

## **MORTALITY OF DEVELOPMENTAL STAGES OF HORSE CHESTNUT LEAF MINER *CAMERARIA OHRIDELLA* DESCHKA & DIMIC**

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In the last 20 years horse-chestnut leaf miner has become widespread in Europe, causing defoliation of horse-chestnut trees ().

At present there are only some studies about population dynamic and affecting factors. To understand the ability that allow chestnut leaf miner to create and keep so high densities of population, it is significant to assess all mortality factors and its impact. The only factor which is widely studied is leaf miner parasitoids, but already now there is common agreement that the role of parasitoids is insignificant, therefore it is important to find other mortality factors which could become as natural regulators of leaf miner population. In Latvia horse-chestnut leaf miner first time was detected in 2007 ().

The aim of this study was to find out mortality rates of eggs, feeding, spinning stages of larvae and pupae, and try to reveal the mortality causes and their frequency.

From beginning of June till beginning of October in 2012, every two weeks, from five *Aesculus hippocastanum* L. trees, 20 leaflets were taken. The number of live and dead eggs were noted. Every mine was dissected and examined, the developmental stage of larvae was noted and if it was dead, the mortality factor was classified into the categories: parasitism, predation by birds, bacterium, fungus, another cause.

In the end there were gathered data from 200 leaflets (1333 leaflets). The total mortality rate of eggs was 47.86%, were from all  $4833 \pm 4.83$  eggs  $2313 \pm 4.83$  were dead. The greatest mortality rate, from all larvae stages and pupae, was in the first larval stage – 45.29% from the stage and 27.40% from all population. The smallest mortality rate for a stage was in the fourth larval stage – 30.97%, but the smallest mortality for all population was in the spinning stages – 1.76%. The total mortality rate of larval stages, including spinning stages and pupae, was 47.14%. From all mortality categories the most frequent was “another cause” – 38.68% off all death cases. The second frequent category was parasitoids, which killed 6.11% of the population.

The higher mortality was in the initial stages of population. These stages are more subjected to influence of different factors, than oldest stages, except parasitism, which was higher in elder stages which are more suitable for parasitoids. There was big influence from unclassified factors, probably weather, intra-specific competition, plant defence reaction, senescence of the host leaf, predation by arthropods and other factors.