



Joint FAO/IAEA Programme
Nuclear Techniques in Food and Agriculture

2 ZERO
HUNGER



Advancing Success Towards SDG2 (Zero Hunger) Through Science & Technology

(Session 2: Latin America: Effects of climate on food security)

The Sterile Insect Technique (SIT) Contribution

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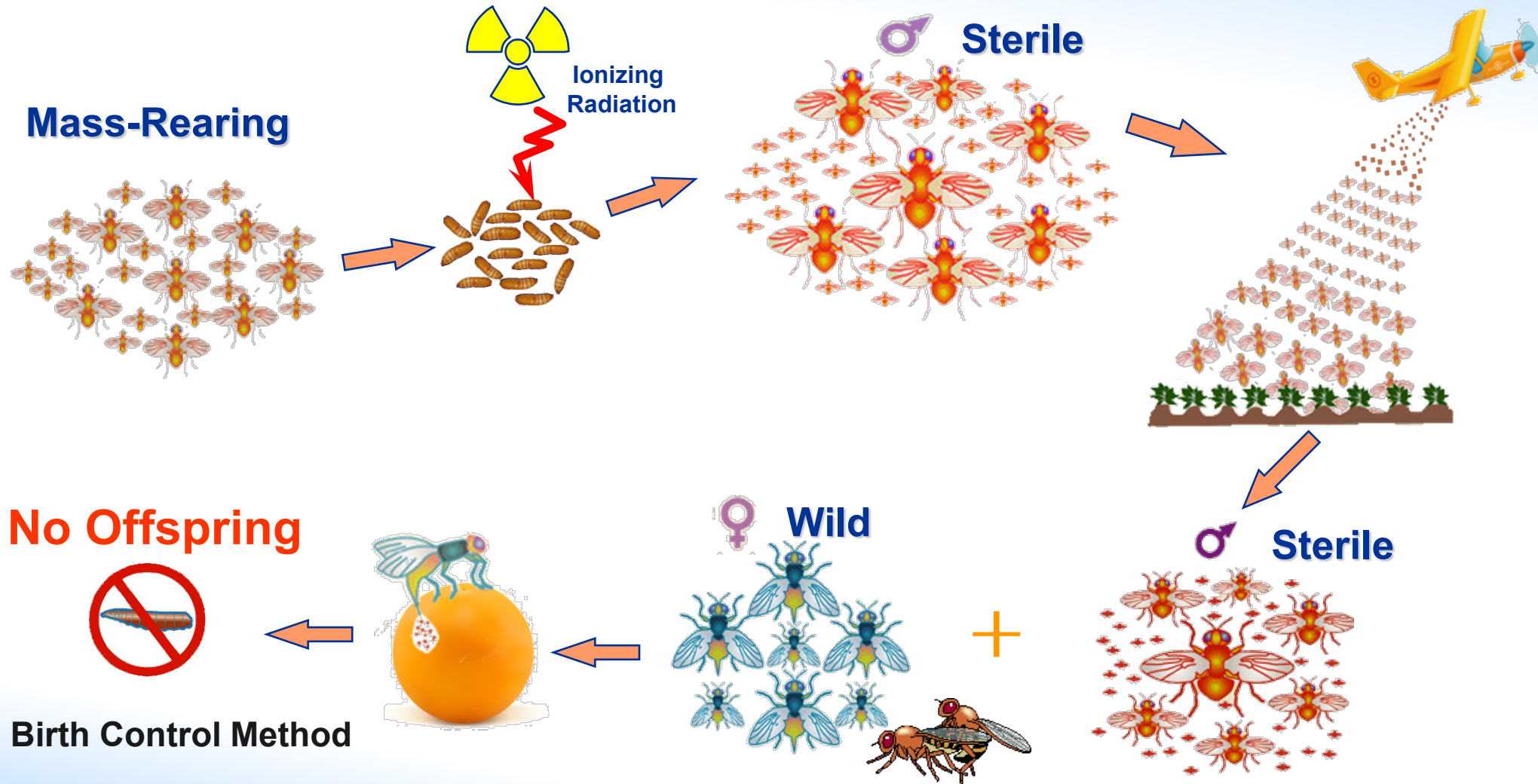
**The Joint FAO/IAEA Centre of
Nuclear Techniques in Food and Agriculture**

