



**MAJLIS PERBANDARAN AMPANG JAYA**  
**BAHAGIAN PERHUBUNGAN AWAM DAN SEKRETARIAT**  
MENARA MPAJ, JALAN PANDAN UTAMA,  
PANDAN INDAH, SELANGOR,  
55100 KUALA LUMPUR

**KERATAN AKHBAR**  
**01 MAC 2019 (JUMAAT)**

**AKHBAR**

**MUKA SURAT**

**The Star**

- Clean-up to clear out mosquito breeding grounds

06

**New Straits Times**

- Mutant Mosquitoes Join The Fight

01-03



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## TS 1/3/19 M/S 06 Clean-up to clear out mosquito breeding grounds

AMID concerns over the rising number of dengue cases in Selangor, a community in Bukit Antarabangsa, Ampang, is taking proactive steps to combat the menace.

Residents of Taman Bukit Mulia banded together to organise a *gotong-royong* in the hopes of destroying Aedes mosquito breeding grounds.

The latest event saw some 200 residents, as well as officers from the Gombak district health office and Ampang Jaya Municipal Council (MPAJ), getting together to help clean up the neighbourhood.

They were also assisted by the Fire and Rescue Department personnel to clear out the drains in the area.

During the clean-up, the health officers assisted residents to identify and destroy potential breeding grounds as well as clear rubbish.

Taman Bukit Mulia Residents' Association chairman Amin Osman said apart from cleaning up the area, the *gotong-royong* also helped foster better relations among the residents.

"We want them to feel like part of the community. For a bit of friendly competition, the area was divided into zones where the cleanest would win prizes.

"This time we focused on cleaning up the back lanes, removing rubbish from the lake, trimming the trees and plants as well as general cleaning," he added. — **By SHALINI RAVINDRAN**

