

OBSERVATIONS REGARDING THE COLEOPTERAN FAUNA IN MAIZE CROPS DEPENDING ON THE CHEMICAL TREATMENTS APPLIED AGAINST PESTS

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Abstract

The research was conducted in a maize crop located in the area of Adea, Bihor County, in 2022. For the collection of entomological material, Barber-type soil traps were used, each containing a 2.5% NaCl solution for preserving and killing the captured insects.

A total of 24 traps were used—12 traps for each of the two experimental variants. Each variant included three repetitions, each repetition consisting of four traps.

The two experimental variants were:

- *Variant 1 – chemical treatments were applied against pests (seed treatments and foliar treatments as needed), representing a conventional system.*
- *Variant 2 – no chemical treatments were applied against pests, neither on seeds nor vegetation (ecological system).*

The collected material was labeled by variants and repetitions, with only the species of coleoptera being selected, which were then preserved until species determination in a solution of sanitary alcohol that was diluted to a concentration of 20%. Species identification was carried out using specialized identification guides. The collected coleopteran species belonged to the following families: Carabidae, Chrysomelidae, Coccinellidae, Staphylinidae, Scarabaeidae, Tenebrionidae, etc. Some of the most important representatives of these families were: Pseudophonus pubescens, Pseudophonus griseus, Pterostichus cylindricus, Pterostichus niger, Harmonia axyridis, Coccinella 10-punctata, Coccinella septempunctata, Adalia bipunctata, Pentodon idiota, Chrysomela haemoptera, etc.

Key words: *maize crop, Carabidae, ecological and conventional*

INTRODUCTION

Observations on coleopteran communities were made in a corn crop in the area of Adea, Bihor County, during 2022. Species were collected using Barber-type soil traps, with 2.5% NaCl solution, installed in the crop during May–October, with harvests at 14–16-day intervals. The study included two experimental variants: 1st variant with chemical treatments applied to the seed and vegetation, and 2nd variant in an ecological system, without chemical

treatments, each with three repetitions and four traps, for a total of 24 traps (Popescu, 2019; Iacob, 2020).

The results obtained indicated significant differences between the two variants. In 1st variant, the largest number of species (25) was collected at the 6th harvest, on July 24, 2022, and the largest number of specimens (130) at the first harvest, on May 15, 2022. In 2nd variant, the largest number of specimens (187) was collected at the second harvest, and the largest number of

species (29) in the same period. In total, 811 specimens were collected in the variant with chemical treatments, respectively 1022 specimens in the organic variant, representing 50 and 78 species, respectively. The dominant species were *Pseudophonus pubescens*, *Pseudophonus griseus*, *Harmonia axyridis*, *Pentodon idiota* and *Coccinella 10-punctata*, and their distribution varied depending on the treatment (Marinescu, 2018; Ene et al., 2021).

These data highlight the impact of applying chemical treatments on the diversity and abundance of coleoptera in maize crops and provide useful information for integrated pest management in traditional and organic agricultural systems.

MATERIALS AND METHODS

The observations were made in a corn crop in the area of Adea, Bihor county, during 2022.

To collect the beetle species, Barber soil traps were used, in which a 2,5% NaCl solution was placed. (Antonescu, 2012)

Two variants were used, each variant with three repetitions, with four traps, for a total of 24 traps.

The traps were installed in the culture, from May to October. The material was harvested periodically, at intervals of 14-16 days. At each harvest, only the species of

coleoptera were selected, with each sample being labeled and preserved in diluted sanitary alcohol, at a concentration of approx. 20%. (Talmaciu, 2008).

Subsequently, the beetle species were identified using field determiners and the internet.

RESULTS AND DISCUSSIONS

Variant number 1 where chemical treatments were carried out against pests, treatments applied to seeds and vegetation. Variant 2, in an ecological system, without chemical treatments applied against pests (table 1).

In variant 1, the most species, 25, were collected during the 6th harvest, on 07/24/2022, and the largest number of specimens collected, 130, were collected on 05/15/2022, during the first harvest.

Regarding the repetitions, the largest number of coleoptera specimens were collected in the second repetition on 29.05.2022, at the 2nd harvest, and also in the second repetition on 24.07.2022, at the 6th harvest, in a total of 77 specimens.

In variant 2 (table 2), most specimens were collected in the second harvest, totaling 187 specimens, and the largest number of species were collected on 15.05.2022, when specimens belonging to a number of 29 species were collected.

Table 1. Beetles collected in corn 1 variant (conventional) in 2022

No	Species	First repetition				Total	Second repetition				Total	Third repetition				Total	Total
		C1	C2	C3	C4		C5	C6	C7	C8		C9	C10	C11	C12		
First harvest 15.05.2022																	
1	Blaps mortisaga	1	-	-	-	1	-	-	-	-	0	-	1	-	-	1	2
2	Cantharis obscura	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
3	Coccinella 10-punctata	-	1	-	-	1	2	3	1	1	7	2	3	1	-	6	14
4	Coccinella septempunctata	-	-	-	-	0	-	-	1	1	2	-	-	-	-	0	2
5	Dermestes lanarius	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
6	Dorcadion murrayi	-	-	-	2	2	-	-	-	2	2	-	-	-	-	0	4
7	Dorcadion pedestre	-	-	-	1	1	-	-	-	1	1	-	-	-	-	0	2
8	Harmonia axyridis	1	2	1	2	6	1	5	3	6	15	3	3	-	-	6	27
9	Hister quadrimaculatus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
10	Opatrum sabulosum	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
11	Pentodon idiota	-	-	-	-	0	2	1	-	1	4	-	-	-	-	0	4
12	Pseudophonus pubescens	5	5	-	9	19	7	11	7	12	37	4	4	2	-	10	66
13	Scymnus frontalis	-	1	-	1	2	-	-	1	1	2	-	-	-	1	1	5
Total first harvest		8	9	1	16	34	12	20	13	25	70	11	11	3	1	26	130

