



## IC PROJECT REPORTING TEMPLATE AS PART OF THE STRATEGY AND PROCESS ON HOW THE IC REVIEWS AND ANALYSES ICD PROJECTS

**Project Title:** Demonstrating Feasibility of the Sterile Insect Technique in the Control of the Codling Moth, *Cydia pomonella*

**Reporter (name, position):** Insect Pest Control Section, Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture

**Project Code (if applicable):** CPR5027

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| <b>1. Project Profile</b>  |   |
| <b>Recipient Region(s)/ Countries</b>  | China   |
| <b>Donor/ Resource Partner</b>   | IAEA/Technical Cooperation Projects (TC)  |
| <b>Collaboration / Participating Organizations</b>   | IAEA / Institute of Plant Protection, Chinese Academy of Agricultural Sciences (CAAS); Shenyang Agricultural University |
| <b>Project Budget (detailed funds and/or in-kind)</b>  | EUR 394 625   |
| <b>Project Timing</b>  | Jan 2022 – Dec 2025   |
| <b>2. Summary of Project (Scope, Relevance to the IPPC, Main outputs, Success and challenges)</b>  |   |
| <p>Project objective: To reduce pesticide use and improve fruit production by demonstrating the effectiveness of SIT for codling moth control using Area-Wide Integrated Pest Management (AW-IPM) programmes.<br/>Project outcome: Sterile Insect Technique for codling moth control integrated.</p>   |   |
| <b>3. Project Supporting Materials [e.g. hyperlinks]</b>   |   |
| Not applicable   |   |
| <b>4. List project technical resources (i.e. guides, training materials, tools) that could be useful and used by other stakeholders</b>  |   |
| <p>FAO/IAEA. (2022). International Guideline for Transboundary Shipments of Irradiated Sterile Insects. Food and Agriculture Organization of the United Nations/International Atomic Energy Agency. Vienna, Austria. 38 pp.<br/><a href="https://www.iaea.org/sites/default/files/2022.transboundary_shipments_of_sterile_insects.pdf">https://www.iaea.org/sites/default/files/2022.transboundary_shipments_of_sterile_insects.pdf</a></p> <p>FAO/IAEA. (2022). General Guidelines to Facilitate the Opening of International Markets for Fruits and Vegetables that are Fruit Fly Hosts Based on International Standards for Phytosanitary Measures. Food and Agriculture Organization of the United Nations/International Atomic Energy Agency. Vienna, Austria.<br/><a href="https://doi.org/10.4060/cc0361en">https://doi.org/10.4060/cc0361en</a></p> <p>FAO/IAEA/USDA. (2022). Manual de Control de Calidad del Producto en la Cría masiva y Liberación de Moscas de la Fruta Estériles. Traducción de la Versión 7.0 de 2019. Agencia Internacional de Energía Atómica, Viena, Austria, 149 pp. <a href="https://www.iaea.org/sites/default/files/qcv7-en-espanol.pdf">https://www.iaea.org/sites/default/files/qcv7-en-espanol.pdf</a></p> <p>FAO/IAEA. (2022). Dosimetry for SIT: Standard Operating Procedures for Gafchromic™ Film Dosimetry System for Gamma Radiation v. 1.0, Andrew Parker, Kishor Mehta and Yeudiel GómezSimuta (eds.), Food</p> |   |

and Agriculture Organization of the United Nations/International Atomic Energy Agency. Vienna, Austria. 40 pp. <https://www.iaea.org/sites/default/files/gamma-sop-en-excel-embedded.pdf>.

FAO/IAEA. (2022). Dosimetría para la TIE: Procedimiento Operativo Estandar para el sistema de dosimetría de películas Gafchromic™ para Radiación Gamma v. 1.0, Andrew Parker, Kishor Mehta y Yeudiel Gómez-Simuta (eds.), Organización de las Naciones Unidas para la Agricultura y Alimentación/Organismo Internacional de Energía Atómica. Viena, Austria. 46 pp. <https://www.iaea.org/sites/default/files/22/03/gamma-sop-es-excel-embedded.pdf>.

FAO/IAEA. (2022). Dosimetry for SIT: Standard Operating Procedures for Gafchromic™ Film Dosimetry System for Low Energy X Radiation v. 1.0, Andrew Parker, Kishor Mehta and Yeudiel Gómez-Simuta (eds.), Food and Agriculture Organization of the United Nations/International Atomic Energy Agency. Vienna, Austria. 42 pp. <https://www.iaea.org/sites/default/files/x-ray-sop-en-excel-embedded.pdf>

FAO/IAEA. (2022). Dosimetría para la TIE: Procedimiento Operativo Estándar para el sistema de dosimetría de película Gafchromic™ para Radiación X de Baja Energía v. 1.0, Andrew Parker, Kishor Mehta and Yeudiel Gómez-Simuta (eds.), Organización de las Naciones Unidas para la Agricultura y la Alimentación /Organismo Internacional de Energía Atómica. Viena, Austria. 51 pp. <https://www.iaea.org/sites/default/files/22/03/x-ray-sop-es-excel-embedded.pdf>

FAO/IAEA (2021). E-learning course on Fruit Sampling for Area-Wide Fruit Fly Programmes <https://elearning.iaea.org/m2/enrol/index.php?id=1168>.

