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Experimental hut study to evaluate the bio-efficacy and residual activity of Sovrenta® 15WP against malaria vectors in Tanzania.

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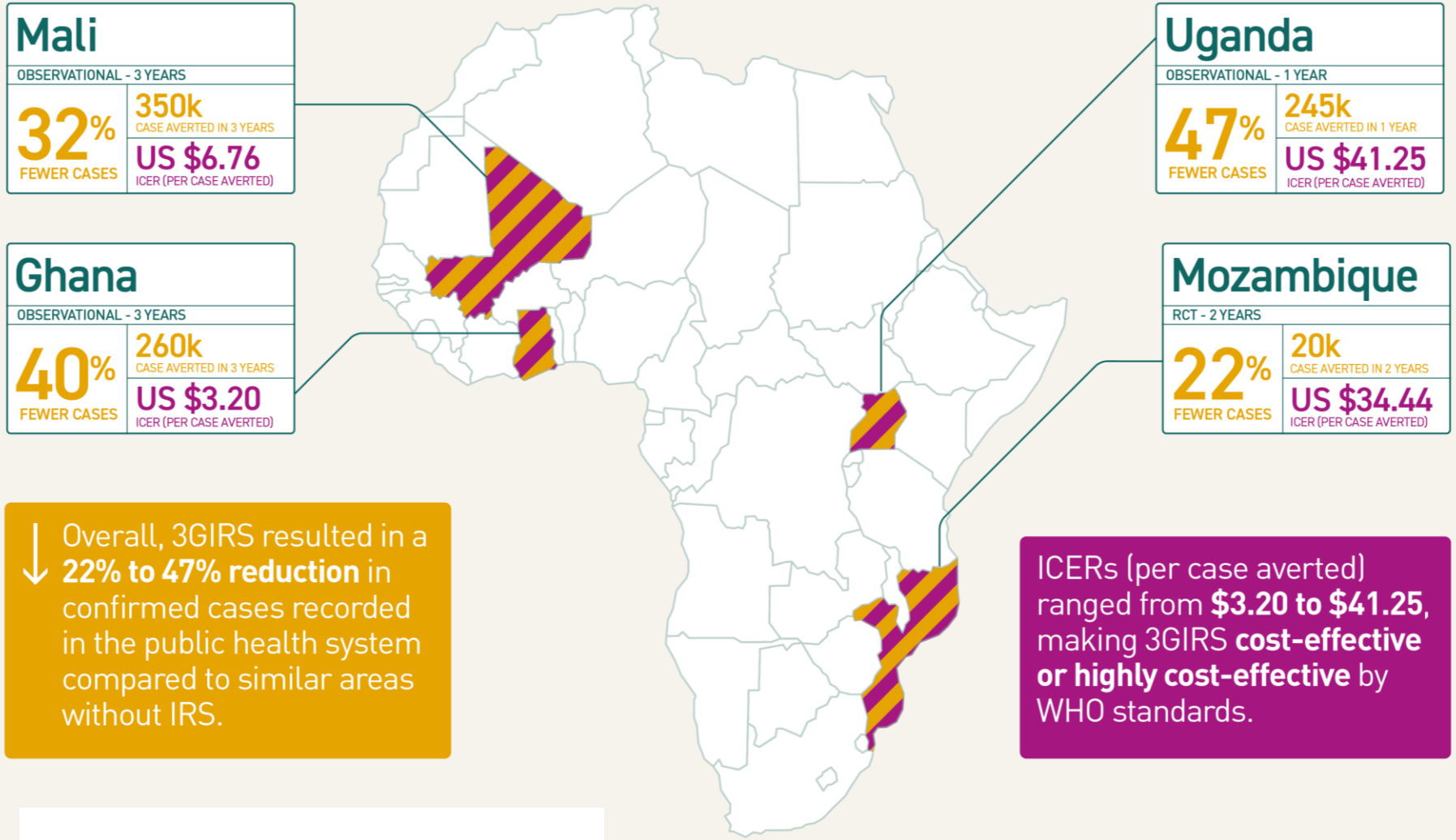
IRS is in decline although it is highly cost effective

Global population at malaria risk protected by IRS
5.5% in 2010
1.8% in 2022

World Malaria Report 2023

Malaria Case Reduction and Cost-Effectiveness



↓ Overall, 3GIRS resulted in a **22% to 47% reduction** in confirmed cases recorded in the public health system compared to similar areas without IRS.

