

# Guppy fish proven to be cheap, effective tool in fight against dengue

September 13 2013

---



Convincing communities to accept fish in their water containers was a key element of the project, which showed that guppies can help combat the spread of dengue by eating mosquito larvae.

Larvae-eating guppy fish can help combat the spread of dengue, a mosquito-borne illness giving rise to hundreds of thousands of severe cases including 20,000 deaths worldwide every year, according to a trial study by the Governments of Cambodia and the Lao People's Democratic Republic (Lao PDR) with the support of the Asian

Development Bank (ADB) and the World Health Organization (WHO).

"This is a low-cost, year-round, safe way of reducing the spread of [dengue](#) in which the whole community can participate," said ADB health specialist Gerard Servais. "It offers a viable alternative to using chemicals and can reduce the scale of costly emergency response activities to contain epidemics."

The community-based project, conducted in two districts in Cambodia and the Lao PDR from 2009 to 2011, resulted in a sharp decline in [mosquito larvae](#) in water storage tanks after the tiny fish were introduced. Guppies eat larvae that grow into mosquitoes, which in turn bite humans and transmit dengue.

Dengue causes severe joint and muscle pain, headache, [high fever](#) and rashes and is fatal in a small proportion of cases, in particular if not diagnosed and treated early. Outbreaks of the illness not only affect families with sudden [health care costs](#) and loss of incomes for adults put out of work, but also impact health services, businesses and tourism, straining government budgets due to unplanned spending on large-scale emergency response measures. Currently there is still no vaccine or specific medicine to treat this [viral disease](#).

Around 2.5 billion people worldwide are at risk of contracting dengue, more than 70% of whom live in Asia and the Pacific. The threat of exposure to dengue-carrying mosquitoes is rising with uncontrolled urbanization and a surge in the use of non-biodegradable packaging, which can act as a water reservoir for dengue [mosquito breeding](#). Dengue is spread by a specific mosquito that breeds readily in standing water, such as found in storage containers, flower pots and discarded tires. The guppies are particularly effective in these settings.

Convincing communities to accept fish in their water containers was a

key element of the project. The trial showed that guppies do not harm water quality and can survive on microscopic organic material in the absence of mosquito larvae. At the project close in Cambodia, about 88% of the storage containers contained guppies, with the figure at 76% in Lao PDR.

"The project was successful in mobilizing communities with widespread grassroots participation, and high levels of acceptance of fish as an effective way of reducing the spread of dengue," said Dr. Eva Christophel, a WHO specialist in vectorborne diseases. "This project was an important contribution to WHO's efforts to develop a toolkit of different community-based methods to prevent and reduce the magnitude of dengue transmission."

Provided by ResearchSEA

Citation: Guppy fish proven to be cheap, effective tool in fight against dengue (2013, September 13) retrieved 25 April 2024 from <https://medicalxpress.com/news/2013-09-guppy-fish-proven-cheap-effective.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--