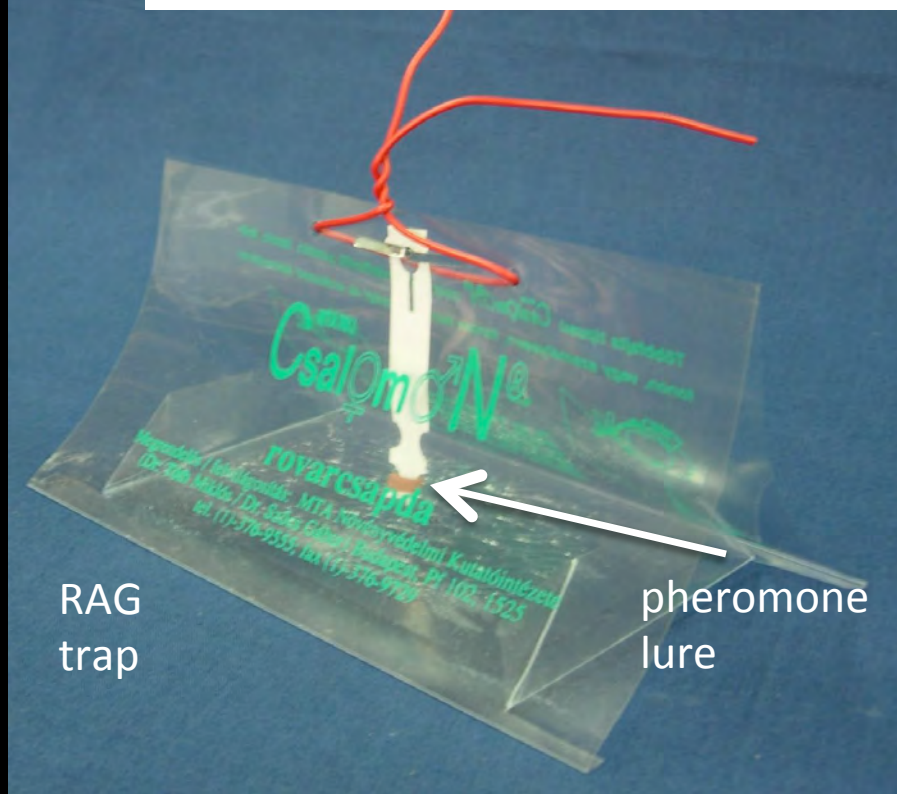


How to use? The CSALOMON® RAG trap, with **pheromone**, or **bisexual** lure of the codling moth (*Cydia pomonella*)



RAG
trap

pheromone
lure



Adult codling moth (*Cydia pomonella*)



bisexual lure

If the lure is synthetic **pheromone**, the trap will catch **only males**, no females. This is the **most sensitive** tool for detection and monitoring of the pest.

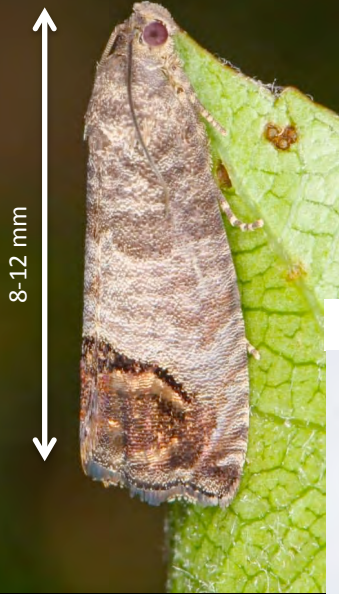
The RAG trap with **pheromone** lure can be used for: **detection** of seasonal occurrence (start of flight), **detection** of spread to new geographical regions, **timing** of control measures (if necessary).

If the lure is synthetic **bisexual**, the trap will catch both **females** and **males**, but it is less sensitive than the pheromone trap.

The RAG trap with **bisexual** lure is the **only trap** which is suitable for **detection** and **monitoring** codling moth in orchards under mating disruption (air permeation with pheromone).

