

## BEETLES IDENTIFIED IN THE SCORNICESTI ORCHARD ECOSYSTEM, OLT COUNTY

VENERA DANIELA STAN<sup>1</sup>, MARIAN DOBRE<sup>2</sup>, ION MITREA<sup>1</sup>,

<sup>1</sup> University Of Craiova, Faculty Of Horticulture

<sup>2</sup>University of Craiova, Faculty of Agronomy

author email: [danielastan2022@yahoo.com](mailto:danielastan2022@yahoo.com)

Corresponding author email: [danielastan2022@yahoo.com](mailto:danielastan2022@yahoo.com)

### Abstract

*The work is a general classification of insects, starting from the large systematic units, the orders and suborders, and further treating the main families and subfamilies. Following the experiments carried out in 2023, in the North-Eastern area of Olt County, Scornicești locality, the coleoptera species collected in the analyzed fruit-growing ecosystem were classified into 4 families: Scarabeidae, Carabidae, Staphilinidae, Coccinellidae. Thus, in 2023, out of a total of 1214 beetles, the Scarabidae family was present in a proportion of 21.17%, the Carabidae family represented 22.16%, the Staphilinidae family was 7.58%, and the Coccinellidae family represented 49.09%.*

**Key words:** biodiversity, coleopterans, fauna, ecology, entomophagy

### INTRODUCTION

Plants, both cultivated and wild, have their pests. The largest number of these pests is formed by insects. Due to the fact that they are very small, the insects go unnoticed most of the time, although through their power of reproduction they can sometimes cause great damage. Research has been done and continues to be done on different species of insect pests. ( Arion G., 1958; Lorenz Joanna, 2020; Pasol P., 2007).

The continuous and accelerated development of entomology, explained by the increasing importance that insects have in the economy, is materialized by the more and more detailed study of these arthropods so widespread in all living environments.

Systematics is the basis of any biological research, especially in applied entomology, no action can be taken without knowing with perfect precision the form that interests us from a

The Barber type traps have a volume of 500 ml, are made of plastic material and

systematic point of view. (Ionescu M.A., 1962; Mitrea I., 2001; Oltean I. and colab, 2004; Stan C., 2013).

### MATERIALS AND METHODS

The scientific research was carried out in 2023 in an orchard ecosystem (plum orchard), untended, private property, from the town of Scornicesti, a town located in the north-eastern part of Olt county.

The following Tuleu gras, Agen and Anna Spath varieties were planted here. . In order to carry out research on the coleopteran fauna, the biological material had to be collected with the help of Barber-type soil traps.

In April 2023, 6 traps were set up in this orchard and 6 collections of entomological material were made (May 27, June 11, June 30, July 22, August 12, September 9) from the town of Scornicesti.

have been filled with a fixing liquid (water + NaCl, 10% concentration). 6 traps were

placed at distances of about 18 meters between them.

The orchard in the town of Scornicesti, with an area of 6000 square meters, was established in 1985, is unkempt, and the grass between the rows of trees was mowed only once in 2020, and since then it has not been taken care of.

## RESULTS AND DISCUSSION

From the analysis of the values recorded in 2023, regarding the total abundance of beetle species, depending on the harvest period, it can be seen that a total of 1259 specimens were collected, systematically classified into 4 families (Carabidae, Staphylinidae, Coccinellidae and Scarabidae) and 31 species (Table 1).

