

Working to remove mosquitoes that can spread dengue and Zika

August 2017: Seeking community support in Innisfail for further studies

Our team of researchers, made up of scientists from CSIRO, James Cook University (JCU) and Verily (a Google affiliate) has been studying mosquitoes and their behaviour on the Cassowary Coast since November 2015.

Over 32 different species of mosquitoes have been identified during that period with a consistent population of the invasive *Aedes aegypti* mosquito that transmits the dengue, chikungunya and Zika viruses.

We have also carried out further studies in East Innisfail and Silkwood where we have studied the behaviour of the male *Aedes aegypti* to inform future studies.

The next phase of our research

We are now planning studies from October that will involve releasing sterile male *Aedes aegypti* mosquitoes over the wet season in Innisfail and selected communities.

Our goal is to show that it is possible to significantly reduce the mosquito population, if not remove it, and therefore also reduce the threat from diseases.

How our mosquito control method works

Female mosquitoes are responsible for transmitting viruses through blood meals (bites), Male mosquitoes don't bite, they feed on plant nectar and spend all their energy seeking and mating with females.

The success of our work is dependent on the sterile males we release out-competing wild *Aedes aegypti* males to mate with wild *Aedes aegypti* females.

If the sterile *Aedes aegypti* male mates with a wild *Aedes aegypti* female the eggs she lays won't hatch, reducing the mosquito population in the next generation. If we get our numbers right, this would mean that the *Aedes aegypti* mosquito population would quickly die-off.

What this involves



- First, we will set a network of traps (including the BG trap shown above) in areas where we propose to carry out sterile male mosquito releases.
- We will release male mosquitoes over a number of weeks (up to 24 weeks) that contain a natural bacteria called *Wolbachia* that renders the mosquito infertile.
- We will monitor the trap network regularly before, during and after the release of sterile males to develop the 'before' and 'after' data we need to show if we are being successful in reducing mosquito numbers.
- We will share the results of the studies with the community and encourage questions throughout all stages of the research.

Overall community support and government approval for planned sterile male mosquito releases is critical for the study to proceed. If you have any questions about our work please contact a team member on 1800 4030 83, we want to hear from you. Thank you for your support.

