across three major clades belonging to *Wolbachia* supergroups A and B. Some of the *Wolbachia wsp* sequences represent new haplotypes.

The presence of *Wolbachia* in Neotropical mosquito species is expected to trigger new research on the control of mosquitoes and the pathogens they transmit. In mosquitoes, *Wolbachia* is able to reduce the fitness and pathogen transmission, thus being a potential target for population reduction and replacement strategies.