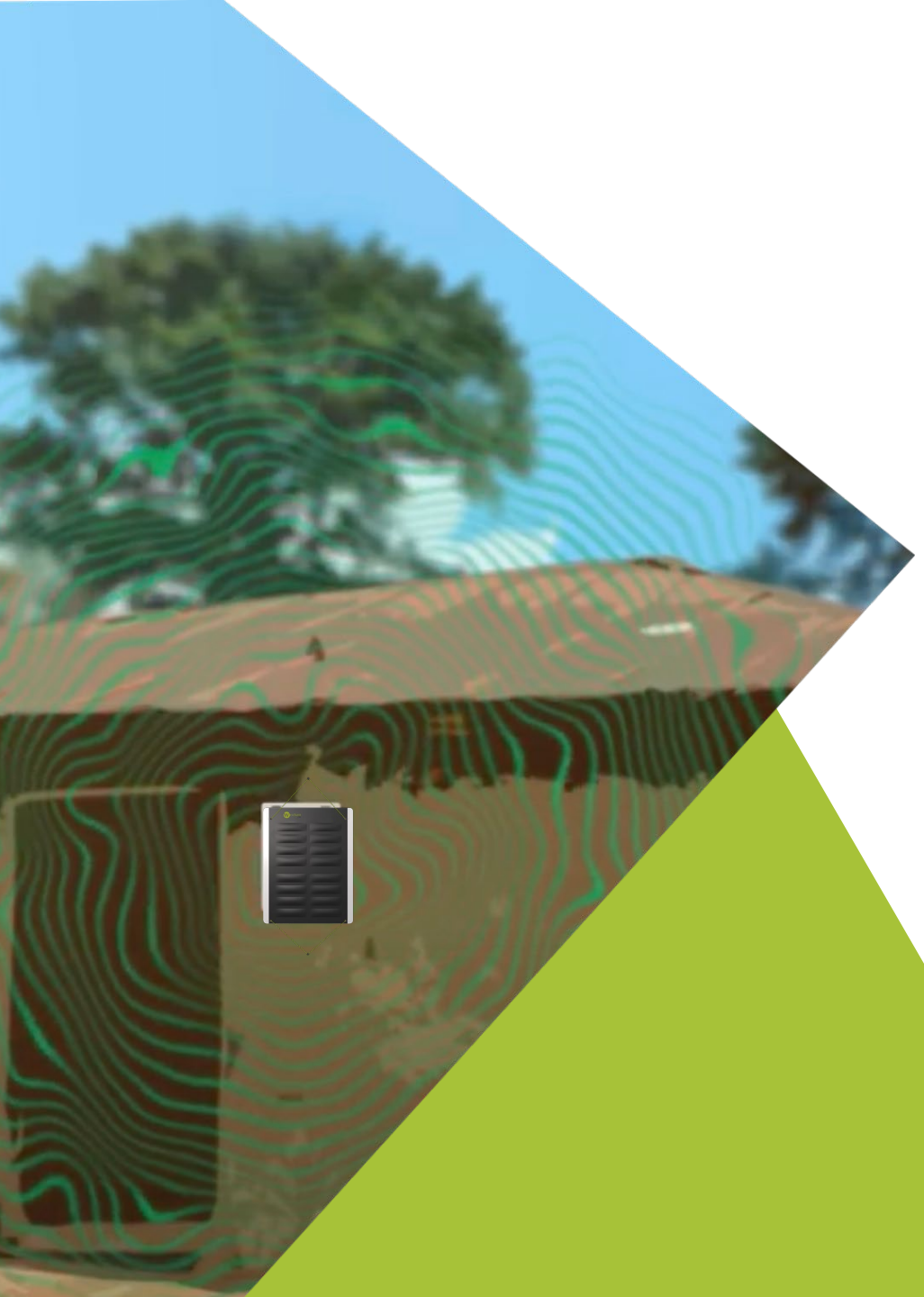
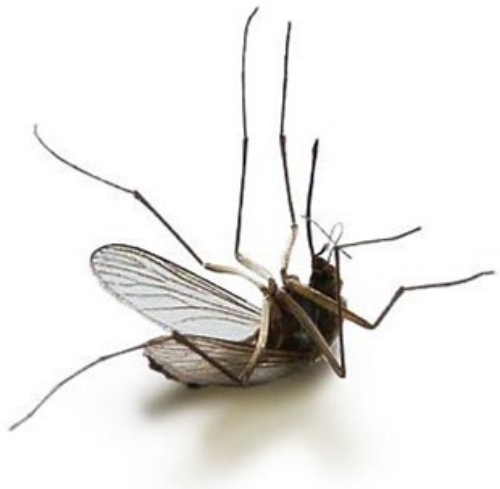


ATSB®

(Attractive Targeted Sugar Bait)

By Westham CO.



