

USING PHEROMONE TRAPS TO MONITOR VARIEGATED CUTWORM IN TOMATOES

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Variegated cutworm (VCW) is a common but sporadic pest of tomatoes in southern Ontario. Although there is likely a small over-wintering population, heavy infestations come from migration of moths from the south on weather systems, usually in July and August.

The larvae of the VCW feed on tomato leaves and fruit. Fruit damage makes the tomatoes unmarketable and is especially serious in whole-peel processing and fresh market crops. It is often difficult to spot the insect until damage is extensive and the larvae are large, as infestations can be very patchy within fields and the larvae often stay deep in the tomato canopy. The goal in scouting for this pest is to detect the population early, before heavy damage occurs -- and while larvae are small and more easily controlled.

Pheromone traps are a relatively easy and inexpensive way to monitor VCW populations. The traps capture male moths, attracted by the pheromone lure. Pheromone traps help in determining when to begin intensive field scouting. By checking the traps at regular intervals, changes in moth numbers can be tracked. Once trap catches reach a peak, intensive scouting for larvae should begin. Damage is likely to be seen within two to three weeks after high trap counts.

Several types of traps can be used for VCW, including bucket-style *Multipher* or *Uni* traps (with insecticide strips) and *delta* or *wing* traps (with sticky trays). These traps are used with a VCW pheromone lure to attract the moths. Ohio research has shown that the green/yellow/white Unitraps capture higher numbers of moths than the green Unitraps or the sticky traps.

Traps should be hung from stakes in the tomato field, at a height of 1.2 to 1.5 metres. Space traps at least 90-100 metres apart and away from trees or obstructions which could interfere with the plume of pheromone that will extend downwind of the trap. It is this pheromone plume that the male moths will follow to find the trap (because they think they are going to find a female moth). Each type of trap has a place for the pheromone lure to be attached. For bucket-style traps, an insecticidal (DDVP) strip should be placed in the trap to kill the moths that enter. Otherwise, some may escape. With delta or wing traps, moths are trapped on the sticky surface.

Aim to have traps installed by late June/early July and monitor them regularly (at least 1-2 times/wk). Ideally, monitor them on the same days every week to get the most accurate indication of changes in pest numbers. Count and record the number of moths captured. For bucket traps, remove the insects and dispose of them away from the field. Sticky traps (or removable sticky trays) will need to be replaced as needed, when too much dirt, debris, and insects accumulate.

Pheromone lures should be replaced at the intervals recommended by the supplier (usually 4-6 weeks). As stray pheromone can interfere with trap catches, it is best to use disposable gloves when installing and removing pheromone lures, so you don't contaminate other surfaces with pheromone. Dispose of old lures, packaging, gloves,

and captured insects away from the field. If using other types of pheromones in your scouting program, use separate gloves and traps for each type.

If you order your supplies before the season begins, it will take little effort to implement the monitoring program in-season. There is a list of IPM monitoring equipment suppliers in the OMAFRA Vegetable Production Recommendations and on the OMAFRA web-site (<http://www.omafra.gov.on.ca/english/crops/resource/pestmonitor equip.htm>).



Wing Trap



Multipher Trap



Green/yellow/white Uni-trap



Green Uni-trap