

## European Corn Borer (ECB) Pheromone Trap Monitoring Instructions for 2021

Monitoring for European corn borer (ECB) using pheromone traps helps detect if and when moths are active in the area and when peak moth flight and peak egg laying is occurring. It is especially important in regions where multiple ECB pheromone strains exist and/or where one-generation (univoltine) and two-generation (bivoltine) populations overlap.

**Pheromone Strains and Lures:** There are three different ECB pheromone strains across eastern North America; one responds to the E-strain (a.k.a. New York) pheromone blend (99E:1Z), another responds to the Z-strain (a.k.a. Iowa;) pheromone blend (3E:97Z) and a third is a hybrid of the E and Z strains, responding to an intermediate pheromone blend of 65E:35Z. Each of these strains require a different pheromone lure and separate trap to monitor for. Contact your provincial/state extension specialist to determine which strains you should be trapping for in your area.

The **Trap Set Up Instructions** are below. Click on the following for a [ECB Trap Supply List and Trap Supply Companies](#).

### Trap Set Up Instructions

1. Use a dedicated Heliiothis trap for each pheromone strain (E, Z or hybrid) per field (Fig. 1a). The same traps should only be used to monitor that pest and pheromone strain from now on. Traps should be installed in early to mid-May for higher CHU regions or early June for shorter CHU regions) and should continue until early September.
2. Each trap should be placed within grassy weeds along the field edge; avoid bare ground or along windbreaks or hedgerows. A **minimum of 30 metres distance** between traps is required.
3. Pound a 6-foot stake or metal T-bar into the ground and tie the Heliiothis to it so that the trap bottom is no higher than 2 feet from the ground or 10 cm above the grassy weed canopy. Pull the anchor string away from the trap and anchor it to the ground to maintain the trap's conical shape. Move the trap higher up the stake as the vegetation grows taller or trim the vegetation under the trap to maintain the 10 cm of clearance.
4. Use a new pair of disposable gloves each time you handle a pheromone lure to reduce the risk of cross contamination of the pheromone strains. Use a small binder clip or paper clip to attach the lure to the elastic band running across the opening of the bottom of the trap (Fig. 1b). **Change the ECB lure every two weeks**. Discard the spent lure back at the office or at home.



**Figure 1. Heliiothis trap with 10 cm clearance above grassy weeds and anchor string pulling trap into cone (a). Lure is clipped onto elastic band at the trap opening (b).**

5. When returning to count weekly moth catches, carefully remove top mesh bucket from the Velcro ring and invert the cone to dump the contents into a Ziploc bag. If moths are still alive, place bag in a freezer for a few hours before counting them.
6. Traps should be checked at least weekly. Enter trap site details and weekly trap counts into the Great Lakes and Maritimes Pest Monitoring Network at: <https://arcg.is/0Lry5a>
7. Make sure you are only counting ECB moths. Other moths can get captured in the trap that are not ECB, especially gypsy moths.

### ECB Moth Look A Likes

Moths get beat up in the traps over time. Fresh male ECB moths are dark brown with zigzag markings (like EKG readings) along their wings (Fig 3a). Their antennae are very thin. After being in the traps for a while, they lose the markings and are beige in colour (Fig 3b). Carrot seed moths can also be found in traps. They are very white compared to ECB moths (Fig 3c). Only count ECB moths when reporting to the network. If the moth has feather like antennae, it could be male gypsy moths (Fig3d).

**Figure 3. (a) Fresh male ECB moth - photo credit: M. Rice; (b) worn out male ECB moth - photo credit: Y. Farhan, UGRC; (c) carrot seed moth - photo credit: G. Quesnel; and (d) male gypsy moth – photo credit: Invasive Species Centre.**