ICERs (per case averted) ranged from **$3.20 to $41.25**, making 3GIRS **cost-effective or highly cost-effective** by WHO standards.

Yukich *et al. Malaria Journal* (2022) 21:185
https://doi.org/10.1186/s12936-022-04160-3

Sovrenta 15WP: a formulation for indoor residual spray (IRS)

- Contains the novel isoxazoline insecticide, isocycloseram
- IRAC group 30 insecticide
- Inhibits GABA and glutamate gated chloride channel
- Hyper-excitation and death of the insect
- New product and data presented for the first time

Residual efficacy of **Sovrenta 15WP** at 120 mg ai /m^2 in experimental hut for 12 months

Substrates:
1. Mud
2. Concrete

Positive controls:
1. Actellic® 300CS - fast acting (organophosphate)
2. SumiShield® 50WG - slow acting (neonicotinoid)

Mosquitoes :
Wild pyrethroid resistant *Anopheles arabiensis* (malaria vector)

Experimental huts:
8 huts, 4 mud and 4 concrete huts.

20 collection nights per month per hut

Double blinded study and powered at 86%

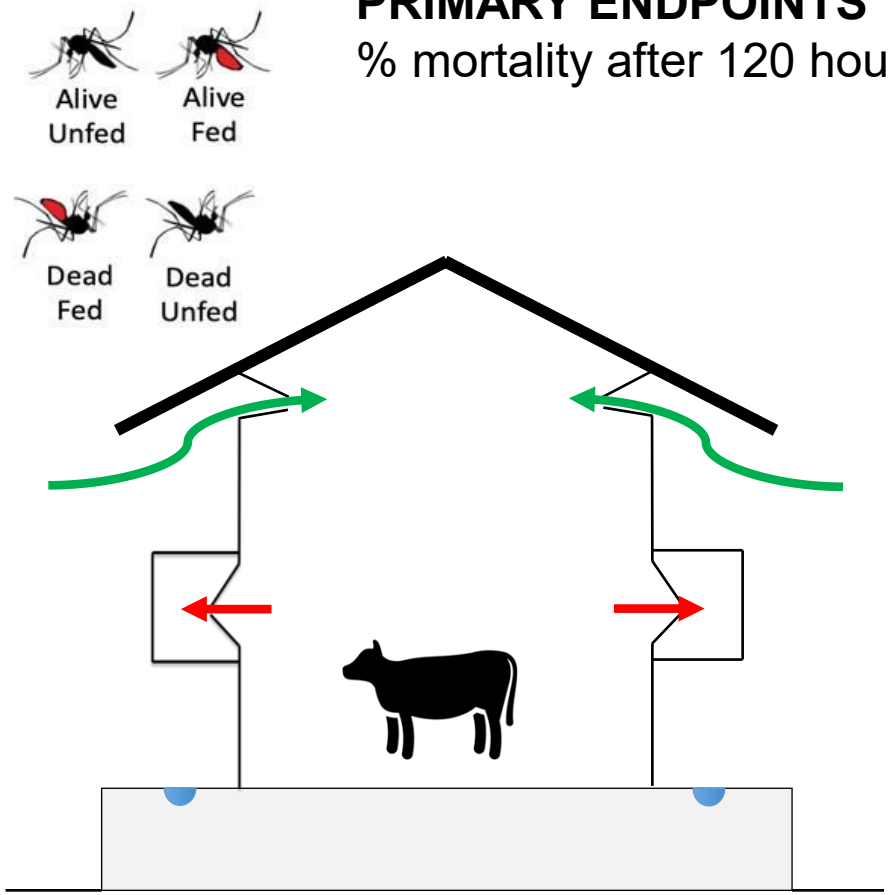
Modified Rapley hut design

2.5m x 2.5m x 2.25m
10 cm eave gaps on four sides

Funnel to prevent egress