Second harvest 29.05.2022																	
1	Adalia bipunctata	1	-	-	-	1	-	-	-	2	2	-	-	-	-	0	3
2	Coccinella 10-punctata	1	-	-	-	1	4	3	-	1	8	-	-	2	-	2	11
3	Coccinella septempunctata	-	-	-	1	1	-	-	-	2	2	-	-	-	-	0	3
4	Dorcadion aethiops	1	-	-	1	2	1	1	-	-	2	-	-	-	-	0	4
5	Dorcadion murrayi	2	-	-	-	2	1	1	-	2	4	-	-	3	-	3	9
6	Harmonia axyridis	-	-	-	2	2	2	8	-	7	17	-	-	7	-	7	26
7	Harpalus distinguendus	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
8	Otiorrhynchus corvus	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
9	Pentodon idiota	-	-	-	-	0	1	-	-	1	2	-	-	-	-	0	2
10	Pseudophonus griseus	4	-	-	-	4	3	3	-	3	9	-	1	-	1	2	15
11	Pseudophonus pubescens	3	4	2	6	15	6	8	5	6	25	2	1	-	1	4	44
12	Pterostichus cylindricus	-	-	-	-	0	-	-	-	4	4	-	-	-	1	1	5
13	Sciaphilus asperatus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
14	Tanymecus palliatus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
Total second harvest		13	4	2	10	29	18	24	5	30	77	2	2	13	3	20	126
Third harvest 12.06.2022																	
1	Coccinella 10-punctata	-	1	-	-	1	4	1	-	-	5	-	1	-	-	1	7
2	Coccinella septempunctata	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
3	Dorcadion aethiops	-	-	1	-	1	-	1	-	1	2	-	-	-	-	0	3
4	Dorcadion murrayi	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
5	Dorcadion pedestre	1	-	-	-	1	-	-	-	1	1	-	-	-	-	0	2
6	Harmonia axyridis	-	3	-	2	5	1	2	2	4	9	1	3	-	-	4	18
7	Pentodon idiota	2	4	-	1	7	-	1	-	-	1	1	-	-	-	1	9
8	Pseudophonus griseus	4	3	-	2	9	2	5	1	2	10	2	2	1	1	6	25
9	Pseudophonus pubescens	-	5	2	2	9	2	4	4	6	16	4	5	-	-	9	39
10	Scymnus frontalis	-	1	-	1	2	-	-	-	-	0	1	-	-	-	1	3
Total third harvest		7	17	3	8	35	9	16	7	14	46	9	11	1	1	22	108
Forth harvest 26.06.2022																	
1	Adalia bipunctata	-	-	2	-	2	-	-	-	-	0	-	-	-	-	0	2
2	Adalia decempunctata	-	-	-	-	0	1	1	-	1	3	-	-	-	-	0	3
3	Coccinella septempunctata	-	1	-	-	1	-	1	-	-	1	-	-	-	-	0	2
4	Crypticus quisquilius	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
5	Dermestes lanarius	2	2	3	2	9	-	3	3	2	8	2	1	-	-	3	20
6	Dorcadion murrayi	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
7	Dorcadion pedestre	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
8	Harmonia axyridis	-	1	-	1	2	-	-	1	-	1	-	-	-	-	0	3
9	Opatrum sabulosum	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
10	Otiorrhynchus orbicularis	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
11	Pseudophonus griseus	1	1	1	2	5	1	4	-	-	5	3	1	-	-	4	14
12	Pseudophonus pubescens	1	-	-	2	3	2	7	2	5	16	4	2	-	-	6	25
Total forth harvest		4	7	6	7	24	4	13	6	9	32	9	1	0	0	13	69
Fifth harvest 10.07.2022																	
1	Adalia bipunctata	-	-	-	2	2	-	1	-	2	3	3	-	3	-	6	11
2	Adalia decempunctata	-	-	-	1	1	-	-	-	3	3	-	-	-	-	0	4
3	Chilocorus renipustulatus	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
4	Chrysomela haemoptera	-	-	-	-	0	-	-	-	1	1	-	1	-	-	1	2
5	Dorcadion aethiops	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
6	Dorcadion murrayi	-	-	-	1	1	-	1	-	1	2	2	-	-	-	2	5
7	Dorcadion pedestre	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
8	Harmonia axyridis	-	-	-	-	0	-	2	-	5	7	2	7	-	-	9	16
9	Opatrum sabulosum	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
10	Othiorrhynchus orbicularis	-	-	-	-	0	-	2	-	-	2	-	-	-	-	0	2
11	Pentodon idiota	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1

