

# Pheromone of horse chestnut leafminer

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The horse chestnut leafminer, *Cameraria ohridella*, is a new pest that is causing more and more damage in horse chestnut trees. Local authorities, tree nurseries and landscape gardeners are always anxiously waiting to find out if this leafminer is present or not in their trees.

## HORSE CHESTNUT LEAFMINER

The horse chestnut leafminer, *Cameraria ohridella*, was discovered for the first time in Macedonia in the neighbourhood of the lake Ohrid in 1985. Since then, the leafminer has quickly spread to neighbouring countries with the result that this species was present in all Central European countries by the mid-nineties.

The number of generations per year varies from five in South-European countries, to three in Central-Europe and to two in North-Europe, which clearly shows the number of generations is strongly dependent on the climate. Each female lays about 20-30 eggs on the upperside of a horse chestnut leaf. After hatching, a young larva eats its way into the leaf, and subsequently eats through the leaf tissue, thus forming mines. *Cameraria ohridella* has five mobile larval stages. The yellowish-green larvae are about 1.5 mm long and have remarkable deep indented segments. When fully grown, the larva pupates in a silken cocoon inside the leaf mine. When damage is severe, mines overlap each other, causing a discoloration (brown) of part of the leaf. The horse chestnut leafminer hibernates as a pupa inside the leaves, which have fallen off to the ground.

## DAMAGE

The horse chestnut leafminer attacks mostly *Aesculus hippocastanum* and *A. parviflora*, but can also attack leaves of *Acer pseudoplatanus* and *A. platanoides* in cases of a severe infestation.

The most obvious damage consists of course of the mines caused by larvae. This can evolve to such an extent that leaves turn brown and fall off prematurely. Attacked trees build up less reserve during summertime and will develop fewer leaves the following year. This weakened condition of attacked trees makes them more susceptible to other enemies and diseases, which would be not harmful in normal circumstances.

## BIOLOGICAL CONTROL

The control of the horse chestnut leafminer with chemical products is very difficult since it lives inside the leaf mines during most of its life cycle. Furthermore, in some countries, strict regulations about pesticide use limit the number of chemical products that can be used against this pest. Thus, biological alternatives will become more and more important in the future.

## MONITORING & SCOUTING WITH THE HELP OF PHEROMONES

Biobest is distributing a pheromone lure, which is very helpful for monitoring the horse chestnut leafminers. The pheromone lure attracts male leafminers, which are caught in a trap. This gives a clear view of the size and evolution of the leafminer population.

The pheromone is contained in a capsule, which can be easily introduced in the *Cameraria ohridella* trap or a Funnel trap. For a period of at least six weeks, male horse chestnut leafminers are attracted by the lure and are captured in the trap.

The pheromone capsules are packed per 10 pieces in a practical “blister package”, preventing contact of the pheromone lures with hands when the capsules are introduced in the trap.

The pheromone capsules have an action range of minimum 50 metres. We, therefore, recommend to hang one trap every 50 metres for monitoring purposes. As the horse chestnut leafminer lays its eggs mostly on young twigs high up in the crown. The best results are achieved by hanging the traps there. As this is not very practical, we recommend to hang them at a height of about 2.5 metres.

### ADVANTAGES

- Accurate detection of male horse chestnut leafminers;
- Easy introduction in trees;
- No risk of resistance;
- Totally safe for humans, animals and plants;
- No protective clothing required during application.