2 window traps

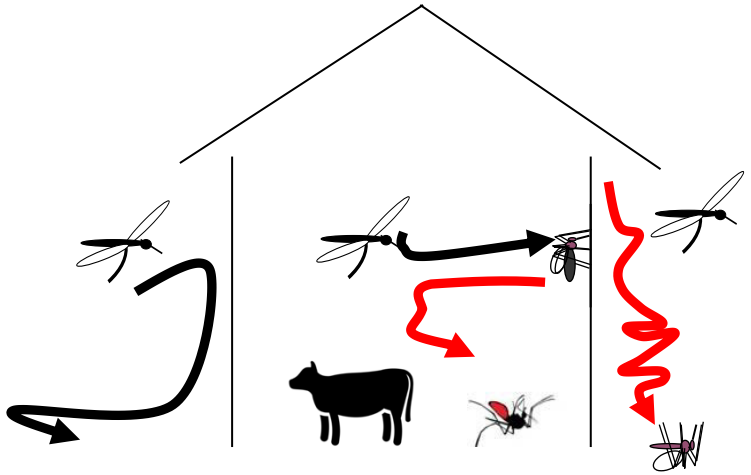
PRIMARY ENDPOINTS

% mortality after 120 hours



SECONDARY ENDPOINTS

% mortality at 24 hour intervals up to 168 hours



Cow used for ethical considerations and study powering

Experimental hut experiment's procedures



Experimental huts ready for spraying


Tank mixing

Spraying

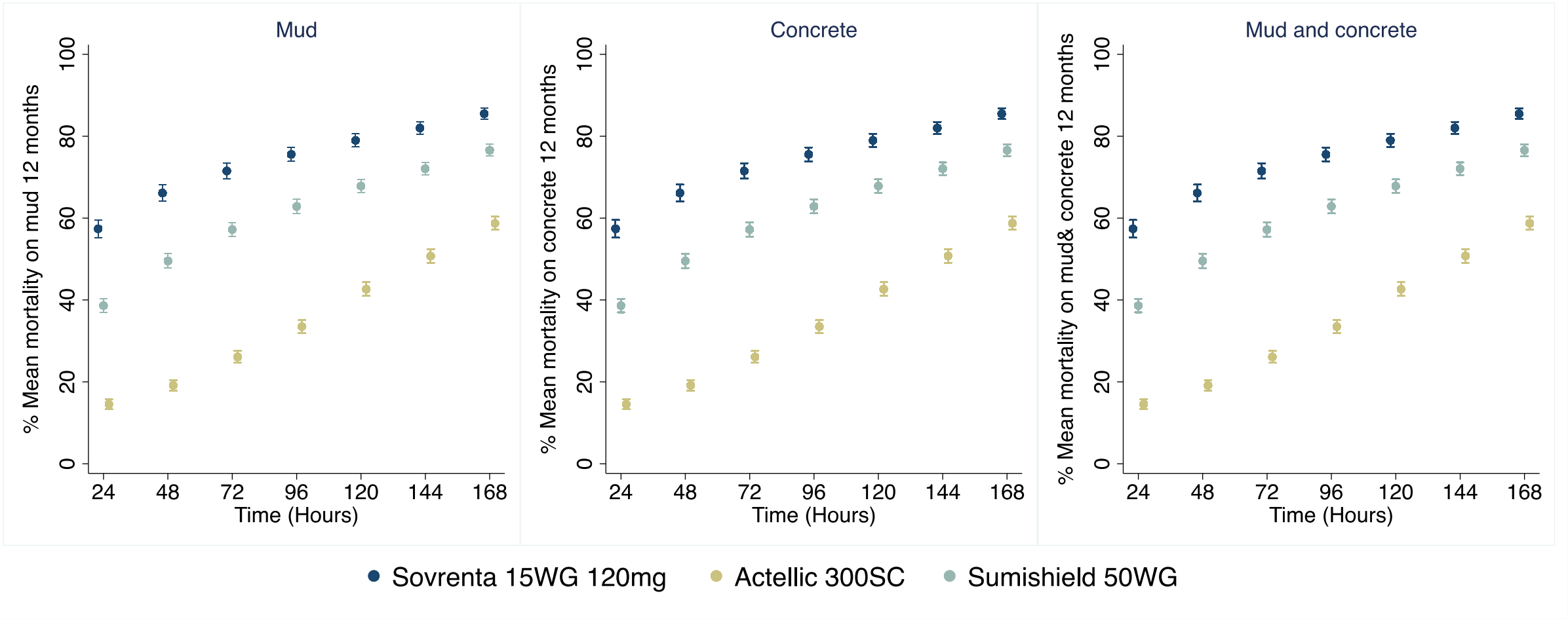

Animals in the hut

Mosquito sorting

Mortality monitoring

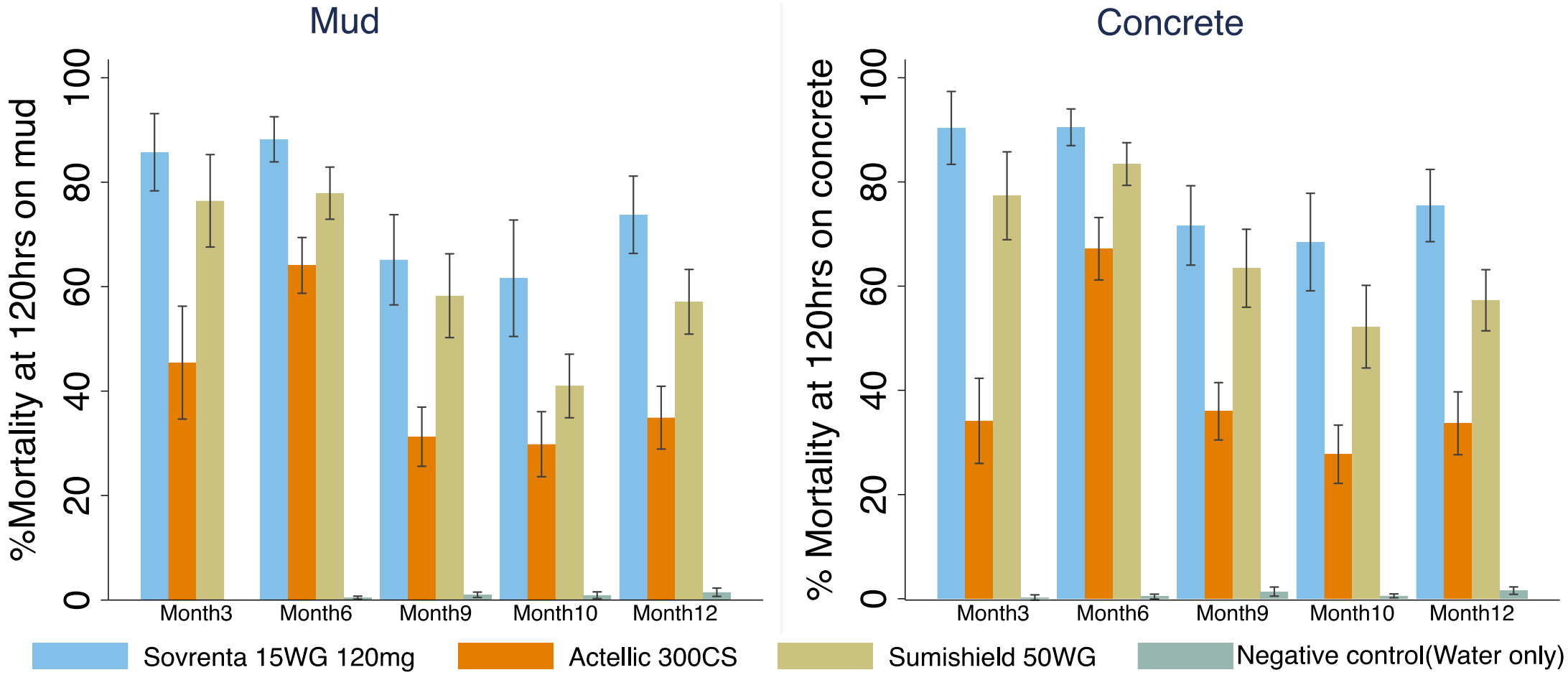
Sovrenta 15WP outperformed Actellic® 300CS and SumiShield® 50WG at all holding times