12	Pseudophonus griseus	-	1	1	2	4	3	2	-	4	9	6	4	2	-	12	25
13	Pseudophonus pubescens	-	2	2	4	8	1	7	2	8	18	4	3	1	2	10	36
14	Pterostichus cylindricus	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	2
15	Sciaphobus scitulus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
16	Subcoccinella vigintiquatuor punctata	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	2
Total fifth harvest		1	3	3	10	17	4	16	2	31	53	18	15	6	2	41	111
Sixth harvest 24.07.2022																	
1	Adalia bipunctata	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
2	Agriotes ustulatus	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
	Calathus fuscipes	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	2
3	Cassida murarea	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
4	Chrysomela haemoptera	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
5	Clytra quadripunctata	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
6	Coccinella 10-punctata	-	-	-	-	0	1	-	-	-	1	-	-	-	-	0	1
7	Coccinella septempunctata	-	-	-	1	1	-	4	1	-	5	-	-	-	-	0	6
8	Dermestes lanarius	-	-	-	-	0	-	3	-	-	3	-	-	-	-	0	3
9	Dorcadion murrayi	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
10	Epicometis hirta	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
11	Galeruca pomonae	-	-	-	-	0	-	1	-	1	2	-	-	-	-	0	2
12	Harmonia axyridis	-	-	-	4	4	-	5	2	6	13	1	-	-	-	1	18
13	Hister cadaverinus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
14	Opatrum sabulosum	-	-	-	-	0	2	-	-	-	2	-	-	-	-	0	2
15	Ophonus azureus	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
16	Pentodon idiota	-	1	-	1	2	1	1	-	1	3	-	-	-	-	0	5
17	Pseudophonus griseus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
18	Pseudophonus pubescens	2	2	1	9	14	2	9	3	8	22	4	2	1	1	8	44
	Pterostichus cylindricus	-	-	-	-	0	-	3	-	-	3	-	-	-	-	0	3
	Pterostichus marginalis	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
	Pterostichus niger	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
	Scymnus frontalis	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	2
	Tenebrio opacus	1	5	-	5	11	3	1	2	-	6	2	-	-	-	2	19
	Trogoderma granarium	-	-	-	-	0	-	3	-	1	4	-	-	-	-	0	4
Total sixth harvest		3	9	1	22	35	9	36	8	24	77	7	2	1	1	11	123
Seventh harvest 07.08.2022																	
1	Blaps mortisaga	-	-	-	3	3	-	-	-	-	0	-	-	-	-	0	3
2	Cardiophorus ruficollis	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
3	Coccinella septempunctata	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
4	Cyphocleonus tigrinus	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
5	Dorcadion aethiops	-	-	2	-	2	-	-	-	-	0	-	1	-	-	1	3
6	Galeruca tanaceti	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	1
7	Pentodon idiota	8	-	2	5	15	-	-	-	-	0	3	1	2	-	6	21
8	Pseudophonus cinereus	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
9	Pseudophonus griseus	1	-	1	5	7	-	2	2	3	7	-	2	-	1	3	17
10	Pseudophonus pubescens	-	-	-	2	2	-	1	2	1	4	-	-	-	-	0	6
11	Pterostichus cylindricus	-	-	1	1	2	-	-	-	-	0	-	-	-	-	0	2
12	Silpha carinata	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
Total seventh harvest		9	1	6	17	33	0	3	4	5	12	3	5	4	1	13	58
Eighth harvest 21.08.2022																	
1	Blaps mortisaga	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
2	Dorcadion aethiops	-	-	-	-	0	-	-	-	1	1	-	-	1	-	1	2
3	Dorcadion murrayi	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
4	Pentodon idiota	3	-	-	2	5	-	-	2	2	4	1	-	1	-	2	11
5	Pseudophonus griseus	-	1	2	1	4	1	-	2	3	6	1	1	1	1	4	14
6	Pseudophonus pubescens	1	-	1	1	3	-	2	-	-	2	-	-	-	-	0	5

7	<i>Pterostichus cylindricus</i>	-	-	-	2	2	-	-	-	-	0	-	-	-	-	0	2
8	<i>Pterostichus niger</i>	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
Total eighth harvest		4	1	3	7	15	1	2	4	7	14	3	1	3	1	8	37
Ninth harvest 04.09.2022																	
1	<i>Dorcadion aethiops</i>	-	-	1	-	1	-	1	-	-	1	-	-	-	-	0	2
2	<i>Dorcadion murrayi</i>	3	-	1	-	4	-	-	-	-	0	-	-	1	1	2	6
3	<i>Dorcadion pedestre</i>	2	-	-	-	2	-	-	-	-	0	5	-	2	-	7	9
4	<i>Opatrum sabulosum</i>	1	-	-	-	1	-	-	-	-	0	1	-	-	-	1	2
5	<i>Pseudophonus griseus</i>	-	2	-	2	4	-	2	-	-	2	-	3	-	-	3	9
6	<i>Pseudophonus pubescens</i>	1	-	-	1	2	-	-	-	-	0	1	2	-	1	4	5
7	<i>Pterostichus cylindricus</i>	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
Total ninth harvest		7	2	2	4	15	0	3	0	0	3	7	5	3	2	17	34
Tenth harvest 18.09.2022																	
1	<i>Cantharis obscura</i>	-	-	-	2	2	-	-	-	-	0	-	-	-	-	0	2
2	<i>Dorcadion aethiops</i>	-	-	-	-	0	1	-	-	-	1	-	-	-	-	0	1
3	<i>Dorcadion murrayi</i>	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
4	<i>Dorcadion pedestre</i>	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
5	<i>Elater nigerrimus</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
6	<i>Pseudocleonus cinereus</i>	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
7	<i>Pseudophonus pubescens</i>	1	1	-	-	2	-	-	1	-	1	2	-	-	2	4	7
8	<i>Silpha carinata</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
Total tenth harvest		3	1	0	3	7	1	1	2	0	4	2	0	0	2	4	15
Total harvested coleoptera																	811

