

Introductions – Panelists With You Today



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Delta MVCD-Oxitec Public Educational Webinar Series

Introduction to our Webinar Series

Delta MVCD and Oxitec are hosting a series of public educational webinars to share information with residents of Tulare County and provide forums to answer questions.

- Webinars are open to everyone.
- Webinars are recorded and made available for everyone after the event.
- All questions relating to the webinar topic(s) will be answered (some in batches if questions are similar).
- If time runs out, we will accept questions in writing via info@oxitec.com.



Delta MVCD-Oxitec Public Educational Webinar Series

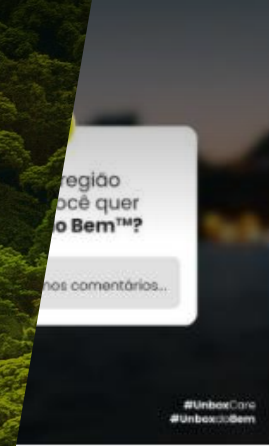
Today's Agenda

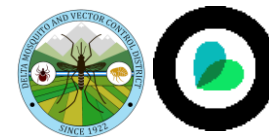
Today's Agenda:

- About Oxitec (Briefly)
- Oxitec's Friendly™ Technology History and Overview
- Partnerships and a Decade of Results Around the World
- Your Questions, Answered

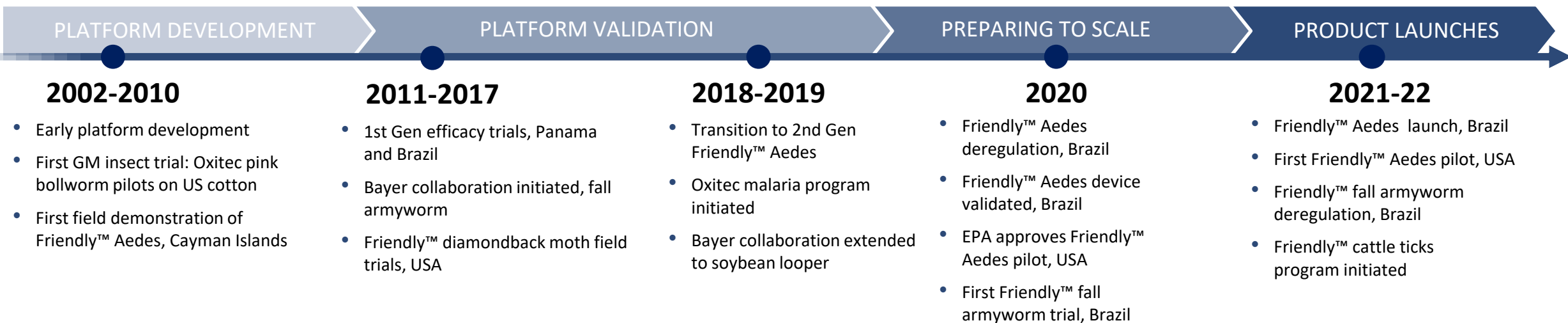


We're forging a category of safe, sustainable, chemical-free, highly effective biological pest control solutions.





History: Oxford Roots with Expansive Validation and Preparation for Scale



KEY PARTNERSHIP AND REGULATORY MILESTONES



Friendly™ Technology Applied to Diverse Pests and Markets

Applicable to a diverse range of important pests with a set of key traits



- Reproduces by mating
- Amenable to artificial production
- Life cycle a few months or less