**Table 1. The structure and abundance of coleopteran species in the fruit growing ecosystem of Scornicesti in 2023**

Nr.crt.	Family	Species	Abundancy
1	CARABIDAE	<i>Harpalus distinguendus</i>	33
2		<i>Carabus cancelatus</i>	60
3		<i>Carabus ulrichi</i>	47
4		<i>Calosoma sycophanta</i>	30
5		<i>Calosoma inquisitor</i>	30
6		<i>Abax ater</i>	28
7		<i>Pterostichus oblongopunctatus</i>	9
8		<i>Pterostichus versicolor</i>	32
<b>Total CARABIDAE</b>			<b>269</b>
9	STAPHYLINIDAE	<i>Pilonthus decorul</i>	53
10		<i>Oligota flavicornis</i>	39
<b>Total STAPHYLINIDAE</b>			<b>92</b>
11	COCCINELIDAE	<i>Subcoccinella 24-punctata</i>	70
12		<i>Adonia variegata</i>	37
13		<i>Coccinella 7-punctata</i>	102
14		<i>Coccinella 14-pustulata</i>	82
15		<i>Coccinella 12-punctata</i>	75
16		<i>Coccinella tessulata</i>	50
17		<i>Coccinella 14-punctata tetragonata</i>	63
18		<i>Coccinella quinquepunctata</i>	42
19		<i>Coccinella bipunctata</i>	47
20		<i>Exochomus quadripustulatus</i>	28
<b>Total COCCINELIDAE</b>			<b>596</b>
21	SCARABAEIDAE	<i>Oryctes nasicornis</i>	21
22		<i>Epicometis hirta</i>	24
23		<i>Oxythyrea funesta</i>	30
24		<i>Cetonia aurata</i>	33
25		<i>Potosia aeruginosa</i>	58
26		<i>Polyphylla fullo</i>	15
27		<i>Melolontha melolontha</i>	36
28		<i>Anoxia orientalii</i>	29
29		<i>Amphimallon solstitialis</i>	30
30		<i>Pbyllopertha horticola</i>	17
31		<i>Rizotrous aechinoctialis</i>	9
<b>Total SCARABAEIDAE</b>			<b>302</b>
<b>Total Coleopterans</b>			<b>1259</b>

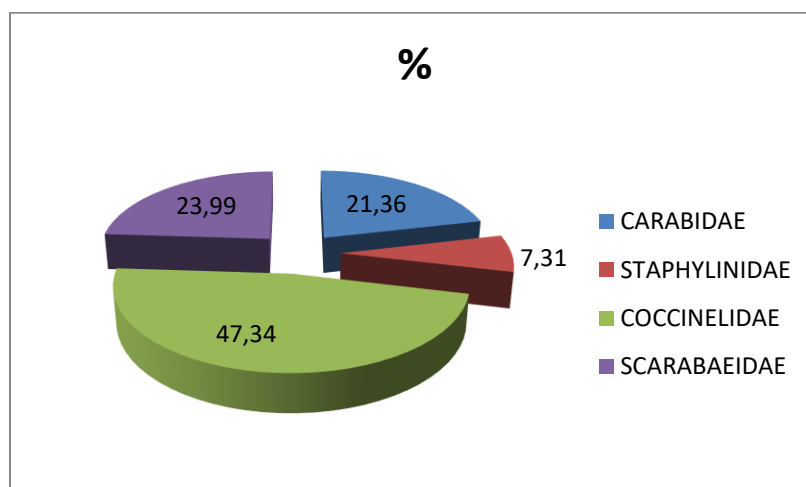
The distribution of species by family was as follows: 8 species were identified in the Carabidae family, 2 species in the Staphylinidae family, 10 species in the Coccinellidae family and 11 species in the Scarabidae family.

The values recorded in 2023, regarding the total abundance of harmful beetle species, depending on the harvest period, show that the most abundant

family was the Coccinellidae family with 596 specimens, representing 47.34%, followed by the Scarabidae family with 302 individuals, (23.99%), then the Carabidae family with 269 specimens, (23.44%) and the fewest specimens were from the Staphylinidae family with 27 specimens, and the weight 3.37%. (Table 2 and fig. 2).

**Table 2. The structure and abundance of coleopteran species in the fruit growing ecosystem of Scornicesti in 2023**

Nr.crt.	Family	Abundance	(%)
1	CARABIDAE	269	21,36
2	STAPHYLINIDAE	92	7,31
3	COCCINELIDAE	596	47,34
4	SCARABAEIDAE	302	23,99
Total beetles collected		<b>1259</b>	<b>100</b>



**Fig.1. The share of coleopteran species per family in the Scornicesti fruit growing ecosystem in 2023**

Regarding the abundance of species from the Carabidae family, it was observed that the species *Carabus cancelatus* has the highest number of specimens collected (60), followed by the

species *Carabus ulrichi*, and the lowest number of individuals collected belongs to the species *Pterostichus oblongopunctatus* (9). (Fig.3).

