



**Ministry of Health**  
*Insect Vector Control Division*  
*Jerningham Junction Extension Road*  
*Cunupia*

“A Field Evaluation of the In2Care Semi-lethal Ovitrap for the Control of *Aedes aegypti* Mosquitoes in Trinidad and Tobago.”

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## In2Care<sup>®</sup> Mosquito Trap



*Aedes* transmits diseases such as Dengue & Chikungunya virus & is difficult to control due to insecticide resistance

*Aedes* mosquito = day-active, container-breeder & skip-ovipositor

Trap: water-filled black container + odour lure to attract gravid *Aedes*

Inside trap: netting treated with 2 bioactives to contaminate & kill the egg-laying females

Unique selling points:

Low-tech, low-cost, multi-impact & sustainable



## In2Care® Mosquito Trap



Durable polyethylene components

Holds 3.5 Liters of water

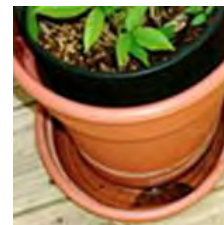
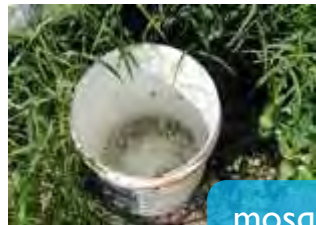
Maintenance needed every 6-8 weeks