FAO/IAEA (2021). E-learning course on Action Plan Against Quarantine Fruit Fly Species of the Genus Bactrocera spp. (in Spanish) <https://elearning.iaea.org/m2/course/view.php?id=914>.

FAO/IAEA (2021). Sterile Insect Technique: Principles and Practice in Area-Wide Integrated Pest Management, 2nd ed., Dyck V.A., Hendrichs J. and Robinson A.S., (Eds.), CRC Press, Boca Raton, FL, USA. 1216pp. <https://doi.org/10.1201/9781003035572>.

FAO/IAEA (2021). Area-Wide Integrated Pest Management: Development and Field Application, Hendrichs J., Pereira R. and Vreysen M.J.B., (Eds.), CRC Press, Boca Raton, FL, USA. 1028pp. <https://doi.org/10.1201/9781003169239>.

FAO/IAEA (2021) Animated infographic on Fruit Fly Standards can Help Gain Market Access. <https://www.iaea.org/newscenter/multimedia/videos/fruit-fly-standards-can-help-gain-market-access>

FAO/IAEA (2020). Dose Mapping by Scanning Gafchromic Film to Measure the Absorbed Dose of Insects During Their Sterilization, Parker, A.; Gomez-Simuta, Y.; Yamada, H. (eds.), Food and Agriculture Organization of the United Nations/International Atomic Energy Agency. Vienna, Austria. 17 pp. <https://www.iaea.org/sites/default/files/dose-mappin-ggafchromic-2020-11-02.pdf>

IAEA/OIRSA (2020). Guía armonizada de taxonomía e identificación de tefritidos que pudieran ser considerados de importancia económica y cuarentenaria en América Latina y el Caribe. Guillen Aguilar. Vienna, Austria. 209 pp. <https://www.iaea.org/sites/default/files/guia210220.pdf>.

FAO/IAEA (2020). E-learning Course on Fruit Fly Trapping in Support of Sterile Insect Technique Implementation. <https://elearning.iaea.org/m2/enrol/index.php?id=694>.

FAO/IAEA (2020). E-learning course on Packing, Shipping, Holding and Release of Sterile Flies in Area-wide Fruit Fly Control Programmes (Spanish) <https://elearning.iaea.org/m2/enrol/index.php?id=745>

Australia Scientific Advisory Services/FAO/IAEA (2019). A Guide to the Major Pest Fruit Flies of the World, Piper R., R. Pereira, J. Hendrichs, W. Enkerlin and M. De Meyer (eds.), Scientific Advisory Services Pty Ltd. Queensland, Australia. 43 pp.

FAO/IAEA (2019). E-training course on Packing, Shipping, Holding and Release of Sterile Flies in Area-wide Fruit Fly Control Programmes. <https://elearning.iaea.org/m2/enrol/index.php?id=600>.

FAO/IAEA/USDA (2019). Product Quality Control for Sterile Mass-Reared and Released Tephritid Fruit Flies, Version 7.0. IAEA, Vienna, Austria. 164 pp. <https://www.iaea.org/sites/default/files/qcv7.pdf>

FAO/IAEA (2019). Fruit Sampling Guidelines for Areawide Fruit Fly Programmes, Enkerlin W., J. Reyes and G. Ortiz (eds.), Vienna, Austria. 46 pp. <https://www.iaea.org/sites/default/files/ca5716en.pdf>

FAO/IAEA (2018). Trapping Guidelines for Area-wide Fruit Fly Programmes, Second edition, by Enkerlin, W.R. and Reyes-Flores, J. (eds). Rome, Italy. 65 pp. <https://www.iaea.org/sites/default/files/trapping-guideline.pdf>

**5. Provide a list of project experts that could be recommended to other stakeholders and describe why**

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This project aims to transfer the Sterile Insect Technique (SIT) to China for codling moth control with the objectives: (1) Establish codling moth mass rearing and sterilization techniques in China; (2) Optimize the packing, holding, and release strategy for sterile codling moth in China (3) Adopt and implement an Integrated Pest Management (IPM)-SIT based approach for sustainable control of the codling moth in China; (4) As a spin-off of this project in the future, it could also provide technical support to other lepidopteran pests of economic significance in China.

It is high relevance to IPPC as (1) Promote sustainable fruit production and enhance the food security through the suppression of the codling moth for better production (2) Reduce the pesticide used for controlling codling moth to protect the human health and biodiversity for better environment (3) Facilitate trade development for better life.

**6. List targeted beneficiaries [i.e. regions, countries, RPPOs, NPPOs and other institutions]**

China, Asia