Set to deliver value to multiple markets

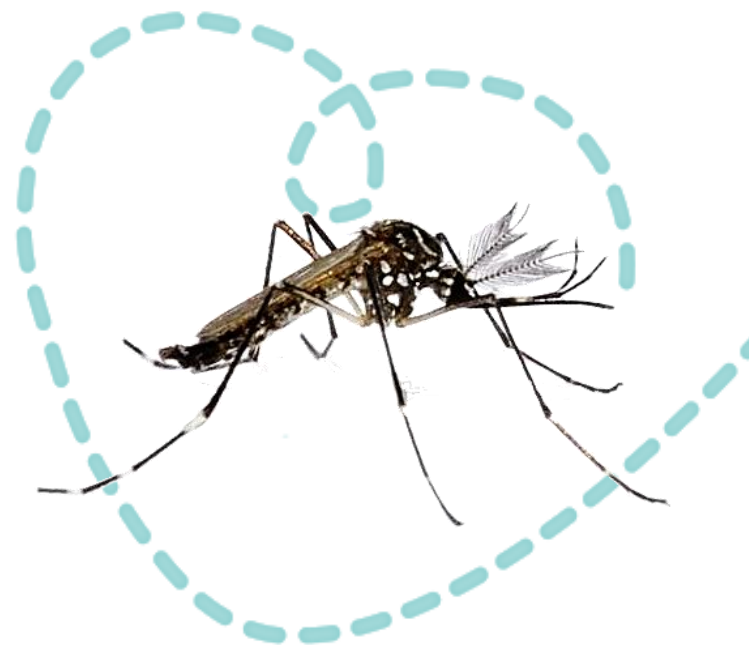
PUBLIC HEALTH	AGRICULTURE		LIVESTOCK
	BROADACRE	HORTICULTURE	
 Malaria	 Corn	 Fruits	 Cattle
 Dengue, Zika, Yellow Fever, Chikungunya	 Soybeans	 Vegetables	 Poultry
 Nuisance Biters	 Cotton	 Tree nuts	 Pigs
	 Sugarcane		

Overview of Oxitec's *Aedes aegypti* Mosquito

✓ TARGETED SUPPRESSION

✓ SAFE, NON-TOXIC, NON-ALLERGENIC

✓ PROVEN EFFECTIVENESS



MALE-ONLY RELEASES
(male mosquitoes do not bite)

TRACEABLE IN THE FIELD

SELF-LIMITING IN THE ENVIRONMENT



Unique combination of characteristics is a key differentiator of Oxitec's technology

World-Class Partners, Collaborators and Regulatory Record



Select Partners and Underwriters



UK Research and Innovation

Select Current and Historical Collaborators



Department of Agriculture and Food



UNIVERSITY OF CRETE



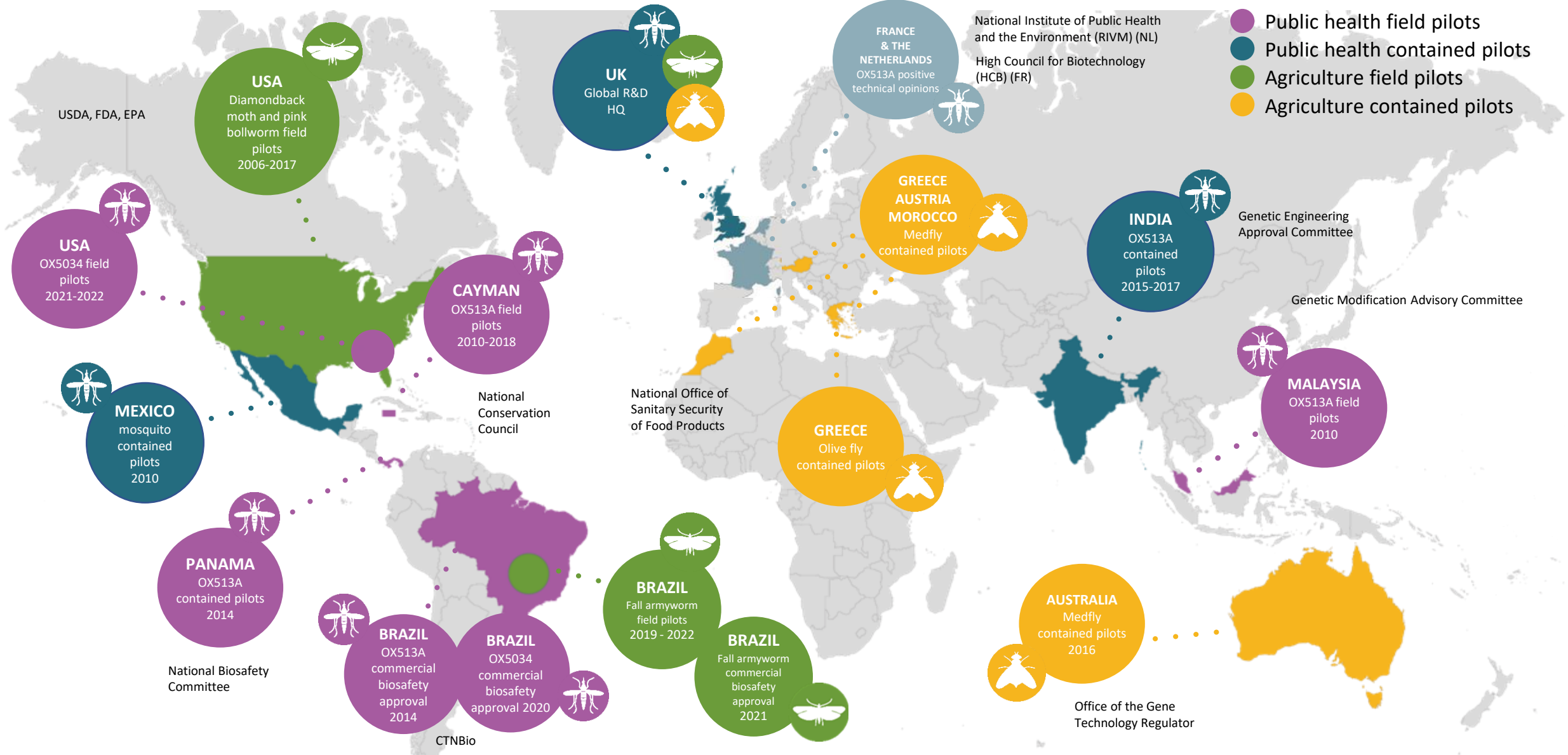
Positive Regulatory Approvals and Opinions



