



INTER-AMERICAN INSTITUTE FOR COOPERATION IN  
AGRICULTURE (IICA)

CENTER FOR KNOWLEDGE MANAGEMENT AND  
HORIZONTAL COOPERATION

# BEST PRACTICES BANK

*Successful experiences in horizontal  
cooperation*

2021

# MOSCAMED PROGRAM

*Maintenance of Mexico's phytosanitary status as a  
Mediterranean fruit fly-free country*



## CHALLENGE ADDRESSED

The Mediterranean fruit fly is considered to be one of the most economically important agricultural pests worldwide, as it affects the production and international marketing of more than 270 species of fruits and vegetables.

In 1978, the MOSCAMED Program was established in Mexico to eradicate the pest in the country, which it succeeded in doing in 1982. However, the appearance of the fly has been a recurring issue in the southern part of Chiapas, due to its proximity to Guatemala and the rest of Central America, where it has established itself.

The implementation of suppression and eradication strategies against the Mediterranean fruit fly, as well as the establishment of pest-free and low prevalence zones in the countries are the basis for possible regional eradication, in conjunction with an integrated fruit and vegetable development and health program to benefit the Region.

## TOWARDS A SOLUTION

The integrated control of the Mediterranean fruit fly is tremendously important to these countries, in which fruit and vegetable production plays a critical role in rural development. The establishment of the pest in Mexican territory and its advancement beyond the area in which it has been traditionally detected—which is along the border with Guatemala—would result in significant financial losses, due to the imposition of phytosanitary barriers by countries that are free of the Mediterranean fruit fly.

## GENERAL INFORMATION

### Project name:

Integrated Management of the Mediterranean Fruit Fly through the MOSCAMED Program

**Countries involved:** Mexico, Guatemala and the United States

**Supported by:** Mexico, the United States and IICA

**Executing agency:** National Service for Agrifood Health, Safety and Quality (SENASICA)

**Status:** Ongoing

**Duration:** 1978–present

## IICA PROGRAMS

Agricultural Health, Safety and Food Quality

## SUSTAINABLE DEVELOPMENT GOALS



Targets: 3.9 and 3.d

MOSCAMED is considered to be the most important integrated pest management program in Mexico, primarily due to the benefits it has created: lower environmental impact; greater employment in rural areas, increased production of fruits and vegetables and increased income for producers-exporters from the sale of healthy and high-quality products in national and international markets.

The program has facilitated the maintenance of an effective containment barrier in the communities of Chiapas and in southern Tabasco, along the border with Guatemala, which has prevented the entry into and establishment of the Mediterranean fruit fly in Mexico. The program is managed by the Government of Mexico, in collaboration with the United States and Guatemala, by way of a unified organizational structure that engages personnel from all three countries, who are responsible for technical leadership and administrative management.

Since it was established, the objective has been to eradicate the pest from Mexico, by detecting its entry in the southern region of the country. In 1982, having achieved this objective, the focus was shifted to the establishment and maintenance of a containment barrier along the border between Mexico and Guatemala, through pest-free and/or low prevalence zones in all the Central American countries.

The Program is applying integrated pest management (IPM) in vast areas of Chiapas and Tabasco, primarily using the sterile insect technique (SIT). Moreover, phytosanitary prevention (trapping nets and fruit sampling), management (autocidal, chemical, mechanical, legal and biological control), and dissemination activities have also been developed.

The prevention of the entry into, establishment and spread of the Mediterranean fruit fly in Mexico has produced direct benefits, due to the increase in cultivated areas, yields, production and access to fruit and vegetable export markets. It has also produced indirect benefits, such as employment retention and generation in rural areas, given the expansion of cultivated areas; greater consumption of high-quality fruits and vegetables, thereby improving the nutrition of the population; reduced use of agrochemicals, and in turn, less rejection of export products, due to pesticide residue; decreased medical expenses for direct and indirect intoxication, given the reduced toxic pesticide residue in fruits, water and air; fewer negative effects on pollinators, thus preventing a rise in secondary pests; and finally greater overall environmental protection.

This Mediterranean fruit fly-free status is a public good that has facilitated the export of fruit and vegetables from Mexico to countries such as the United States and Japan, which are the most coveted markets for Mexican fruit and vegetable exporters.

It bears mentioning that between 2009-2017, exports of 26 Mexican fruits and vegetables to the most demanding international markets (such as the United States) contributed USD 43.147 billion to the country's earnings, with the monetary value of this production representing 21% of the annual agricultural gross domestic product over this same period. Moreover, the cultivated land area for these products was only 8% of the national agricultural area.

