

ASSESSMENT OF GREEN OAK LEAF-ROLLER (TORTRIX VIRIDANA, LEPIDOPTERA: TORTRICIDAE) ACTIVITY USING PHEROMONAL TRAPS

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Introduction

Despite being a polyphagous species, *Tortrix viridana* shows a clear preference for oak (*Quercus* spp.). However, mature larvae can also migrate to other food sources, including orchards, where they show an increased affinity for apple (*Malus domestica*) and pear (*Pyrus communis*) species under conditions of food scarcity. The main objective of the present paper was to monitor the population dynamics of this species, using pheromone traps, in relation to the local climatic conditions. The study also aimed to assess the trophic preferences of the species in relation to different host plants, as well as its distribution in different areas of the canopy.

Material and methods

The experimental field was set up in 2023 in two different locations: a family farm in the locality Dudeștii Noi and the park of the University of Life Sciences "King Mihai I" in Timișoara, Timiș County. Delta traps, equipped with atraVIR pheromonal lures, were used for monitoring and identification of adult *Tortrix viridana*. Larval densities were assessed using the "100 leaves" method, with sampling from three levels of the tree canopy: upper, middle, and lower canopy.



Figure 1: Average larvae and adults of *Tortrix viridana*/ trap, 2023

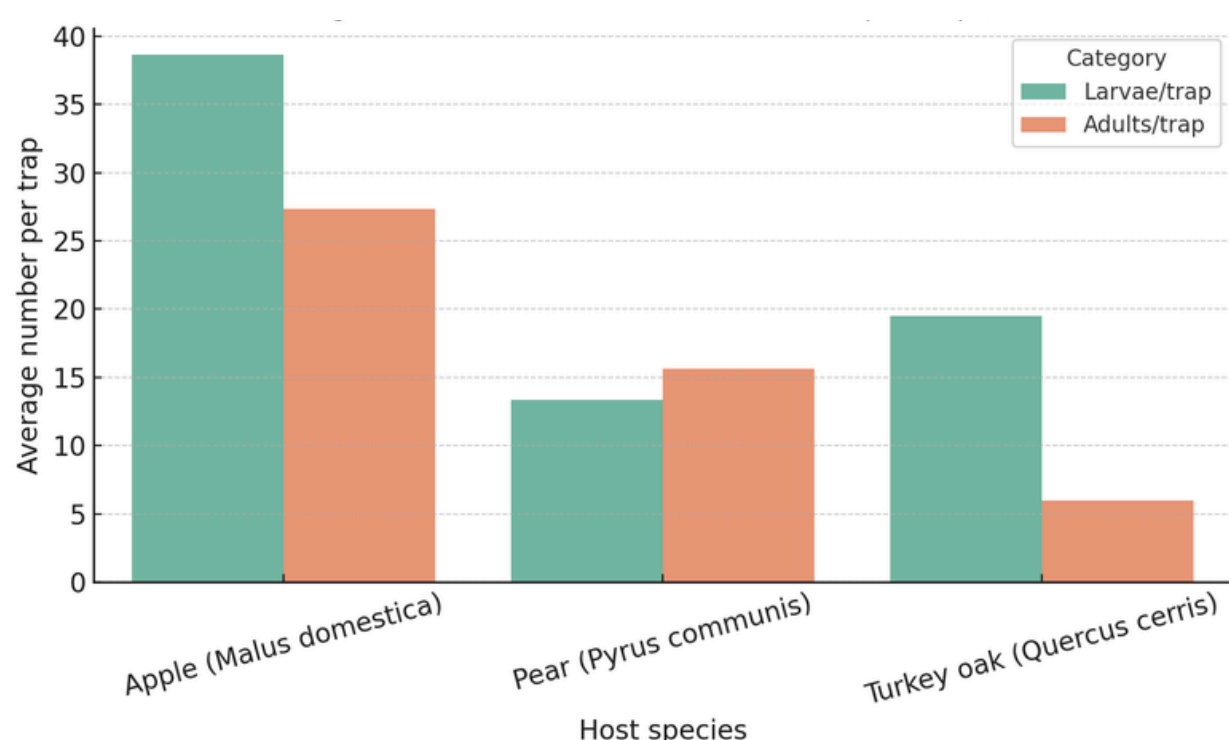
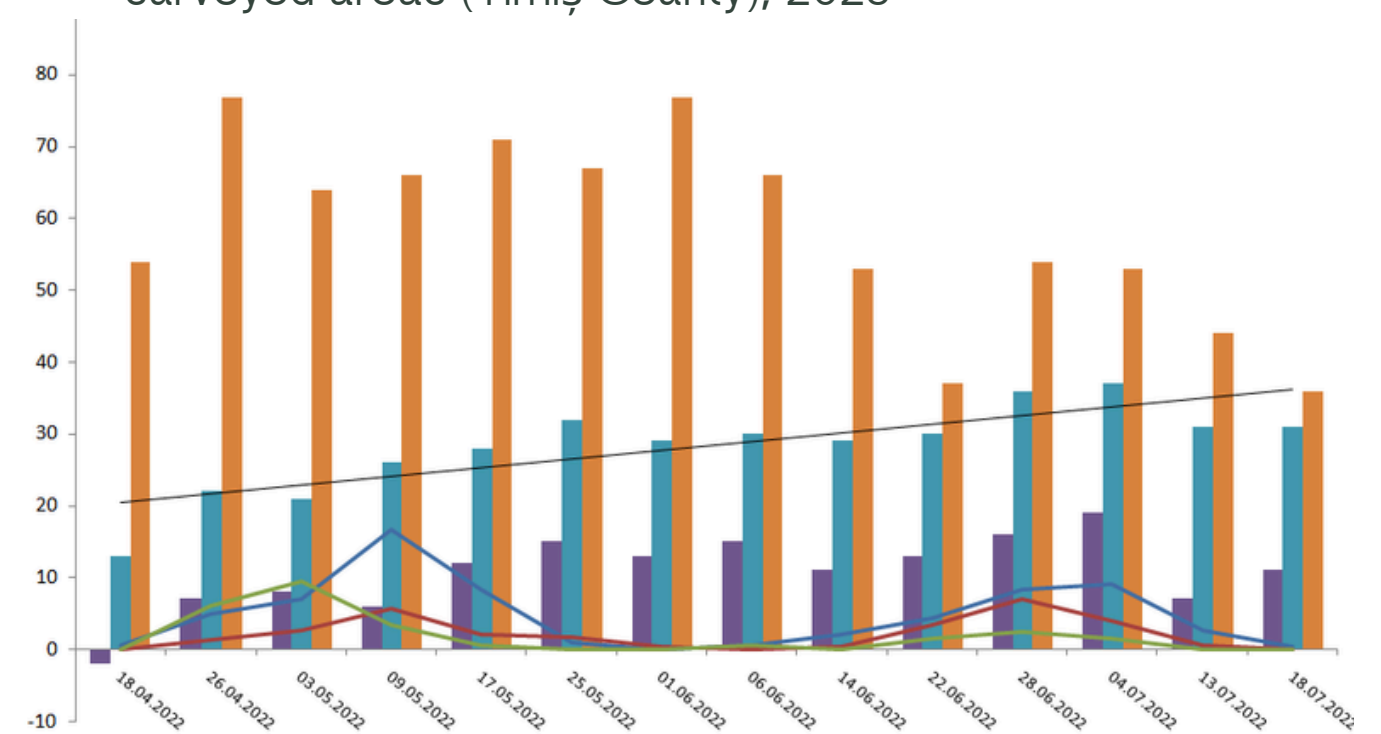


Figure 2: Population dynamics of *Tortrix viridana* in surveyed areas (Timiș County), 2023



Results

The surveys carried out in 2023 in the USVT park and in the fruit tree orchards of Dudeștii Noi confirm the presence and the development of the populations of *Tortrix viridana* on three host species: *Quercus cerris*, *Malus domestica* and *Pyrus communis*. First larval infestations were observed in fruit tree orchards in spring 2022, indicating the species' rapid adaptation and possible range expansion in the region. During the observation period, population densities differed significantly between host species, with *Malus domestica* having the highest (38.66 larvae/trap, 27.33 adults/trap), followed by *Pyrus communis* and *Quercus cerris* (figure 1). Larval activity peaked in early May, and adult activity peaked in early July for apple and late July for pear and oak. A vertical preference in insect distribution was indicated by the highest catches in traps located towards the crown apex (figure 2). These results indicate a biological cycle well adapted to local conditions and a potential threat to fruit tree species, especially apple.

Conclusion

Tortrix viridana infestations reported in apple, pear and oak in 2023 highlight the need for an effective pest management program focused on pheromone trap monitoring and treatment at key points in pest development. Significant damage reduction and quality production while protecting the environment can be achieved by implementing this program.

References

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