Regarding repetitions, the most specimens collected were recorded in the first repetition in the second harvest when 87 specimens were recorded.

In total, in the two variants, with the 10 harvests, a number of 811

specimens were collected in variant 1, where chemical treatments were performed, and in the ecological variant, 1022 specimens of coleoptera in the variant with chemical treatments.

Table 2.Beetles collected in corn variant 2 (ecological) in 2022

Nr	Species	First repetition				Total	Second repetition				Total	Third repetition				Total	Total
		C1	C2	C3	C4		C5	C6	C7	C8		C9	C10	C11	C12		
First harvest 15.05.2022																	
1	Amphimallon solstitialis	1	-	-	-	1	-	-	1	-	1	-	-	1	-	1	3
2	Blaps mortisaga	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
3	Cantharis nigricans	-	1	-	-	1	-	-	2	-	2	-	-	-	-	0	3
4	Cetonia aurata	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
5	Coccinella 10-punctata	1	2	-	-	3	1	-	1	-	2	1	-	-	-	1	6
6	Dorcadion aethiops	1	-	-	-	1	-	-	-	-	0	-	-	1	-	1	2
7	Dorcadion murrayi	-	-	-	-	0	-	-	-	1	1	-	-	1	-	1	2
8	Dorcadion pedestre	-	-	-	-	0	-	-	-	1	1	-	-	2	-	2	3
9	Eusomus ovulum	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
10	Harmonia axyridis	2	1	3	-	6	-	1	3	-	4	2	-	-	1	3	13
11	Harpalus aeneus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
12	Harpalus distinguendus	1	1	-	1	3	-	-	-	-	0	-	-	1	-	1	4
13	Harpalus rufus	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	1
14	Hister quadrimaculatus	-	-	-	-	0	-	-	2	1	3	-	-	-	-	0	3
15	Nebria brevicollis	1	-	-	-	1	-	-	-	-	0	-	1	-	-	1	2
16	Onthophagus vacca	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
17	Ophonus azureus	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
18	Ophonus puncticollis	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	1
19	Otiorhynchus corvus	1	-	-	1	2	1	-	-	-	1	-	-	3	-	3	6
20	Pentodon idiota	1	-	1	1	3	-	-	-	-	0	-	-	2	-	2	5
21	Pseudophonus griseus	3	2	3	2	10	-	-	-	-	0	-	-	-	-	0	10
22	Pseudophonus pubescens	4	4	4	3	15	-	1	3	3	7	3	3	6	1	13	35
23	Pterostichus cylindricus	-	-	1	2	3	-	1	-	1	2	2	-	2	1	5	10
24	Pterostichus koyi	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
25	Pterostichus niger	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
26	Scymnus frontalis	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
27	Tanymecus dilaticolis	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
28	Tenebrio opacus	2	2	2	3	9	-	-	1	-	1	-	-	-	-	0	10
29	Valgus haemipterus	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
Total first harvest		21	13	14	17	65	2	3	14	8	27	8	6	21	3	38	130
Second harvest 29.05.2022																	

