

## **OBSERVATIONS ON THE STRUCTURE, DYNAMICS AND ABBREVIATION OF ENTOMOFAUNE COLLECTED FROM CERTAIN AGRICULTURAL CROPS**

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**keywords:** *structure; abundance; dynamics; entomofauna.*

### **ABSTRACT**

*The remarks were made in 2016 in the fruit tree, pear, peach, vine plantations, corn crops and cabbage crops, in two stations, stationary Vasile Adamachi, Iasi Iasi county and Ezereni farm in the Miroslava, Iasi County. The purpose of the paper was to compare the entomofauna by a number of different agricultural and field cultures, different as well as agroecosystem technology and conditions. The material was collected using the entomological filet, from June until September inclusive. The collected material was cleaned of vegetal remains and was then prepared for identification at species level. The analysis of the collected material shows that the samples collected belong to the Hexapoda Class, with several insect orders and the Arachnida Class, the Aranea order and the Acari order. Most of them belong to the Insecta class. The orders to which the species are collected are: Coleoptera, Heteroptera, Hymenoptera, Diptera, all of the Hexapoda class. As regards the abundance entomofauna, cultures, it is found that the wheat had been collected the multiple copies (69) followed by the growing of maize (39) and then planting vine (29) and plantations apple (24).*

### **INTRODUCTION**

In the present paper we present the results from the observations made in the agricultural crops of apple, corn and cabbage, collecting the material by means of the entomological netting, within the two stationary:

1. Vasile Adamachi, stationary from Iasi, Iasi county;
2. Ezăreni Stationary, Miroslava, Iași County

### **MATERIAL AND METHOD**

Collection of the material was done using the entomological netting (Tălmăciu M., 2008, Șuta V. 1976). The entomological net is a device consisting of a circular metal frame with a diameter of 30 cm, attached to a truncated mesh and a rod of approximately 0,70 m.

With the entomological net mowing is carried out on the surface or plants.

During research performed multiple threading in both stationary Vasile Adamachi Ezăreni, Iasi County.

Collection of the material by this method was made at the following calendar dates: 10.06.2016; 17.06.2016; 24.06.2016; 05.07.2016; 13.07.2016; 20.07.2016; 27.07.2016; 02.08.2016; 08.08.2016; 14.08.2016.

The material thus collected was placed in jars in which a cotton swab pad was placed in chloroform for almost instantaneous killing of entomophage collected (Cozma V, 2008, Tălmăciu N 2006). So the material was brought into the laboratory, then cleared of vegetal remains and then identified and inventoried up to order level

### **RESULTS AND DISCUSSIONS**

The situation of the collections was as follows:

- ◆ at the first collection on 10.06.2016, we identified apple: 6 specimens of the Order of Coleoptera and one specimen of the Diptera order.

pear: 4 specimens of the order Coleoptera and one copy of the Diptera order.

peach: 2 specimens of the order Coleoptera and one copy of the Ortoptera order.

◆ at the second collection on 17.06.2016, there were registered:

the apple: 2 copies of the order Coleoptera and one specimen of the Hymenoptera order.

peach: 2 specimens of the order Coleoptera and one specimen of the Diptera order.

◆ at the third collection dated 24.06.2016, were registered:

cabbage: 2 specimens of the Coleoptera order.

corn: a specimen of the Diptera order.

◆ at the fourth collection on 05.07.2016, we identified:

apple: a copy of the Coleoptera order.

cherry: a copy of the Coleoptera order.

◆ at the fifth collection on 13.07.2016, identified:

the apple: 3 specimens from the order

In the Ezăreni station, the collection of the biological material was carried out at the following dates:

Harvesting I = 12.06.2016;

Harvest II = 16.06.2016;

Harvest III = 23.06.2016;

Harvest IV = 27.06.2016;

Harvesting V = 07.07.2016;

Harvest VI = 20.07.2016;

Harvest VII = 14.07.2016;

Harvest VIII = 21.07.2016;

Harvest IX = 28.07.2016;

Harvest X = 03.08.2016;

Harvest XI = 08.08.2016;

Harvest XII = 13.08.2016;

Harvest XIII = 20.08.2016;

Harvest XIV = 06.09.2016;

Harvest XV = 30.09.2016.

The situation of the collections was as follows (Table 3, Table 4):

◆ at the first collection on 12.06.2016 there were identified:

wheat: 2 specimens of the order Coleoptera and one specimen of the Diptera order

Corn: One copy of the order Coleoptera and one copy of the Heteroptera order

◆ the second collection on 16.06.2016 identified:

wheat: 5 specimens of the order Coleoptera and one copy of the Heteroptera order;

Corn: 3 specimens of the order Coleoptera;

◆ at the third collection on 23.06.2016 we identified:

wheat: 2 specimens of the order Coleoptera, one copy of the Diptera order

corn: 1 specimen of the order Coleoptera and 2 specimens of the order Lepidoptera;

**Table 1**

**Dynamics and abundance of the collected entomofauna from different cultures in the Adamachi stationary**

No.	Order	No. harvesting/culture																				Total
		I			II		III		IV		V		VI		VII		VIII	IX		X		
		Apple	Pear	Peach	Apple	Peach	Cabbage	Corn	Apple	Cherry	Apple	Vine	Cabbage	Corn	Vine	Apple	Vine	Vine	Apple	Vine	Apple	
1	Coleoptera	6	4	2	2	2	2	-	1	1	3	2	-	-	3	2	4	8	4	6	2	<b>54</b>
2	Diptera	1	1	-	-	1	-	1	-	-	-	-	1	1	-	-	2	1	-	1	-	<b>10</b>
3	Orthoptera	-	-	1	-	-	-	-	-	-	1	-	1	-	1	-	-	-	-	-	1	<b>5</b>
4	Hymenoptera	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	<b>3</b>
<b>Total</b>		<b>7</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>9</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>72</b>

