

## Heart and dart moth - *Agrotis exclamatoris* L.

The moth has a wingspan of 30-40 mm. The greyish forewings are with an "exclamation sign" - shaped dark pattern. The hindwings are greyish white, with a light violet tinge. The thorax is covered by woolly hairs and its colour is similar to that of the forewings. The abdomen is greyish. The host plants of the caterpillar include many field crops and vegetables like tobacco, sugarbeet, maize, sunflower, cereals (sown in autumn), peppers, tomatoes, etc. Its damages look similar to those of the related turnip moth (*Agrotis segetum*). It usually causes damage together with this latter species; it can feed on a high variety of agricultural plants and/or weeds. The larvae destroy first of all the roots of young plants or seedlings, decreasing the fitness of the plant. Sometimes the damaged plant can even turn over and be completely destroyed.

The pheromone trap should be placed in the vicinity of the plant culture to be studied, at the level of the top of the vegetation. It is advantageous to hang the traps from lower branches of nearby trees or bushes at a height of no more than 1.0 - 1.5 m above soil. Moths usually congregate in hedges, or the weedy edges bordering a field, so this is where high captures can be expected.

The first moth flight usually starts in Hungary at the beginning of May, and the second flight in the middle of July.



*The larva causing the damage which should be averted*

Usually larger moth numbers can be trapped during the first moth flight.

Selectivity of the CSALOMON® pheromone trap: in tests conducted at several sites in Hungary apart from *A. exclamatoris* other moth species were only recorded as chance captures. These can be easily told apart from *A. exclamatoris* as they are either much smaller or the characteristic "exclamation sign" is missing from their wing patterns.

A CSALOMON® pheromone trap starts slowly to decrease its attractive activity after 4-6 weeks of field exposure (depending on actual weather conditions). After this period it is advisable to set up a new trap for reliable detection and monitoring.



*The moth, which is captured in the trap*

Trap design recommended: for detection our sticky trap design (RAG) is most suitable. It proved to be excellent and very sensitive for detection of occurrence and monitoring of flight dynamics of the species. The sticky insert can become saturated with captured specimens within a relatively short period (1-2 days even) at high population densities, so frequent renewal of sticky inserts may become necessary. For catching large numbers of moths and/or for quantitative monitoring the funnel (VARL+) design can be recommended. In case of the funnel design it is advisable to kill the moths captured by placing a killing agent (not provided with the trap) into the catch container.



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**To order / to inquire:** MTA ATK Növényvédelmi Intézet (Plant Prot. Inst. MTA ATK) Budapest, Pf 102, H-1525, Hungary; phone. +(36-1)-391-8637, +(36)-30-9824999; fax +(36-1)-3918655; e-mail: <csalomon.orders@julia-nki.hu> or <h2371tot@ella.hu>; internet: <<http://www.julia-nki.hu/traps/>>.



The funnel VARL+ traps can capture very large numbers without saturating.



So it looks when caught in the CSALOMON® RAG trap, which, although can be used for detection, can get saturated with the catch relatively fast.