

High-resolution optical identification of *Aedes albopictus* and *Aedes aegypti* eggs

*Nikoleta Anicic*¹, *Carlos F. Marina*², *Florence Fouque*³, *Raman Velayudhan*⁴, *Eleonora Flacio*¹

¹Department for Environment Constructions and Design, Vector Ecology Unit, Institute of Microbiology, University of Applied Sciences and Arts of Southern Switzerland, 6850 Mendrisio, Switzerland. ²Centro Regional de Investigación en Salud Pública/Instituto Nacional de Salud Pública (CRISP/INSP), Tapachula, Mexico. ³TDR/WHO, 1211 Geneva, Switzerland. ⁴NTD/WHO, 1211 Geneva, Switzerland

Abstract

Invasive mosquito species of the genus *Aedes* pose a risk to public health due to their ability to transmit viral diseases (e.g. Dengue, Chikungunya, Zika), which is why there is a need to monitor and control these species. The objective of this project was to develop a high-resolution optical instrument to identify differences in the chorion structure of eggs of the two main vector species (*Aedes albopictus* and *Aedes aegypti*). This system would allow a rapid analysis of the samples collected in the field and a quantification of the abundance of the two species when both are present, in order to improve arboviral disease surveillance. In the first part of the project, researchers from the Centro Regional de Investigación en Salud Pública/Instituto Nacional de Salud Pública (CRISP/INSP) collected *Aedes* eggs in Mexico using ovitraps, while the Vector Ecology Unit (SUPSI-DACD-Institute of Microbiology) performed the optical analysis of *Aedes* eggs with a high-resolution microscope. The results obtained were confirmed by molecular analysis.

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