The codling moth (*Cydia pomonella*)

Larvae of the codling moth feed on very many host plants. Most severe damages occur in **apple** and relatives, but it can cause damage also for example in **walnut** orchards. As the larva feeds inside the fruits, for effective control **accurate timing** is necessary!



www

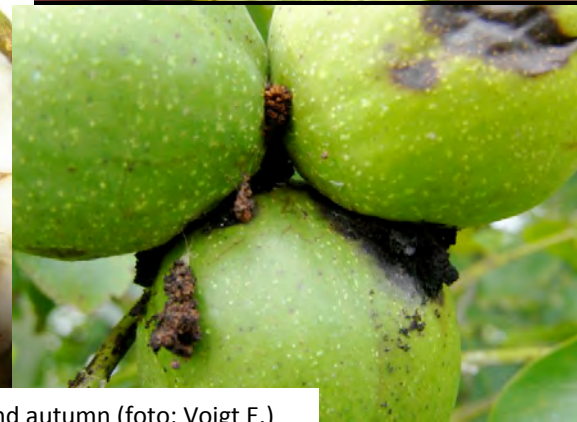
8-12 mm

The adult moth

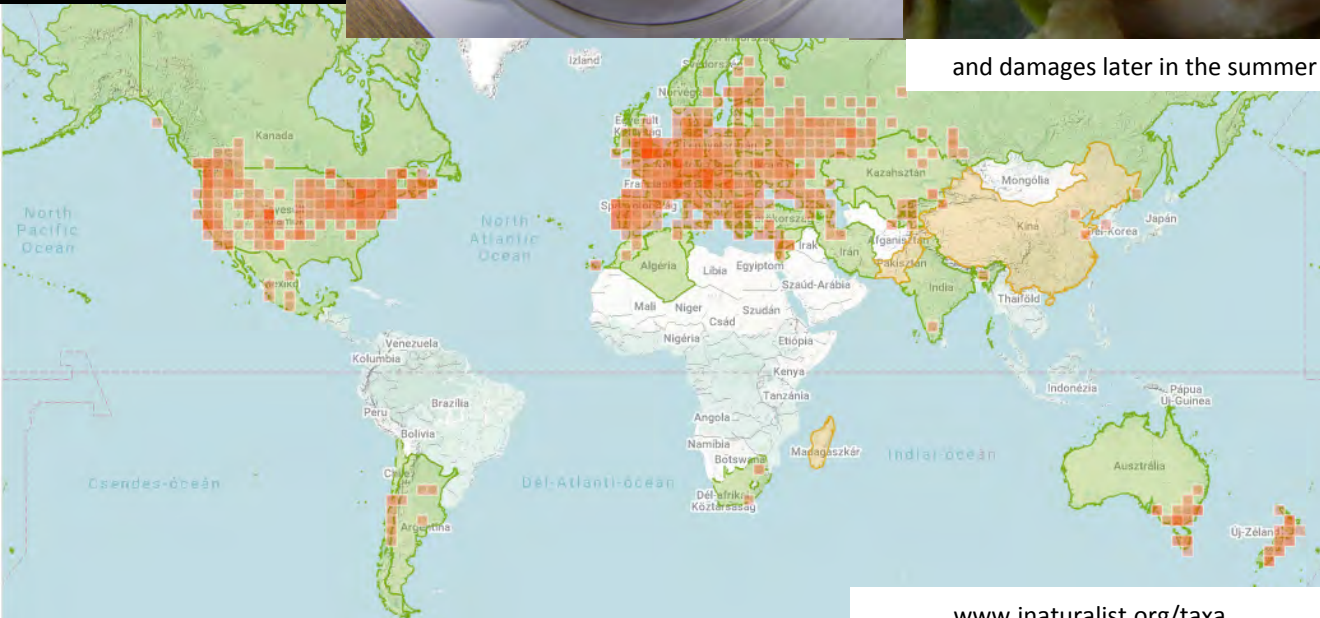
Walnuts: damage of 1st generation in spring,



www



and damages later in the summer and autumn (foto: Voigt E.)