According to data from the Agrifood and Fisheries Information System (SIAP), in 2019, the agriculture sector generated approximately USD 38 billion, of which about USD 8 billion was from fruits and vegetables grown on 7% of the country's agricultural farming area (IICA, 2020), an activity that provides a little more than 4.7 million working days each year (Salcedo et al, 2009).

The Program is maintained through the direct allocation of resources from SENASICA and resources transferred to the IICA Delegation in Mexico, through the Operational MOSCAMED Program. However, its success is due to the consistent efforts, the long-term vision, territorial and regional approach, use of innovative technology, strategic partnerships, coordination mechanisms and its processes ensuring accountability and transparency. The initiative has gained international recognition as the first to have eradicated the pest from a continental area, using SIT-based integrated pest management.

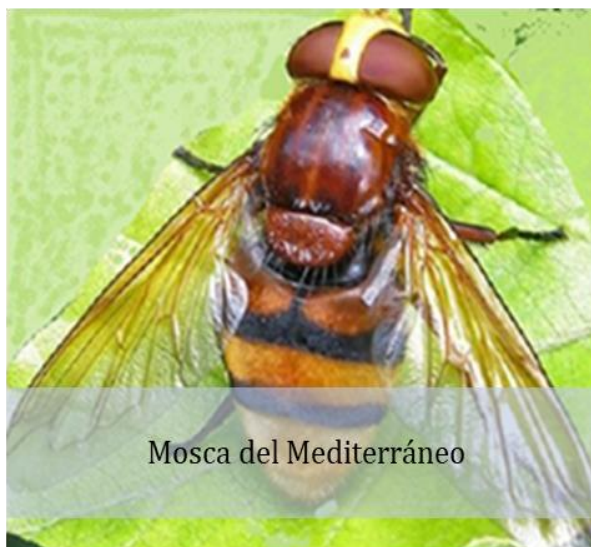
It has therefore become a solid public policy instrument that has operated efficiently to maintain a pest-free area that benefits Mexican producers of fruits and vegetables that are Medfly hosts, exporters and national consumers of these products.

In Mexico, the Program has contributed to generating new knowledge and technologies that have enabled other pests in the country to be efficiently managed, establishing the basis for other strategies, such as the National Anti-Fruit Fly Campaign.

Thus, the definition and establishment of common objectives, the harmonization of criteria to implement national and regional strategies, inter-institutional coordination mechanisms and their multi-country coordination, as well as strategic partnerships, coupled with innovation and technological development, are the basis for the possible eradication of the Mediterranean fruit fly in the region, which will bring about significant benefits for countries involved in future initiatives.

## MATERIAL PRODUCED

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Description of the images (from left to right and top to bottom):

- Mediterranean fruit fly
- Mediterranean fruit fly
- Facilities
- Mediterranean fruit fly trap

## RELATED RESOURCES

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Resource	Title	Year	URL
Document	Evaluación económica del Programa MOSCAMED en México (1978-2008)	2009	<a href="http://repiica.iica.int/docs/B1681e/B1681e.pdf">http://repiica.iica.int/docs/B1681e/B1681e.pdf</a>
Document	Evaluación económica del Programa MOSCAMED en Guatemala y sus impactos en ese país, México, EE. UU. y Belice	2013	<a href="http://repiica.iica.int/docs/B3347e/B3347e.pdf">http://repiica.iica.int/docs/B3347e/B3347e.pdf</a>
Document	Impacto económico y ambiental del Programa MOSCAMED, el trapeo preventivo contra moscas exóticas de la fruta y la campaña nacional contra moscas de la fruta, implementados por el SENASICA-SAGARPA de 2009 a 2017	2018	<a href="https://repositorio.iica.int/bitstream/handle/11324/14286/BVE21021104e.pdf?sequence=1&amp;isAllowed=y">https://repositorio.iica.int/bitstream/handle/11324/14286/BVE21021104e.pdf?sequence=1&amp;isAllowed=y</a>

## REFERENCES

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Inter-American Institute for Cooperation on Agriculture. (2020). *Smart management of the Mediterranean fruit fly in Mexico strengthens food production*. Technical cooperation stories. <https://www.iica.int/en/press/news/smart-management-mediterranean-fruit-fly-mexico-strengthens-food-production>

Salcedo, D., Lomeli, R., and Terrazas, G. (2009). *Evaluación Económica del Programa Moscamed en México (1978-2008)* (p. 145). Instituto Interamericano de Cooperación para la Agricultura. <http://repiica.iica.int/docs/B1681e/B1681e.pdf>