M-Tego

M-Tego
[ɛm • Teygō] (*noun*)
'M(osquito) trap' in Swahili

A mosquito trap for malaria control in Africa

Malaria is a major problem in sub-Saharan Africa, with as a result over 400,000 deaths each year. With pesticide resistance on the rise, new methods have to be developed that will reduce malaria transmission. The mosquito trapping method, in combination with bed nets, has been proved to be effective. The M-Tego is a mosquito trap embodiment designed with the user, sustainability and performance in mind.

M-TEGO IS FUTURE-PROOF

The M-Tego is designed to be suitable for multiple applications that will occur in the coming years. First, large-scale research projects are needed to convince major partners, such as the WHO, of the benefit of mosquito trapping.

After WHO approval, the trap can be deployed in malaria control programmes across sub-Saharan Africa. All the while, research applications will continue. Users from all sides were heavily involved in the design process.

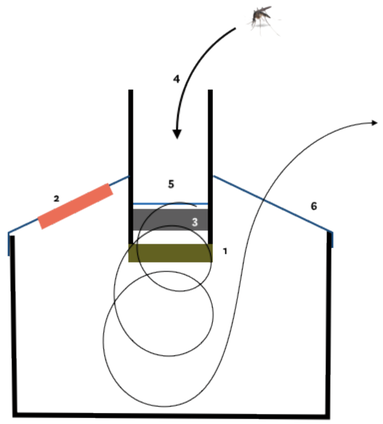
Robust, small and light, the trap is suitable for field sampling (scientific use), as well as malaria control projects.

M-TEGO IS SUSTAINABLE BEYOND GREEN

The trap can be connected to a solar powered system, which also brings affordable lights and phone charging to people off the grid.

In order to make sure that broken traps are repaired, a network of micro-solar companies might be suitable partners. These companies have a vast network of shops and technical crew, and also sell the required solar panels and batteries.

After a long life in use, the material loop can be closed by collection, refurbishing, and re-use of traps. The trap is designed for repairability.



1. An odour strip is suspended in the trap, luring mosquitoes from the long (10-100m) distance.

2. Heat elements lure the mosquito on the short range (<50cm)

3. A fan draws in air and mosquitoes

4. Mosquito enters the trap, being sucked in by a fan

5. Mosquitoes are captured here, unable to escape the airflow

6. Scented air is expelled again through a mesh

€24

Price for the trap, excluding solar panel

±3X

More effective than existing traps used before in mass trapping experiments, based on initial testing

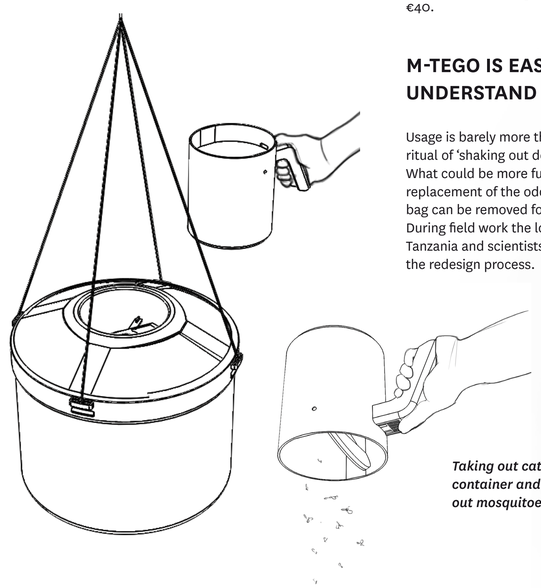
M-TEGO EXCELS AT PRICE AND PERFORMANCE

With a synthetic odour blend, heating elements and popping colour contrast, the M-Tego captures about 3X more mosquitoes than existing traps, while being extremely easy to use and maintain. The sales price at €24 is around 3 times lower than competing traps.

For scientific use, a trap with additional features such as CO_2 pipe is designed for €40.

M-TEGO IS EASY TO UNDERSTAND

Usage is barely more than the weekly ritual of 'shaking out dead mosquitoes'. What could be more fun? For repairs and replacement of the odour, the foldable bag can be removed for easy access. During field work the local people in Tanzania and scientists were involved in the redesign process.



Taking out catch container and shaking out mosquitoes

Cedric van de Geer

Adapting a mosquito trap for future deployment in African communities

Februari 18th, 2019
IPD, faculty of Industrial Design Engineering

Committee

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Mentor: Jan-Carel Diehl

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