

What do seasonal flight patterns of the horse-chestnut leafminer, *Cameraria ohridella* (Lepidoptera, Gracillariidae), monitored by pheromone traps, tell us?

Szőcs¹, G., Kárpáti¹, Zs., Nagy, Z¹., Saly², K., Sebestyén³, Á., Nemestóthy³, K., Ujváry⁴, I.

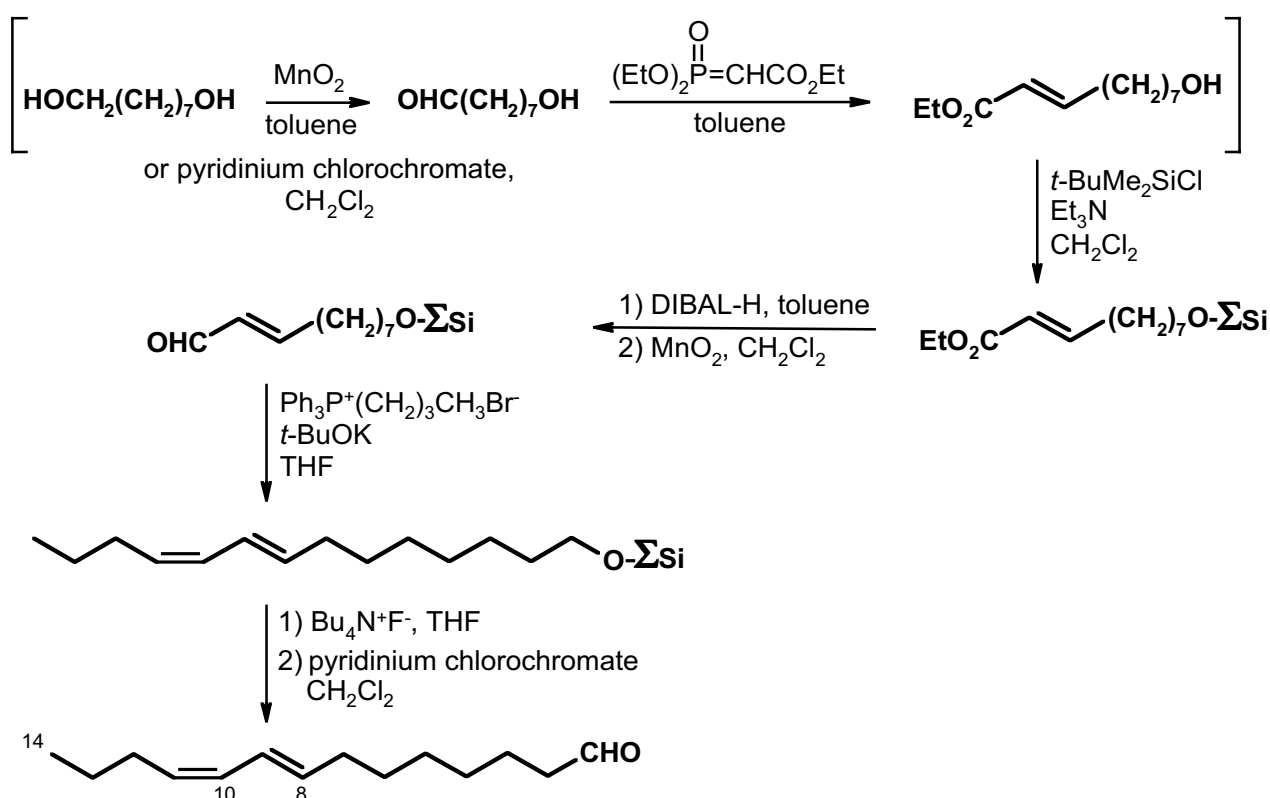
¹ Plant Protection Institute, Hungarian Academy of Sciences, Budapest, Pf 102 H-1525, Hungary;
email: h7192szo@ella.hu

² Plant Protection and Soil Conservation Service of Budapest and Country-Pest, H-2100, Gödöllő,
Kotlán S. u. 3, Hungary