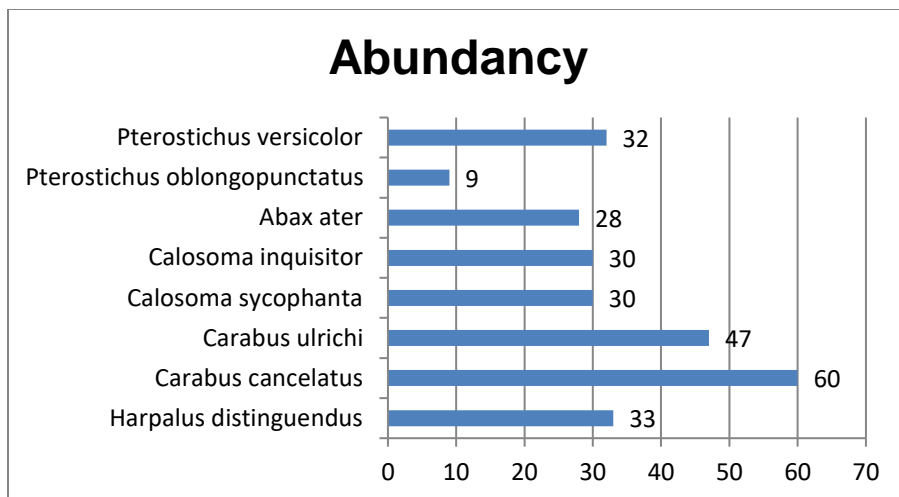


Fig.2. The abundance of coleopterans from the Carabidae family in the Scornicesti fruit growing ecosystem in 2023

The abundance of species from the Staphylinidae family shows that the species *Pilonthus decorul* has a number

of 57 specimens collected, and the species *Oligota flavicornis* has a number of 39 individuals collected (Fig. 4).

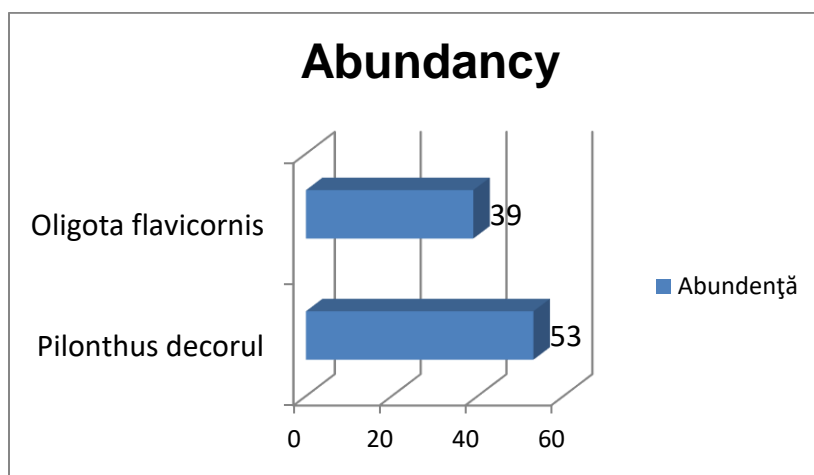


Fig.3. The abundance of coleopterans from the family Staphylinidae in the Scornicesti fruit growing ecosystem in 2023

Regarding the abundance of species from the Coccinellidae family, it was observed that the species *Coccinella 7-punctata* presented the highest number of specimens collected (102), followed by

the species *Subcoccinella 24-punctata* with 70 specimens, and the lowest number of individuals collected belong to of the species *Exochomus quadripustulatus* (28) (Fig. 5).

