



Food and Agriculture
Organization of the
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International
Plant Protection
Convention



IPPC Global Workshop on Systems Approaches

Santiago, Chile
1 – 4 December 2025

In partnership with:



Australian Government
Department of Agriculture,
Fisheries and Forestry

SYSTEMS APPROACH FOR ASPARAGUS SPEARS EXPORTATION.

Case study



SENASA
PERU





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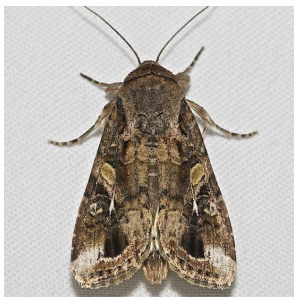
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Main pests on asparagus crops in Peru

1. Eggs and larvae (immature stages) of the Noctuidae family are the main phytosanitary problem in asparagus exports.
2. The NPPO of asparagus importing countries, rejects the shipment when eggs or live larvae are detected.
3. Asparagus spears usually reach commercial length in only 24 hours.
4. In Peru, asparagus is harvested twice a year.



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First Independent mitigation measures : in the field

1. Integrated Pest Management - IPM :
 - Oviposition traps for Noctuidae.
 - Banker plants and trap crops to promote biological control.
 - Molasses, light, pheromone traps & other measures for pests population reduction.
2. The NPPO officials in Peru certify mandatory the places of production intended for the export of asparagus to the international market.
3. Pest evaluation during crop growth and harvest are conducted by Peruvian farmers.



Oviposition trap



Molasses trap



Promoting Bio control



Pheromone trap



Oviposition trap



Second Independent mitigation measures: in the packinghouse

1. Traceability of every lot is verified from the registered production site to the packinghouse.
2. The batches containing asparagus are submerged in a tank with water and disinfectant, equipped with a bubbling system to remove immature pest stages.
3. Spears are then transported to high-pressure water showers to remove any remaining immature pest stages.
4. Two inspections for immature pest stages are performed by trained packinghouse personnel:
 - Upon arrival at the packinghouse
 - Immediately after the packing process
5. This regulation is mandatory for all packing plants.





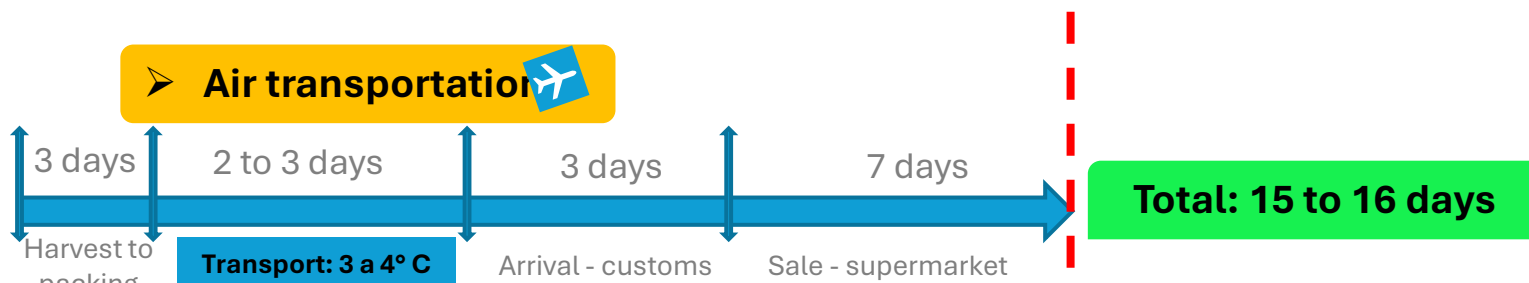
Mandatory official Phytosanitary inspection

1. All consignments are inspected by NPPO inspectors, in accordance with ISPM 31.
2. If live Noctuidae larvae are detected, the consignment is rejected. However, detection of Noctuidae eggs does not result in rejection.
3. Peruvian asparagus is shipped almost entirely by air due to its high perishability.
4. The traceability code is printed on the export boxes.





Biological cycle of the pests and shelf life of the asparagus spears fresh



Source: IPEH, 2024

Shelf life of asparagus

2° C	18 days
4° C	15 days
6° C	12 days
20° C	2.8 days

Source: García-Gimeno et al., 1998

Most common
temperature in
asparagus
shipments.