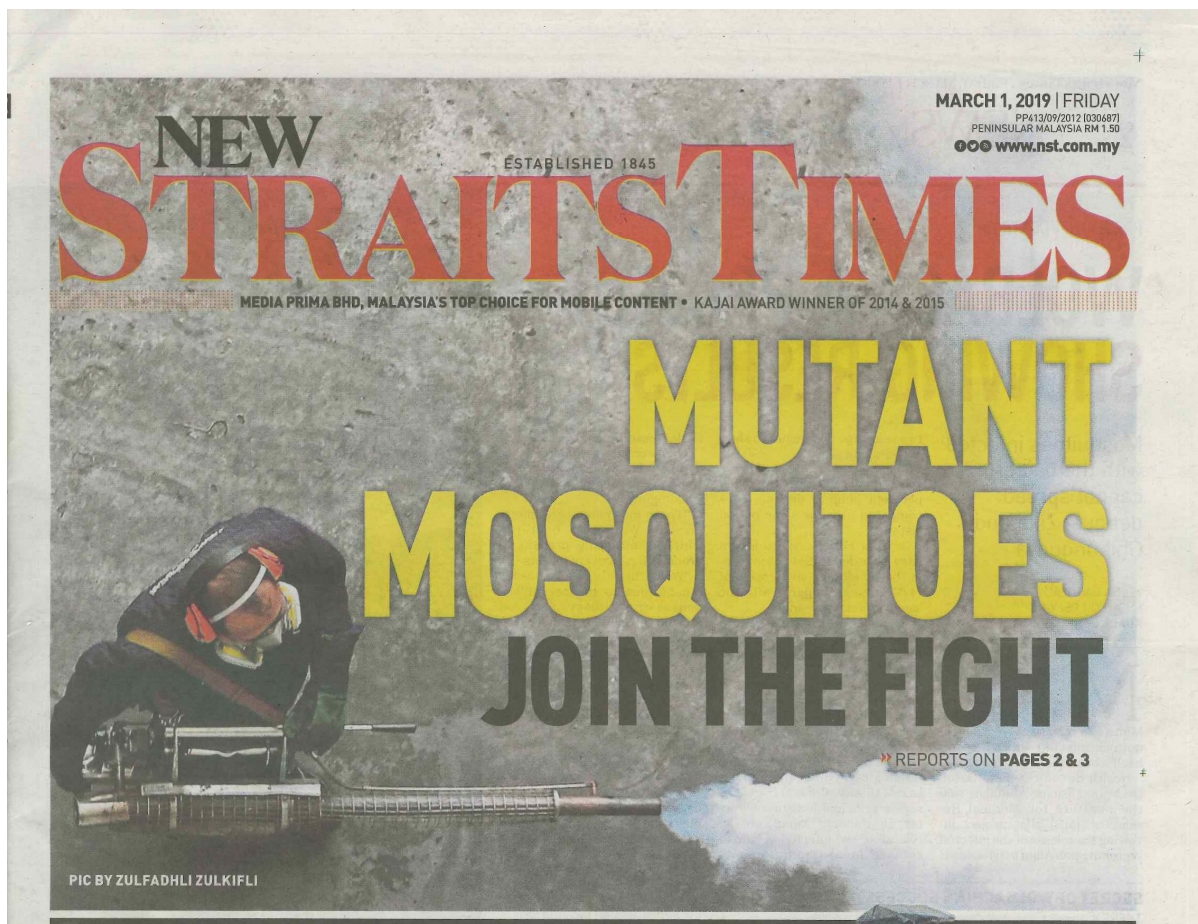


Amin (left) and a Taman Bukit Mulia resident removing mud and other debris from the drains during the gotong-royong. — LOW LAY PHON/The Star



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## POPULATION CONTROL

# WOLBACHIA PROJECT SHOWING RESULTS

Mosquitoes infected with the bacteria cannot spread dengue, Zika and Chikungunya

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**M**ALAYSIA'S long battle with dengue may show some sign of relief with the Health Ministry's release of Aedes mosquitoes infected with the Wolbachia bacteria.

Health director-general Datuk Dr Noor Hisham Abdullah said the Institute for Medical Research's (IMR) pilot project involving the release of the infected vector in Shah Alam and Keramat

two years ago had begun to show encouraging signs.

This came at a crucial time because as at Feb 23, there was a 163 per cent jump in dengue cases compared with the same period last year.

Dr Noor Hisham said the ministry recorded 23,914 cases within the timeframe, an increase of 14,843 cases compared with the same period last year.

"Dengue fever has claimed 40 lives as at Feb 23, a 100 per cent increase in deaths compared with the same period in 2018.

"Even though the increase in deaths due to dengue is also seen in other countries in the region, the dengue situation is still troubling."

He said this while drawing on a briefing carried out by the ministry's Disease Control Division's senior principal assistant director, Dr Rahmat Dapari, on the release of the infected vector to replace local populations of

Aedes mosquitoes.

The project was implemented so that infected mosquitoes cannot spread dengue, Zika and Chikungunya.

"These mosquitoes are infected with Wolbachia bacteria, which is naturally present in around 60 per cent of insects.

"Wolbachia also causes aedes mosquitoes to be free of the dengue virus so they can't spread it," said Dr Noor Hisham.

Universiti Kebangsaan Malaysia's parasitology and entomology expert, Associate Professor Dr Hidayatullah Othman, said she was heartened by the positive signs showed by the pilot project as previous efforts to control the population of Aedes mosquitoes, including releasing genetically-modified ones, were unsuccessful.

She drew on the release of genetically-modified mosquitoes, a plan that the government had abandoned due to costs and lack of studies.

Hidayatullah said while Wolbachia was naturally occurring in most insects, it was not the case for Aedes aegypti mosquitoes.

"The bacteria arrests the development of the virus causing dengue and Chikungunya. Those with Wolbachia cannot transmit dengue when they bite people," she told the *New Straits Times*.

She said male mosquitoes infected with the strain that were released into the wild would mate with females, but would not produce offspring.