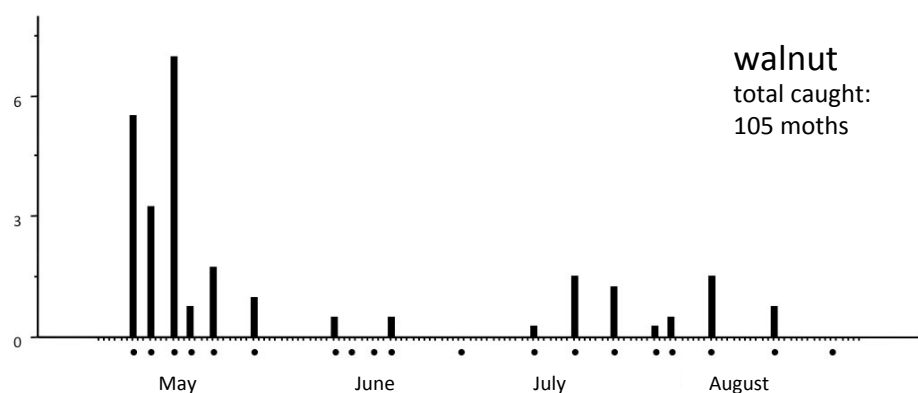
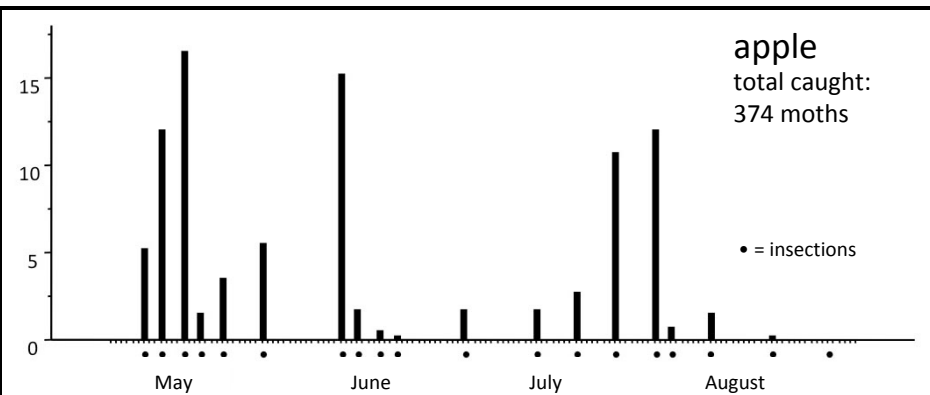


Codling moth is a real world-wide pest, being present in moderate temperature region in all continents (except Antarctica). Most severe damages regularly occur in Eurasia and North America, but it can cause severe problems for example in Australia and New Zealand or South America as an invasive pest.

Using the CSALOMON® RAG trap with the **codling moth pheromone** lure

Seasonal occurrence:

In Central Europe codling moth usually shows two flights but in certain years these can overlap.

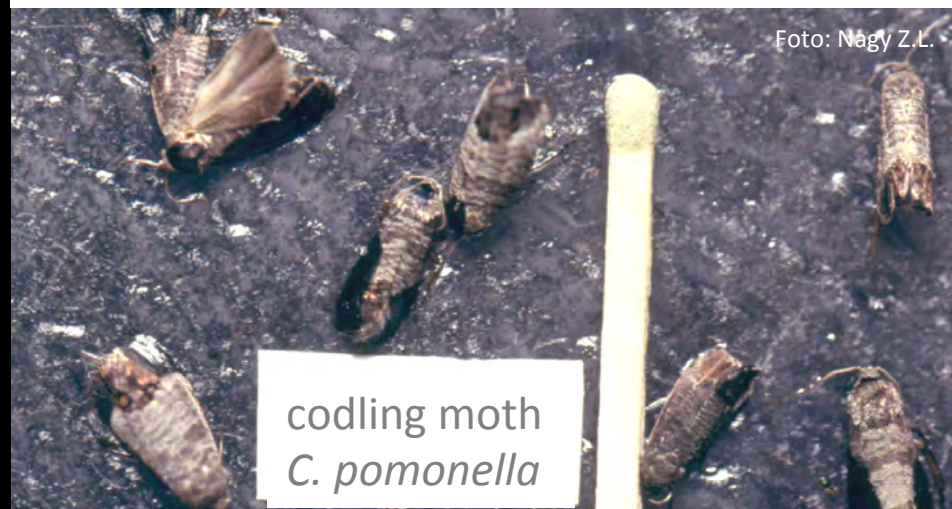


Seasonal flight of codling moth in RAG traps with pheromone, in apple or walnut orchards. Hungary, Érd-Elviramajor, 2009.
After: [Joint Conference of IOBC WPRS and IOBC EPRS, Budapest, 2009.](#)

Insecticide treatment is most effective if happens in the period of mass hatching of eggs. To determine this period, apart from trap catches one should consider heatsum measurements also.