National Conservation Council
Cayman Islands



10+ Years of Successful Regulatory Decisions



10 Years of Community Support Every Place We've Worked



WE DELIVER IMPACT WORKING IN CLOSE PARTNERSHIP WITH COMMUNITIES

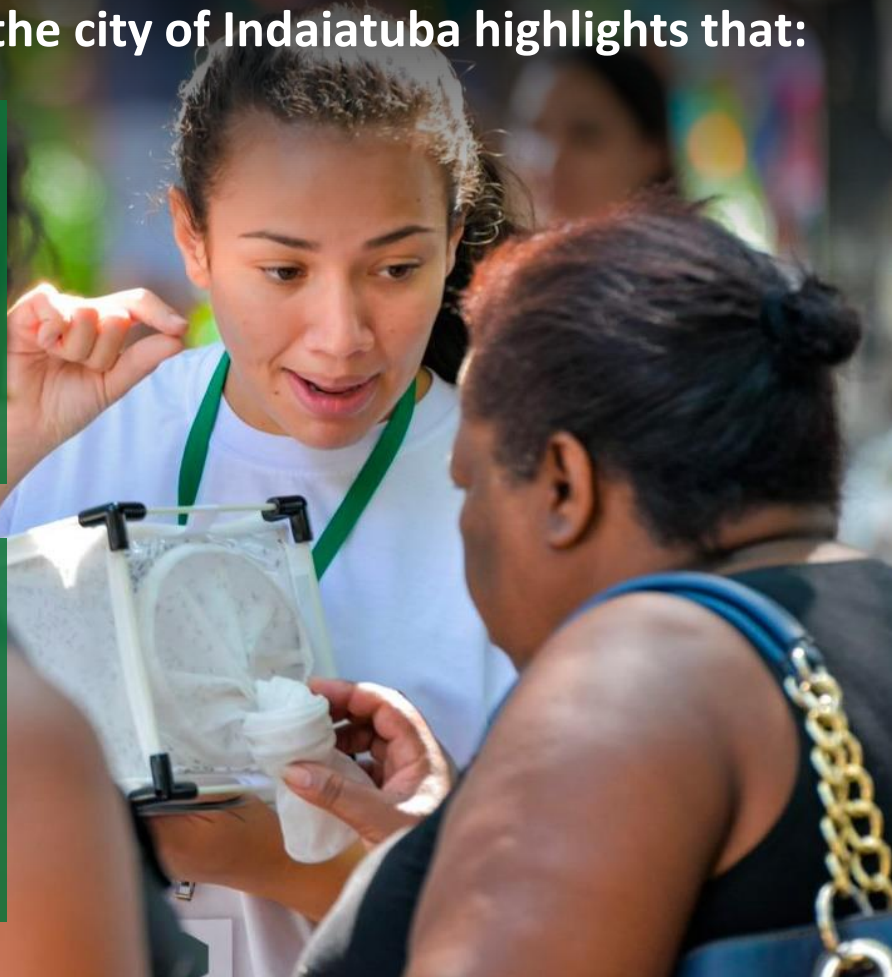
Example: a public survey of 2,000 people carried out in March 2021 in the city of Indaiatuba highlights that:

