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ERADICATION OF THE MEDITERRANEAN FRUIT FLY FROM THE DOMINICAN REPUBLIC USING NUCLEAR TECHNOLOGY

The Mediterranean fruit fly (or medfly), *Ceratitis capitata* Wied., is considered a major agricultural pest worldwide because of its direct damage to fruit and vegetable production, and restrictions imposed to commercialization of horticultural commodities by countries free of the pest. The insect attacks several varieties of fruit and vegetable, and spreads very fast.

The presence of this pest was officially reported in the Dominican Republic in March 2015.

The International Atomic Energy Agency (IAEA), FAO and the United States Department of Agriculture (USDA) immediately joined hands to assist the country in establishing a national monitoring network to delimit the distribution of the outbreak and initiate an eradication campaign with support from the Guatemala, Mexico, USA Moscamed Programme and regional organizations, such as the International Regional Organization for Plant and Animal Health (OIRSA) and the Inter-American Institute

for Cooperation on Agriculture (IICA).

In July 2017, the Caribbean country declared officially that it is free of the invasive pest, only two years after an outbreak led to considerable damage to its agricultural industry.

The Dominican Republic has eradicated the medfly by using an integrated approach that includes the sterile insect technique (SIT) - an environmentally-friendly and effective method to suppress or eradicate selected insect populations - applied on an area-wide basis.

EFFECTIVE MEDITERRANEAN FRUIT FLY ERADICATION

An outbreak of the Mediterranean fruit fly was reported for the first time in March 2015 in the Dominican Republic, near the tourist city of Punta Cana, and rapidly spread to an area of 2000 km² in the east of the country. Investigations indicate that the Mediterranean fruit fly probably entered the country inside a tourist's luggage.

Although about 200 km away from the main horticultural production areas, an immediate import ban on several agricultural products, including avocado, citrus fruits, papaya and peppers, was placed by major trading partners, severely affecting the country's main source of income after tourism - agricultural exports. The ban resulted in an estimated loss of about USD 40 million in fruit and vegetable exports alone in the

KEY FACTS

JOINT FAO/IAEA PROGRAMME

A MEDFLY OUTBREAK IN THE DOMINICAN REPUBLIC RESULTED IN AN EXPORT BAN OF HORTICULTURE PRODUCTS WITH AN ESTIMATED LOSS OF USD 40 MILLION

THE IAEA AND FAO IN CLOSE COOPERATION WITH THE USDA, THE MOSCAMED PROGRAMME, OIRSA AND IICA, PROVIDED TECHNICAL ASSISTANCE TO THE GOVERNMENT OF THE DOMINICAN REPUBLIC

MEDFLY WAS ERADICATED FROM THE DOMINICAN REPUBLIC USING THE STERILE INSECT TECHNOLOGY

OFFICIAL ERADICATION WAS DECLARED IN JULY 2017. EXPORT MARKETS HAVE SINCE REOPENED AND NET REVENUES RE-ESTABLISHED

THE DOMINICAN REPUBLIC IS NOW ON THE LIST OF COUNTRIES THAT HAVE SUCCESSFULLY ERADICATED THE MEDITERRANEAN FRUIT FLY

JOINT FAO-IAEA PROGRAMME

E-MAIL

NAFA.Contact-Point@iaea.org

WEBSITES

<http://www.naweb.iaea.org/nafa/index.html>
<http://www.fao.org/food-chain-crisis>

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following nine months of 2015, putting thousands of jobs at risk.

While most flies were initially detected in non-commercial almond trees along the coast, there was a fear that they might also invade commercial fruit and vegetable farms.

NUCLEAR TECHNOLOGIES TO CONTAIN AND ERADICATE THE PEST

As an emergency response, the Government of the Dominican Republic, through its Ministry of Agriculture, established the Moscamed Programme-DR, and made the required financial and operational support available to perform all required monitoring and control activities. Local personnel were immediately trained in establishing a surveillance network throughout the country to detect and identify the fly, and in complementary pest control methods, such as pruning of host trees, the destruction of potential fruit hosts and the use of selective insecticide bait-sprays.

IAEA and FAO, in close cooperation with the USDA and the Guatemala-Mexico-USA Moscamed Programme, provided technical assistance to the Dominican Republic to suppress and eradicate this major invasive pest and to implement the SIT as the main eradication tool. Other organizations that participated in this major effort to assist the Dominican Republic were OIRSA and IICA.

Through its Technical Cooperation Programme, the IAEA also provided assistance through emergency funds, conducting capacity building actions, and deploying a long-term expert on-site to train staff and implement the SIT to eradicate the pest. A facility in the town of Higüey was adapted as a fly emergence

and release facility to manage the sterile male flies transported weekly as pupae from El Pino, Guatemala. From October 2015 until May 2017, over 4 billion sterile flies were released in the affected areas.

A Technical Advisory Committee of international experts, chaired by the Joint FAO/IAEA Division, was fundamental in providing technical guidance to the Ministry of Agriculture in the Dominican Republic.

DOMINICAN REPUBLIC MEDFLY FREE

As a result of this major effort, the last Mediterranean fruit fly was detected in January 2017 and official eradication was declared six months later in July 2017. Export markets have since reopened and net revenues of the rapidly growing horticultural sector have been re-established.

Phytosanitary activities are now carried out by 117 inspectors, including the use of X-ray machines in the Dominican Republic's maritime ports, airports and border points to minimise the risk of entry of the fly and other invasive pests.

The Dominican Republic is now on the list of countries that have successfully eradicated the Mediterranean fruit fly. It has successfully developed the capabilities for area-wide application of the SIT and has become a source of training and technology transfer for other countries in the region that are increasingly exposed to invasive pest incursions due to increased travel and trade. Had this devastating pest been allowed to establish itself, the whole Caribbean Region and all its trading partners would have been at severe risk of devastating outbreaks and huge losses in export revenue.