Selectivity of the pheromone lure:

The pheromone lure is **highly selective**, apart from codling other moths are caught very rarely and in low numbers.



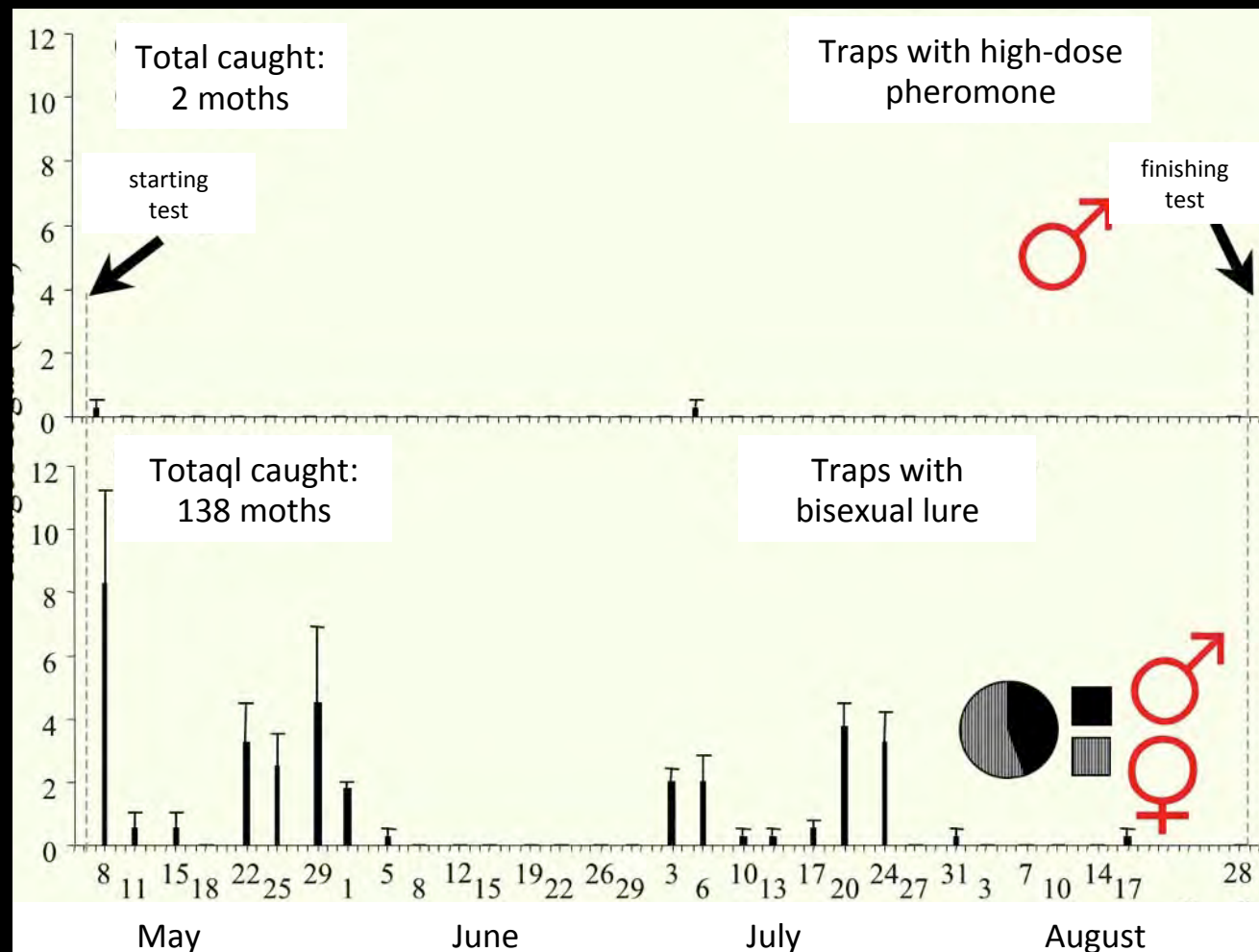
Therefore it was a great surprise when repeated catches of *Cydia interscindana* were reported in traps with codling pheromone. ([Növényvédelem, 51:184-185, 2015](#), [Nota Lepi 45: 53-64, 2022](#)).