97%

Would like the Friendly™ project to continue

97%

Would like to see the project expanded

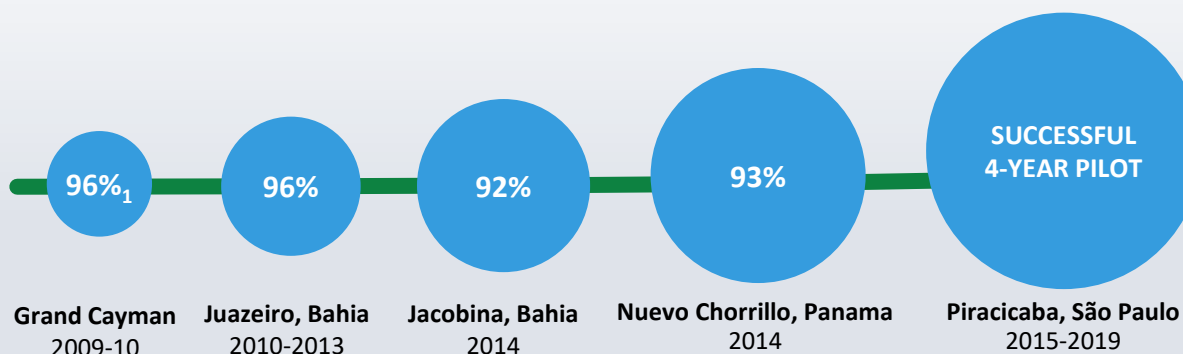


Success in the Field: Decade of Performance, Lessons & Proof-points

OXITEC'S PROVEN VECTOR CONTROL RESULTS, SELECTED DEPLOYMENT PROGRAMS, 2010-2020

- Published **peak suppression performance of wild-type *Aedes aegypti*** ranging from **92% to 96%** as compared to control sites (see below)
- 1Bn+ Oxitec mosquitoes produced for release with no adverse effect on humans or the environment**
- Deployments ranged from small-scale to **coverage of 65K people**

- Successful suppression** of target *Aedes aegypti* populations in range of deployments
- Demonstrated **safe with no lasting impact on the environment, humans or animals**
- Multiple pilot approvals** from biosafety regulators



Upgrade to 2nd Generation Platform in 2018

96%₄

1st OX5034 Adult Pilot
Indaiatuba, Brazil
2018-2019

96%

1st OX5034 Product Trial
Indaiatuba, Brazil
2019-2020

2020-21

Scaled-up OX5034 Product Trial
Indaiatuba, Brazil
2020-2021

2021-22
US OX5034 Product Trial
Florida 2021

2021-22

OX5034 Market Launch In BR

2021-22 INITIAL BR LAUNCH



DECADE OF DEVELOPMENT AND PROOF-POINTS

PREPARING FOR COMMERCIAL LAUNCH

Oxitec in Cayman

OX513A Demonstration Trial – East End (2010)



Extremely high pest populations tackled
Published in respected international scientific journal

Photo by RH43 (unmodified)
<https://web.archive.org/web/20161021023351/http://www.panoramio.com/photo/65908716>

Purpose: Proof of Concept
Duration: 23 weeks
Partner: MRCU
Independent Validation: Yes

**World's first
GM mosquito
performance
trial**

**Proof of
concept
completed**

**80-96%
Suppression**

Oxitec in India

OX513A Regulatory Trials – Dawalwadi (2011 – present)



*Population elimination in all field cages
after 10-15 weeks of releases*

Facility opened by current Chief Scientist at WHO



Purpose: Caged Suppression
Duration: 34 weeks
Partner: GBIT
Independent Validation: Yes

**Proven
*Aedes
aegypti*
eliminations**

**Confirmed
insecticide
susceptibility**

**Confirmed
strong mating
capability**

**Three peer-
reviewed
publications**

Oxitec in Panama

OX513A Demonstration Trial - Nuevo Chorrillo (2014)



Panama residents named Oxitec male mosquitoes "Mosquitos Amigables"

Purpose: Suppression pilot
Duration: 28 weeks
Partner: Gorgas Institute
Independent Validation: Yes

