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# STUDIES CONCERNING THE HARMFUL ENTOMOFAUNA IN SOME VEGETABLE CROPS IN SOUTHERN OLTENIA

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## ABSTRACT

*The harmful entomofauna has always been of scientific interest, so many researchers are studying how to attack, control and prevent it.*
*This paper aims to provide a scientific contribution on the harmful entomofauna of some vegetable crops in southern Oltenia.*
*Research was carried out in Bratovoești stationary where three methods of entomofauna collection were used, namely: Barber soil trap, entomological net trapping method and the spawning method.*
*A total of 48 species totalling 626 specimens belonging to 14 families were identified.*

## INTRODUCTION

Many researchers have studied the harmful entomofauna, how these insects attack plants, and how to control and prevent them to have healthy crops.

Worldwide, research began in France in 1935 by Bonnmaison, when he published many materials on plant pests.

Michereff-Filho, M. and collaborators in 2021, Arriela and collaborators in 2021, or Pachkin and Deen in 2020 also researched on the study of the harmful entomofauna.

In our country, the research on the harmful entomofauna started to develop since 1929 at the Romanian Institute of Agronomic Research, and the main promoter of biological control was Professor Borcea (1879-1936).

Recent research has been carried out in our country by Boțman and Vîrteiu in 2021 or Hogea in 2020.

Mitrea and Bîrzanu carried out research on the harmful entomofauna found in the Oltenia area in 2016 when they presented the harmful entomofauna and its impact on vegetable crops.

This paper aims to provide scientific data of some research referring to the harmful entomofauna in some vegetable crops in southern Oltenia.

The research was carried out in the private stationary in Bratovoești commune, where vegetables are cultivated on large areas, being the basic work of the inhabitants.

## MATERIAL AND METHOD

Three methods were used to collect entomofauna, namely: the spawning method, the Barber soil trap, and the entomological net trapping method.

Periodically samples were collected, and 9 traps were considered at 20 meters from the edge and 8 meters between traps at a time.

For the Barber method, plastic boxes with a volume of 500 ml and a diameter of 10 cm were used, with a height of 8 cm, the solution used consisting of salt with a concentration of 25%.

After the biological material was collected, it was brought to the Entomology Laboratory of the Faculty of Horticulture.

Here it was identified using determinators (Chimișliu, 2002) and divided by families and order.

## RESULTS AND DISCUSSION

The results obtained from the analysis of the vegetable crops on the entomofauna of the Bratovoesti stationary led to the identification of 48 harmful and useful species belonging to the order Insecta.

These summed up a total of 626 identified specimens belonging to 14 families.

The entomofauna of the Bratovoești stationary summed up 48 insect species collected, of which 32 species were harmful and 16 species were useful, the percentage of harmful entomofauna was 67% and that of useful was 33%. Fig. 1.)

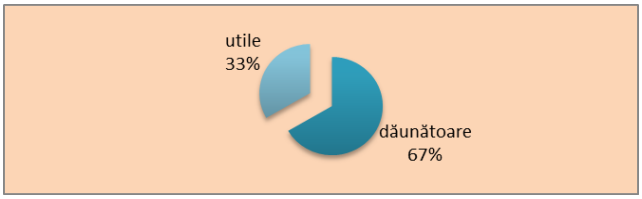


Figure 1. Structure of harmful and useful entomofauna in Bratovoesti stationary

The harmful entomofauna had 32 species and summed up 450 specimens.

The species with the most specimens was Thrips tabacci (38 specimens), followed by *Phyllotreta atra* L. (21 specimens).

Equal in number of individuals identified were the species *Frankliniella occidentalis* P., *Graphosoma lineatum* L. și *Autographa gamma* L. (each with 19 specimens), Eurydema ornata L., Apis melifera L., *Vespa germanica* L., *Leptinotarsa decemlineata* (each with 18 specimens), *Phyllotreta nemorum* L., *Pieris brassicae* L., *Pieris napi* L. (with 17 specimens identified), *Gryllus desertus* L., Melolontha melolontha L., Bombus terrestris, Coccinella septempunctata (with 16 specimens identified for each species). Large number of specimens were also found in species: *Pyrrhocoris apterus*, *Dociostaurus maroccanus* Thunberg, *Cassida nebulosa* L., *Eurydema oleraceae* L. or *Forficula auricularia*.(Fig. 2.)

The harmful insect species belonged to 14 families, the families with the most species being Pentatomidae, Chrysomelidae, Scarabeidae (each with 4 specimens), followed by the families Gryllidae, Vespidae, Thrypidae, Noctuidae, Pieridae, Elateridae, with the families Gryllotalpidae, Acrididae, Tettigoniidae, Miridae and Cetoniidae in last place (Fig. 2).