C. interscindana was originally present in the Mediterranean, but since the middle of the 2010s started to invade to the north. It feeds on *Juniperus* spp., causing damage in ornamentals, therefore the codling trap may be useful for its trapping.

Using the CSALOMON® RAG trap with the **codling moth bisexual lure**

The trap with codling moth bisexual lure catches not only males, but also **females**. This lure was developed for use in orchards under mating disruption (=air permeation) of codling moth.



Catches of male and female codling moths in an orchard under mating disruption, in CSALOMON® RAG traps with bisexual lure or high-dose pheromone lure. Hungary, Tordas, 2012. After:

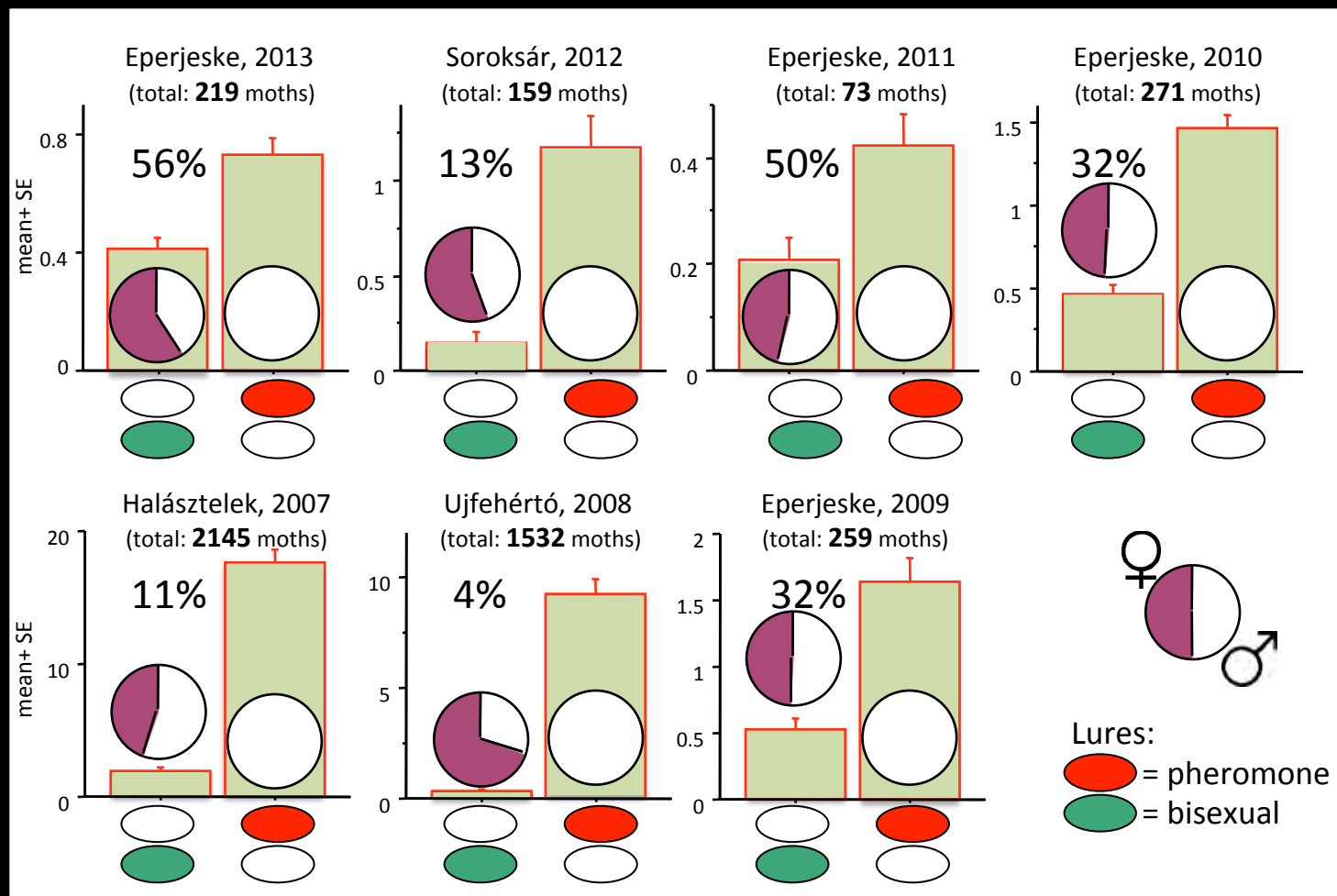
[Acta Phytopath. Entomol. Hung. 49:37-47, 2014.](#)

