

Forest Tent Caterpillar

Malacosoma disstria Hübner

Lepidoptera: Lasiocampidae

Schmidt, B. C.; Roland, J.; Wakarchuk, D. 2003. Evaluation of synthetic pheromones for monitoring forest tent caterpillar (Lepidoptera: Lasiocampidae) populations. *Environmental Entomology* 32: 214-219.

Objective: To develop a synthetic pheromone for use in detecting and monitoring populations of *M. disstria*.

Abstract: Forest tent caterpillar, *Malacosoma disstria* Hübner, is a major defoliator of hardwood forests, particularly trembling aspen, *Populus tremuloides* Michx., in the northern USA and Canada. Young larvae feed on developing buds, while later instars feed gregariously, often defoliating the tree completely. Defoliation causes growth loss, twig dieback, and tree mortality in cases of prolonged infestation.

Three blends of pheromones and 5 volumes of a specific tent caterpillar blend were tested on epidemic and endemic populations of *M. disstria*. A three component blend of (Z,E)-5,7-dodecadienal:(Z,Z)-5,7-dodecadienal:(Z)-7-dodecanal (100:1:10) was most attractive of the three blends tested. The highest volume of pheromone tested (390 µg) caught the most moths with fewest zero captures at a range of moth densities, though 100 µg per lure should be sufficient for use in a trapping program.

Sampling Procedure: Wing traps (Wing Trap I, Phero Tech Inc., Delta, B.C, Canada) are used to house the pheromone blend. Place a Flex Lure baited with 390 µg of (Z,E)-5,7-dodecadienal:(Z,Z)-5,7-dodecadienal:(Z)-7-dodecanal (100:1:10) pheromone into each trap. For more information regarding the manufacturing methods of these lures, consult Canadian patent #2,218,157 and US patent #5,750,129. Install traps in field just prior to moth flight. Lures are effective for approximately 28 days under field conditions, which is adequate to span the flight period of *M. disstria* in Alberta. Place traps approximately 1.5 to 2.0 m above ground and about 100 m apart along transects in aspen stands.

Note: Optimal trap density was not provided in this article. Users should consult the authors or Phero Tech Inc. regarding updates to this protocol.