– all data for 12 month trial combined



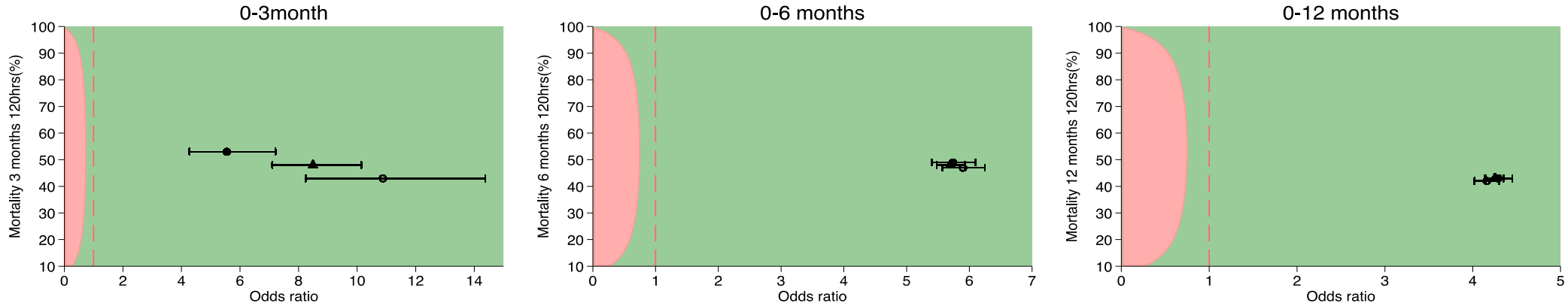
Sovrenta 15WP outperformed Actellic® 300CS and SumiShield® 50WG at all time intervals on mud and concrete

– data for each 3 month interval

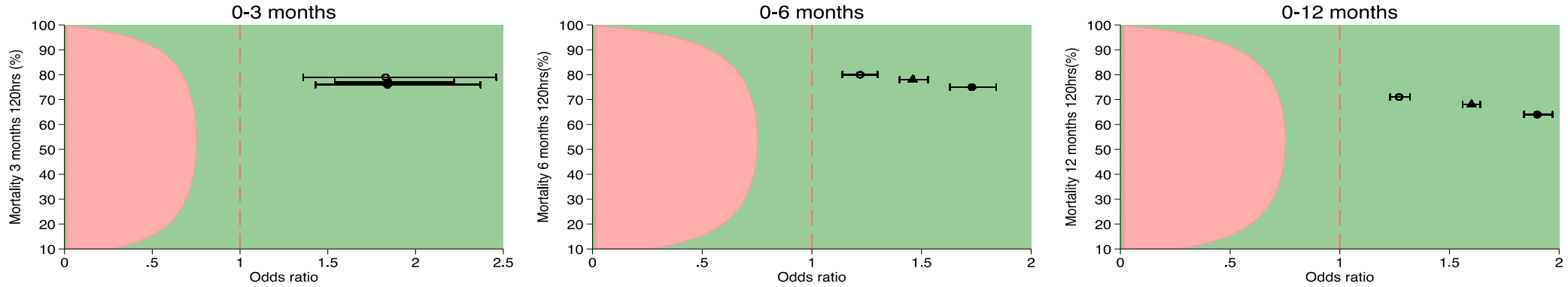


Sovrenta 15WP 120 mg ai/m² was non-inferior and superior to Actellic® 300SC and SumiShield 50WG