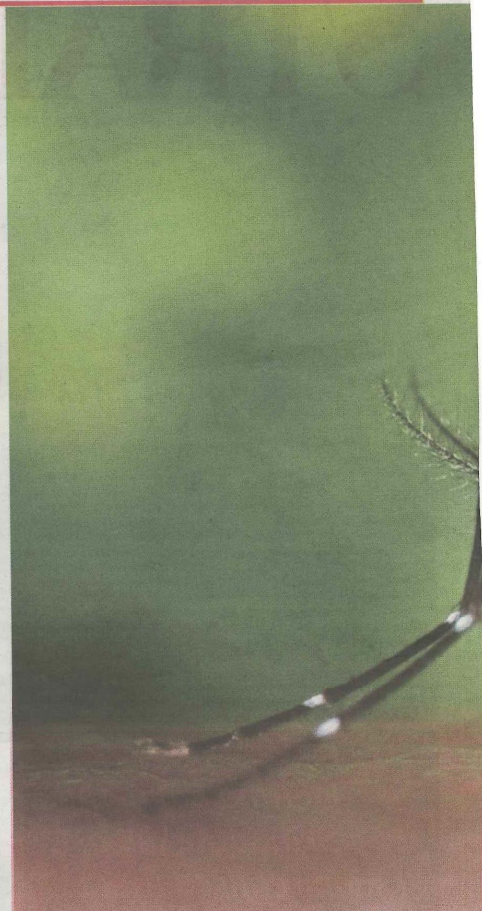
"Infected females will produce hatchlings, but their larvae will no longer be vectors. So this is a great move, but they have to release at least 20,000 to 50,000 in one go."

She said the mosquitoes needed to be released in many areas to gauge its efficacy.

She said it was better to release the insects in neighbourhoods that were partially cut off from others so the mosquitoes cannot move to other places.

"For example, Shah Alam is a good place to do so, while Keramat is open and is well-connected to other places, which may have an effect on how the mosquitoes adapt to the area. This affects the way the authorities study the effectiveness of the project later."

She said IMR needed to identify the most suitable strain of the



The Wolbachia bacteria is naturally present in around 60 per cent of insects. Mosquitoes infected with it cannot spread the dengue virus. FILE PIC

bacteria so that it produced the best results.

"There are many strains, so it must be very careful in its selection. Some can withstand our climate, but cannot fully curb the development of the virus."

The bacteria has many strains, and it can only take hold of the vector (mosquitoes) in temperatures outside the 26°C to 37°C bracket. Those infected within the temperature range can still lay eggs that hatch into mosquitoes that can transmit dengue.

There is also the issue of high mortality rates among young mosquitoes that are infected.

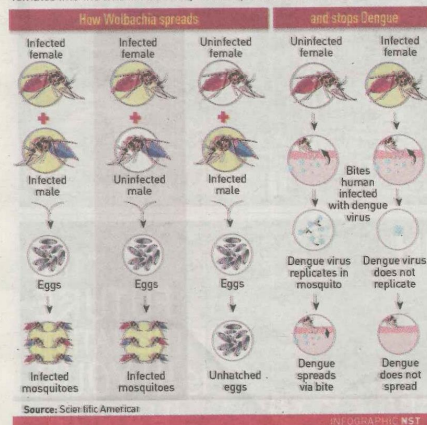
Twenty to 30 per cent of the mosquito population in an area also needs to be infected for the bacteria to take hold and push down dengue rates.

Dr Hidayatullah said the government should not abandon awareness programmes as human activity had been identified as the main factor behind mosquitoes breeding at alarming rates.

"Malaysians think that combating dengue is only the government's job, not theirs. They wash their hands off at the point of paying taxes. When the council comes to fog their neighbourhoods, they don't even open their doors."

## SECRET OF WOLBACHIA'S SUCCESS

THERE is no vaccine against dengue, but infecting mosquitoes with a natural bacterium called *Wolbachia* blocks the insects' ability to pass the disease to humans. The microbe spreads among both male and female mosquitoes: infected females lay eggs that harbour the bacterium and when *Wolbachia*-free females mate with infected males, their eggs simply do not hatch. Researches are now releasing *Wolbachia*-infected females into the wild in Australia, Vietnam, Indonesia and Brazil.



Source: Scientific American

INFOGRAPHIC: NST





## Wolbachia-infected mosquitoes curbing dengue

**KUALA LUMPUR:** Wolbachia-infected mosquitoes have been proven to curb dengue.

In October 2014, researchers and community members released four million *Aedes aegypti* mosquitoes over 66sq km in Townsville, a coastal city in north-eastern Queensland, Australia.