FRUTERIA



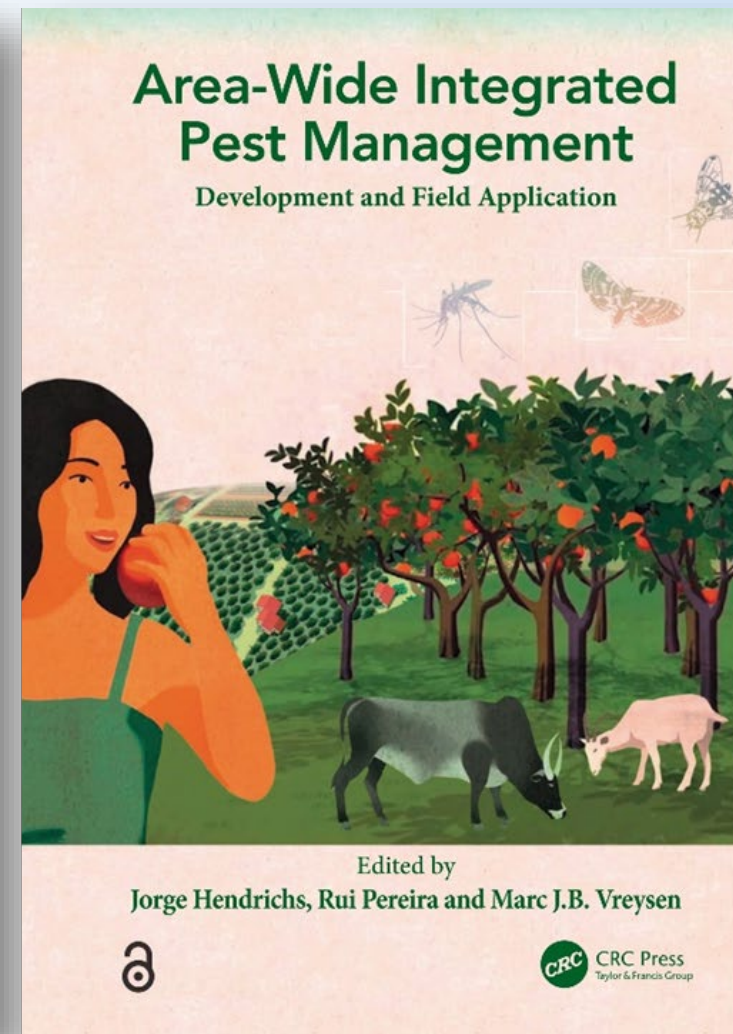
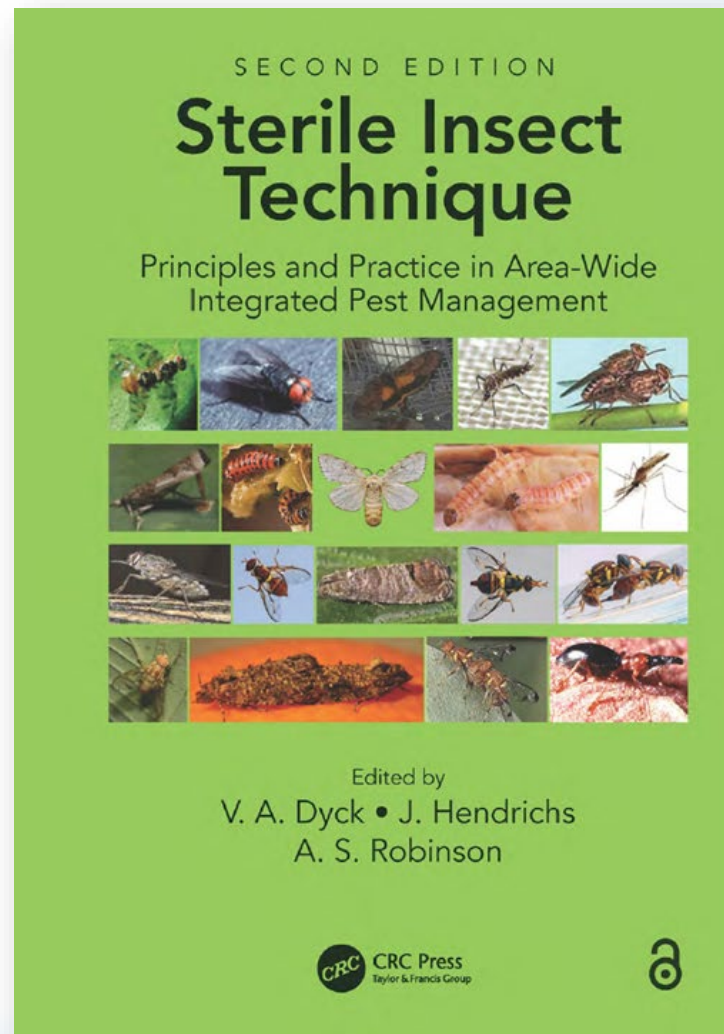
The **WHO** is promoting healthy diets with daily fresh fruit / vegetable consumption of at least 400 g/day

