

Protocol for Monitoring Armyworms with Pheromone-Baited Traps

Larvae of armyworms, *Mythimna unipuncta*, can cause significant feeding injury to cereals and forage grasses when levels are abundant. Adult moths of armyworms migrate to Manitoba in the spring from overwintering sites from the southern US, and have been known to overwinter as far north as Pennsylvania. Levels of armyworms that arrive in Manitoba can vary greatly from year to year. Pheromone-baited traps help to detect their arrival, and regions with higher levels. Adult moths prefer to lay their eggs in grassy vegetation that is present in spring, including grassy weeds, cereals, grassy forages and cover crops. Traps can be set up at the edge of forage grass or cereal fields to monitor for armyworm moths.

Trap Assembly

The traps we are using to monitor armyworms are called Multiplier 1 traps. To assemble:

1. Tape the vaportape strip to the side or bottom of the trap bucket. The vaportape strip will last the entire season.
2. Insert the funnel, pointing downwards.
3. Secure the lure (rubber stopper containing pheromone) to the shuttlecock using a piece of wire, paper clip or by other means (Fig. 1 a-b). Do not handle the rubber stopper with your hands. Oil from your skin can lessen the lures' effectiveness. Use rubber or latex gloves or tweezers to handle lures.
4. Snap the shuttlecock into the fitting beneath the trap lid.
5. Insert the trap bucket into the ring of the trap lid and twist to lock.



Figure 1a.



Figure 1b.

Components:

- Trap lid (A)
- Shuttlecock (B)
- Funnel (C)
- Trap bucket (D)

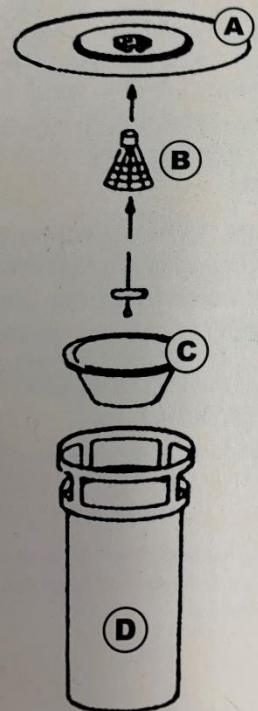




Figure 2. Shuttlecock attached to lid



Figure 3. Multipher trap assembled

Trap Setup, Monitoring and Reporting Instructions

1. Use 1 trap per field. Set up traps in late-April or early May and monitor for 12 weeks.
2. Set up the trap along the fields' edge. Mount the trap so that it hangs from a stake or T bar so that the bottom of the trap is 1 metre above the ground. Position the trap on the prevailing wind side, along the edge of the field. This ensures that the pheromone plume will carry into the field being monitoring and give a better indication of moth activity within that field.
3. Traps should be checked, and counts submitted, at least weekly.
4. Change the armyworm pheromone lures **every 3 weeks** so that the pheromone plume is strong enough to attract the moths to the trap. Discard the spent lure back at the office or at home (not in the field).

Armyworm Moth Identification

Armyworm moths have pale brown forewings, each with a single small white spot. Make sure to count only armyworm moths, as other moths may also end up in the trap.



Figure 4. Armyworm moth.



Figure 5. Armyworm larva

Interpreting moth counts from the traps

The data from these traps should not be used to make control decisions for armyworms, but to encourage enhanced scouting for larvae in regions with higher trap counts. Decisions on whether control is economical can only be made by sampling for the damaging (larval) stages of armyworms and determining if the levels of larvae present in the field are above the economic threshold. Weather can affect the success of mating and laying eggs, and many mortality factors could reduce the numbers of eggs and larvae before they develop to the damaging stage. Additional information on the biology of armyworm, scouting for larvae and thresholds can be found at: <https://www.gov.mb.ca/agriculture/crops/insects/true-armyworm.html>

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