→ Refill sachet with treated netting & odour tablets

# In2Care<sup>®</sup> MosquitoTrap



spreads larvicide powder attached to her legs



mosquito larvae in vicinity die

dies before transmitting Dengue



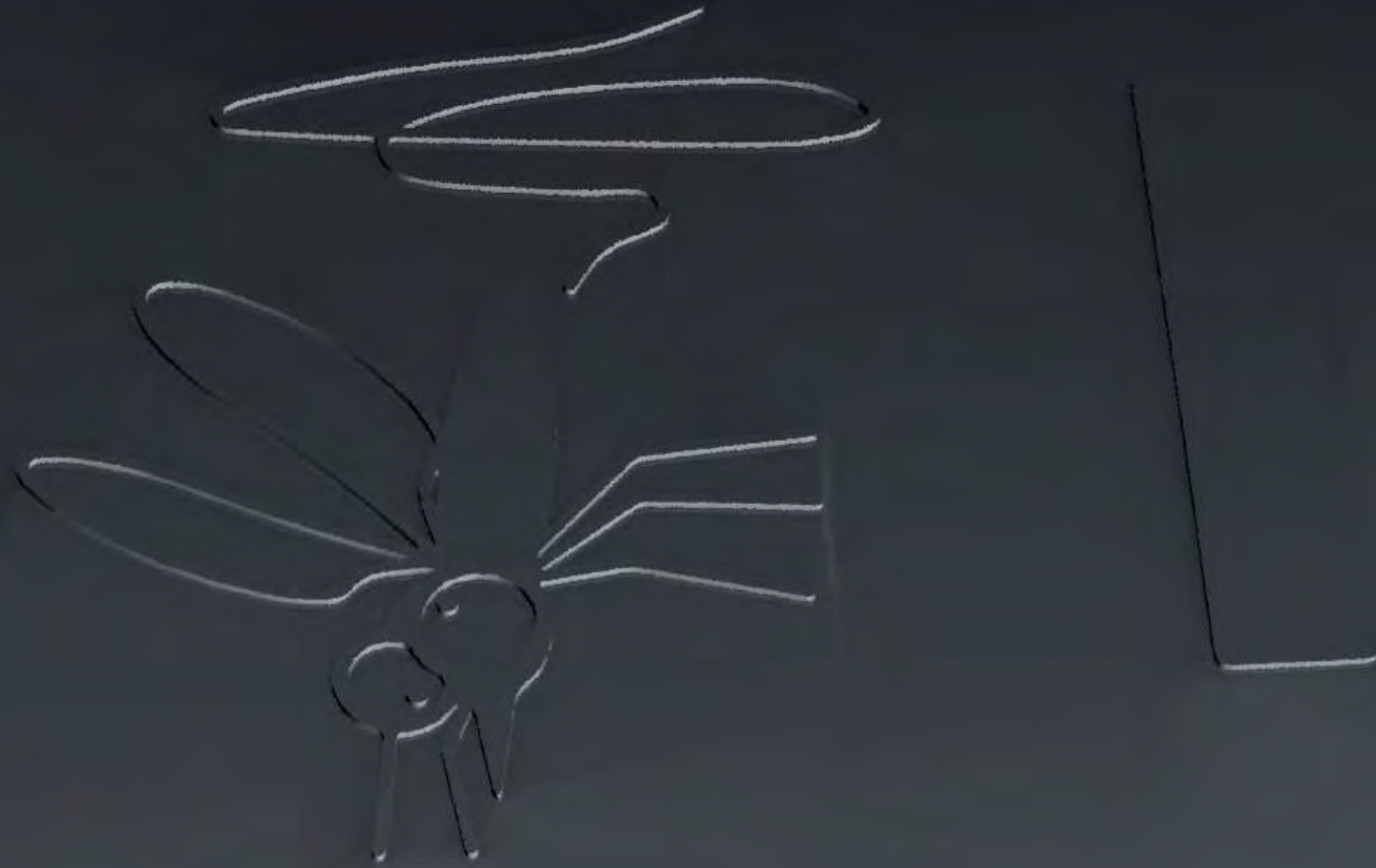
mosquito dies within approx. 10 days

# In2Care Semi-lethal Ovitrap

- The bioactives contained in the In2Care trap are:
  - 1. *Beauveria bassiana* (Fungus spores) (10% w/w)
  - 2. Pyriproxifen (an IGR) (75% w/w)
  - 3. A Yeast tablet

Active ingredients in the trap need to be replaced and water replenished every 6-8 weeks. Area-wide coverage of at least 1 trap per 400 m (4305 ft<sub>2</sub>) is needed to ensure a significant impact on *Aedes* mosquito populations.

# In2Care Semi-lethal Ovitrap operation



# Field testing in Trinidad

## **Methodology:**

- Two sites (Intervention and Control) were chosen based on pre-determined criteria e.g. Fairly isolated; high and low *Aedes* indices.
- The Intervention site was the Madras community (Figure 1).
- The Control site was the Las Lomas #1 community (Figure 2).
- A sensitization effort was carried out in November 2014 to determine willingness of residents to participate in the study.
- Baseline monitoring (perifocal work and standard ovitrapping) began in early January 2015 prior to the deployment of In2Care traps.