**91% & 95%
suppression
in 1 season**

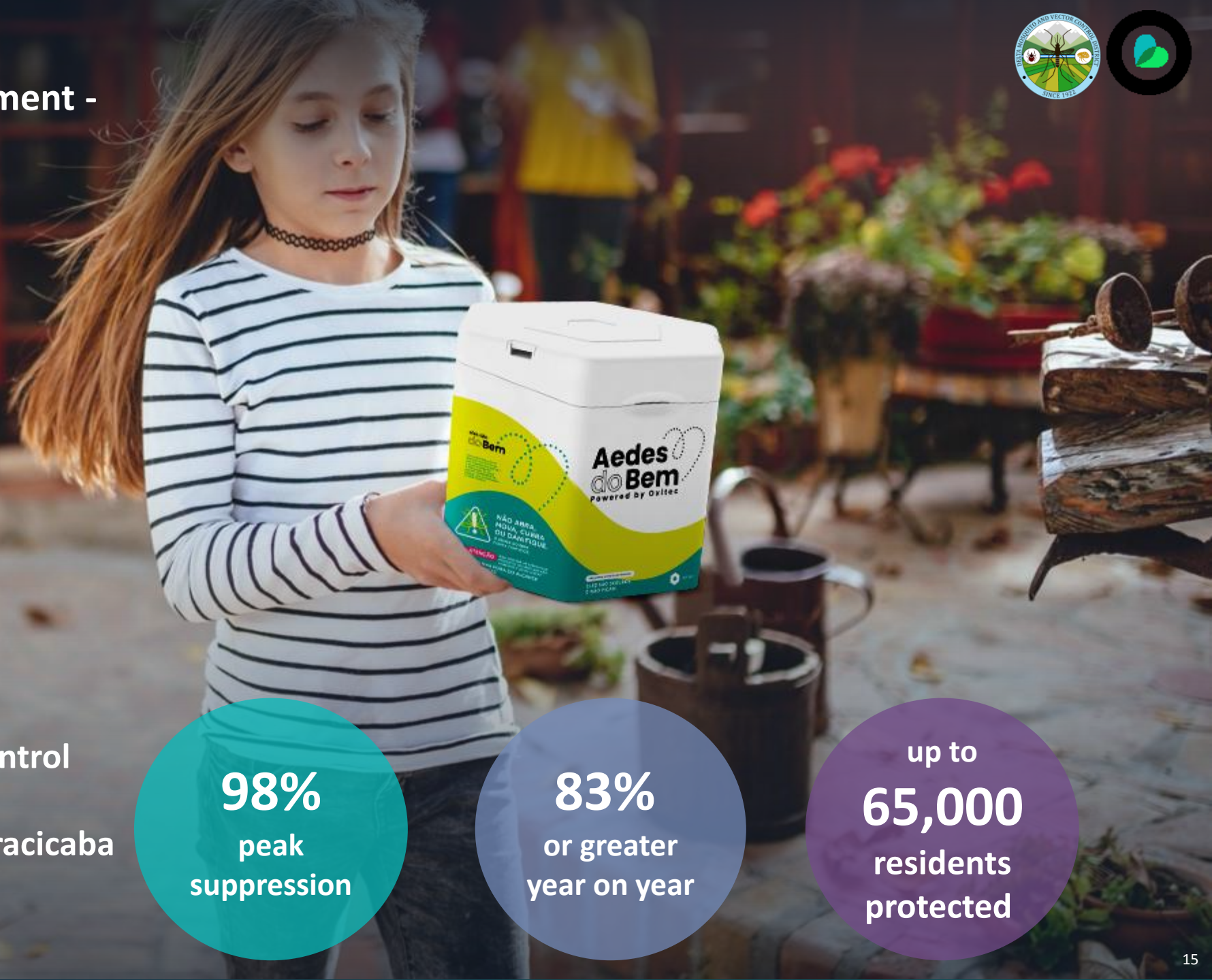
**Proven safe
& no niche
replacement**

**Two peer-
reviewed
publications**

**Strong
mating
performance**

Oxitec in Brazil

OX513A Operational Deployment -
Piracicaba (2015-2019)



*93% of residents wanted
the project to continue*

Purpose: Operational Vector Control

Duration: 4 years

Partner: Vector Control Unit, Piracicaba

Independent Validation: Yes

98%

peak
suppression

83%

or greater
year on year

up to
65,000
residents
protected

Oxitec in Cayman

OX513A Demonstration Trial – West Bay (2016)

Mobile laboratory built in the UK, shipped, installed, and employed

Strong support from local community



Purpose: Area-wide suppression
Duration: 12 months
Partner: MRCU

Novel mobile lab concept tested

62% suppression achieved in one season

Extreme pest levels combatted

Oxitec in Cayman

OX513A Demonstration Trial – West Bay (2018)



Fully adhered to regulatory and operational requirements

"The 2018 collaborative project was a professional scientific endeavor. MRCU's relationship with Oxitec senior scientists and management was positive and supportive. This was a successful collaboration that fully adhered to the mutually agreed upon contract and Operational Plan that was steered through an active Stewardship Committee."

