Mosquito Control by Combining chemical and biological measures in Western Kenya, Africa – a feasability study

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Background

- Mosquitoes = disease vectors
  - Malaria (863,000 Deaths per year, 89% in Africa, WHO, 2009)
  - Dengue, West Nile Fever …
- Global change -> shift in distribution

Aim of the project:

- Integrating novel ANTAGONIST STRATEGY into existing control measures in Kenya
- Capacity building of the local population for integrated vector control (IVM)

Study area and methods

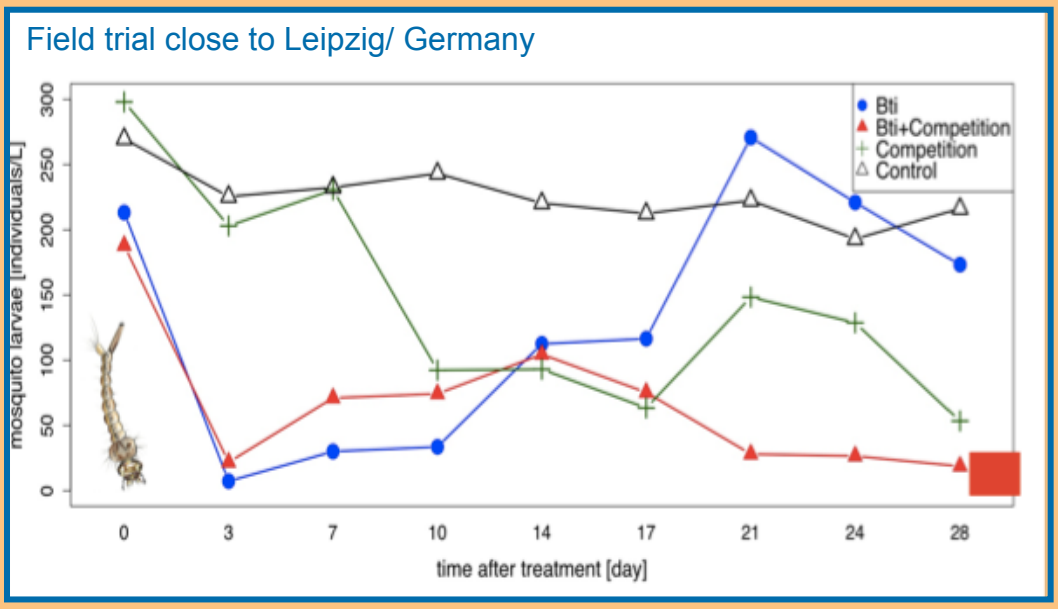
- **ICIPE** field station in Mbita, West Kenya, lake Victoria
- Field monitoring
- Semi-field and field trials with **antagonists** + **Bti**

Watering place, Lwanda Nyamasari

Abandoned fish pond, Rusinga Island

The ANTAGONIST STRATEGY

Field trial close to Leipzig/ Germany



Approach

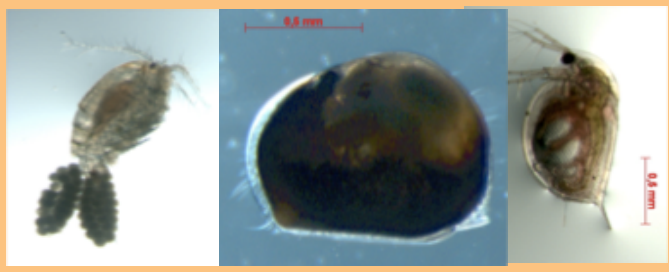
Kröger et al. in prep.

Combining natural antagonists (competitors and predators) with biological larvicides (Bti):

- Bti will acutely reduce mosquito larvae
- Antagonists will prevent recovery of mosquito larvae
- **Advantage**: reduced amount of larvicides → lower risk of resistances, reduced costs

Validation

microcosms and field in Germany (Kröger et. al., submitted) and Cameroon (Meyabeme et al., in prep.)



Potential competitors (crustaceans)

Results

- ANTAGONIST STRATEGY is a good approach to control mosquito larvae in small ponds
- Negative relation-ships, especially between *Anopheles* sp. and crustaceans

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References:

- WHO (2009) World Malaria Repoert 200. Geneva, Switzerland
- Kröger I., Duquesne S., Dziock F., Liess M. Two are better than one - sustainable mosquito larval control in the field by combined actions of Bti and natural competitors (submitted)

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African Insect Science for Food and Health

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