



# Kasetsart University

**PARTNER TYPE:**  
Academic

**MEMBER SINCE:**  
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## INSTITUTION BACKGROUND

Kasetsart University (KU) is a public research university in Bangkok, Thailand. Primarily an Agricultural University focusing on animal health or agricultural studies, KU expended their expertise to medical entomology.

## PARTNER INSTITUTION ENGAGEMENT WITH APMEN

In 2019, KU coordinated with the APMEN Vector Control Working Group (VCWG) to run two training programs: the 2nd Malaria Vector Surveillance for Elimination (MVSE) International Training and; a PCR technique for specific identification course. These courses have responded directly to the recommendations and priorities of country partners and the University has made the courses available at a subsidized rate.

For the 2nd MVSE, KU contributed financial resources as well as provided in-kind support through high subsidized rates for hiring their lab and lab equipment that is necessary for the training. In addition, they also contributed through the use of their state-of-the-art campus, lecture halls, internet facilities, computer lab, laboratories at no cost for the training.

## CORE EXPERTISE AND FUNCTIONS

### Technical Support, Training and Operational Research

#### Vector

KU researchers focus on studying the mosquito's behaviours such as peak biting hours, host preferences and vector behaviours. KU has the following equipment/facilities:

| EQUIPMENT / FACILITIES              | WHAT THEY CAN DO   |
|-------------------------------------|--|
| <b>Excito Repellent Test System</b> | Test the chemical action of new vector control products (e.g. repellent) and identify their chemical action (toxic, irritant, or repellent). This system can evaluate the chemical compound and their actions and useful in testing new or current vector controls under trails. |
| <b>HITTS</b>                        | Evaluate the chemical action of the products in practical field setting  |

|  |   |
|--|---|
| <b>CONE Test</b>   | Evaluate the residual effects of the LLINs. This can be useful part of evaluating effectiveness of LLINs and their durability including a washing system that simulates the multiple washing of LLINs and later study the effectiveness of insecticide. |
| <b>Molecular species identification for six species Complex or Group of Anopheles vectors of malaria</b> | Identify the species within the complex or group  |
| <b>WHO Tube/Bottle Assay</b>   | Valuate the susceptibility of mosquito to insecticides  |
| <b>A novel noncontact repellency assay system (NCRAS)</b>  | An alternative method for testing compounds that repel or inhibit mosquitoes from blood-feeding   |
| <b>Insectary</b>   | The lab has more than 7 populations of mosquitoes species   |
| <b>Biological Markers</b>  | To evaluate the human biological response/outcome measures of pre and post deployment of any vector control tools under trial   |

These facilities allow KU to play an important role in quality control and assurance. The KU lab can test products (LLINs, repellents) and chemical actions in both laboratory and field settings, evaluate current vector control tools (both LLINs and IRS) and their effectiveness and insecticide resistance status.

KU welcomes the opportunity for more Country programs to use these facilities and services. They are willing to conduct country site visits to assess and help establish the labs, develop SOPs, train the personnel, organize/host training/workshop from the country partners on using these facilities and act as reference laboratory or a collaborating research site.

### Training Courses

Lab-based trainings focus on:

- Excito repellent tests
- PCR techniques for species identification
- WHO tubes essay bottle assays
- Mosquitoes raring techniques
- GIS techniques for vector mapping

Field-based trainings focus on:

- Semi-field huts
- Mosquito trapping techniques
- Baseline studies – when mosquitoes enter a home, collect mosquitoes from window traps, study vector biting behaviour for residual transmission (very special for SEA)
- Four experimental huts equipped with entrance and exit traps

### Webinar/Scientific Conferences

KU is interested to host research conference/workshops related to entomology and vector control designed to translate evidence to practice addressing key vector control issues in the region. They are available to lead webinars that strategically link with ORENE (VCWG Online tool) and host regular webinars by inviting local and international speakers.

### **Surveillance**

KU is armed with well-trained staff specializing in Geographic Information Systems (GIS) Techniques focusing on vector-borne disease management. Moreover, KU has a database of vectors incorporating case surveillance data to support robust and comprehensive disease and vector distribution patterns, including for malaria transmission foci.