1	Adalia bipunctata	3	2	-	2	7	-	-	-	2	2	-	1	-	2	3	12
2	Adalia decempunctata	2	2	-	1	5	-	-	-	2	2	-	-	-	-	0	7
3	Carabus coriaceus	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
4	Carabus intricatus	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
5	Coccinella septempunctata	1	2	-	-	3	1	-	-	-	1	-	-	-	-	0	4
6	Dorcadion aethiops	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	1
7	Dorcadion murrayi	3	1	-	-	4	-	-	-	-	0	-	2	-	2	4	8
8	Dorcadion pedestre	-	-	-	-	0	-	-	-	-	0	-	-	-	1	1	1
9	Harmonia axyridis	6	5	-	5	16	3	-	-	4	7	-	4	-	6	10	33
10	Harmonia quadripunctata	-	-	-	-	0	-	-	-	-	0	-	2	-	2	4	4
11	Harpalus aeneus	1	-	-	-	1	-	-	-	1	1	-	-	-	-	0	2
12	Harpalus distinguendus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
13	Oxymirus cursor	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
14	Ophonus azureus	-	2	-	1	3	-	-	-	-	0	-	-	-	-	0	3
15	Ophonus puncticollis	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
16	Pentodon idiota	1	-	-	-	1	-	-	-	-	0	-	-	-	2	2	3
17	Phytodecta fornicata	1	-	-	-	1	-	-	-	1	1	-	1	-	-	1	3
18	Pseudocleonus cinereus	1	-	-	1	2	-	-	-	-	0	-	-	-	1	1	3
19	Pseudophonus griseus	-	4	2	-	6	-	2	2	2	6	2	7	1	-	10	22
20	Pseudophonus pubescens	15	5	5	10	35	3	-	8	3	14	3	2	2	1	8	58
21	Pterostichus cylindricus	3	1	-	-	4	-	-	7	-	7	-	-	-	-	0	11
22	Pterostichus vulgaris	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
23	Scymnus frontalis	-	2	-	1	3	-	-	-	-	0	-	-	-	2	2	5
24	Subcoccinella vigintiquatuor punctata	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
Total second harvest		40	27	7	23	97	7	2	17	16	42	5	20	3	19	47	187
Third harvest 12.06.2022																	
1	Abax carrinatus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
2	Amara crenata	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
3	Calatus fuscipes	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
4	Cantharis obscura	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
5	Cantharis fusca	-	-	-	3	3	-	-	-	-	0	-	-	-	-	0	3
6	Coccinella 10-punctata	4	-	-	2	6	-	-	-	-	0	-	-	-	-	0	6
7	Coccinella septempunctata	2	1	-	-	3	-	-	-	-	0	-	-	-	-	0	3
8	Dorcadion aethiops	-	1	1	-	2	-	-	-	-	0	-	-	1	-	1	3
9	Dorcadion murrayi	3	-	-	1	4	-	-	-	-	0	-	-	1	-	1	5
10	Dorcadion pedestre	1	-	-	1	2	-	-	-	-	0	-	-	-	-	0	2
11	Harmonia axyridis	8	2	1	3	14	-	-	4	-	4	-	-	1	-	1	19
12	Harpalus aeneus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
13	Harpalus distinguendus	1	-	-	-	1	-	-	-	2	2	-	-	-	-	0	3
14	Hister quadrimaculatus	-	1	-	-	1	1	-	-	-	1	-	-	-	-	0	2
15	Opatrum sabulosum	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
16	Otiorrhynchus corvus	-	-	-	1	1	-	1	-	-	1	-	-	-	-	0	2
17	Pentodon idiota	-	1	1	-	2	-	-	3	-	3	-	-	-	-	0	5
18	Pseudophonus griseus	3	-	1	3	7	-	-	3	-	3	-	-	-	-	0	10
19	Pseudophonus pubescens	9	2	4	6	21	-	-	2	-	2	-	2	6	-	8	31
20	Pterostichus melas	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
21	Pterostichus cylindricus	-	-	-	-	0	1	-	-	-	1	-	-	-	-	0	1
22	Pterostichus niger	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
23	Pterostichus vulgaris	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
24	Tanymecus palliatus	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
Total third harvest		34	10	8	22	74	2	1	14	3	20	0	2	9	0	11	105
Forth harvest 26.06.2022																	
1	Agriotes lineatus	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
2	Amara aenea	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
3	Amara apricaria	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
4	Blaps mortisaga	1	-	1	-	2	-	-	1	-	1	-	-	-	-	0	3
5	Calathus fuscipes	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
6	Carabus cancellatus	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
7	Coccinella 10-punctata	-	-	1	1	2	-	-	1	-	1	1	-	-	-	1	4
8	Coccinella septempunctata	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
9	Dorcadion aethiops	-	-	-	1	1	-	-	-	-	0	-	1	1	-	2	3
10	Harmonia axyridis	1	-	3	1	5	-	-	1	-	1	1	1	3	-	5	11
11	Harpalus aeneus	1	-	-	-	1	-	-	1	-	1	-	-	-	-	0	2
12	Harpalus distinguendus	1	-	-	2	3	-	-	-	-	0	-	-	-	-	0	3
13	Harpalus tardus	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
14	Opatrum sabulosum	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	1
15	Ophonus azureus	1	-	-	-	1	-	-	1	-	1	-	-	-	-	0	2
16	Ophonus puncticollis	1	-	-	-	1	-	-	1	-	1	-	-	-	-	0	2
17	Otiorrhynchus corvus	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
18	Pentodon idiota	1	-	-	-	1	-	-	-	-	0	-	-	1	-	1	2
19	Phytodecta fornicata	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
20	Pseudocleonus cinereus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1

