

Headline	Research shows used cooking oil works well for fogging operations		
MediaTitle	The Star		
Date	03 Oct 2016	Color	Full Color
Section	Metro	Circulation	338,368
Page No	3	Readership	1,032,000
Language	English	ArticleSize	427 cm ²
Journalist	GRACE CHEN	AdValue	RM 21,489
Frequency	Daily	PR Value	RM 64,467



Research shows used cooking oil works well for fogging operations

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OUT of the frying pan and into a fogging machine.

That sums up the collaboration between Sepang Municipal Council (MPSepang) and Forest Research Institute Malaysia (FRIM) where used cooking oil is being recycled into fuel for fogging machines.

Speaking of the two-year partnership, FRIM senior research officer Dr Wan Asma Ibrahim said MPSepang had approached the institute to convert some 13,000kg of used cooking oil into biodiesel after launching a buy-back programme with food courts, stalls and restaurants in 2012.

Originally, MPSepang had hoped for lorry fuel as an end product but food elements such as salt, turmeric powder as well as traces of protein and carbohydrates in the oil made it unstable.

"It satisfies standards when newly converted but after two months, it starts to biodegrade," said Wan Asma.

To look at faster ways of disposing the end product, she considered testing them on fogging machines that run on diesel.

"Diesel emits toxic compounds such as sulfur and nitrogen dioxide that are detrimental to health when inhaled. But used cooking oil is derived from palm oil and is non-toxic," she said.

FRIM researchers also noticed that used cooking oil in fogging operations had a higher efficacy when combined with insecticide.



Dr Wan Asma (middle in red scarf) says diesel emitted toxic compounds like sulfur and nitrogen dioxide. These are detrimental to health when inhaled but used cooking oil is derived from palm oil and is non toxic.



MPSepang and FRIM are working together in the recycling campaign.

The oil residue produced can suffocate larvae as it covers stagnant water surfaces with a thin film. Diesel on the other hand, evaporates.

A total of RM170,000 was given by the council to conduct research and testing.

MPSp health environment officer Nurul Syazana Shukri said the council began using the new formula at dengue hotspots, in

early January 2015, as part of their pilot studies.

The fogging team had reported that the new formula did not sting their eyes.

They were also breathing easier as there was less odour.

Though foggers were provided with full body protection including goggles, earmuffs, safety shoes and respirator protectors, they risked being exposed to carcinogenic

fumes produced by fossil fuels, such as diesel, as fogging operations were conducted daily with each operation lasting up to 30 minutes.

"The formulation process is still under research and development.

"To get a bigger output of biodiesel from used cooking oil, we will need further funding to set up a production facility.

"If the plan succeeds, the new

formula will be used by other municipalities in Klang, Sepang, Ampang and Kajang," said Wan Asma.

In the ongoing used oil buy-back programme, MPSepang collected up to 3,779kg of oil up to August.

On the halal issue of the biodiesel used in fogging machines, Nurul Syazana said used cooking oil was sourced from Malay hawkers and halal fast food stores.