

## Diversity and seasonal dynamics of invasive mosquito species in Brod-Posavina County, Croatia

M. Sudarić Bogojević<sup>1</sup>, I. Jurčević<sup>1</sup>, A. Cvitković<sup>2</sup> and M. Valjetić<sup>2</sup>

<sup>1</sup>Josip Juraj Strossmayer University of Osijek, Department of biology, Cara Hadrijana 8a, 31000 Osijek, Croatia, <sup>2</sup>Public Health Institute of Brod-Posavina County, V. Nazora 2a, 35000 Slavonski Brod, Croatia; [mirta.sudaric@biologija.unios.hr](mailto:mirta.sudaric@biologija.unios.hr)

Monitoring of invasive mosquito species in Brod-Posavina County (as a part of the national monitoring of invasive mosquito species programme) was conducted from May to November during 2019 and 2020 seasons. Oviposition traps were installed at 24 locations: 8 ovitraps were placed in private backyards, 4 in specialised tire fitting shops, 2 in cemeteries, 4 in school and hospital backyards and others at landfill site, border crossings, etc. The purpose of the study was to determine invasive mosquito species and to examine the environmental effect on their preference for different oviposition site. During 2019, a total of 63,450 eggs were recorded, while only 29,184 in 2020. The progress of mosquito developmental stages has been monitored and recorded in the laboratory every week. In 2019, a total of 1,391 adult mosquitoes were sampled, 98% of which belonged to *Aedes (Stegomyia) albopictus* (Skuse, 1895). In 2020, 427 adult mosquitoes did develop and only 19 belonged to *Ae. japonicus* (Theobald, 1901). Both mosquito species were recorded at 5 locations in 2019 and at 3 locations in 2020. A significant dominance of *Ae. albopictus* was recorded for both years, probably due to the most favourable oviposition place and potentially increasing artificial containers as breeding sites in the vicinity.

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## COI haplotype diversity in three exotic *Aedes* species in Belgium

A. Vanderheyden<sup>1</sup>, N. Smitz<sup>2</sup>, I. Deblauwe<sup>3</sup>, K. De Wolf<sup>3</sup>, S. Gombeer<sup>1</sup>, K. Meganck<sup>2</sup>, A. Schneider<sup>3</sup>, J. De Witte<sup>3</sup>, A. Vanslembrouck<sup>3</sup>, W. Dekoninck<sup>1</sup>, T. Backeljau<sup>1,4</sup>, M. De Meyer<sup>2</sup>, R. Müller<sup>3</sup> and W. Van Bortel<sup>3,5</sup>

<sup>1</sup>Royal Belgian Institute of Natural Sciences, Taxonomy, Vautierstraat 29, 1000 Brussels, Belgium, <sup>2</sup>Royal Museum for Central Africa, BopCo, Leuvensesteenweg 13, 3080 Tervuren, Belgium, <sup>3</sup>Institute of tropical medicine, Unit of entomology, Nationalestraat 155, 2000 Antwerp, Belgium, <sup>4</sup>University of Antwerp, Evolutionary ecology group, Universiteitsplein 1, 2610 Antwerp, Belgium, <sup>5</sup>Institute of tropical medicine, Outbreak research team, Nationalestraat 155, 2000 Antwerp, Belgium; [avanderheyden@naturalsciences.be](mailto:avanderheyden@naturalsciences.be)

Exotic *Aedes* mosquitoes are introduced and established in several European countries. Some of these species are of public health concern (vectors of pathogens). Successive monitoring projects have been undertaken in Belgium since 2007, during which three exotic *Aedes* species were identified at multiple points of entry (PoE), viz. *Ae. japonicus*, *Ae. koreicus* and *Ae. albopictus*. To validate their identity and investigate their genetic diversity (COI), 301, 144 and 95 specimens of each species, respectively, were screened for sequence variation. The haplotype composition of *Ae. albopictus* differed between PoE at international import companies and highway parking lots. A similar pattern was observed for *Ae. japonicus*, when comparing the haplotype composition at an international used tyre company vs sampling locations along the Belgian-German border. The difference in haplotype composition between PoE may reflect different introduction pathways. This is in accord with monitoring activities, where passive ground transport was proposed as new pathway in Belgium for *Ae. albopictus*, probably from a nearby population (French/German). Likewise, it was predicted that *Ae. japonicus* might cross the German border. The results of the present study are in line with these assumptions. Concerning *Ae. koreicus*, haplotypes were identical at the two PoE (5.4 km apart). Further genetic investigations to better understand the species' population dynamic are required.

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