MRCU DIRECTOR JIM MCNELLY (JULY 2020)

Purpose: Area-wide suppression

Duration: 22 weeks

Partner: MRCU

First actively combining OX513A and chemicals

All releases under threshold for females

Lessons learned on Integrated Vector Management

Photo by RH43 (unmodified)

<https://web.archive.org/web/20161021023351>

[/http://www.panoramio.com/photo/65908716](http://www.panoramio.com/photo/65908716)



Oxitec in Brazil

OX5034 Regulatory Trial Indaiatuba (2018-2019)

“The collaboration between the city and Oxitec has been positive and transparent, and the suppression results in the areas that received Oxitec mosquitoes were excellent.”

DR GRAZIELA GARCIA, INDAIATUBA SECRETARY OF HEALTH

Purpose: Regulatory - Replicated Field Trial

Duration: 46 weeks

Partner: Indaiatuba Municipality

Independent Validation: Yes

96%
Suppression

Confirmed
biosafety
credentials

94%
of residents
wanted the
project to
continue

Oxitec in Brazil

OX5034 Capsule Demonstration Trial Indaiatuba (2019-2020)

Just add water technology in use for the first time

Purpose: Replicated Field Trial

Duration: 18 weeks

Partner: Indaiatuba Municipality

Independent Validation: CTNBio

92%
Suppression
in just 15
weeks

6
weeks faster
than
OX513A



Brazil Authorizes Oxitec Mosquitos for Commercial Use

Oxitec's *Aedes aegypti* mosquitoes evaluated by an independent body of 27 academic experts that comprise Brazil's regulator CTNBio.

May 2020 – Oxitec mosquitoes received full biosafety approval from CTNBio, Brazil's national regulatory authority

- Approved after demonstrating the technology's full safety to human health and the environment.
- Free to release anywhere without license or restriction
- Over 20 million released protecting thousands of people without any adverse effect.
- Available for sale commercially (aedesdobem.com.br).



Commercial Launch - Engaging Brazilian Consumers at all Levels



Instagram Search

Instagram Search

Últimos dias para conhecer o Aedes do Bem™ no Polo Shopping Indaiatuba!
Aedes do Bem™ Uma nova vida fora da caixa. #UnboxCare #UnboxdoBem

Dengue, zika e chikungunya:
o que espera o brasileiro neste verão?
Fonte: Band

Aedes do Bem™, o jeito mais seguro, simples e eficaz de combater o Aedes aegypti
Biotecnologia, uma nova aliada contra as doenças endêmicas.
voja
#UnboxdoBem

Voe para o nosso esquento BLACK FRIDAY!
Preço especial e frete grátis! Assine agora!
E a cada compra realizada, uma Caixa do Bem™ será doada para o Projeto Aquarela.
#UnboxCare #UnboxdoBem Aquarela

Nessa caixa tem ciência e tecnologia
Aedes do Bem

Gripe, Covid-19 ou Dengue?
Arraste para o lado e saiba a diferença!
Aedes do Bem

Está em Indaiatuba? Então venha conhecer o Aedes do Bem™!
Aedes do Bem™ Uma nova vida fora da caixa. #UnboxCare #UnboxdoBem

Casos de chikungunya voltam a crescer no Brasil. Saiba como se prevenir!
Aedes do Bem™ Uma nova vida fora da caixa. Fonte: G1

A proteção está no ar!
Acesse o nosso site e garanta a proteção da sua família.
#UnboxCare #UnboxdoBem

Com Aedes do Bem™ você curte o verão sem preocupação.
FALTA 1 DIA
#UnboxCare #UnboxdoBem

80% DOS FOCOS do mosquito Aedes aegypti estão dentro de casa.
Fonte: Relatório CCEV 2020

A PAZ INVADIU O MEU coração DE REPENTE ME ENCHEU de paz
Um verão cheio de paz para você!
Aedes do Bem

Amanhã começa um novo ciclo com novos desafios e oportunidades para você viver a sua vida fora da caixa!
Feliz 2022!
Aedes do Bem

FALTAM 2 DIAS
Para você se proteger do mosquito da dengue de um jeito muito simples.
#UnboxCare #UnboxdoBem



NEOON

Quer saber mais sobre o Aedes do Bem™ e como ele funciona?