21	<i>Pseudophonus griseus</i>	-	2	-	2	4	-	2	3	-	5	-	-	3	-	3	12
22	<i>Pseudophonus pubescens</i>	6	4	4	5	19	4	5	4	-	13	1	-	5	1	7	39
23	<i>Pterostichus cylindricus</i>	-	-	1	-	1	-	-	3	-	3	1	1	-	1	3	7
24	<i>Pterostichus niger</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
25	<i>Scymnus frontalis</i>	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
26	<i>Tenebrio molitor</i>	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
27	<i>Tenebrio opacus</i>	1	-	1	2	4	-	-	1	-	1	1	2	5	-	8	13
Total forth harvest		16	6	12	16	50	4	7	21	0	32	8	5	20	2	35	117
Fifth harvest 10.07.2022																	
1	<i>Adalia bipunctata</i>	-	1	2	-	3	-	-	1	2	3	1	2	1	-	4	10
2	<i>Adalia decempunctata</i>	-	3	5	-	8	-	-	2	1	3	-	-	3	-	3	14
3	<i>Amara aenea</i>	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	1
4	<i>Anisodactylus signatus</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
5	<i>Calatus fuscipes</i>	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
6	<i>Coccinella septempunctata</i>	-	-	-	1	1	-	-	-	1	1	-	-	-	-	0	2
7	<i>Dorcadion aethiops</i>	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
8	<i>Dorcadion murrayi</i>	-	-	1	-	1	-	-	-	1	1	-	2	-	-	2	4
9	<i>Dorcadion pedestre</i>	-	-	-	-	0	-	-	1	-	1	-	1	-	-	1	2
10	<i>Harmonia axyridis</i>	-	3	5	1	9	-	-	5	4	9	5	2	4	2	13	31
11	<i>Harpalus aeneus</i>	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
12	<i>Harpalus distinguendus</i>	2	1	-	-	3	-	-	2	-	2	-	-	-	-	0	5
13	<i>Harpalus tardus</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
14	<i>Ophonus puncticollis</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
15	<i>Pentodon idiota</i>	-	-	-	-	0	-	-	1	-	1	-	2	-	-	2	3
16	<i>Pseudophonus griseus</i>	-	2	3	-	5	-	-	-	-	0	-	-	1	-	1	6
17	<i>Pseudophonus pubescens</i>	2	3	4	2	11	-	1	5	2	8	1	3	3	1	8	27
18	<i>Pterostichus cylindricus</i>	1	-	-	2	3	-	1	-	2	3	1	1	2	1	5	11
19	<i>Pterostichus niger</i>	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
20	<i>Scaphomorphus poricollis</i>	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
21	<i>Sciaphobus scitulus</i>	-	-	-	-	0	-	-	-	1	1	-	2	-	-	2	3
22	<i>Sphenophorus striatopunctatus</i>	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
23	<i>Stelidota geminata</i>	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
Total fifth harvest		5	16	23	6	50	0	2	18	15	35	10	16	14	4	44	129
Sixth harvest 24.07.2022																	
1	<i>Abax carrinatus</i>	1	-	-	-	1	1	-	-	-	1	-	-	-	-	0	2
2	<i>Adalia bipunctata</i>	-	-	-	2	2	-	-	-	-	0	-	-	-	-	0	2
3	<i>Amara aenea</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
4	<i>Bembidion properans</i>	1	-	-	3	4	-	-	-	-	0	-	-	-	-	0	4
5	<i>Blaps mortisaga</i>	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
6	<i>Cassida atrata</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
7	<i>Cleonis pigra</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
8	<i>Coccinella 10-punctata</i>	-	1	1	3	5	2	-	1	-	3	-	-	-	-	0	8
9	<i>Coccinella septempunctata</i>	1	-	1	2	4	1	-	-	1	2	-	-	-	-	0	6
10	<i>Crypticus quisquilius</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
11	<i>Dorcadion aethiops</i>	1	2	1	-	4	-	-	1	-	1	-	-	-	-	0	5
12	<i>Dorcadion murrayi</i>	1	-	-	-	1	1	-	3	-	4	-	-	1	-	1	6
13	<i>Dorcadion pedestre</i>	1	-	-	-	1	1	-	-	-	1	-	-	-	-	0	2
14	<i>Harmonia axyridis</i>	9	2	3	10	24	5	3	3	-	11	-	-	-	-	0	35
15	<i>Harpalus distinguendus</i>	-	2	1	1	4	1	-	1	-	2	-	-	1	-	1	7
16	<i>Nebria brevicollis</i>	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
17	<i>Opatrum sabulosum</i>	-	-	-	1	1	-	1	1	-	2	-	-	-	-	0	3
18	<i>Ophonus azureus</i>	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
19	<i>Otiorrhynchus corvus</i>	-	-	-	-	0	-	-	-	1	1	-	-	1	-	1	2
20	<i>Otiorrhynchus niger</i>	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
21	<i>Pentodon idiota</i>	1	2	-	-	3	2	-	2	-	4	-	-	1	-	1	8
22	<i>Pseudophonus griseus</i>	3	-	-	4	7	3	-	2	-	5	-	-	-	-	0	12
23	<i>Pseudophonus pubescens</i>	4	1	-	-	5	3	1	2	1	7	2	1	2	-	5	17
24	<i>Pterostichus cylindricus</i>	2	2	1	1	6	1	-	2	-	3	1	1	2	-	4	13
25	<i>Pterostichus marginalis</i>	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
26	<i>Pterostichus niger</i>	1	1	-	-	2	-	-	-	-	0	-	-	-	-	0	2
27	<i>Pterostichus vulgaris</i>	-	-	-	-	0	-	-	1	-	1	-	-	-	-	0	1
28	<i>Scymnus frontalis</i>	2	-	-	-	2	-	-	-	-	0	-	-	-	-	0	2
29	<i>Subcoccinella vigintiquatuorpunctata</i>	2	-	-	-	2	-	-	-	-	0	-	-	-	-	0	2
Total sixth harvest		33	14	11	29	87	21	5	19	3	48	3	2	8	0	13	148
Seventh harvest 07.08.2022																	
1	<i>Blaps mortisaga</i>	-	-	-	-	0	-	-	-	3	3	3	5	2	-	10	13
2	<i>Cantharis fusca</i>	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
3	<i>Cetonia aurata</i>	1	-	-	-	1	-	-	-	-	0	1	-	-	-	1	2
4	<i>Coccinella 10-punctata</i>	1	2	-	1	4	-	-	-	-	0	-	-	-	-	0	4
5	<i>Dorcadion aethiops</i>	-	-	-	1	1	-	-	-	-	0	1	-	-	-	1	2
6	<i>Dorcadion murrayi</i>	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1