In this Presentation

- Where are we
- Method and Product
- ATSB® – till Today
- Preparation of epidemiological trials
- Epidemiological trials
- Insights to date
- Next Steps of ATSB®

Where are we

Epidemiolocal trials:

The Epidemiolocal trials are being conducted in three countries: Kenya, Zambia and Mali

The public health value of ATSB® will be assessed when data from all three trials are available (Apr/24)

Zambia results will be first presented at ASTMH

PQ dossier almost completed, waiting for the efficacy results

Market uptake activities:

Product optimization

Production scale up

Regulatory dossier

Demand forecast and Funding planning

Logistics and operation

Country engagement

Marketing

Method and product

Method: The ATSB® is a unique *'Attract & Kill'* approach to eliminate mosquitoes that feed on the bait

Application: Sarabi, the 1st product based on the ATSB® method, is a 2D bait-station to hang on walls

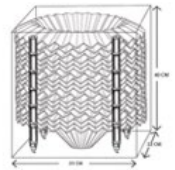
- <u>Two component system:</u>
  - **Bait formulation:** includes the attractants, feeding stimulant and insecticide
  - **Station:** Protects the bait from abiotic conditions and non-target insects while providing access to mosquitoes

- <u>Uniqueness (Benefits):</u>
  - The method – attract and kill
  - Gut toxin Active Ingredient – Gut toxin enables a new mode of action
  - Outdoor use
  - Low environmental impact
  - Non-intrusive intervention

ATSB® - till today

- ATSB® is a new vector control method developed by Westham Co., based on Prof. Schlein's & Dr. Muller's experiments, to control mosquitoes in general and malaria transmission in a peri-domestic environment
- In 2016 and 2017, large-scale proof-of-concept field studies were conducted in Mali (initiated and supported by IVCC), which demonstrated a significant impact on mosquito density and survival

- Following the successful POC in Mali, Westham received the support of the Bill & Melinda Gates Foundation and shifted its focus to vector control in sub-Saharan African countries
- ATSB® product development started over a decade ago and included:
  - Definition of the **method**
  - Search for the applicable **attraction materials**
  - Selecting the most appropriate **Active Ingredient**
  - Designing the **application**
  - Developing the **production process** and building the required machines
  - Specifying the **deployment** activities and **overall operation**
  - Establishing the **QA procedures** through physical tests and entomological experim
  - Balancing human safety and environmental sustainability with affordable pricing



Preparation of the epidemiology trials

- Prototype design: remain efficacious for at least 6 months when deployed outdoors in targeted countries
- Manufacturing quality: able to produce and ship product with a defined Quality Assurance process
- Entomological evaluation:
  - Small cage efficacy
  - Durability evaluation in real conditions
  - Feeding rate assessment in field
  - Attractancy evaluation
  - Density placement evaluation
  - Competition with natural sugar sources
  - Modelling (IDM, Swiss TPH and Imperial College London)
- Epidemiology trial preparation:
  - Baseline in targeted location
  - Cohort enrolment

Epidemiological experiments

- The trials conducted in three countries: Kenya, Zambia and Mali
- In each region 70 – 80 villages participated; ATSB® and control
- Trials will last 2 years
- Trials performed above standard of care (ITN or IRS in treated and control arms)
- The public health value of ATSB® as an intervention will be assessed when data from all three trials are available

Insights to date

Product:
- Product remain efficacious for more than 6 months in harsh conditions
- Replacement rate is driven by mold growth and deterioration by rodents

Social acceptance:
- ATSB® is well accepted if presented to communities

Production scale up:
- Demonstration that ATSB® can be produced at scale while maintaining quality
- Scale up for market entry will require enhanced production line for quantity and price optimization

Safety:
- No adverse effect recorded to date (final assessment when epidemiology trials will conclude)

Deployment optimization:
- Further work (together with enhanced production line) is needed to optimize product deployment (distribution, hanging on houses, density, disposal)

Next Steps of ATSB®

ATSB® is 1st in class product, and we should learn more about the challenges and the potential of this new intervention

Determinants the efficacy

We are in a durability improvement process to minimize replacement rate

Optimize product deployment with communities' cooperation (e.g., product monitoring and replacement)

Further investigate against other vectors/diseases

How I would like to see the ATSB® products:

- Effective
- Simple to deploy
- Highly cost effective
- Long lasting (one round per year)
- Used against vector and nuisance mosquitoes

Thanks to our many partners