

Biodegradable Lethal Ovitrap



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R&D Partners

University of Queensland

Queensland Health

James Cook University

Swinburne University of Technology

Background

Plantic worked with the above R&D partners to develop a water resistant application in the form of a Biodegradable Lethal Ovitrap (BLO). The trap is used to control the spread of Dengue Fever in the tropics. This research collaboration helped to identify the key product requirements needed in the BLO.

Current application requirements

An injection molded trap that has appropriate mechanical properties (HDPE-like) to be an attractant to egg-laying mosquitoes.

How it works

The Dengue Mosquito lays its eggs in a container of water, such as the BLO. An insecticidal strip is placed inside the bucket, creating a 'booby trap' that kills the mosquito and the eggs before they have the opportunity to spread Dengue.

Technical challenges

Meeting the key BLO requirements:

- Water resistant up to 8 weeks
- Biodegradable after 8 weeks
- Attractive to mosquitoes

Why Plantic®?

Plantic® offers the unique properties of being biodegradable and compostable. Previously, the retrieval of traps had to be tracked and mapped to prevent continuing vector production. The BLO does not require retrieval and it doesn't provide mosquito risk. Additionally, the BLO:

- Holds water
- Is biodegradable after use
- Is inexpensive – eliminates cost associated with tracking and logging locations for retrieval
- Demonstrates equivalent mosquito attractiveness to the non-biodegradable materials currently being used



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Status

Market testing complete. Plantic[®] traps are currently being used by Queensland Health for further trials to help control a recent outbreak of Dengue Fever.

Potential market/benefits

- Dengue Fever evident, not only in Queensland, but also in parts of Asia, Africa and South America
- Lethal ovitrapping is faster, cheaper and environmentally safer than interior spraying techniques
- Two water resistant, injection molding grades added to the range of water soluble materials currently on offer, thereby expanding the range of applications for Plantic[®] resins, and resulting in increased enquiries from customers



Process of biodegradation in compost



Week 0



Week 1



Week 2



Week 3



Week 4