7	Dorcadion pedestre	-	-	-	-	0	-	-	-	-	0	1	-	-	1	2	2
8	Harmonia axyridis	1	4	-	2	7	-	-	-	-	0	-	-	-	-	0	7
9	Harpalus aeneus	1	-	-	1	2	-	-	-	-	0	-	-	-	-	0	2
10	Harpalus distinguendus	-	-	-	1	1	-	-	1	1	2	-	-	-	-	0	3
11	Lamia textor	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
12	Otiorrhynchus corvus	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
13	Pentodon idiota	1	1	-	2	4	-	-	2	-	2	-	2	-	-	2	8
14	Pseudophonus griseus	1	4	1	2	8	1	1	3	1	6	-	1	-	-	1	15
15	Pseudophonus pubescens	-	-	-	1	1	-	-	-	1	1	1	-	1	-	2	4
16	Pterostichus cylindricus	1	-	-	2	3	-	1	2	-	3	-	1	2	-	3	9
17	Pterostichus niger	-	-	-	-	0	-	1	-	1	2	-	-	-	-	0	2
Total seventh harvest		8	13	1	13	35	1	4	8	7	20	7	9	5	1	22	77
Eighth harvest 21.08.2022																	
1	Blaps mortisaga	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
2	Coccinella septempunctata	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	2
3	Cyphocleonus tigrinus	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
4	Dorcadion aethiops	-	-	-	-	0	-	1	1	1	3	-	-	-	-	0	3
5	Harmonia axyridis	-	-	-	-	0	-	-	2	2	4	-	-	-	-	0	4
6	Harpalus distinguendus	1	1	-	-	2	-	-	-	-	0	-	-	-	-	0	2
7	Opatrum sabulosum	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
8	Pentodon idiota	3	2	-	-	5	2	-	1	1	4	-	-	-	-	0	9
9	Pseudophonus griseus	2	-	-	1	3	-	1	-	1	2	1	1	1	1	4	9
10	Pseudophonus pubescens	-	1	1	1	3	-	2	-	1	3	-	-	-	-	0	6
11	Pterostichus cylindricus	1	1	-	2	4	-	1	2	1	4	-	1	1	-	2	10
12	Pterostichus niger	-	-	-	-	0	-	1	-	1	2	-	-	-	-	0	2
13	Scymnus frontalis	-	-	-	-	0	-	-	1	1	2	-	-	-	-	0	2
14	Tenebrio opacus	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
Total eighth harvest		10	5	1	4	20	2	7	7	11	27	1	2	2	1	6	53
Ninth harvest 04.09.2022																	
1	Ablattaria laevigata	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
2	Bothynoderes punctiventris	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
3	Canharis fusca	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
4	Cerambyx scopoli	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
5	Cetonia aurata	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
6	Coccinella 10-punctata	-	-	-	-	0	-	-	-	-	0	-	-	-	1	1	1
7	Dorcadion aethiops	1	-	-	-	1	-	-	-	1	1	2	-	-	-	2	4
8	Dorcadion murrayi	-	-	-	-	0	-	-	-	-	0	-	-	-	1	1	1
9	Harpalus distinguendus	-	-	-	-	0	-	-	-	1	1	1	-	-	-	1	2
10	Hister quadrimaculatus	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
11	Pentodon idiota	-	-	-	-	0	-	-	-	3	3	2	-	-	-	2	5
12	Pseudophonus griseus	2	-	-	-	2	-	-	-	-	0	3	-	1	1	5	7
13	Pseudophonus pubescens	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
14	Pterostichus cylindricus	-	-	-	1	1	-	-	-	1	1	-	-	1	-	1	3
15	Pterostichus niger	1	-	-	-	1	-	-	-	2	2	-	1	-	-	1	4
16	Scymnus frontalis	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
17	Tenebrio opacus	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
18	Trogoderma granarium	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
19	Valgus hemipterus	-	-	-	-	0	-	-	-	-	0	1	-	-	-	1	1
Total ninth harvest		4	0	0	1	5	0	0	0	11	11	16	1	2	3	22	38
Tenth harvest 18.09.2022																	
1	Adalia decempunctata	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
2	Coccinella septempunctata	-	-	-	-	0	1	-	-	-	1	-	-	-	-	0	1
3	Brachynus crepitans	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
4	Dorcadion aethiops	-	-	-	1	1	-	-	-	-	0	-	-	-	1	1	2
5	Dorcadion murrayi	1	-	-	-	1	-	1	1	-	2	-	-	-	-	0	3
6	Dorcadion pedestre	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
7	Elatr nigerrimus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
8	Galeruca tanaceti	-	-	1	-	1	-	-	-	-	0	-	-	-	-	0	1
9	Harmonia axyridis	2	1	-	2	5	-	1	-	1	2	1	-	-	-	1	8
10	Harpalus distinguendus	-	-	-	-	0	-	-	-	1	1	1	-	-	-	1	2
11	Hister quadrimaculatus	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	1
12	Notaris bimaculatus	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	1
13	Platynaspis luteorubra	-	-	-	-	0	1	1	-	-	2	-	-	-	-	0	2
14	Pseudophonus griseus	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
15	Pseudophonus pubescens	2	-	-	1	3	-	-	-	2	2	-	-	-	2	2	7
16	Pterostichus cylindricus	1	-	-	1	2	-	-	-	1	1	1	-	-	-	1	4
17	Scymnus frontalis	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	1
18	Scymnus apetzi	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	1
19	Silpha carinata	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	1
Total tenth harvest		8	2	2	8	20	2	4	1	7	14	3	0	0	3	6	40
Total harvested coleoptera																	1024