³ Budapest Metropolitan Horticultural Corporation, Budapest, Dob u. 90, H-1073, Hungary

⁴ Institute of Chemistry, Chemical Research Center, Hungarian Academy of Sciences, Budapest, Pf.
17, H-1525, Hungary; email: istvan@chemres.hu

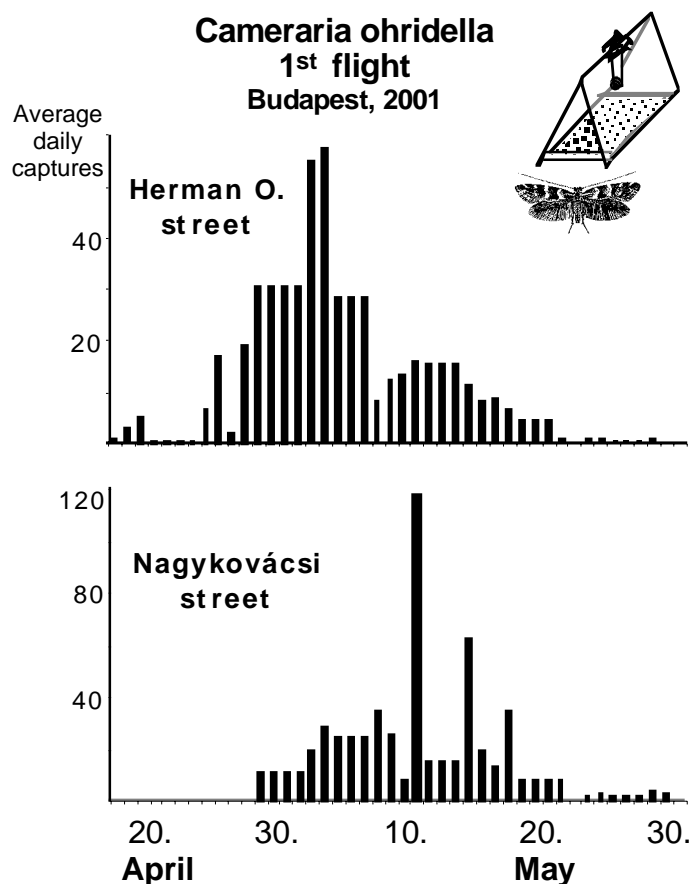
In order to specify timing of pesticide spraying against the horse-chestnut leafminer, *Cameraria ohridella* (Lepidoptera, Gracillariidae), a new, defoliator pest of horse chestnut trees in urban areas, we developed pheromone traps for season-long practical monitoring. E8,Z10-14:Ald, the sex pheromone of the pest, was synthesized by a new, stereoselective *Wittig*-reaction-based, short method, from the readily available 1,8-octanediol in eight chemical steps (Scheme).



The pheromone was synthesized in >94% stereochemical purity as established by NMR. It was then formulated in rubber dispensers, and sticky as well as large-capacity funnel traps were developed.

In 2001, the seasonal flight pattern of *C. ohridella* was monitored by sticky traps in two parks in Budapest, with horse-chestnut trees. In course of the whole season, trap captures were recorded on each workday. In 2002, *C. ohridella* was monitored by both sticky and funnel traps, in 6 sites in Budapest.

Significant differences were observed at the start as well as at the peak of the first flight (moths emerged from overwintering pupae), between various sites located relatively close to each other. This shows that *C. ohridella* should be monitored simultaneously in several sites even within the same city. Also funnel traps proved to be sufficiently sensitive in early indication of the start of the flight. At peak flight, sticky traps soon became saturated by captured moths (sometimes in less than an hour), while large-capacity funnel traps caught impressively high numbers without saturation.



Thus, sticky traps can be recommended for early warning of the start of the flight, or for checking the effect of a pesticide treatment while funnel traps are more suitable for season long monitoring at sites where *C. ohridella* is abundant. Large scale control measures using commercially available chitin-synthesis inhibitors (with special license-extension to urban environment) showed that one

spraying protects the trees for the whole season, if application is carefully timed according to capture data obtained by pheromone traps.

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