

Mosquito alert app: How to track invasive mosquitoes

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MOSQUITO



ALERT



Welcome

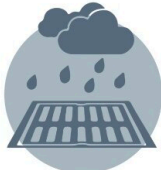
What would you like to do?



Report bite



Report mosquito



Report breeding site



My data



Credit: ActionAedes Invasive Mosquitoes (AIM)

Have you ever been bitten by a tiger? A tiger mosquito, that is. This invasive species and other close Asian species have found their way to Europe. But thanks to an ingenious smartphone app developed by the COST Action Aedes Invasive Mosquitoes (AIM), you can do more to bring this insect under control than simply swinging your flyswatter.

Today, we catch up with AIM's chair, Alessandra della Torre, a scientist on the front line of mosquito research and control. She stopped by to talk about her latest achievements, as well as her experience in chairing this COST Action.

COST: We published an article about AIM for World Mosquito Day (20 August) last year, what has the Action been up to since then?

We progressed in implementing standardized invasive mosquito surveillance and monitoring activities across Europe. Countries monitor mosquitoes in many different ways, and levels of expertise vary. By conducting direct experiments in the field in a dedicated Training School, trainers and trainees came to agree upon common harmonized protocol for invasive mosquito monitoring. Consecutively, we engaged 42 volunteer teams from 24 European Countries to apply this protocol. This allowed us to collect standardized data in 3 consecutive mosquito seasons, which is an unparalleled set of data. These data allow us, for example, to compare seasonality and abundance of Aedes Invasive species across Europe and, in a subsequent phase, to compare field data

with reports obtained by [citizen science](#) (for example, the Mosquito Alert app).

COST: Tell us more about this Mosquito Alert app to which your Action contributed?

The Mosquito Alert app is a Citizen Science project launched in Spain in 2014 to trace the invasion and spread of the [tiger mosquito](#), *Aedes albopictus*, throughout the country. Photographic records of mosquitoes were sent to expert entomologists who identified the species, compiled a database, and mapped the spread. Later, the app was updated to focus on five species, including all *Aedes* [invasive species](#), and to include the possibility of sharing records of mosquito bites.

AIM had a pivotal role in raising the project to a pan-European level. People all over Europe volunteered with translation, and the app is now available in 19 different languages. Every country in Europe can now use it. Our Action worked on the translation, promotion, and support of this app.

Consequently, we are starting to see nice results, having now collected data from thousands of citizens who have sent in over 70,000 records!

COST: Tell us more about how you involved policymakers in your COST Action?

As the Mosquito Alert app can easily be used alongside existing methods of mosquito surveillance, our objective was to involve national policymakers to help make our app a standard monitoring tool in their respective countries.

In Spain, the involvement of policymakers is already achieved, seeing as

the app existed before the start of the Action. In Italy, we approached several municipalities. As a result, some of them are now promoting the app on our behalf: informing people of the app's existence, and explaining why they should use it.

Our final goal is to convince additional public authorities to promote the app. We would provide them data gathered from the general public, showing how mosquitoes are distributed, and which species are present in a given municipality. We would then offer advice on how to improve their municipality's current mosquito control efforts.

COST: What other problems are left to tackle in the field? How do you see its development?

When I wrote the Action proposal, I hoped that we would strengthen the relationship with public-health representatives in the participating countries. In reality, we only achieved this in a few cases. Our community mostly consists of various research groups. There still much to do to establish a closer relationship between researchers and the representatives of public health in order to improve control of invasive mosquitoes and prevent the transmission of pathogens from mosquitos to humans.

COST: Does climate change have an impact on mosquitoes?

Of course, but it depends. Our Action is focused on invasive mosquitoes, and these invasions are primarily linked to globalization. Still, once invasive mosquitoes arrive, they may or may not be favored by climatic changes. For example, higher temperatures in temperate regions such as Europe are favorable to mosquitoes, with drier climates being generally unfavorable. And this, in fact, is something that we also want to model,

thanks to the data gathered by our harmonized protocol.

COST: How was your experience in chairing a COST Action?

For me the most rewarding aspect was in meeting and working with many people who are very keen to contribute, despite not receiving financial support for their research. So much was done on a voluntary basis. I chaired this Action on a voluntary basis, but I was not the only one. There was a good group of senior people supporting me, and many other people supporting the activities we proposed.

COST: Did it bring you more visibility, new contacts? Any positive aspects for your career?

It was very rewarding because my visibility in Europe increased. I think I can safely say that I now know most people working in this field in Europe, and that most of them know me. However, from a career perspective, I think research projects are more rewarding because one sees more direct benefits.

And in terms of publications, we are now starting to publish our results and produce reports for public health institutions dealing with mosquito control.

For example, a core file with 19,130 records from the first year implementation of the harmonized monitoring has been made available to the entire scientific community by publishing it as a Darwin Core archive in the Global Biodiversity Information Facility data repository.

Also, larger networks have more opportunities to apply for grants, and we are currently preparing several other large projects, which we hope

will receive funding. So from this perspective, I think it has been good.

COST: What do you perceive to be the biggest impact of the Action?

I think we created a very good community in the Inclusiveness Target Countries (ITCs). Before this COST Action, Western Europe was already collaborating, but there were only a few groups in these other countries. I think we now have a very good integration of both. This is rewarding.

Eventually, by the end of the Action, we will have some data at the European level that is unprecedented. For instance, the European Center for Disease Control (ECDC) has already expressed interest in data from the three-year standardized monitoring. So, I believe that the exploitation of the data will continue beyond the end of the Action.

The most rewarding of all is that we created a community of very active people who were happy to participate. And we got results at European level that would otherwise have been impossible to achieve.

More information: Mosquito Alert app:
[play.google.com/store/apps/det ... igatrapp&gl=US&pli=1](https://play.google.com/store/apps/details?id=com.igatrapp&gl=US&pli=1)

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