**Table 2**

**The collected entomofauna from the Adamachi stationary**

No	Order	Culture/no. of specimens							Total
		apple	pear	peach	cabbage	corn	cherry	vine	
1	Coleoptera	20	4	4	2	-	1	23	<b>54</b>
2	Diptera	1	1	1	1	2	-	4	<b>10</b>
3	Orthoptera	2	-	1	1	-	-	1	<b>5</b>
4	Hymenoptera	1	-	-	-	1	-	1	<b>3</b>
<b>TOTAL</b>		<b>24</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>29</b>	<b>72</b>

- ◆ at the fourth collection dated 27.06.2016 we identified:
  - wheat: 3 specimens of the order Coleoptera;
  - corn: 2 specimens of the order Coleoptera;
- ◆ at the fifth collection on 07.07.2016 we identified:
  - wheat: 7 specimens of the order Coleoptera;
  - Corn: 5 specimens of the order Coleoptera;
- ◆ at the sixth collection on July 14, 2016 were identified:
  - wheat: 2 specimens of the order Coleoptera;
  - corn: 6 specimens from the order Coleoptera;
- ◆ the seventh collection on July 21, 2016 identified:
  - wheat: 3 specimens of the order Coleoptera;
  - corn: a copy of the Coleoptera order;
- ◆ at the eighth collection on 28.07.2016 there were identified:
  - wheat: a copy of the order Coleoptera and a copy of the Diptera order
  - corn: a specimen of the order Coleoptera and a copy of the Heteroptera order;
- ◆ at the ninth collection on 03.08.2016 we identified:
  - wheat: 2 specimens of the Order of Coleoptera and one specimen of Ortoptera order;
  - corn: 2 specimens of the order Coleoptera and one specimen of the Lepidoptera order;
- ◆ at the tenth collection on 08.08.2016 we identified:
  - wheat: 8 specimens from the order Coleoptera;
  - corn: 2 specimens of the order Coleoptera;
- ◆ at the eleventh collection of 13.08.2016 we identified:
  - wheat: 7 specimens of the order Coleoptera and one specimen of the Lepidoptera order;
  - corn: 2 specimens of the order Coleoptera and one specimen of the order Acarinae;
- ◆ at the twelfth collection on 20.08.2016 we identified:
  - wheat: 10 specimens of the order Coleoptera and 2 specimens of the Heteroptera order;
  - Corn: 3 specimens of the order Coleoptera;
- ◆ at the thirteenth collection of 06.09.2016 we identified:
  - wheat: 6 specimens from the order Coleoptera;
  - Corn: 2 specimens of the Coleoptera order
- ◆ at the fourteenth collection of September 30, 2016 were identified:
  - wheat: 2 specimens of the order Coleoptera and one specimen of the Diptera order;
  - Corn: 1 copy of the order Coleoptera and one specimen of the Lepidoptera order.

**Table 3**

**Dynamics of collected entomofauna from wheat crops in Ezăreni stationary**

No	Order	No of harvesting														Total
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	
1	Coleoptera	2	5	2	3	7	2	3	1	2	8	7	10	6	2	<b>60</b>
2	Diptera	1	-	1	-	-	-	-	1	-	-	-	-	-	1	<b>4</b>
3	Heteroptera	-	1	-	-	-	-	-	-	-	-	-	2	-	-	<b>3</b>
4	Lepidoptera	-	-	-	-	-	-	-	-	-	-	1	-	-	-	<b>1</b>
5	Orthoptera	-	-	-	-	-	-	-	-	1	-	-	-	-	-	<b>1</b>
<b>Total</b>		<b>3</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>6</b>	<b>3</b>	<b>69</b>

**Table 4**

**Dynamics of collected entomofauna from the Ezereni stationary in corn culture**

No	Order	No of harvesting														Total
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	
1	Coleoptera	1	3	1	2	5	6	1	1	2	2	2	3	2	1	<b>32</b>
2	Diptera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Heteroptera	1	-	-	-	-	-	-	1	-	-	-	-	-	-	<b>2</b>
4	Lepidoptera	-	-	2	-	-	-	-	-	1	-	1	-	-	1	<b>4</b>
5	Orthoptera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Acari	-	-	-	-	-	-	-	-	-	-	1	-	-	-	<b>1</b>
<b>Total</b>		<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>39</b>

**Table 5**

**The collected entomofauna from wheat and maize crops in the Ezaeni stationary**

No.	Order	Culture		Number of specimens
		corn	maize	
1	Coleoptera	60	32	<b>92</b>
2	Diptera	4	-	<b>4</b>
3	Heteroptera	3	2	<b>5</b>
4	Lepidoptera	1	4	<b>5</b>
5	Orthoptera	1	-	<b>1</b>
6	Aranea	-	1	<b>1</b>
<b>TOTAL</b>		<b>69</b>	<b>39</b>	<b>108</b>

## CONCLUSIONS

1. The collection of entomological material was made in two stations, stationary Vasile Adamachi and Ezăreni Station, both belonging to Iași County, from different agricultural crops: wheat, corn, cabbage, but also from fruit and wine plantations.
2. The collected material was determined at the level of order, stationary and crop.
3. The collected species belong mainly to the Coleoptera order, with 60 specimens collected from the wheat crops, in the Ezăreni station, 54 copies in the fruit and vineyard crops and vines of Vasile Adamachi stationary and 30 copies in the maize crops of the Ezăreni station.

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