# Figure 1. Intervention site – Madras Community

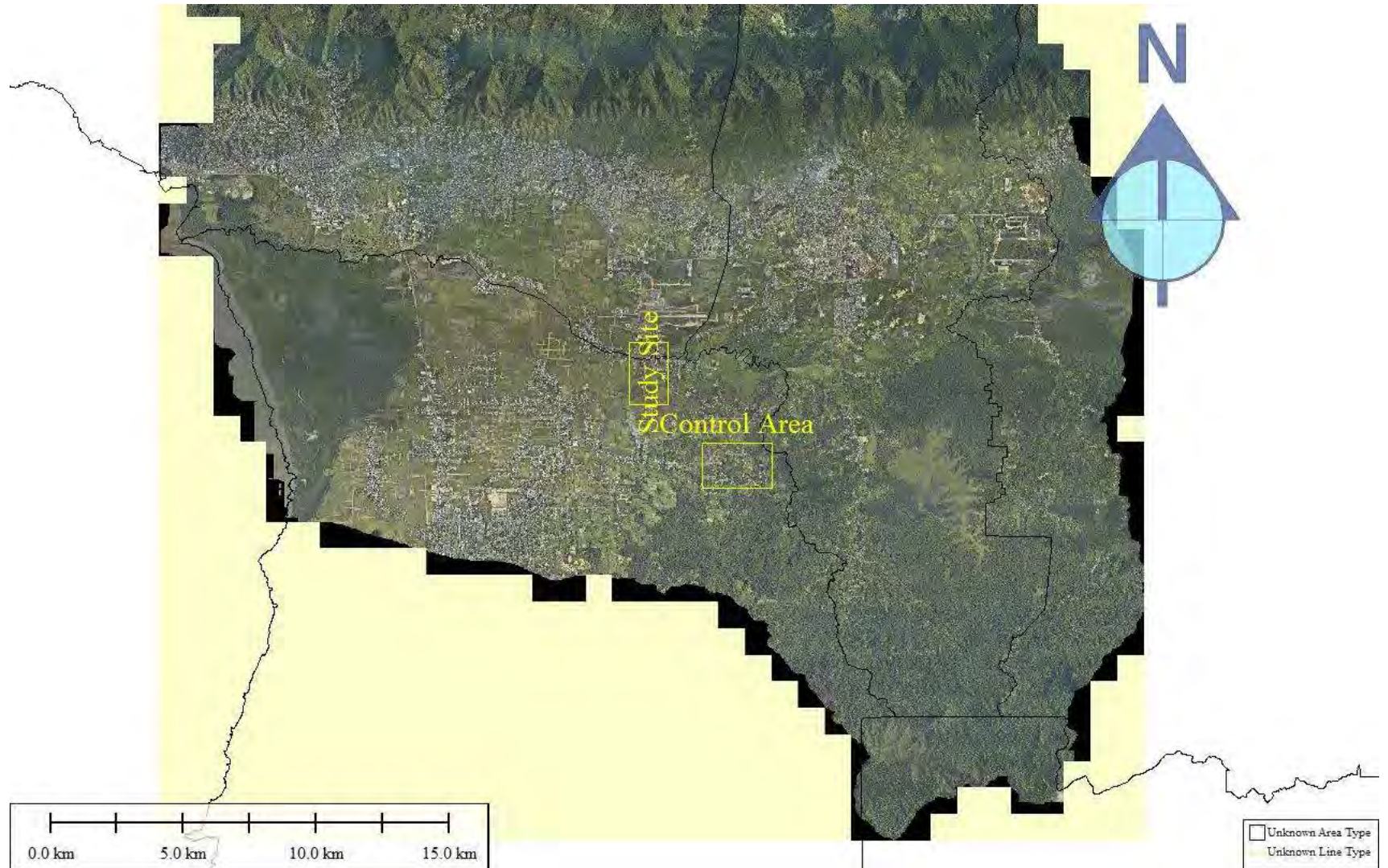




# Figure 2. Control site – Las Lomas Community



# Intervention and Control sites



# Field testing in Trinidad

## **Methodology:**

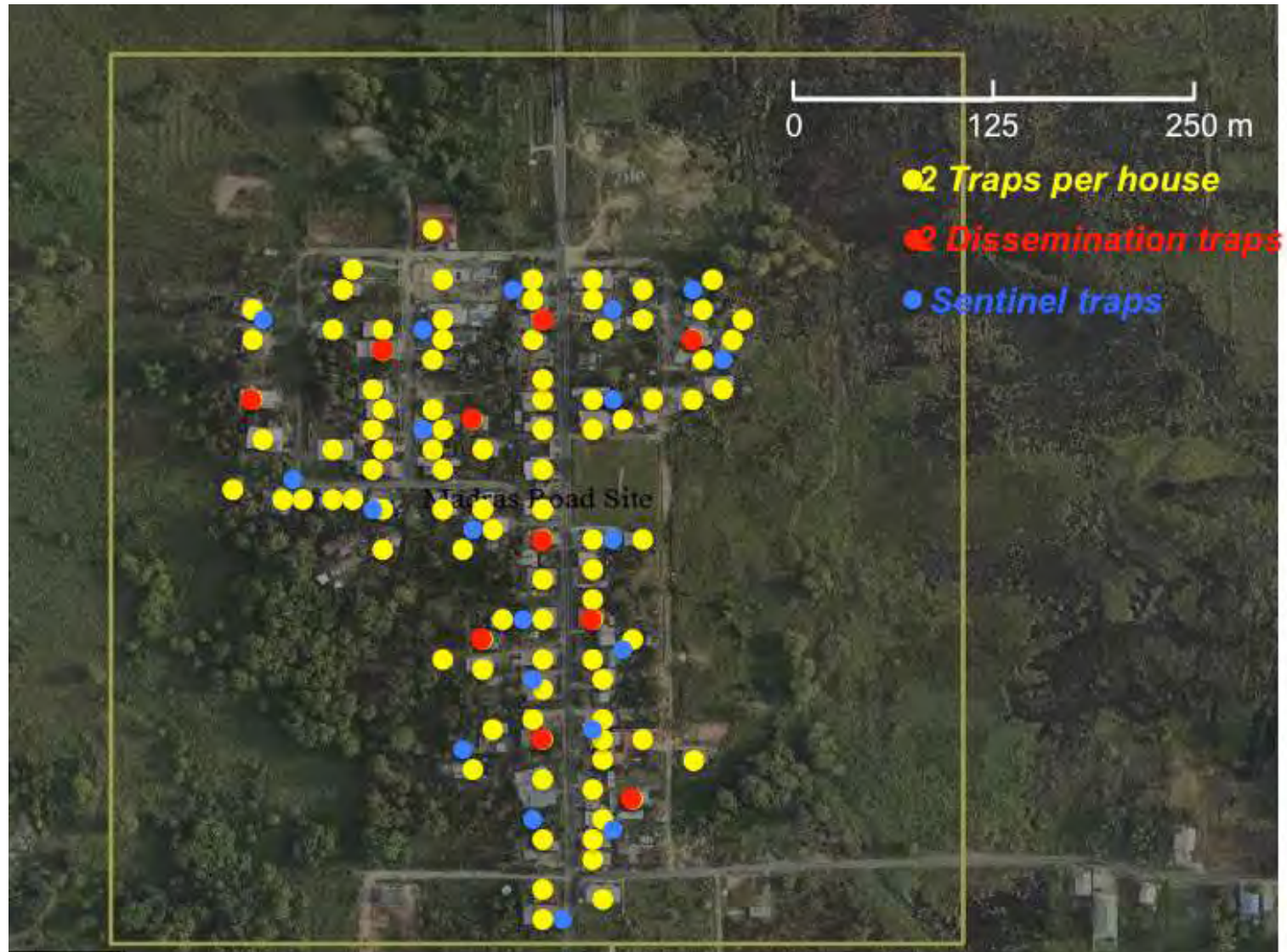
- Two weeks of baseline data were collected from both Madras and Las Lomas communities.
- Baseline monitoring was done using standard paper paddle ovitraps (called Sentinel traps) labelled ST 1 to ST 25 in Madras and C 1 to C 15 in Las Lomas.
- These ovitraps were left in place throughout the experimental period and paddles were collected on a weekly basis. Any larvae or pupae seen in these traps were also recorded.
- 200 In2Care traps were deployed on January 27, 2015 at a density of two traps per house.

# Field testing in Trinidad

## **Methodology:**

- 20 Auto-dissemination traps were randomly placed at a density of 2 per In2Care trap. These were labelled AD 1-1, AD 1-2 to AD 10-2.
- In the control site, 10 Auto-dissemination traps labelled CAD 1-1 to CAD 5-2 were placed.
- All pupae found in the Auto-dissemination traps were carried to the lab and monitored for emergence.
- In2Care traps were inspected on a weekly basis.
- Sentinel traps were inspected on a weekly basis.
- Auto-dissemination traps were inspected twice per week.

# Trap placement at Madras site



# Results

## **In2Care trap attractiveness:**

- All 200 In2Care traps have recorded significant “breeding” with eggs on the gauze and larvae in the water.

## **In2Care trap functioning:**

- Field observations have noted that most larvae do not develop past stage 4.
- Larvae that develop into pupae do not emerge into adults.
- Dead L4 larvae and pupae are frequently seen in the In2Care traps.

# Results

## **Auto-dissemination traps:**

- All pupae collected from auto-dissemination (AD) traps had a 100% mortality in the lab.
- All pupae collected from control auto-dissemination (CAD) traps had a 90% emergence in the lab.

# Results

## **Sentinel trap data:**

- Baseline sentinel trap data (two weeks before In2Care deployment) were compared with weekly sentinel trap data.
- Three weeks after In2Care deployment, absolute eggs counts are showing a steady and sustained reduction in numbers.
- Many of the sentinel traps are already down to zero egg count.



# Thank you!

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