



OXITEC

TRIALLING A NEW WAY TO FIGHT MOSQUITOS IN THE FLORIDA KEYS



PROTECTING AGAINST *Aedes aegypti* MOSQUITOS

Aedes aegypti mosquitos spread diseases including dengue and chikungunya. There is no vaccine or cure available so the World Health Organisation recommends controlling the mosquitos to keep people safe.

Currently there is no active transmission of these diseases in the Keys and the aim is to keep it that way. The Oxitec mosquito is a promising new approach in the fight to protect against *Aedes aegypti*.

Improving mosquito control means trialling new tools so they are available when needed. The proposed Florida Keys investigation of the Oxitec approach is regulated by federal agencies who must review its safety and be fully satisfied before it can go ahead. The FDA will publish a draft Environmental Assessment online for review and comment. For further information see below.

Below are some key facts about the Oxitec approach that have been shown in scientific studies and field trials in Cayman, Brazil, and Panama.



GOOD RESULTS

1 Up to 99% reduction in *Ae. aegypti* mosquitos that can spread disease

Trials around the world show the Oxitec approach reduces *Ae. aegypti* mosquitos by up to 99%. The Oxitec approach uses male mosquitos. These males have been genetically engineered so their offspring die. This reduces the population. Male mosquitos don't bite or spread disease. Independent trials in the Cayman Islands, Panama and Brazil have tested this approach and in every case they achieved reductions of over 90%.

2 Improving control is important

Ae. Aegypti is difficult to control, and reduction efforts around the world have proven insufficient to prevent the spread of disease. Even using the best methods available control groups can only reduce the *Ae. Aegypti* population by about 50%. Therefore, it is important to find new additional methods to defend against *Aedes Aegypti* mosquitos.

3 Control of urban mosquitos where insecticides don't reach

Ae. aegypti mosquitos bite people and live in and around homes. This makes them effective at spreading diseases. Current control methods use insecticides, but it's hard to treat each and every home. Oxitec's approach uses natural reproductive instincts of male mosquitos to find females wherever they hide. This approach targets the whole *Ae. aegypti* mosquito population.



TARGETED CONTROL OF PEST
Aedes aegypti MOSQUITOS





HEALTH, SAFETY AND EFFECTIVENESS

1 Mosquito control technology that isn't based on pesticides

Oxitec mosquitos only live a short time and have a gene that makes their offspring die. This technology is pesticide-free and offers a promising solution, with the potential to reduce insecticide use.

2 Trial safety must satisfy independent experts

Oxitec's approach is only trialled after careful review and if the authorities are fully satisfied. Following review of safety information by independent experts, trials went ahead in Cayman, Panama, Malaysia and Brazil. The trial in Florida Keys can only go ahead if federal regulators are fully satisfied.

3 Established record

The Oxitec mosquito has completed more than 10 years of research and testing. In trials around the world since 2009 the *Ae. aegypti* mosquito population has been reduced by up to 99% with no reports of adverse effects to humans or the environment.



CARING FOR THE ENVIRONMENT

1 Precision program targets only *Ae. aegypti* pest which is non-native

Oxitec uses engineered mosquitos to target *Ae. aegypti*. The Oxitec mosquitos are *all Ae. aegypti* and only breed with other *Ae. aegypti*. Unlike insecticides this technology offers precision control of this non-native mosquito.

2 Oxitec mosquitos die out and leave no trace

All the Oxitec mosquitos that are released die out. They are specially engineered so their offspring die before they can reproduce. This keeps the pest population under control.

3 Reducing insecticides in the environment

Insecticides are currently used to reduce *Ae. aegypti* numbers, but can affect other vulnerable species. Controlling the non-native *Ae. aegypti* with chemicals is difficult because they are developing resistance to many insecticides. The use of new additional approaches may help control the mosquitos and reduce reliance on insecticides.

FOR MORE INFORMATION

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The FDA will issue public notification when it publishes the Oxitec draft environmental assessment for comment on www.regulations.gov.
www.fda.gov/animalveterinary/developmentapprovalprocess/geneticengineering/geneticallyengineeredanimals/ucm446529.htm