

Glasshouse whitefly- *Trialeurodes vaporariorum* Westw.

The adult whitefly is a 1.1 - 1.6 mm long small insect, with two pairs of wings, resembling a small white moth. Their wings are covered by white, flour-like wax powder, the wings are uniformly white. The first instar larva is 0.3 mm long, it wanders on the backside of the leaves looking for a feeding place, where it settles down. The larvae of instars 2 to 4 are not mobile, their legs turn into fastening disks. By moulting into nymphs they prepare a waxy, 0.7-0.9 mm long larval cocoon.

The whitefly is first of all a glasshouse pest in temperate Europe. In warmer regions it can cause damage also in the field.

In Hungary its **host plants** include many vegetables, it is most common on **tomatoes** and **cucumbers**, but it can damage also other plants like beans and paprika. Among ornamentals it is common on *Ageratum*, *Fuchsia*, *Salvia*, *Adiantum*, and *Pelargonium*. It can survive in the vicinity of glasshouses in the field during the summer months. **Damages**: both the adult and the larvae feed on the plants, but the damage by the larvae is more severe. It prefers the young leaves, as a result of damage these leaves wither and dry down; in case of extensive damages all the plant can die. During feeding whiteflies produce a sweetish secretion on which mould species can grow which increases the damage. They can transfer many kinds of plant viruses. When one knocks a plant on which whiteflies live they fly up as a small cloud and then they settle down and scrawl to the backside of the leaves. It is on the backside where one can find the larvae and nymphs. The trap should be placed in the glasshouse into the plant culture to be studied, at the **level** of the **top** of the **vegetation**. Trapping should be conducted **continuously** during **all year**, when there is plant production in the glasshouse.



The insect, which is captured in the trap

Selectivity of the CSALOMON® trap (based on tests performed in Hungary): the glasshouse whitefly is captured on the bright yellow part of the trap. Yellow colour is known to attract many other insects, i.e. *Bemisia tabaci*, which is a closely related whitefly, and several aphids, which usually are not as whitish as the whiteflies. Thrips species i.e. *T. tabaci* can also be captured, which are very minuscule, blackish insects. All of these insects are pests so that their capture may make control measures necessary.

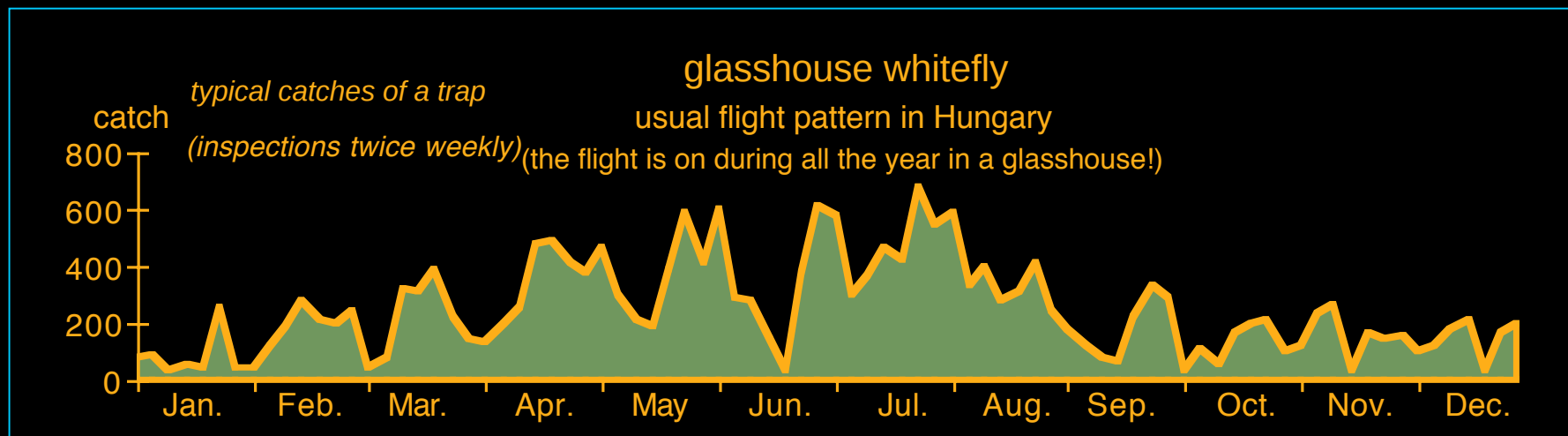
Longevity of the CSALOMON® trap: in this trap type insects are attracted by the visual cue of the bright colour of the trap. The trap remains effective as long as the sticky surface is not totally covered by captured insects. This usually happens only after 6-8 weeks of exposure, unless there is a mass outbreak in the glasshouse.



The damage of the larva, which should be averted

After this period exchange the trap for a new one for most reliable monitoring. The method of using coloured sticky traps is widespread worldwide in the control of the glasshouse whitefly, for the timely detection of the settling in and seasonal occurrence of the pest, and to locate the centers of infection[1] Captures of yellow sticky traps will reliably detect the occurrence of as little as 0.01 - 0.1 whitefly per plant.[2] When the traps are applied in combination with beneficial parasitoid wasps (i.e. *Encarsia formosa*[3], one can easily determine the most suitable time for introducing the wasp. If at the introduction time there are too few whiteflies available, the wasps will die off; if already there is a mass outbreak of the whitefly in progress, then the wasps will take a long time in getting in control of the situation (during which period damages do not decrease). Yellow colour is not attractive towards *Encarsia* wasps, if there are enough whiteflies present for the wasps to live on[2]. By applying a larger number of coloured traps the whitefly population can be decreased; i.e. by growing tomatoe seedlings no other control was necessary by applying traps at the frequency of one per 3-5 m² [2]. The use of conventional control is becoming problematic due to the fast development of resistance[4], so rotation of different insecticides can be suggested.

[1] H. Zsellér I., *Agrofórum*, 8:60, 1997; [2] Gillespie D.R. Quiring D., *J. Econ. Ent.* 80:675-679, 1987; [3] Horváth, J. Tüske, M. *Agrofórum*, 8:68, 1997; [4] Darvas B, *Budai Cs. Növényvédelem* 13: 415, 1977.



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Trialeurodes prefers and is mostly captured on the bright yellow part of the CSALOMON® SZINb (combined yellow/blue) sticky trap.