
Alexandra Hiscox, Wageningen University, The Netherlands

Thursday 29th January 2015, RBM VCWG 9th Outdoor/Residual Malaria Transmission Work Stream Meeting
Why do we need a tool for sampling outdoor-biting mosquitoes?

- Need to assess outdoor mosquito populations in a standardised, cost-effective manner.
  - Measure changes in vector populations across time and space.
- Importance of sampling host-seeking females.
- Ethics of conducting human landing catches.
The mosquitito trap – early 2012
First Suna trap prototype, mid-2012

- “Suna” meaning mosquito in DhoLuo language.
- Solid metal cone introduced – more robust than fabric.
- Fabric base replaced with flexible plastic mesh base.
- Introduction of CO$_2$ release pipe.
Second Suna trap prototype – end 2012

- Suna trap prototype with a rigid plastic base (reduced air-flow caused reduced performance).
The final Suna trap – early 2013
Long-lasting attractants to mimic a human host

- The Mbita-5 odour blend (MB5).


  **Assessing the efficacy of candidate mosquito repellents against the background of an attractive source that mimics a human host**

  D. J. Menger, J. J. A. Van Loon and W. Takken

- Impregnated on to nylon strips.

- Remains attractive to *An. gambiae s.s.* even after 4 months of continuous use in the field (Mweresa in prep).
Comparison with MM-X trap

Mean proportion of 50 An. coluzzii females (%)

Trap Type

MM-X

Suna

http://www.malariajournal.com/content/13/1/257
Trap positioning outside houses

![Graph showing mean catch per trap night for different trap types and heights above ground. The graph compares An. gambiae s.l., An. funestus, and Culex spp.]

WAGENINGEN UR
For quality of life

icipe

http://www.malariajournal.com/content/13/1/257
Odour-baited Suna traps for malaria control? SolarMal – Rusinga Island
SMoT
(Solar-powered Mosquito Trapping system)
The SolarMal Project

- Against a background of LLINs and case management
- Odour-baited Suna traps installed outside 4,200 houses (~25,000 people).
  - Rollout commenced June 2013, will be complete by May 2015.
- Outcome measures:
  - Clinical malaria incidence, malaria parasite prevalence
  - HDSS
  - Mosquito densities, species composition and sporozoite rates
  - Sociological indices – perceptions, adherence, willingness to pay.
What next?

* Comparison with HLC inside and outside houses
* Testing traps in multiple locations - South America, West Africa, Southeast Asia. Urban areas? Forests?
* Trap modifications to preserve condition of trapped mosquitoes.
* Even longer lasting odour baits?
* Impact as a tool for malaria control – SolarMal.
* Economic evaluation – cost-effectiveness, willingness to pay, distribution channels.
Acknowledgements