

# Is *Helicoverpa armigera* (Lepidoptera: Noctuidae) a key pest in western Romanian paprika pepper crops?

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## Introduction

Recent changes in intensive vegetable production systems in Romania, but also throughout Europe, with the frequent and sometimes exclusive use of monoculture for certain groups of vegetables, including the *Solanaceae* group, have resulted in major changes in entomofauna in these areas. In addition, we are witnessing global climate change that also affects the composition and density of entomofauna in these agro-ecological areas. Under the influence of these two decisive factors, the dynamics of a pest population is oscillating and, therefore, some less known or newly entered species in the research area (invasive species) begin to cause significant damage to crops and especially to their control.

**Keywords:** *Helicoverpa armigera*, key pest, western Romanian, paprika pepper crop

## Scope, objective

The aim of this paper was to identify, in the first phase, the presence of pepper crop pest species, then to determine the circumstances of the development of the main harmful species, namely the fruit borer *Helicoverpa armigera*, in order to be able to predict its occurrence, to determine the population structure and expansion and to identify the larval damage degree.

## Material and methods

20 years after the first mentions of the attack, this pest causes considerable damage to the pepper crop, in the case of the present study, paprika. In the favorable conditions from 2020, in Arad County (Chislaca locality) it caused substantial damages, which reduced the production, but especially led to the deterioration of the fruit quality. The total area of the experimental field was 1400 m<sup>2</sup>.

The pepper variety for paprika used in the research was the Mihnea variety.

The research took place between the end of May 2020 and the beginning of October 2020, with a periodicity of harvesting every 7-10 days, using a beating tray (Japanese umbrellas).

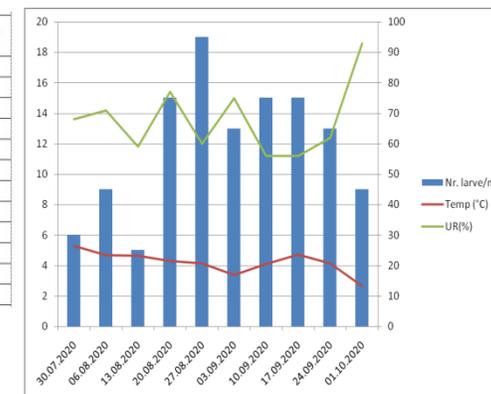
*Helicoverpa armigera* Hub larval monitoring begin in the last decade of July. The larval stages were collected using the metric frame.



## Results

From the pepper crop for paprika, in 2020 in Chișlaca locality, Arad County, a number of 11 pest species were collected: *Forficula auricularia* Linnaeus, 1758, *Thrips tabaci* Lindeman, 1889, *Lygus lineolaris* Palisot de Beauvois, 1818, *Nezara viridula* Linnaeus, 1758, *Trialeurodes vaporariorum* Westwood, 1856, *Aphis grossypii* Glover, 1877, *Macrosiphum euphorbiae* Thomas, 1878, *Myzus persicae* Sulzer, 1877, *Autographa gamma* Linnaeus, 1758, *Helicoverpa armigera* Hübner, 1809, *Spodoptera littoralis* Boisduval, 1833.

Family	Species	Chișlaca (Arad)	Total number
Forficulidae	<i>Forficula auricularia</i> Linnaeus, 1758	5	5
Thripidae	<i>Thrips tabaci</i> Lindeman, 1889	63	63
Miridae	<i>Lygus lineolaris</i> Palisot de Beauvois, 1818	12	12
Pentatomidae	<i>Nezara viridula</i> Linnaeus, 1758	36	36
Aleyrodidae	<i>Trialeurodes vaporariorum</i> Westwood, 1856	56	56
Aphididae	<i>Aphis grossypii</i> Glover, 1877	15 col	15 col
	<i>Macrosiphum euphorbiae</i> Thomas, 1878	23 col	23 col
	<i>Myzus persicae</i> Sulzer, 1877	19 col	19 col
Curculionidae	<i>Autographa gamma</i> Linnaeus, 1758	8	8
	<i>Helicoverpa armigera</i> Hübner, 1809	96	96
	<i>Spodoptera littoralis</i> Boisduval, 1833	5	5
		<b>338</b>	



The species *Helicoverpa armigera* was the predominant species, registering the highest number of specimens, 96. The dynamics of larval populations showed an oscillating evolution, depending on climatic conditions, the maximum threshold being reached on 27.08.2020.

## Conclusions

As an immediate consequence of global warming, we are witnesses that from one year to another, in western Romania the average temperatures above normal and the lack of rainfall during the period of active plant development, will lead to increases in *Helicoverpa armigera* population levels above those at the moment. Therefore, it is necessary to get acquainted with this insect and to identify the most appropriate methods of control, so that the quantity, but also the quality, of the crop does not suffer.