According to reports by Australian media, Townsville, which has a population of 187,000, faced periodic dengue outbreaks since 2001, but recorded only four locally-acquired cases in the 44 months after the release began.

In Vietnam, a research group from a Hanoi-based institute together with Australian scientists bred *Aedes aegypti* mosquitoes laced with Wolbachia and released them on a trial basis in Tri Nguyen island, Khanh Hoa, in 2013 and 2014.

Since 2014, no dengue outbreaks have been detected on the island.

Following the success, the Vietnamese government released Wolbachia-infected mosquitoes in the Vinh Luong commune, Nha Trang city, central Khanh Hoa

province, in March last year.

The method uses mosquitoes infected with the Wolbachia bacterium. When male and female *Aedes aegypti* mosquitoes with Wolbachia are released over a number of weeks, they breed with wild mosquitoes and pass the bacteria from one generation to another.

Over time, the number of mosquitoes carrying Wolbachia increases until it no longer requires further artificial release.

Mosquitoes with Wolbachia are less able to transmit diseases to

people, so the risk of outbreaks of mosquito-borne diseases, such as dengue, Zika and chikungunya, is reduced.

In Malaysia, the Health Ministry released Wolbachia-infected mosquitoes at dengue hotspots in AU2 Keramat and Seksyen 7, Shah Alam.

A total of 16,000 male and female Wolbachia-infected mosquitoes were released at 300 dengue hotspots in both areas.

China, Indonesia, Singapore, Thailand, Tahiti, Colombia and Brazil also use the method.



**DECEMBER 2016:** About 6,000 sterile male lab mosquitoes are released in an uninhabited forest area near Bentong, Pahang. The Institute of Medical Research (IMR) said another 6,000 wild male *Aedes aegypti* mosquitoes have been placed in the area for scientific comparison. The experiment, IMR said, "successfully" concluded on Jan 5. The field test is meant to pave the way for the use of genetically-engineered *Aedes aegypti* male mosquitoes to mate with females and produce no offspring or ones with shorter lives, thus curtailing the mosquito population.

**OCTOBER 2011:** The Subang Jaya Municipal Council (MPSJ) releases *Toxorhynchites* mosquitoes, or "elephant mosquitoes", in Kampung Sri Aman, Puchong, Selangor, after the area suffered one of the worst dengue outbreaks of the year. The effects in Kampung Sri Aman have been reported to be "positive". *Toxorhynchites* mosquitoes are not genetically-modified, but consume other mosquito larvae, including the aedes, at its larval stage.

**JULY 2013:** MPSJ releases 400 adult *Toxorhynchites* mosquitoes and 200 pupae at the Sri Tanjung Apartments in Kinrara, Puchong, following 15 reported cases of dengue between January and June, reportedly the highest in the Kinrara area. The mosquitoes were released five times between October 2011 and July 2013.

**MARCH 2016:** The government announces that it is shelving plans to release genetically-modified mosquitoes to combat dengue. Health director-general Datuk Seri Dr Noor Hisham Abdullah said following field trials in 2010 and 2011, the ministry has decided against proceeding further as it is not "cost effective".

**MARCH 2017:** The Health Ministry releases 16,000 male and female mosquitoes infected with the Wolbachia microorganism at 300 dengue hotspots in AU2 in Keramat. The ministry said various anti-dengue activities involving residents will be intensified in Section 7, Shah Alam, Selangor, before Wolbachia-infected mosquitoes are released there. The release of the mosquitoes will take place on a weekly basis until 60 per cent of the population of wild *Aedes* mosquitoes in Keramat have been replaced with Wolbachia-infected mosquitoes.

**FEBRUARY 2019:** The Health Ministry announces that IMR's Wolbachia project is showing positive signs. It said the project, which aims to curb the mosquito population that carries the dengue, Zika and Chikungunya viruses, will be expanded in phases and the mosquitoes will be released in selected areas.

INFOGRAPHIC NST