

Mosquito on Board: Do Exotic Mosquitoes Stow-away on Aircraft Entering Europe?

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Background:

A changing climate and the subsequent expansion of the range of vector mosquitoes means it is crucial to examine possible routes for their introduction into Europe. We examined the possibility of exotic mosquitoes being imported into Europe through commercial air travel.

Materials and methods:

This study examined aircraft arriving at Zürich airport through two methods. The first consisted of performing sweeps of the passenger areas of aircraft after passengers have disembarked using a handheld vacuum system. The second involved placing passive box traps in the cargo hold of aircraft during their travel to their destination country and back, and then examining the traps for adult mosquitoes. Samples were then examined under a dissecting microscope for the presence of mosquitoes, and any found are identified to species.

Results:

Through close collaboration with airline companies and the Zürich international airport, we were able to perform sweeps of incoming aircraft starting November 2021. A total of 48 aircraft coming from mosquito vector endemic areas were examined for the presence of stowaway mosquitoes using the methods outlined above, and as of yet, no mosquitoes were found. The results will be used to conduct a risk assessment of exotic mosquitoes entering Germany through the same pathway.

Conclusion:

This study examined the risk of exotic mosquitoes being imported through air travel, in Switzerland, and neighboring Germany. Although the risk is small, due to the expansion of mosquito-favourable climate zones, it should still be taken seriously, and other pathways should be examined.