

Cotton bollworm - *Helicoverpa (Heliiothis) armigera* Hbn.

The moth has a wingspan of 35-40 mm. The basic colour of the forewings ranges from ochre yellow to light greyish brown, the patterns are somewhat darker. The hindwings are lighter, with a broad dark line running parallel to the edge of the wing, with a lighter spot within the line.

The host plants of the caterpillar in Central Europe include many field crops and vegetables, like maize, tobacco, tomato, paprika, beans, etc. In its original occurrence area (subtropical and tropical regions of Eurasia, Africa, and the Mediterranean) its predominant host plant is cotton. The caterpillars prefer to bore into the pod, cob, or fruit of the host plant, i.e. into the apical part of maize cobs. Their presence is revealed by a small round hole on the surface. The moth is a typical migrating species. Usually adults migrate into Central Europe from the Mediterranean at the beginning of the season, and the damages are caused by caterpillars hatching from their eggs. In Hungary in hot summers several generations can develop.



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The moth, which is captured in the trap



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The larva and its damage, which should be averted

In Hungary its most recent severe outbreak was registered in 1993-1996.

[1]

The CSALOMON® pheromone trap should be placed at the level of the top of the vegetation. Male moths prefer to aggregate in hedges along the edge of open fields, so it is advisable to set up traps on the branches of bushes or trees near fields. Usual starting date for trapping is middle of May (Hungary).

Selectivity of the CSALOMON® trap (based on tests performed in Hungary): occasionally some specimens of *Heliiothis maritima* or *H. viroplaca* can be captured, however, these can easily be told apart from *H. armigera* based on the broad band across their forewings. Some specimens of the noctuid *Discestra dianthii* can also be caught, this is much smaller and dark brown in colour. Other non-target catches can include some microlepidoptera (Crambidae), these are much smaller and cannot be confounded with the cotton bollworm. 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.

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.

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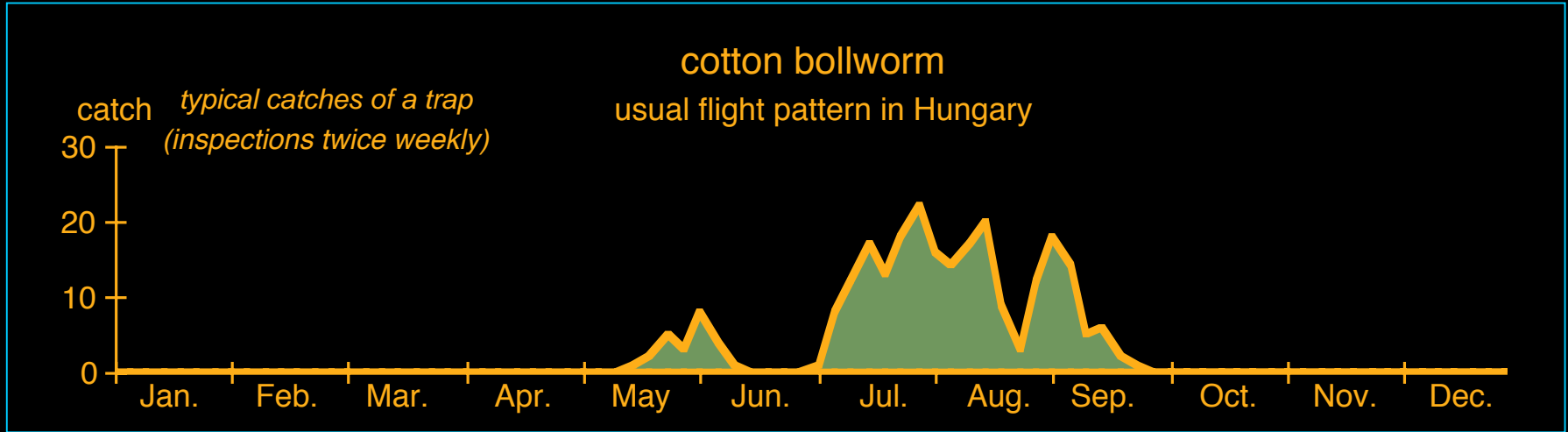


The larva and its damage, which should be averted

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 killing moths caught in the catch container.

Sudden increase of VARL+ trap captures in practice coincides with mass hatching of larvae. In maize damage from larvae can be expected if the maize already reached or passed the R1 phenological phase by the time of mass captures[2].

[1] Szócs G. és mtsi, *Növényvédelem* 30:278, 1994. [2] Dömötör I. és mtsi, *J. Pest. Sci.*, 80:183-189, 2007.



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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.

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