Mating disruption treatment interferes with pheromonal communication of codling moths resulting in disruption of matings. However, male moths are unable to locate the traps with synthetic pheromone lures as well.

In an example study, in an orchard under mating disruption even a high-dose pheromone lure caught **insignificant** numbers (total of 2) of males. On the other hand, traps with **bisexual** lure could follow flight **clearly** and significant numbers of both **females** and **males** came into the traps.

Trapping of codling moth in CSALOMON® RAG trap with **bisexual lure**

The bisexual lure however catches less total moths (females plus males) than a pheromone-baited trap (males only): according to several years of experience on an average **28%** only.



This problem can easily be **overcome** if one applies 2x or 3x more bisexual baited traps than as it is usual with pheromone baited traps.

It is clear however, that in the catch of bisexual baited traps a **sizeable amount** is **females**. Consequently in case of orchards without mating disruption it is worthwhile to use bisexual baited traps if for some specific purpose one needs females to be caught.

Catches of male and female codling moths in non-mating disruption orchards, in CSALOMON® RAG traps with bisexual lure or pheromone lure at several sites in Hungary.

After: *Acta Phytopath. Entomol. Hung.* 49:37-47, 2014.

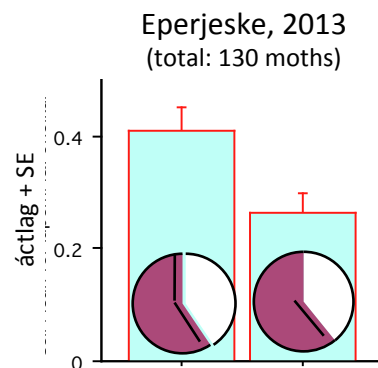
Trapping of codling moth in CSALOMON® RAG trap with **bisexual lure**

It is of utmost importance to set up the trap **high in the canopy** in case of bisexual baited traps!

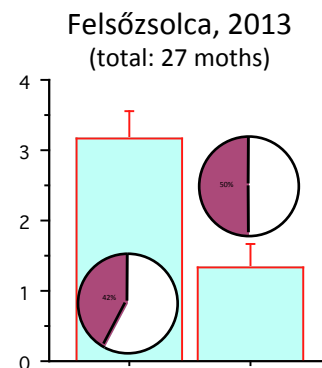


One should set up the trap always to **high branches** of the canopy, so that catches be more reliable, more numerous! Traps set out lower do not yield **reliable** catches!

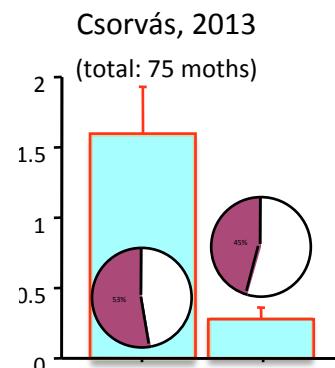
(This phenomenon can be observed also with pheromone baited traps, but since these are more sensitive, set-up height is of lower importance.)



