Mexico

IAEA Member State since April 1958

Selected achievements

2023: The production and quality control of radioisotopes and radiopharmaceuticals is enhanced, advancing nuclear medicine in the country.

2022: Cancer control is strengthened in the State of Chihuahua through the acquisition of a state-of-the-art linear accelerator.

2022: Nuclear methods are applied to help avert a fruit fly crisis in Mexico.

A linear accelerator (linac) was purchased for the Chihuahua State Cancer Center, following an official request from the Secretary of Health of Chihuahua. The linac became operational in April 2022. (Photo: Chihuahua State Cancer Center, Mexico)

National priorities

- Strengthening the diagnosis and treatment of cancer
- Radiation and nuclear safety
- Radiopharmaceutical production
- Radiological protection

Main areas of IAEA support

- Safety assessment of the Laguna Verde Nuclear Power Plant
- Management of radioactive waste
- Environmental radiological surveillance
- Human health
- Sterile insect technique

Project successes

Human health

With IAEA support, Mexico's Chihuahua State Cancer Center acquired a state-of-the-art linear accelerator (linac) in April 2022.

This instrument destroys cancer cells without damaging surrounding tissue thanks to precise high-energy X rays tailored to the shape of a tumour.

Treating approximately 400 patients annually, the success of this initiative has significantly improved cancer care in the country.

Ongoing IAEA support includes training specialist staff in radiotherapy to ensure advancements in Mexico's cancer treatment capabilities are sustained.

Sterile insect technique (SIT)

In response to a Mediterranean fruit fly (medfly) outbreak in the Mexican state of Colima, the IAEA and the FAO collaborated on an emergency action plan involving the sterile insect technique (SIT). This uses gamma-ray irradiation to sterilize male medflies.

The swift and effective response, in coordination with national plant protection authorities, successfully brought the outbreak under control.

As a significant agricultural exporter, Mexico attaches high importance to the prevention of medfly outbreaks as these can have severe socio-economic consequences and impact global food prices.

Radioisotopes and radiopharmaceuticals production for medical applications

Since 2018, Mexico's National Institute of Nuclear Research (Instituto Nacional de Investigaciones Nucleares - ININ) has actively explored introducing a medical cyclotron for radiopharmaceutical production.

Currently, most radionuclides for radiopharmaceuticals are imported, except for ^{153}Sm and iFAP-functionalized lutetium oxide colloidal solutions.

To assess feasibility and expand health coverage, six representatives from ININ undertook a two-week scientific visit to the specialized cyclotron training centre at the University of Coimbra in Portugal.

The visit covered cyclotron operation, radionuclide production, quality control, and compliance with national and international legislation, amongst other things.

ININ plans to formally begin the process of acquiring the cyclotron in 2024.

Participation in the major initiatives

- NUTEC Plastics
- Rays of Hope
- ZODIAC

Jackson trap baited with Cuelure for early detection of *Bactrocera Scutellata* (Photo: SENASICA, SADER)

Date of imPACT Review(s)

2018

IAEA support received in the 21st century

60
national TC projects implemented

375 fellows and scientific visits — 101 women

1029 training participants — 386 women

1572 meeting participants — 487 women

387 expert missions received — 62 women

Contributions to South-South and triangular cooperation

563 fellows and scientific visits hosted — 173 women

1316 meeting participants hosted — 513 women

713 expert missions supported — 167 women

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