The Sterile Insect Technique (SIT)



SIT: Concepts

- Books with more than 1000 pages each published in 2021 and freely available on digital format
- <https://doi.org/10.1201/9781003035572> (SIT)
- <https://doi.org/10.1201/9781003169239> (AW-IPM)

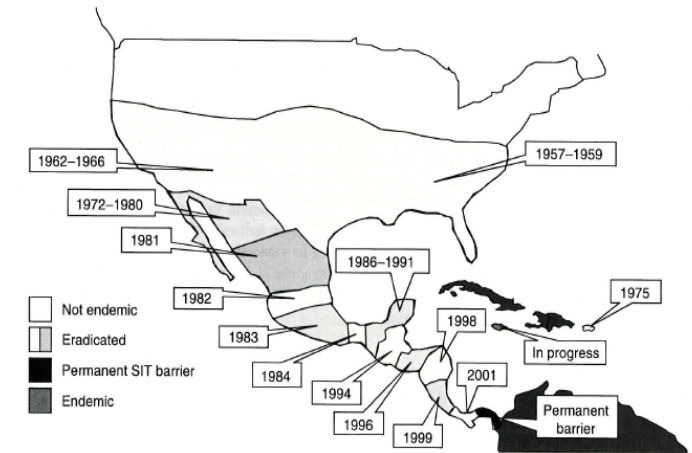


SIT Pioneer



E. F. Knipling

Received the 1992 [World Food Prize](#) for the major collaborative achievement in developing the [sterile insect technique](#) (SIT) for the eradication or suppression of the threat posed by pests to the livestock and crops that contribute to the world's food supply.



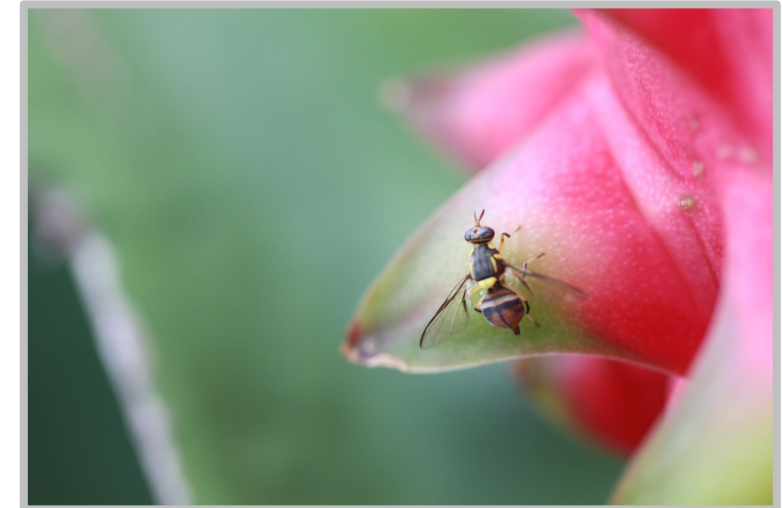
SDG2, SIT, Invasive Species and Climate Change



SDG 2 Zero hunger

Food security through enhanced crop production

- The rapid expansion of international travel and trade are facilitating the spread of non-native species, while **climate change** is creating new ecological niches enabling the establishment of pests in previously inhospitable regions (**Invasive Species**).
- Area-wide is an integrated pest management (IPM) applied against an **entire target pest population** within a delimited geographical area.
- The SIT can contribute to the significant **reduction of insecticide application**.



