Bertha Armyworm (BAW)

Survey Protocol

Purpose

To monitor populations of the Bertha armyworm using pheromone traps in fields in each agricultural district where canola is grown. Moth trapping will provide advance warning of an outbreak to producers and agronomists and enable them to target monitoring for the larvae.

Background

The bertha armyworm occurs throughout the canola growing areas of Canada. Bertha armyworm, a native pest, has periodically caused severe economic damage to the canola crop throughout western Canada. Between 1993 and 1997, 1.72 million ha were treated to control Bertha Armyworm. During 1998 the economic loss from this insect had decreased to nearly nil. Monitoring of the population using pheromone traps provides producers with an early warning of a potential outbreak of this economically important pest.

Materials

Green Unitrap (2); includes round lid, barrel, top with four legs, and basket with plug.

Wire to hang trap

Paper clip (Only for old model traps)

Pheromone lures (2)

2 L shaped stands (for hanging trap)

Email Record Sheet (to be sent in weekly)

Gloves

Vapona: insecticide (Used in barrel part to keep insects from flying away when opened)

Monitoring Period

Monitoring begins early June and proceeds until end of July. At bolting stage of canola it is critical to be monitoring for BAW moths.

Field Selection

Select a canola field in your area. The field should **not** be next to a shelterbelt, steep ditch or within ½ kilometer of a strong light source (such as a farm yard light).

Assembly and Trap Set Up

Bertha armyworm (BAW) pheromone traps should be set up in the selected field. The traps should be located 2m from the field edge and a minimum of 50 meters apart. The trap is hung directly by a wire hangar from the "L" shaped metal post supplied. They should be placed 3-4 feet above the ground on an upside L shaped apparatus (made out of stakes, metal, etc.) It is best to anchor the bottom of the trap by wiring it to the pole itself. Failure to anchor the bottom of the trap increases the risk of wind damage. The trap bottom is "locked" in place using a pin that goes through the top and bottom.

For new traps there are four holes drilled in the barrel part of the trap, two are to tie a vapona with a twisty tie and the other is for attaching the trap to the stand, so it does not swing in the wind.

For old model traps lures are attached to the trap by placing the end of the paper clip through the hole at the narrow end of the lure and poking it through the side of the lure. For new model traps you simply place the lure into the green basket and than snap the white lid on (Figure 2 and 3). Please wear gloves when handling the lures. ***Remember to handle the pheromone lures before touching the vapona, as the vapona may interfere with the scent of the pheromone.

Wire is attached through the two holes on top of the trap and than attached to the L shaped stand.

Weekly Trap Monitoring and Maintenance

The traps should be checked and the number of moths counted once a week (the same day of the week if possible). Please record the data for your records and enter it into the Prairie Pest Monitoring Network. Once you have a site located, you can email your legal location(s) to the coordinator. Once it is received you will be emailed a Username and a Password, which will allow you to log onto http://ncrxeis4.agr.gc.ca/ppmn/loginForm.jsp , where you can enter your data.

Bertha pheromone lures last all season. Unused lures should be stored in a freezer. Remember to use the gloves provided while handling the lures.

Larval Sampling

Larval sampling will be carried out only if the threshold of 300 moths per trap is exceeded. Once threshold is reached larval sampling should be carried out weekly until the end of the canola growing season. Samples should be taken at 3 representative locations within the field. These locations must be at least 50m apart and 10m from the field edge. Mark out a ¼ m^2 area (50 cm x 50 cm), beat plants within the sample area, carefully examine ground for larvae of bertha armyworm (see attached photos).

Recording Data and Data Delivery

Data should include:

- Date of collection
- Number of moths per trap, keep trap counts separate as you will be asked to enter them separately.
- Please email coordinator if unfamiliar with this insect and we can send you links to sites with good pictures.

Data for viewing:

The Prairie Pest Monitoring System delivers forecast maps that are posted at:

http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm9959

Please record adult moth and larval counts on the internet site to be provided. It is important that you sample the field once a week in order to have continuity in the data. However, if for some reason you are unable to sample the field please mark the data sheet with the date, your name and no collection and forward it by fax to the above number (zero and no data are 2 different results).

Figure 1: Unitrap Pieces

Figure 2: Lure basket and pheromone lure

Figure 3: Place lure in green basket and close

Figure 4: Assembled Unitrap