Escaneie aqui



Quer saber mais sobre o Aedes do Bem™ e como ele funciona?



Amor & Aedes

A leitura



A leitura

Saída do Terminal de Bus
Metrô de Teresopolis

Saída Metrô Terminal "Bomfim"

Friendly™ Aedes is protecting passengers in LATAM's largest bus terminal

Overview of EPA's Scientific Assessment and Approval

Key Elements:

- 14-month in-depth process
- Exhaustive scientific review
- Risk assessment
- Multi-agency support
- Public comment & responses



By the Numbers:

- 70+ documents submitted
- 25 commissioned studies
- 4,500+ pages, including 2,500+ pages of scientific peer-reviewed literature

Data Requirements Fulfilled by Oxitec (partial list)

Environmental Assessments:

- Fish
- Birds
- Mammals
- Plants
- Aquatic Invertebrates
- Insects
- Endangered Species

Health Assessments:

- Trait Penetrance
- Oral Toxicity
- Inhalation Toxicity
- Ocular Toxicity
- Dermal Toxicity
- Allergenicity
- Vector Competence

Mosquito Characterization and Performance:

- Insecticide Susceptibility
- Trait Penetrance
- Tetracycline Response
- Stability of Genetic Traits
- Trait Persistence
- Field Data (Brazil)
- Protein Stability
- Arbovirus Screening
- Introgression Analysis
- Complete SOPs
- Analytical Methodologies

EPA Conclusion: Oxitec Mosquitoes are Safe for Humans, Wildlife, and the Environment

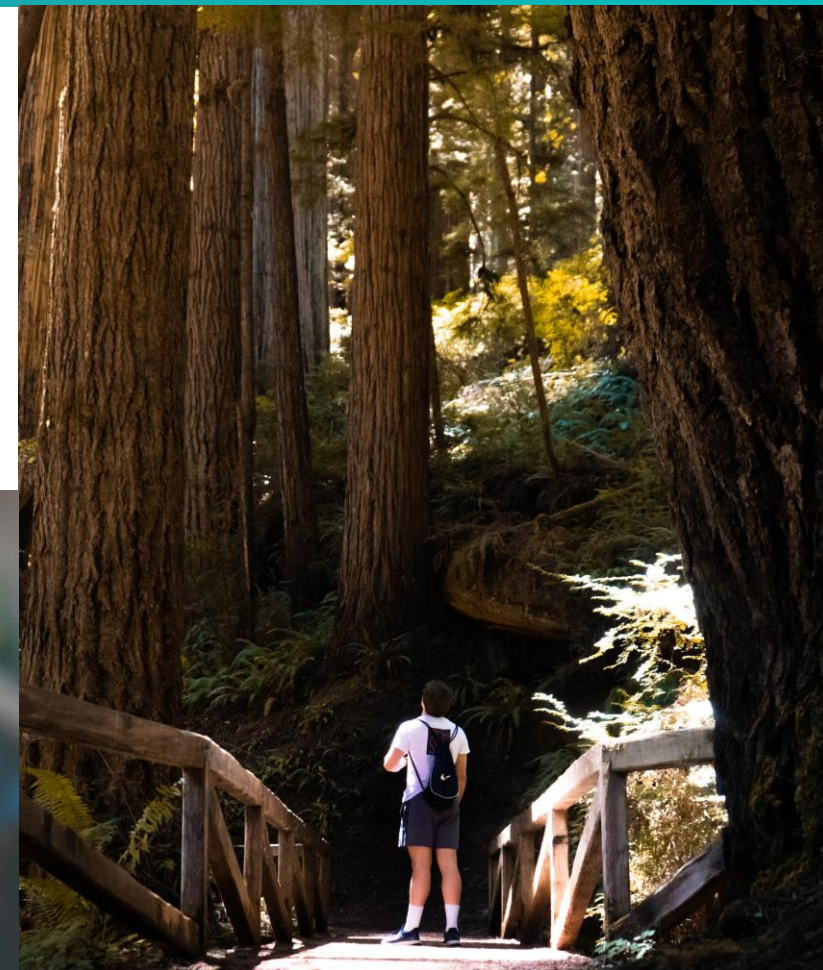
Independently validated: no effects on endangered species or critical habitat, whether direct or indirect.

