

Regulatory experience with the GE Mosquito release in Panama

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How Dengue Fever is transmitted?

- * Dengue Fever is a virus that may cause death when is hemorrhagical. It is transmitted through the female mosquito bite **Aedes aegypti** and in lesser extend by the **Aedes albopictus**, which most be infected with the virus. Since 1988 Panama has been affected by the virus, in the urban areas.



Use of GE Mosquito in Panama

- * The Gorgas Memorial Institute for studies on tropical diseases (ICGES) located in Panama, in collaboration with Oxitec from England, made the formal request to the National Commission on Biosafety for GMOs in 2011.



Purpose of the GE Mosquito project in Panama

- * Once the formal request was received by the National Commission on Biosafety for GMOs, then it was sent to the Sectorial Committee on Biosafety for Public Health for its technical evaluation, with a **Research and Development purpose**, in two phases: :
 - ✓ First phase it was a Confined Research in Laboratory, where the specialists observed and measured the competitiveness between the local males and the transgenic males mosquitoes with a lethal system and a fluorescence gene, regarding the mating with native females.
 - ✓ Second phase is for the GE mosquitoes release in the environment, monitoring what is the behavior of the population in the area where the release was made.

Who are the Members of the National Commission on Biosafety for GMOs in Panama?

Legal Basis: Law 48 of 2002

1. MINISTRY OF AGRICULTURAL DEVELOPMENT - MIDA
2. MINISTRY OF HEALTH - MINSA
3. MINISTRY OF COMMERCE AND INDUSTRY - MICI
4. MINISTRY OF FOREIGN AFFAIRS - MIRE
5. NATIONAL ENVIRONMENTAL AUTHORITY - ANAM
6. NATIONAL SECRETARIAT OF SCIENCE, TECHNOLOGY AND INNOVATION - SENACYT
7. PANAMANIAN FOOD SAFETY AUTHORITY - AUPSA
8. PANAMANIAN AUTHORITY FOR AQUATIC RESOURCES - ARAP
9. CIVIL SOCIETY REPRESENTATIVES: ACADEMIA, AGRICULTURAL PRODUCERS, TRADERS, INDUSTRY AND ENVIRONMENTALISTS.

Steps for the release into the Environment

REPORT OF THE RESEARCH OUTCOMES

THE SECTORIAL COMMITTEE EVALUATES THE INFORMATION AND RECOMMENDS AN ACTION TO TAKE TO THE NATIONAL COMMISSION ON BIOSAFETY FOR GMOs