Actellic® 300SC



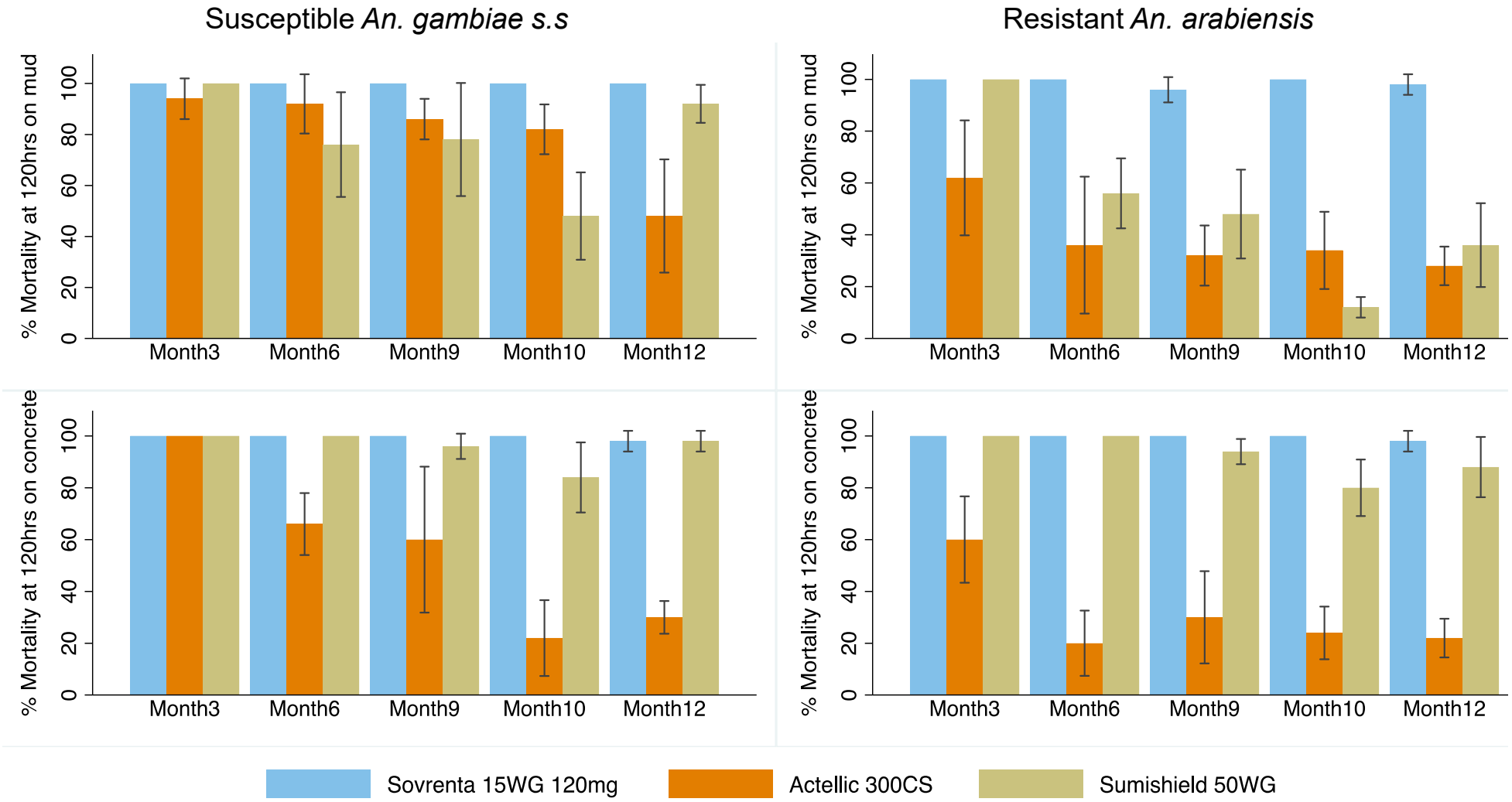
SumiShield® 50WG



Cone test: Sovrenta 15WP demonstrated residual efficacy > 12 months

Mud at 120hrs

Concrete at 120hrs



Conclusion – efficacy of Sovrenta 15WP 120mg ai/m^2

1. 12 months **residual efficacy** against wild free-flying pyrethroid-resistant *An. arabiensis*

2. Superior mosquito mortality to **Actellic® 300CS and SumiShield 50WG**
   - all holding times up to 120- hours,
   - all time intervals from 3 months to 12 months
   - on both mud and concrete

Likely to show public health benefit

Currently under review by WHO PQ

Acknowledgements