Preventive Release Programmes

Mediterranean fruit fly Preventive Release Programme in California and Florida



Mediterranean fruit fly preventive releases in Argentina and Chile



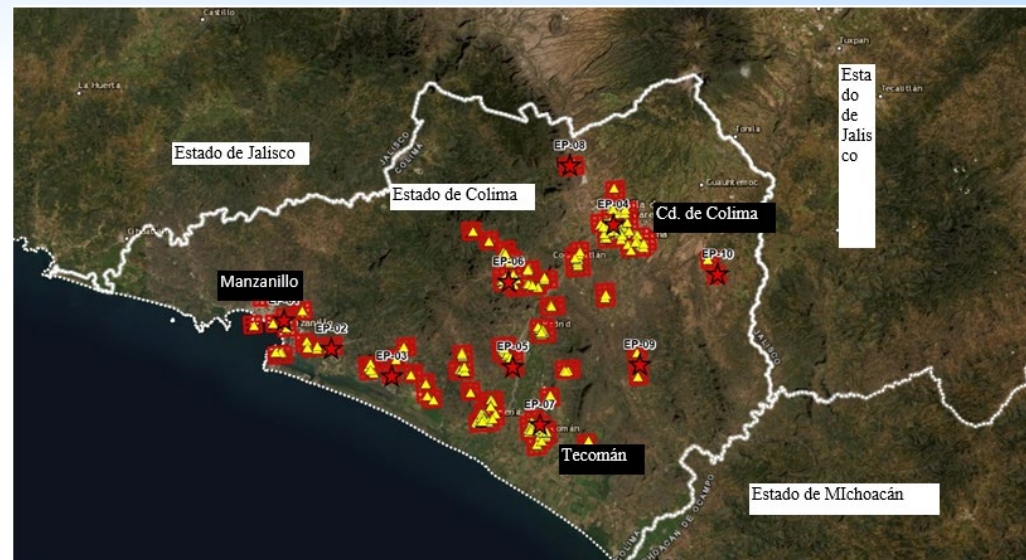
Argentina and Chile are currently piloting the implementation of a preventive SIT approach in their fruit fly free areas.



Eradication, Colima, Mexico (2021-2022)

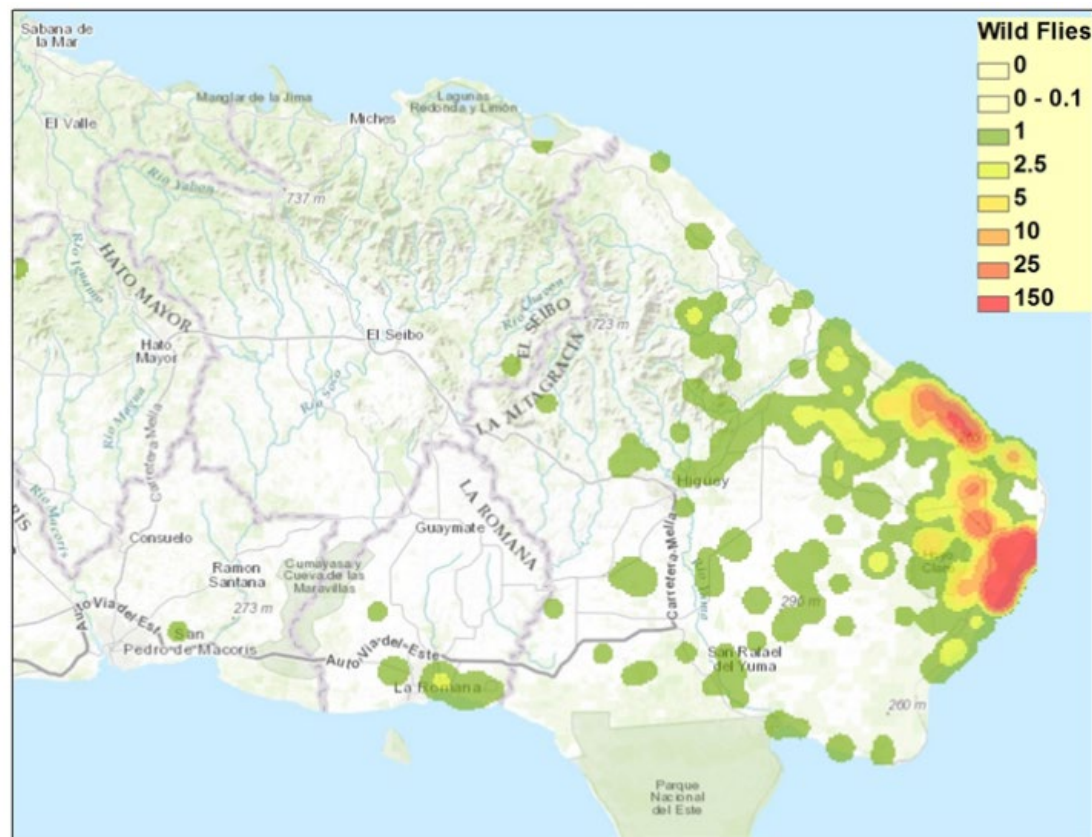


- Outbreak of Mediterranean fruit fly in April 2021
- 4436 traps deployed for pest delimitation purposes
- Extensive suppression and eradication activities, including release of 1170 million of sterile flies
- Official declaration of eradication by the Mexican Government on 2 Aug. 2022

