Breeding mosquitoes – for a good cause

The National Environment Agency's latest mosquito breeding facility aims to produce five million mosquitoes a week to help fight dengue. **Timothy Goh** looks at the process.

1 Male and female Wolbachia-Aedes aegypti mosquitoes mate and produce offspring with Wolbachia.

2
- Larvae are placed in a tray of water using an in-house-developed larvae counter, which is 40 times faster than the previous manual counting method.
- New technology such as the multi-layer automated feeding system and high-density rearing racks (right) are being tested to speed up the feeding and harvesting processes.

3
- Pupae are sorted by sex using a combination of manual methods and a male-female pupae sorter.
- A pupae counting and dispensing module accurately counts and dispenses a fixed number of male pupae into release containers.

4
- X-rays (right) are used to ensure any female mosquitoes that are inadvertently released are rendered infertile.
- This prevents any build-up of the female population, which would hamper the effectiveness of Project Wolbachia.

5
- The pupae are then packed into containers for release in the field.
- One release method is the mosquito launcher, which allows field officers to carry and release many mosquitoes in a single trip.

OTHER STAGES

- Large cages are used to simulate field conditions to study mosquito mating competitiveness and longevity.
- Quality control checks are conducted to ensure that mosquitoes to be released carry Wolbachia.

Source: NEA PHOTOS: GIN TAY, MARCELLIN LOPEZ STRAITS TIMES GRAPHICS