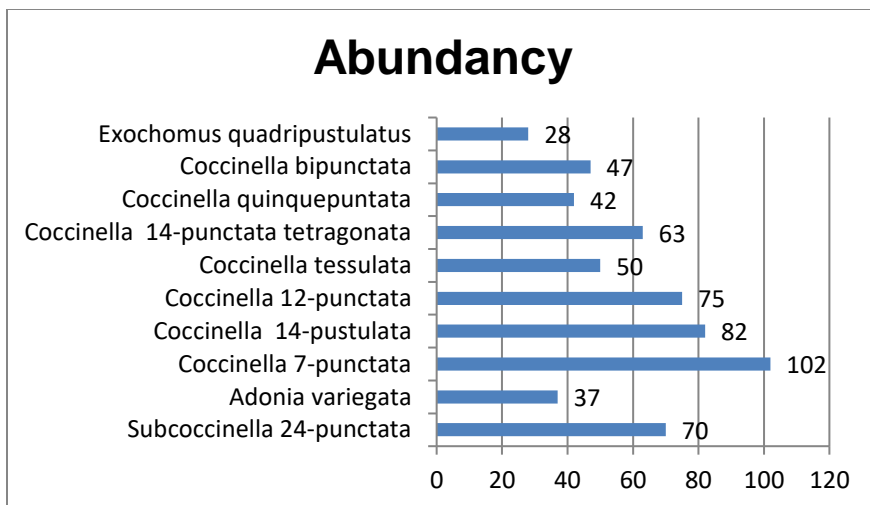


Fig.4. The abundance of the species in Coccinellidae Family from the fruit- growing Ecosystem Scornicesti

The data on the abundance of the Scarabidae family highlight the fact that the species *Potosia aeruginosa* recorded the largest number of individuals (58), followed by *Melolontha melolontha* with

36 individuals and *Cetonia aurata* with 33 individuals, in the last place were recorded the species *Rizotrous aechinoctialis* with 9 individuals (Fig. 6).

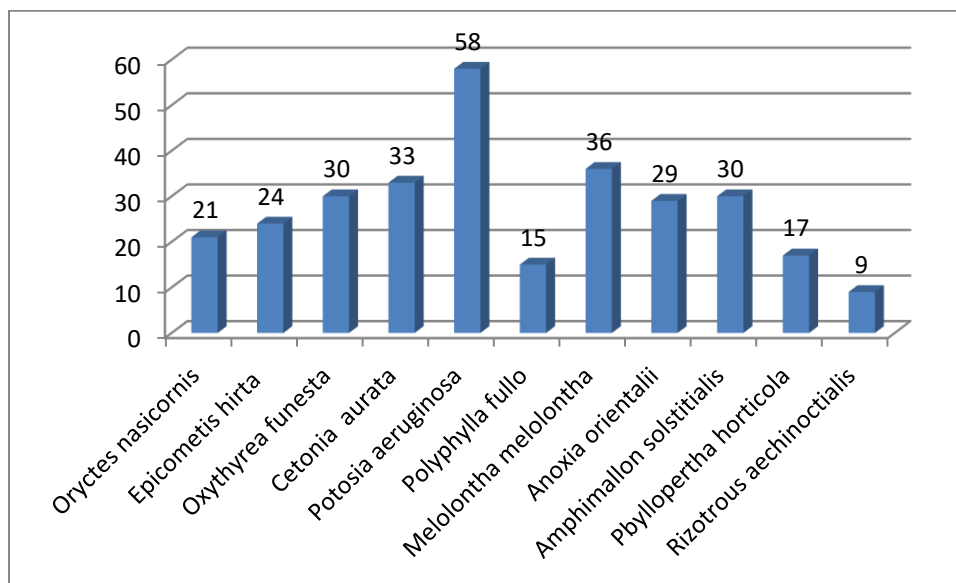


Fig. 5. The abundance of the species in Scarabidae Family from the fruit- growing Ecosystem Scornicesti in 2023

### CONCLUSIONS

The year 2023 was a favorable year for insects because there was little

precipitation and high temperatures, and the plantation was not cared for.

During the entire vegetation period, 6 collections of the entomological material

were carried out using the Barber method. 1259 insects were collected in the Scornicesti orchard, belonging to 4 families: Carabidae, Staphilinidae, Coccinellidae, with 31 species.

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