CREC/LSHTM Collaborative Research Programme
SANAS OECD GLP Compliant Facility N°G0028

Newsletter

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CREC/LSHTM Experiment Hut Stations for Vector Control Product Evaluation

In keeping with guidelines stipulating the need of a suitable system for WHOPES phase 2 semi-field evaluation of vector control tools, CREC / LSHTM installed a field site at Covè (7°14′N, 2°18′E), central Benin in 2013. The site is situated approximately 160km from Cotonou where the Main Facility and Insectary are located. Currently, there are 2 experimental hut stations set in a huge rice growing area which provide extensive breeding sites for *Anopheles gambiae s.l.* throughout the year.

The rainy season extends from March to October and the dry season from November to February. Irrigated rice farming is practiced within two periods every year at the hut stations, the first period being March to May and the second from October to January. The vector population at Covè consists of a mixture of *An. coluzzii* (formerly *An. gambiae* M form) and *An. gambiae* s.s. (S form) with the latter occurring at lower frequencies (23 %) and only in samples collected in the dry season. There is a high prevalence of resistance to pyrethroids and DDT (>90 % bioassay survival) with pyrethroid resistance intensity reaching 200-fold compared to the laboratory susceptible *An. gambiae* Kisumu strain. The L1014F allele frequency was 89 %, meanwhile CYP6P3, a cytochrome P450 validated as an efficient metabolizer of pyrethroids, was over-expressed. Local malaria vectors show susceptibility to organophosphates and carbamates (Ngufor *et al.,* 2015).

The high vector density and strong levels of pyrethroid resistance at the Covè experimental hut stations make it suitable for Phase II experimental hut evaluation of novel vector control products. At present, the 2 stations comprise a total of 37 experimental huts of WHOPES West African design.

An expansion of the evaluation capacity of the hut station is under way with the construction of 7 new huts which will be completed by October 2019 at the latest.

Over the years, CREC/LSHTM has evaluated important vector control products in the Covè experimental hut sites and generated high quality technical data in line with WHOPES recommendations. Specific LLNS currently used in malaria control such as Olyset Duo, Olyset Plus, Permanet 3.0, Dawa Plus, Duranet Plus, Royal Guard, Interceptor G2 and the WHO-recommended IRS products such as Ficam WP, Actellic 50 EC, Actellic 300 CS, Fludora Fusion and Sumishield® 50 WG have been tested in the CREC/LSHTM experimental hut stations at Covè.

We are glad to have developed strong partnerships with renowned companies across the globe and look forward to establishing more collaborations and offering our expertise to new partners.

CREC/LSHTM field site laboratory, Cove, central Benin

ABOUT US | The CREC/LSHTM Collaborative Research Programme is a research partnership set up in 2003 between the London School of Hygiene & Tropical Medicine in the UK and the Centre de Recherche Entomologique de Cotonou, Ministry of Health in Benin. The partnership has extensive experience in the evaluation of vector control products to WHO standards and is largely funded by the Bill & Melinda Gates Foundation (BMGF) through the Innovative Vector Control Consortium (IVCC), the WHO and chemical companies.

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