

Guidelines for submitting Old World Bollworm samples from USDA-funded (CAPS) surveys for molecular analysis



This document provides instructions for submitting Old World bollworm (OWB; *Helicoverpa armigera*) trap samples for screening at a centralized lab using molecular methods. These instructions supplement your current OWB survey guidelines and are only for states with prior approval to send samples to the molecular lab. Please contact your PPQ regional CAPS coordinator or State Survey Coordinator for OWB survey questions.

Domestic OWB traps usually contain dozens or even hundreds of non-target *H. zea*. These specimens are morphologically identical to the target *H. armigera*, and thus molecular methods have been developed to screen an entire trap sample for the presence of OWB. Please follow these instructions to ensure that sample quality is sufficient for screening with molecular methods.

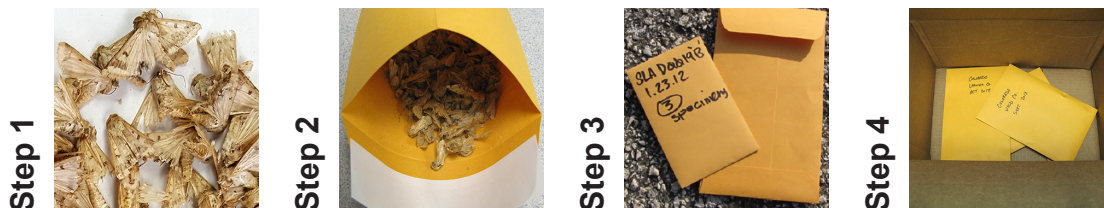
Please send samples on a regular basis as they are collected from the field. Do not save all of the samples until the end of the season to send them all at once. This creates a backlog for the molecular lab and greatly delays the response if there is a positive find.

General Trapping Procedures

- General trapping procedures for OWB follow those listed in the FY25 Approved Methods for Pest Surveillance (<https://approvedmethods.ceris.purdue.edu/sheet/2071>).
- Tri-color plastic bucket traps should be used with the 2-component *H. armigera* lure.
- Traps should be serviced every 14 days, with the lure replaced every 28 days.
- Data for these surveys are collected using the Exotic Moth (ExM) Trapping Data Collection Application. For questions on data collection, please contact your PPQ regional CAPS coordinator or State Survey Coordinator.

Sample Submission Instructions

- Step 1:** After trap samples are collected, remove all non-moth material (leaves, twigs, other insects, and all other organisms). If on-site expertise is available, also remove any non-target moths. If it is not possible to separate out only the *Helicoverpa* spp., send all captured moths for screening.
- Step 2:** Place complete *Helicoverpa* specimens in a paper/manila sample envelope. "Coin envelopes" can be used for small numbers of specimens or 6" x 9" envelopes for entire traps. Use paper/manila envelopes to store and ship specimens to the molecular lab. Never use plastic bags, as these cause the specimens to rot very quickly and makes them unsuitable for molecular analysis. Samples submitted in plastic bags of any kind will not be processed.
- Step 3:** Seal the envelope and label it with the appropriate data. Because the molecular lab doesn't have direct access to the ExM App data, please provide an Excel Spreadsheet with the appropriate collecting data for each trap sample (sample number, date, location, etc.). Only a minimum amount of data needs to be written on the envelope, but it must be correlated to the entry in the spreadsheet. An estimate of the number of moths in each envelope is useful, but does not need to be precise.
- Step 4:** Place the labeled envelopes loosely in a cardboard box for temporary storage. Attempt to store the envelopes/box in a cool, dry place. Heat and moisture (including humidity) destroy DNA and can render the samples unsuitable for molecular studies. Please do not freeze samples and do not store samples in plastic bags or plastic containers of any kind. You can store the samples in a refrigerator if your storage area is not temperature controlled. Ship the specimens to the address below.



Please ship specimens for molecular screening to the following address:

**Specimen Screening, c/o Frida Zink
USDA-APHIS-PPQ
2301 Research Boulevard, Suite 108
Fort Collins, Colorado 80526-1825 USA
Phone: 970-490-4473**

Please email the accompanying spreadsheet to:

frida.a.zink@usda.gov, todd.m.gilligan@usda.gov, and alec.ormsby@usda.gov

For questions regarding OWB surveys in your area please contact your PPQ regional CAPS coordinator or State Survey Coordinator.
For further information or questions regarding this document, please contact Todd Gilligan (todd.m.gilligan@usda.gov).