

## **Open field trial demonstrates effectiveness of RIDL® system for suppressing a target wild mosquito population**

Oxitec and the Mosquito Research and Control Unit of Grand Cayman (MRCU) today announced, at the American Society of Tropical Medicine and Hygiene annual meeting in Atlanta, the results of their open field trial. This was the first field demonstration of the use of Oxitec's RIDL strain OX513A to control the dengue-carrying *Aedes aegypti* mosquito.

This genetically sterile mosquito strain has been developed to help combat the dengue carrying mosquito *Aedes aegypti*. This sterility can be suppressed with a dietary antidote, allowing the strain to be reared in large numbers. Sterile males are then released to seek out and mate wild females, competing for mates with the wild males. If a female mates with a sterile male she will have no offspring, thus reducing the next generation's population. Repeated releases of sufficient numbers of sterile males will result in a reduction in the target mosquito population below the minimum level needed to support dengue transmission.

Male mosquitoes do not bite or spread disease and will mate only with females of the same species, hence the release of sterile male mosquitoes presents a safe alternative to insecticides.

Dr William Petrie of MRCU said 'Dengue is a debilitating disease one can only get from the bite of an infected mosquito. There are around 100 million cases per annum globally and we need new tools against this mosquito', a view supported by the World Health Organisation; 'the only way to prevent dengue virus transmission is to combat the disease-carrying mosquitoes.'<sup>1</sup>

The field trial took place in Grand Cayman with sterile male releases from May to October and additional pre- and post-trial monitoring. This followed a successful smaller trial in 2009 that demonstrated that released RIDL males mated successfully with their local counterparts in the open environment. Eggs were supplied from Oxitec's facilities in the UK and the sterile male mosquitoes were hatched and released by MRCU. After initial production and release testing, releases of male sterile mosquitoes reached the required release level in July. A significant reduction in the local mosquito population was observed from August. All of the trial objectives were successfully met, including the main goal of suppressing the local *Aedes aegypti* population.

Dr Luke Alphey, Chief Scientific Officer and Founder of Oxitec added 'Oxitec considers that this approach could be used in many countries to help control the *Aedes aegypti* mosquito and hence prevent dengue fever. We have been working on this for many years to ensure the approach is both effective and safe. This trial represents the first demonstration in the open field and we are delighted with the results.'

### **About Dengue**

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<sup>1</sup> WHO Dengue factsheet <http://www.who.int/mediacentre/factsheets/fs117/en/index.html>

Dengue is the world's fastest growing mosquito borne viral disease for which there is neither medication nor vaccine. Existing control methods centre on the use of insecticides together with practical methods to reduce the number of likely mosquito breeding sites. Despite this, dengue fever has grown rapidly over the last decades as *Aedes aegypti* has spread to new countries and, according to the WHO, two fifths of the world's population, some 2.5bn people, are now at risk.

### **About Oxitec**

Oxitec is a pioneer in controlling insects that spread disease and damage crops. Oxitec has developed RIDL technology that allows the development of sterile males of a target insect species as a control method. This approach is safe, environmentally friendly and sustainable.

### **About MRCU**

The Mosquito Research & Control Unit (MRCU) was established in 1965 and provides mosquito control on Grand Cayman and its sister islands. MRCU also performs leading research into mosquito behaviour, insecticide resistance and control methods and is internationally renowned for its public health contribution.

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