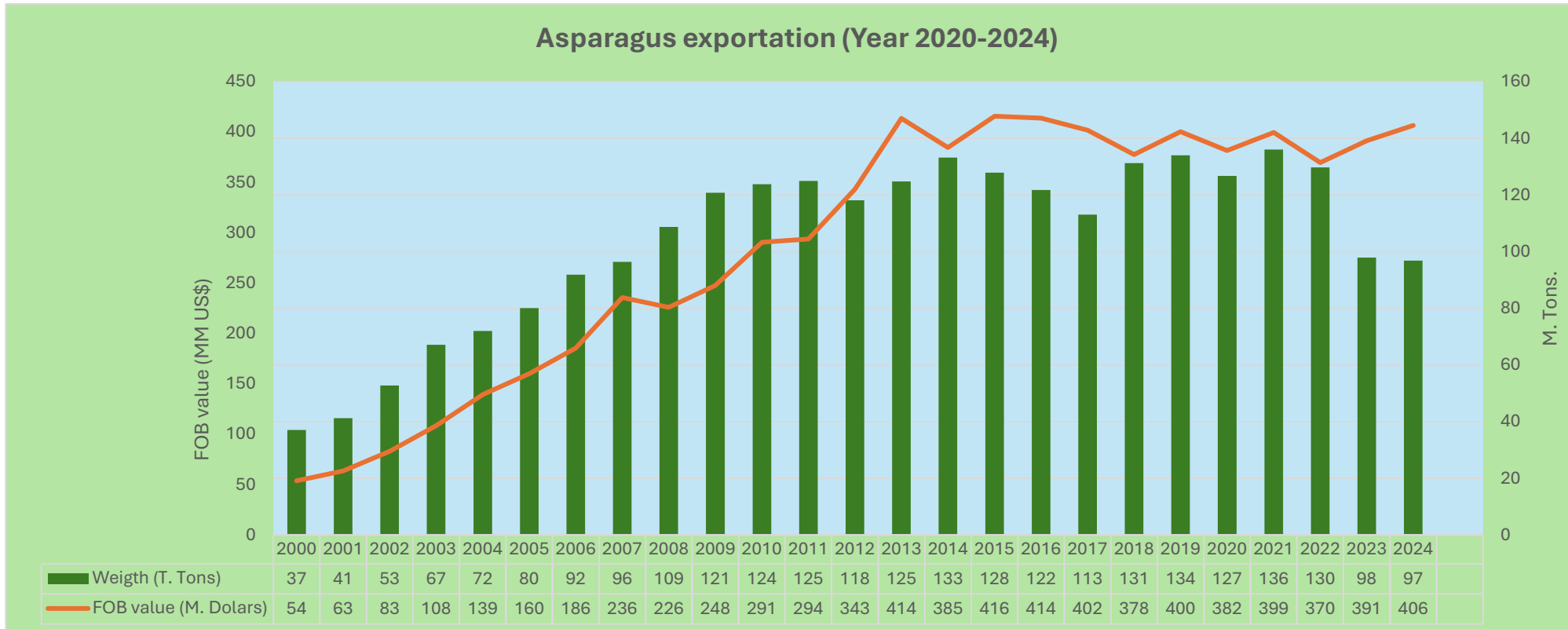
Source: CABI,
2016

- *Spodoptera frugiperda* experiences cold stress (8°C). (Du Plessis H. 2020)
- The minimum temperature for the development of larvae and eggs are 13.01°C and 12.12°C, respectively (Du Plessis H. 2018).

The product's shelf life is
shorter than the pest's
life cycle, which prevents
the insect from
developing optimally.



Export of fresh Peruvian asparagus to the world



The countries regulations are affecting the international market of fresh asparagus



Scientific evidence:

1. Gould & Huaman (2006) demonstrated that *Copitarsia* (Lep: Noctuidae) larvae do not complete their development on rotting asparagus and that survival on dried material is extremely low.
2. The lack of fresh food in discarded asparagus prevents lepidopteran larvae from completing their development, limiting their ability to establish in new areas.
3. The eggs that hatched did not complete their development cycle.
4. This confirms that asparagus does NOT pose a phytosanitary risk due to Noctuidae.

COMMODITY TREATMENT AND QUARANTINE ENTOMOLOGY

Copitarsia decolora (Lepidoptera: Noctuidae) Larvae Escaping from Discarded Asparagus: Data in Support of a Pathway Risk Analysis

J. R. GOULD¹ AND M. HUAMÁN MALDONADO²

J. Econ. Entomol. 99(5): 1605-1609 (2006)

ABSTRACT This research was undertaken to gather data in support of an assessment of the likelihood that *Copitarsia decolora* (Guenée) (Lepidoptera: Noctuidae), a pest of asparagus, *Asparagus officinalis* L., and other crops, could escape from the pathway followed by asparagus from the field to the consumer. Asparagus that is destroyed by cooking and consumption, being run through a trash compactor or garbage disposal, or being buried in a landfill probably cannot support development of *C. decolora* larvae. Much asparagus is discarded in dumpsters, however, and the time between disposal and removal to the landfill provides an opportunity for *C. decolora* to escape into the environment. Results of this study indicate that *C. decolora* cannot survive to the pupal stage on rotten asparagus, and survival on dried asparagus is low. However, larvae can survive at least 1 wk on both types of deteriorating asparagus held at 23.5°C. In field trials, a small percentage of *C. decolora* larvae crawled out of a dumpster filled with asparagus after 1 wk.

KEY WORDS *Copitarsia decolora*, Noctuidae, risk assessment, pathway analysis





Results

According to ISPM 14 and considering the Pest Risk Analysis as outlined in ISPM 11, the following should be taken into account:

- The probability of immature stages of pest of family Noctuidae survival during transport (air and sea), including storage and shelf-life of the product is “highly unlikely”¹.
 - Currently, Peru is exporting asparagus to the UK under this system approach, and consignments are not rejected when eggs (immature stage) of pests from the family Noctuidae are detected during phytosanitary inspections in the destination country.
- THANKS A LOT, UNITED KINGDOM!

⁽¹⁾ The USDA-APHIS (2015) Pest Risk Assessment (PRA) for Peruvian asparagus



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Thank you

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