SAFE FOR

- Fish
- Birds
- Mammals
- Plants
- Invertebrates
- Other aquatic animals



'OX5034 male mosquitoes do not bite people or wildlife'



Preparing for Oxitec Deployments in California

Summary of the Federal Insecticide, Fungicide, and Rodenticide Act

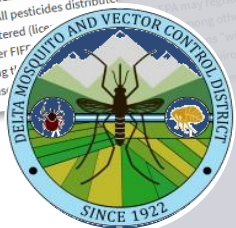
7 U.S.C. §136 et seq. (1996)

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (labeled) under FIFRA. Pesticides that do not generally use toxic substances are not required to be registered.

- Project planning
- Board approval



Local Approval



Quick Links

- Official text of FIFRA is available in the [United States Code](#).
- [FIFRA Regulations](#) from the Environmental Protection Agency.
- [FIFRA Registration](#) from the Environmental Protection Agency.



- Dossier
- Scientific literature
- External experts



Federal approval



- Dossier
- EPA risk assessments
- Scientific literature

State Approval



- Dossier
- EUP field data
- International data

Federal Product Registration

Dossiers:

- Environmental Impact
- Human Health
- Feeding Studies
- Technical Data
- Operating Procedures

Oxitec mosquitoes regulated as a 'biopesticide' by EPA

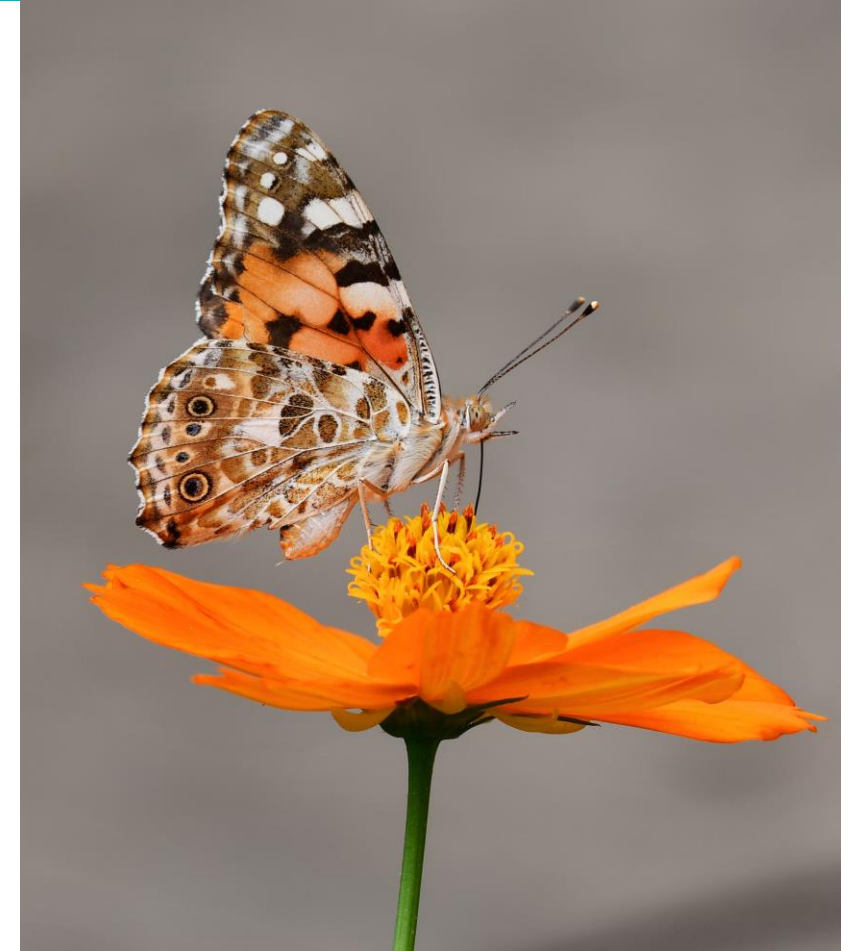
Protocols, metrics, and analysis are predetermined by EPA

Wolbachia mosquitoes are regulated under the same rules

Question and Answers

Any and all questions on this evening's topics are welcome!

(If we run out of time tonight, email info@oxitec.com and we will attempt to answer your question if it isn't included in the growing FAQ we publish online at californiamosquitoproject.com, oxitec.com/california and deltamvcd.org)



Thank You!



For more information please visit [oxitec.com/california](https://www.oxitec.com/california)