

#45

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## **Effective and eco-friendly delivery of a *Bacillus thuringiensis*-based insecticide in *Aedes albopictus* larvae**

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Climate change and trade globalisation is causing the expansion of mosquitoes areals to non-endemic regions, together with the pathogens transmitted by their bite. To control this spread, we focused on the production of an innovative biorational floating raft containing a bioinsecticide and an attractant (i.e., *Bacillus thuringiensis* var. *israelensis*, Bti, and the yeast *Saccharomyces cerevisiae*) to control mosquito larvae.

We performed bioassays with a Bti-based commercial bioinsecticide to measure susceptibility to this product in larvae of different colonies of the Asian tiger mosquito (*Aedes albopictus*). Then, we tested the toxicity of chitosan-based hydrogel rafts containing the bioinsecticide alone or with yeasts in laboratory and semi-field conditions. The “MosChito” rafts resulted attractive for the larvae that eroded and ingested the hydrogel, and proved to be very effective in killing larvae over a month period demonstrating that the hydrogel preserved the bioinsecticide activity.

Our results showed that “MosChito” rafts may represent an original, eco-based and user-friendly floating solution for mosquito larval control in residential or urban environments.