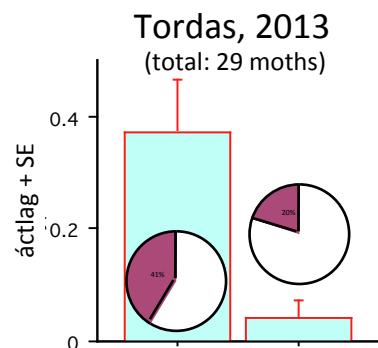
HIGH low



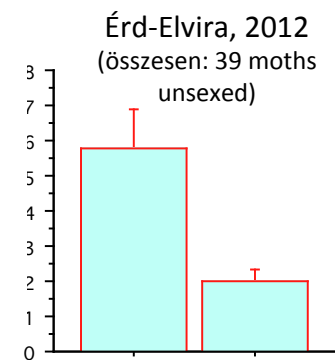
HIGH low



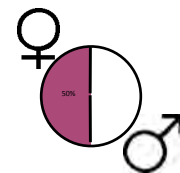
HIGH low



HIGH low



HIGH low



HIGH = high branches
(3,0-3,5 m);
low = low branches
(1,5 - 1,7 m)

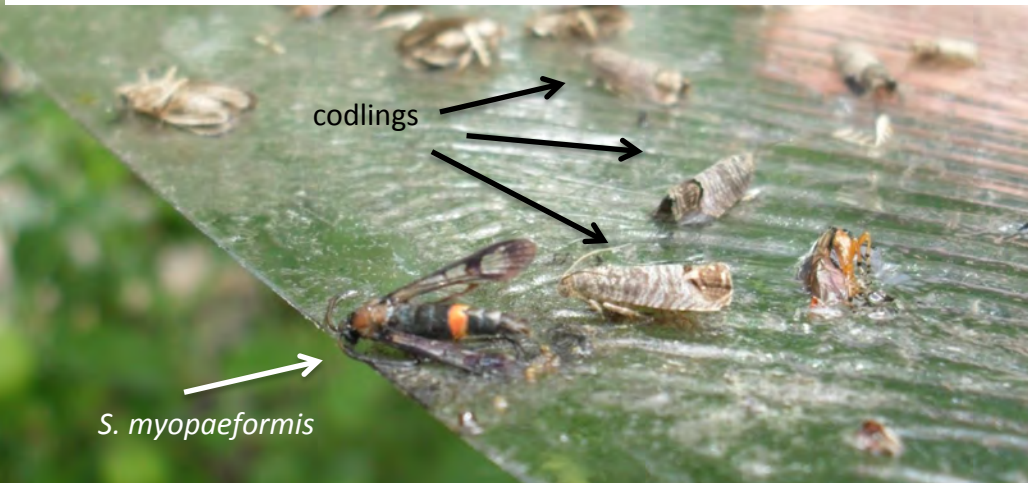
Catches of male and female codling moths in “normal” apple orchards without mating disruption, in bisexual baited traps set to the lower or to the higher part of the canopy

After: *Acta Phytopath. Entomol. Hung.* 49:37-47, 2014.

Trapping of codling moth in CSALOMON® RAG trap with **bisexual lure**

The bisexual lure is not selective, most frequent moths coming into the traps beside codling include (depending on site): **apple clearwing moth** (*Synanthedon myopaeformis*), **cloudy white marble** (*Hedya nubiferana*), and **splendid piercer** (nut fruit tortrix, *Cydia splendana*)

After: Poster P-060, 26th Annual Meeting of ISCE, 2010, Tours, France



All of these moths are pests, consequently the bisexual trap can be used as well in mating-disruption (treated for the given species) orchards, or if female catches are needed.

Pls note that for all three species mentioned above species-specific pheromone traps (catching only males) are available in the CSALOMON® trap family (**apple clearwing moth, cloudy white marble, splendid piercer**)!

Male codling moths in the **pheromone** baited trap



Foto: Jurkó V.



Foto: Tóth M..



Foto: Jósvai J...

To inquire: CSALOMON Ltd., H-1116 Budapest,
Kondorfa u. 1. Hungary, tel. +36-30-982-4999,
order@csalomon.hu

webpage: www.csalomontraps.com

Assistance in preparing this advisory leaflet is deeply acknowledged to
M. Tóth and E. Voigt.

Female codling moth in the **bisexual** baited trap