

## 2023 Corn Rootworm Trap Network Trapping Instructions

### Objectives:

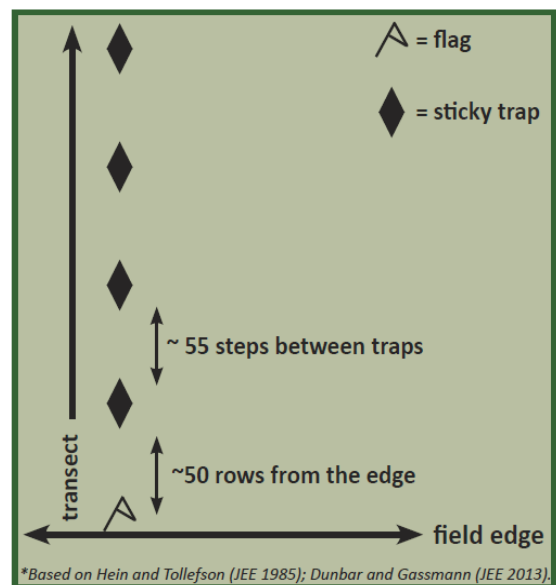
1. increase scouting efforts in continuous corn fields;
2. understand changes in adult rootworm populations between years;
3. raise awareness about changes in western and northern corn rootworm range distribution and activity; and
4. identify high risk fields needing additional resistance monitoring efforts and the potential need for crop rotation to reduce resistant population

**Field Sites:** Preferred: same fields that were monitored in 2022 (even if they've been rotated out of corn in 2023 – data collected from rotated fields will help show what impact rotation has on CRW populations). Ideal sites are high-risk continuous corn fields with a history of CRW Bt-corn use.

**Timing: 6 to 8 weeks from early July until the end of August.** Traps should be set up by fresh silk (R1 stage) in corn. Traps will need to be checked and replaced weekly for up to 8 weeks (minimum of 6 weeks). It is important to try to check the traps weekly in 7-day intervals to help us see weekly trends in these data.

### Rootworm Trap Set Up and Monitoring

- 1) Four sticky traps per field will be placed in a transect (Fig. 1).
- 2) Place the 1<sup>st</sup> trap approximately 50 rows in from the fields' edge (not in headland rows). Tie the 1<sup>st</sup> trap at ear height around the stalk of the plant using the twist tie provided with the trap (Fig. 2). Sticky sides of the trap face out. Remove any corn leaves in the immediate area of the trap so they don't get stuck on the trap.
- 3) Staying in the same corn row, walk up the row for approximately 165 feet or 50 metres. Place Traps #2 to #4 in the same method described in Step #2, ensuring each trap is 165 feet or 50 metres from each other but still along the same corn row.



**Figure 1. Trap layout for each corn field. 4 sticky traps are placed along a transect approx. 50 metres apart along the corn row. Photo credit: Iowa State University.**

- 4) When finished setting up the 4 traps, use a flag or stake at the fields' edge to mark where you need to enter the field to find the traps again each week.
- 5) Return to the field 7 days later. Count and record the # of western corn rootworm adults (Figs 3 & 4) and northern corn rootworm adults (Fig. 6) for each trap.
- 6) Repeat this for a full 6 (minimum) to 8 weeks (preferred) of monitoring. Bring new traps with you each week and also a garbage bag to discard the old traps in. Replace the old trap with a new one for each of the 4 traps in the field.



Figure 2. Pherocon AM No-Bait Sticky Traps are tied to each corn plant near the ear, removing any leaves that could get stuck in the trap. Iowa State University.

### Adding Trap Sites and Weekly Data to the CRW Trap Network:

The CRW Trap Network can be found here: <https://arcg.is/qnumW> Go to the “Trap Data Entry” tab and navigate on the map to where your trap site is located.

#### 1. Setting up Trap Sites on the Trap Network System for 2023

**A) For New Trap Sites Not Monitored in 2022:** Click on the “Edit Tool” button (looks like a notepad with pencil) located at the bottom of the screen. This will open the Edit Tool window. Click on the orange dot titled “Corn Rootworm Monitoring”. Note: You will know that the dot is selected when it turns blue. Once the dot is selected, click on the map where your trap site location is. This will add your trap site to the map and a pop-up window will open. Then add the trap site name and field information asked in the pop-up window links. **It is very important to enter the date that the traps were first set up as this helps the system calculate the # of beetles per trap per day for week 1.**

**B) For Sites in the Same Field as 2022:** Find your trap site from last year on the network map under Trap Data Entry and click on the trap site dot. A small blue box opens up with the trap site name. Click on the arrow to the right in the blue box which opens up another pop-up window. Fill in the 2023 Field Information for this site. **It is very important to enter the date that the traps were first set up in 2023 as this helps the system calculate the # of beetles per trap per day for week 1.**

**2. Entering Weekly Trap Counts:** Return weekly to your trap site dot(s) on the map and click on it. The pop-up window will open. Click on the Weekly Trap Counts link and enter that week's data.

Step by step instructions on how to add trap sites and enter weekly data can be found on the "Instructions" tab on the CRW Trap Network site.

## **Adult Corn Rootworm Identification and Look-a-Likes**

### **Western Corn Rootworm Adults**

Western corn rootworm (WCR) adults are yellow to tan with three wavy black stripes that do not reach the end of their wings. Female stripes are wavy (Fig.3) and their wings are also shorter than their abdomens. Male's stripes bleed together (Fig. 4). Both female and male antennae and legs are black but their bodies/undersides are a dull yellow.



**Figure 3. Female western corn rootworm adult. Their three black stripes do not reach the wing tips. T. Baute, OMAFRA**



**Figure 4. Male western corn rootworm adult. Their three stripes bleed together but do not reach the wing tips. T. Baute, OMAFRA**

A look alike to the western corn rootworm is the **striped cucumber beetle**. The striped cucumber beetle is also yellow and black. Their stripes are well defined and reach to the end of their wings while abdomen and underside is black (Fig. 5).



**Figure 5. Striped cucumber beetles are also yellow and black but have well defined black stripes and dark undersides. Whitney Cranshaw, Colorado State University, Bugwood.org**

## **Northern Corn Rootworm Adults**

Northern corn rootworm (NCR) adults are uniformly green to yellowish beige with no particular markings that differentiate males and females (Fig 6). Their wings are slightly shorter than their abdomen.



**Figure 6. Northern corn rootworm adult females and males are green to tan in colour and have no stripes. T. Baute, OMAFRA**