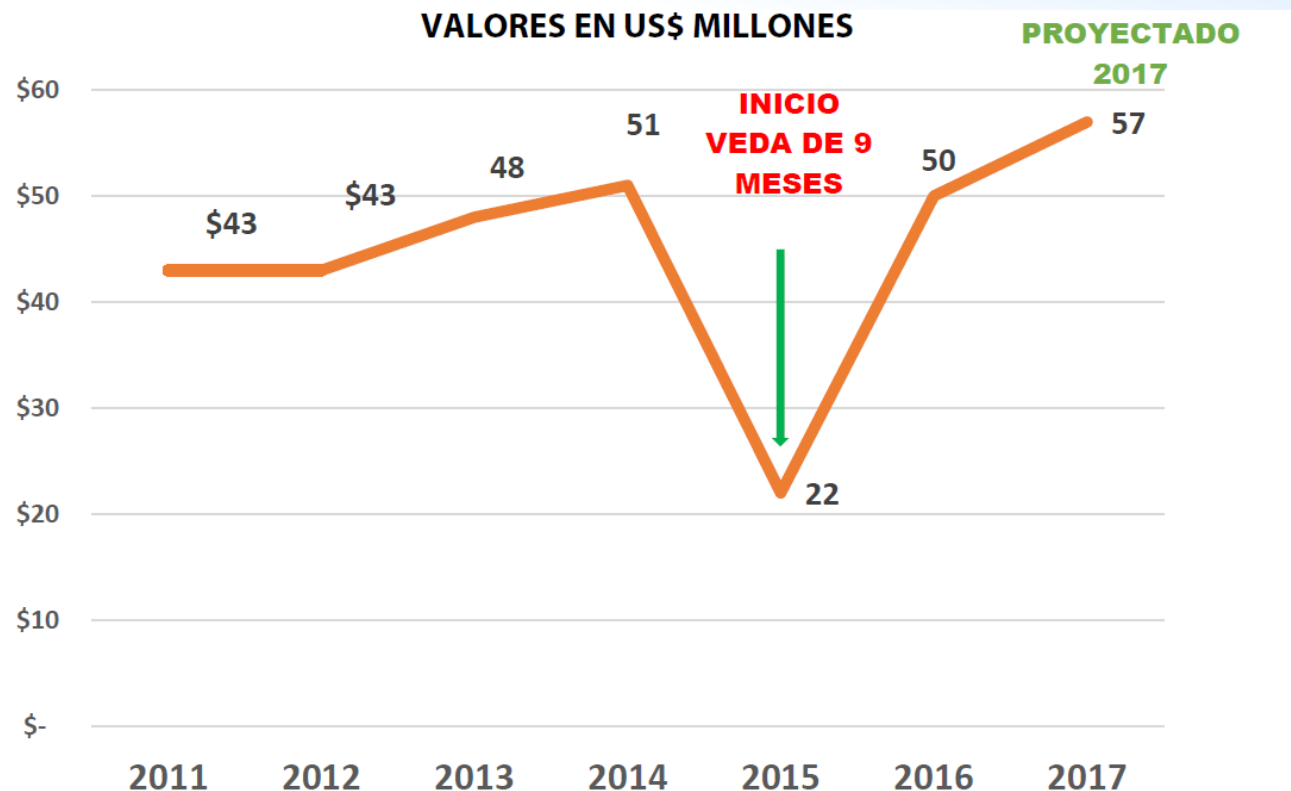




Eradication, Dominican Republic (2015-2017)



Invasion of Mediterranean fruit fly in 2000 Km²
 (1st detection in March 2015, last detection Jan. 2017).
 4000 million sterile flies released between Oct. 2015-May 2017.



Dominican Republic Fruit Exports (million \$).

Other Eradication Programmes

Cactus Moth in Isla Mujeres and Isla Contoy, Mexico (2009)



Pink Bollworm in Mexico and USA (2018)



Included planting of transgenic cotton, use of insect pheromones to disrupt mating, release of sterile insects to prevent reproduction, and extensive survey.

Thank you for your attention!