

Click beetle - *Agriotes ustulatus* Schaller

Trap with both pheromone plus floral baits, catching FEMALES & males

The beetle is elongated, length 7- 11 mm. Its shape, despite being elongated, appears to be stubby, as the margin of its broad thorax runs down beside the shoulder of the elytrae. Its head is broad, rounded, the elytrae end in a conical shape. The elytrae can be coloured from black to brownish or reddish brown.

Host plants of the larva include maize, cereals, sunflower, sugar-beet, potatoes, other grasses, and also many other plants, i.e. tomatoes. The larvae feed on the roots. The adult beetle feeds on leaves of grasses, and on flowers by pollen. The main damage is caused by the larvae, the wireworms, which eats up hatching seeds and roots inside the soil.

Damages are variable depending on the plant species attacked and the type of soil.

Indicators can be of imperfect hatching of seedlings (maize), damaged hatchlings and roots, yellow colouring of the plant parts above ground.

Traps should be placed at the soil. Usual beginning of trapping in Hungary is middle of June.

Selectivity of the CSALOMON® trap: this dual-baited trap attracts both females and males of *A. ustulatus* efficiently. In tests conducted at several sites in Hungary and Italy no other click beetle species were attracted to the pheromone bait during the flight period of *A. ustulatus*. The floral bait can attract low numbers of noctuids (i.e. *Autographa*, *Helicoverpa*), occasionally flies and hymenopterans.



The beetle, which is captured in the trap



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A CSALOMON® trap starts slowly to decrease its attractive activity after 3-4 weeks of field exposure (depending on actual weather conditions). After this period it is advisable to exchange the baits to new ones.

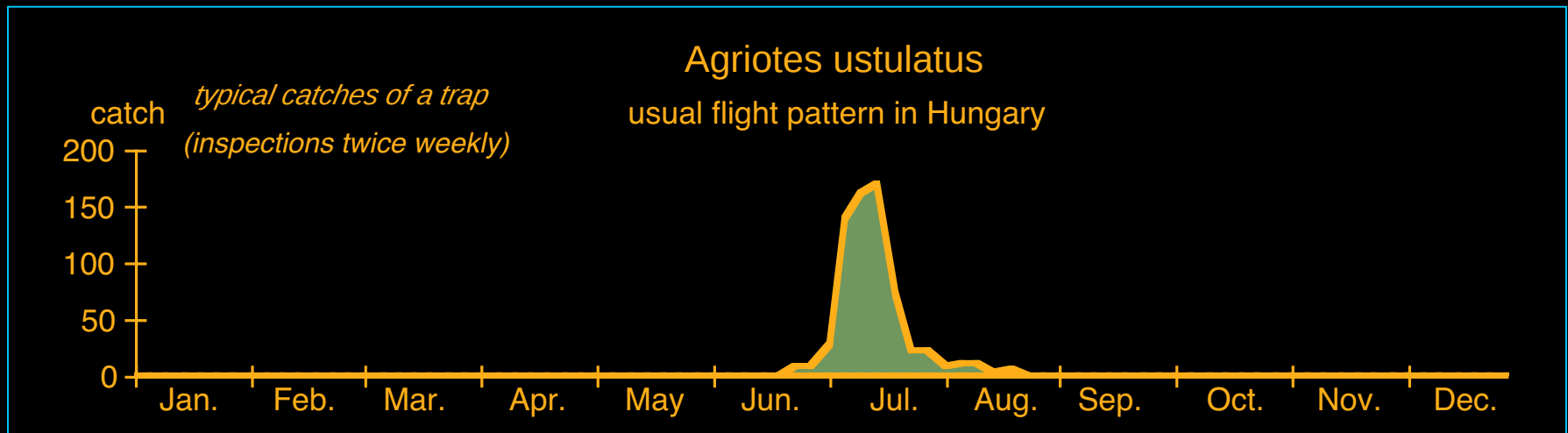
The damage of the larva, which should be averted

Control of wireworms should be based on reliable **forecasting**. Application of attractant baited traps is much easier and simpler than other sampling methods utilized before (i.e. soil sampling, etc.). Attractant baited traps **detect** the occurrence of the pest very sensitively, so that infestation centers can be "mapped" and treated by insecticide easily. The funnel trap types are capable of catching very large numbers of beetles without being saturated.

According to experience in Italy, if the average catch per pheromone trap does not exceed 150-200 specimens per year, damage is highly improbable on the given field[1]. In case of higher captures, it is advisable to perform larval sampling (soil cores) for more accurate estimation of population levels.

This may be performed through agrotechnical means, crop rotation or in more severe cases by soil insecticides[2]. More accurate establishment of correlations between trap captures and larval density in different cultures are underway (Lorenzo Furlan, pers. comm.)

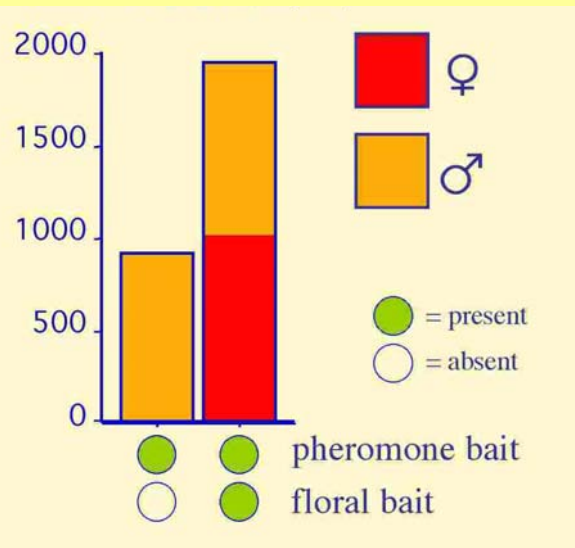
[1] *Furlan, L. és mtsi, ATTI Giorn.Fitopat. 1:133-140, 1996*; [2] *Jermy T, Balázs K. (szerk.) A növényvédelmi állattan kézikönyve. Akadémiai Kiadó, Budapest, 1990*



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A. ustulatus caches in traps baited with only pheromone, or with a combination of foral bait and pheromone (data from a test in Veneto, Italy, 2008, Tóth M. & Furlan L., unpubl.)



So it looks when caught in the CSALOMON® VARb3 trap!

Click beetles caught in traps with
A. ustulatus pheromone bait
(1998-2004)

(after Tóth & Furlan, 2005, IOBC/wprs Bull.,
28:133-142; Furlan & Tóth, 2007, IOBC/wprs
Bull., 30:19-25)

● *ustulatus* catches

○ no catch