The family with the most specimens of species was the Family Chrysomelidae (70 specimens) and which had the species: *Leptinotarsa decemlineata*, *Cassida nebulosa* L., *Phyllotreta atra* L. and *Phyllotreta nemorum* L.

The second most specimens were the Family Pentatomidae (60 specimens) and of which the species: *Graphosoma lineatum* L., *Eurydema ornata* L., *Eurydema oleraceae* L. and *Dolycoris baccarum*.

The Family Thrypidae was in third place with 57 specimens and had the species *Frankliniella occidentalis* Pergande and *Thrips tabacci*.

The Family Noctuidae was in fourth place with 48 individuals identified and the species that were recorded are: *Mamestra brassicae* L., *Autographa gamma* L. and *Helicoverpa armigera*.

The Family Scarabeidae was in fifth place with 40 specimens identified, and the species recorded were: *Melolontha melolontha* L., *Polyphylla fullo* L., *Rhizotrogus aeqinoctialis* and *Epicometis hirta* Poda.

The next places were occupied by the Families Pieridae (37 specimens), Vespidae (34 specimens), Gryllidae (31 specimens), Acrididae (22 specimens), Elateridae (17 specimens), Cetoniidae (11 specimens), Gryllotalpidae (9 specimens), Tettigoniidae with 8 specimens and in the last place is the Family Miridae with only 6 specimens. (Fig. 3).

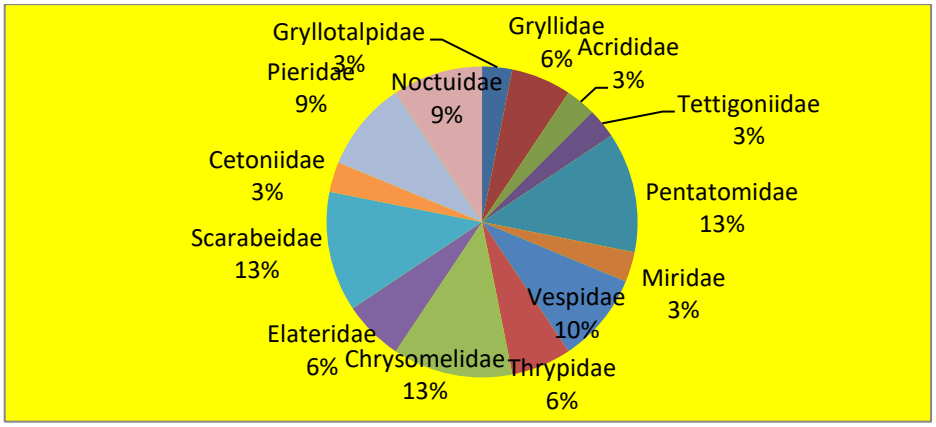


Figure 2. Family structure of harmful species in Bratovoesti stationary

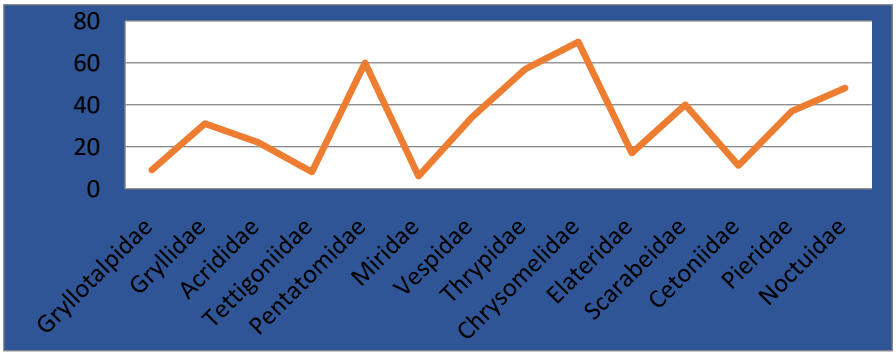


Figure 3. Family structure of specimens from Bratovoesti stationary

## CONCLUSION

The harmful entomofauna is of interest from all points of view, so there is continuous research on its control and attack.

The entomofauna identified in the Bratovoesti stationary belongs to 14 families with 48 species totalling 626 specimens.

A total of 32 harmful species with 450 specimens and 16 useful species with 176 specimens were identified, the species with the most specimens was *Thrips tabacci* (38 specimens) and the species with the fewest specimens was *Vespa crabro* L. (4 specimens identified).

The family with the most specimens was the Family Chrysomelidae (70 specimens) and the family with the fewest specimens was the Family Miridae (6 specimens).

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