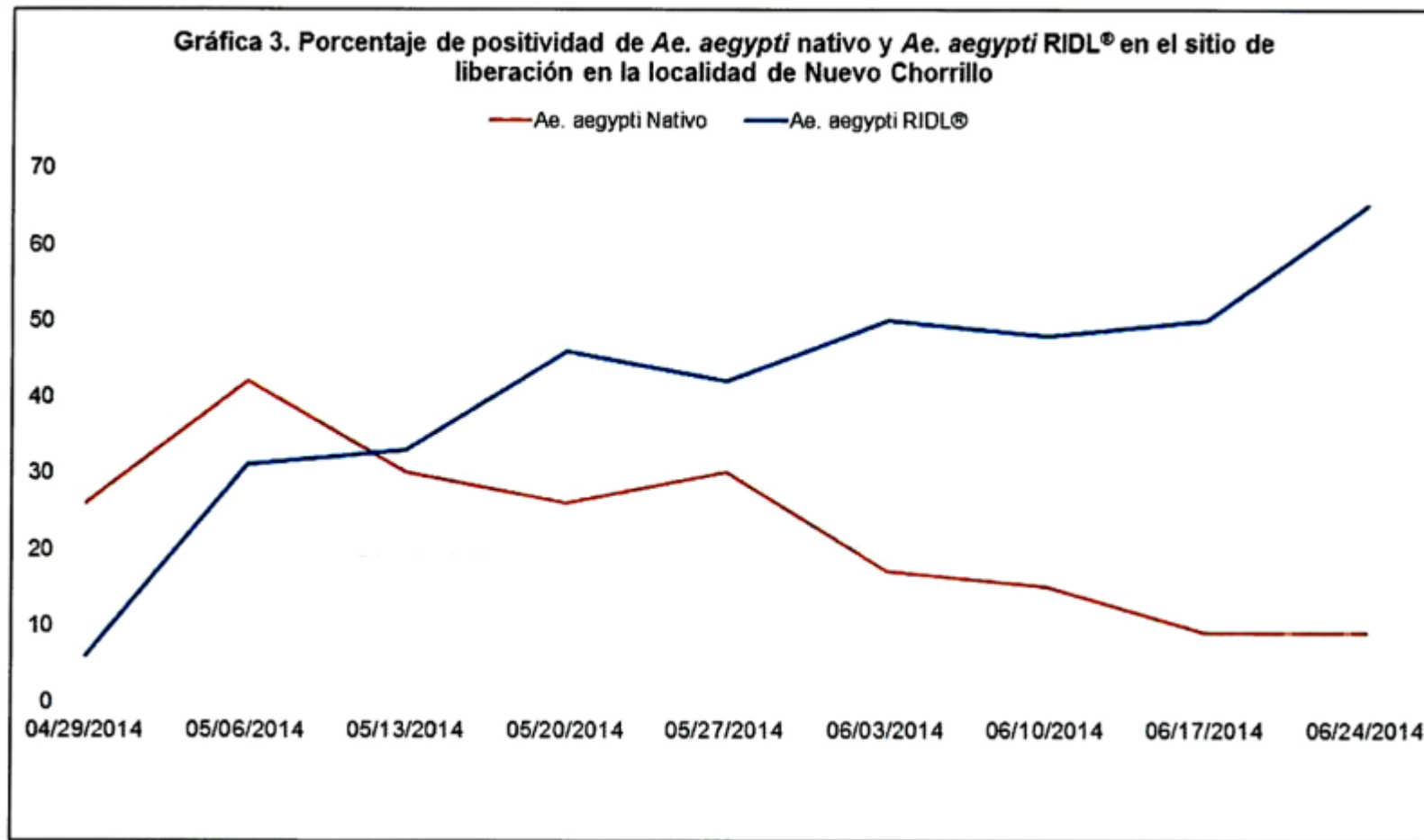
THE NATIONAL COMMISSION RECOMMENDS THE COMPETENT AUTHORITY THE DECISION TO TAKE (RELEASE INTO THE ENVIRONMENT OR REJECTION)

THE COMPETENT AUTHORITY MAKES THE DECISION THROUGH A RESOLUTION

PROCESS OF IMPORTATION AND LATER,
RELEASE INTO THE ENVIRONMENT

Communication with the public

- * Months before to start the first step of the research of the GE mosquitoes, different public outreach events were held: with the population of the district of Arraijan, national authorities, journalists, among other stakeholders. This was led by the Gorgas Memorial Institute and the Ministry of Health of Panama.
- * Gorgas Memorial Institute Researcher Lorenzo Caceres, PhD, after the second step (GE *Aedes aegypti* release to the environment) reported that evidence has shown 80% reduction of native larvae since 2011, after monitoring the release of Oxitec's GE Mosquitoes, in the towns of Princesa Mia, Nuevo Chorrillo and Lluvia de Oro in the District of Arraijan (outside of Panama city)
- * This valuable evidence was given to the Press, and published in different newspapers, TV and radio news shows on the last weeks in Panama.



Source: ICGES (Gorgas Commemorative Institute, 2014). Larvae population of native *A. aegypti* decreases 80% regarding to population (*A. aegypti*) monitoring since 2011.

THANK YOU FOR YOUR
ATTENTION

