

Click beetle - *Agriotes ustulatus* Schaller
bisexual lure. Trap with a combined lure of
floral plus pheromone components, catching
both FEMALES & males. (Before 2020 it was necessary to put
two separate lures into the same trap, by now we developed a single dispenser
lure!^[1])

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. Adult

beetles feed on leaves of grasses, and on flowers by pollen. The main damage is caused by
the larvae, the wireworms, which eat 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: the bisexual trap attracts both females and males of *A. ustulatus* efficiently
^[1]. In tests conducted at several sites in Hungary and Italy no other click beetle species were attracted during the

flight period of *A. ustulatus*. The floral bait can attract low
numbers of noctuids (i.e. *Autographa*, *Helicoverpa*),
occasionally flies and hymenopterans.

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.

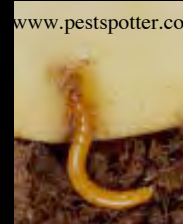


Photo: L. Furlan

*The beetle, which is captured
in the trap*



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The damage of the larva, which should be averted

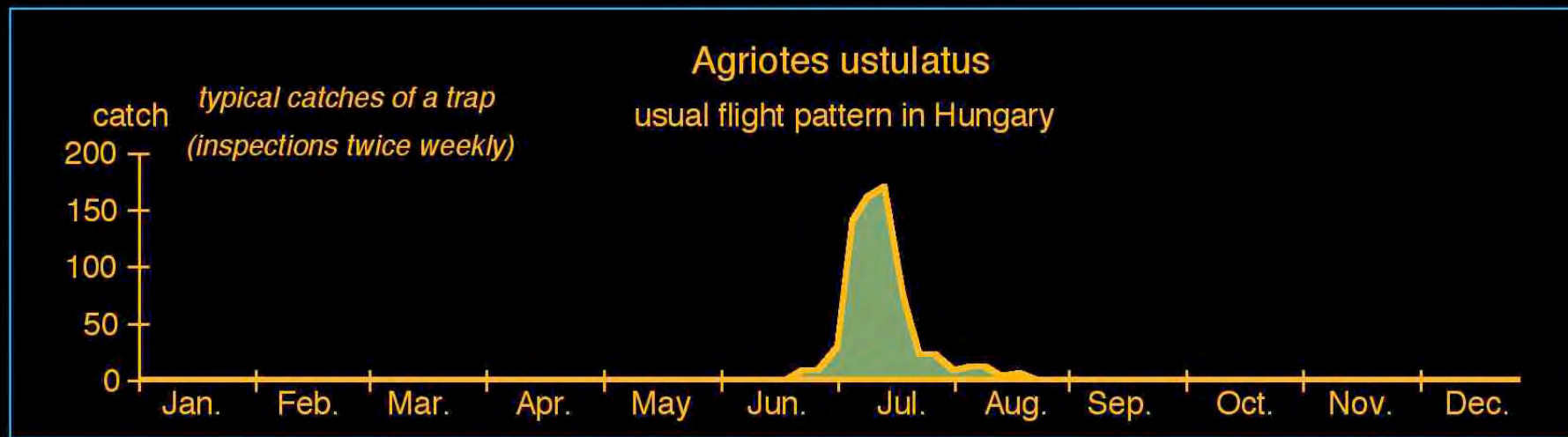
Control of wireworms should be based on reliable forecasting. Application of attractant baited traps is much easier and simpler than other sampling methods utilized before (i.e. soil sampling, etc.). Attractant baited traps detect the occurrence of the pest very sensitively, so that infestation centers 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.^[2] 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.^[3] More accurate establishment of correlations between trap captures and larval density in different cultures are underway (Lorenzo Furlan, pers. comm.)

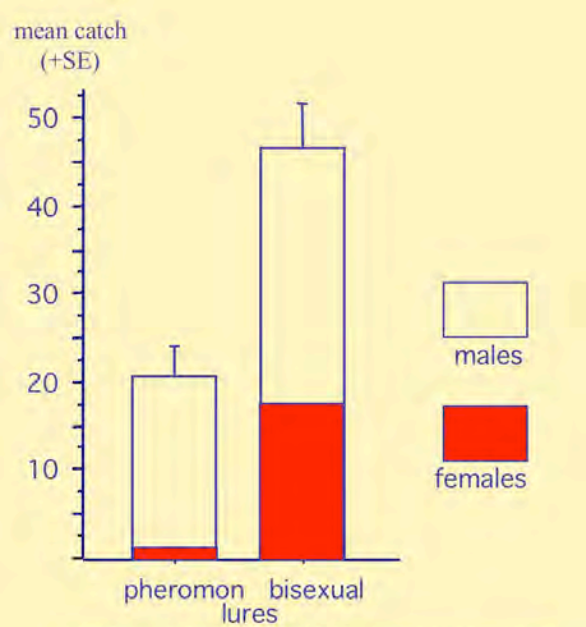
[1] Tóth, M. et al., *J. Chem. Ecol.* 45:667-672, 2019; [2] Furlan, L. és mtsi, *ATTI Giorn.Fitopat.* 1:133-140, 1996;

[3] Jermy T, Balázs K. (szerk.) *A növényvédelmi állattan kézikönyve.* Akadémiai Kiadó, Budapest, 1990



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Catches of *Agriotes ustulatus* separated by sex in traps with pheromone only or bisexual lures.^[1]



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