During the entire observation period, 811 specimens of coleoptera belonging to 50 species were counted (table 3). The species with the largest number of specimens collected were: *Pseudophonus pubescens* with 272

specimens, *Pseudophonus griseus* with 120 specimens, *Harmonia axyridis* with 108 specimens, *Pentodon idiota* with 38 specimens, and *Coccinella 10 punctata* with 33 specimens.

Table 3. Centralized situation of collections in the Maize crop, variant 1 (conventional)

Nr. crt	Specia	Recoltarea										
		I	II	III	IV	V	VI	VII	VIII	IX	X	Total
1.	Blaps mortisaga	2	-	-	-	-	-	3	1	-	-	5
2.	Cantharis obscura	1	-	-	-	-	-	-	-	-	-	1
3.	Coccinella 10-punctata	14	11	7	-	-	1	-	-	-	-	33
4.	Coccinella septempunctata	2	3	1	2	-	6	1	-	-	-	15
5.	Dermestes lanarius	1	-	-	20	-	3	-	-	-	-	24
6.	Dorcadion murrayi	4	9	1	1	5	1	-	1	6	1	29
7.	Dorcadion pedestri	2	-	2	1	1	-	-	1	9	1	16
8.	Harmonia axyridis	27	26	18	3	16	18	-	-	-	-	108
9.	Hister quadrimaculatus	1	-	-	-	-	-	-	-	-	-	1
10.	Opatrum sabulosum	1	-	-	1	1	2	-	-	2	-	7
11.	Pentodon idiota	4	-	-	-	-	-	-	11	-	-	15
12.	Pseudophonus pubescens	66	44	39	25	36	44	6	-	5	7	272
13.	Scymnus frontalis	5	-	3	-	-	2	-	5	-	-	15
14.	Adalia bipunctata	-	3	-	2	11	1	-	-	-	-	17
15.	Dorcadion aethiops	-	4	3	-	1	-	3	2	2	1	16
16.	Harpalus distinguendus	1	-	-	-	-	-	-	-	-	-	1
17.	Otiorhynchus corvus	1	-	-	-	-	-	-	-	-	-	1
18.	Pentodon idiota	-	2	9	-	1	5	21	-	-	-	38
19.	Pseudophonus griseus	-	15	25	14	25	1	17	14	9	-	120
20.	Pterostichus cylindricus	-	5	-	-	2	3	2	2	1	-	15
21.	Sciaphilus asperatus	-	1	-	-	-	-	-	-	-	-	1
22.	Tanymecus palliatus	-	1	-	-	-	-	-	-	-	-	1
23.	Adalia decempunctata	-	-	-	3	4	-	-	-	-	-	7
24.	Chilocorus renipustulatus	-	-	-	1	-	-	-	-	-	-	1
25.	Chrysomelia haemoptera	-	-	-	2	1	-	-	-	-	-	3
26.	Opatrum sabulosum	-	-	-	1	-	-	-	-	-	-	1
27.	Otiorhynchus orbicularia	-	1	2	-	-	-	-	-	-	-	3
28.	Chilocorus renipustulatus	-	-	-	1	-	-	-	-	-	-	1
29.	Crypticus quisquilius	-	-	-	1	-	-	-	-	-	-	1
30.	Sciaphobus scitulus	-	-	-	-	1	-	-	-	-	-	1
31.	Subcoccinella vigintiquatuorpunctata	-	-	-	-	2	-	-	-	-	-	2
32.	Agriotes ustulatus	-	-	-	-	-	1	-	-	-	-	1
33.	Calathus fuscipes	-	-	-	-	-	2	-	-	-	-	2
34.	Cassida murraea	-	-	-	-	-	1	-	-	-	-	1
35.	Clytra quadripunctata	-	-	-	-	-	1	-	-	-	-	1
36.	Epicometis hirta	-	-	-	-	-	1	-	-	-	-	1
37.	Galeruca pomonae	-	-	-	-	-	2	-	-	-	-	2
38.	Hister cadaverinus	-	-	-	-	-	1	-	-	-	-	1
39.	Ophonus azureus	-	-	-	-	-	1	-	-	-	-	1
40.	Pterostichus marginalis	-	-	-	-	-	1	-	-	-	-	1
41.	Pterostichus niger	-	-	-	-	-	1	-	1	-	-	2
42.	Tenebrio opacus	-	-	-	-	-	19	-	-	-	-	19
43.	Trogoderma granarium	-	-	-	-	-	4	-	-	-	-	4
44.	Cardiophorus ruficollis	-	-	-	-	-	-	1	-	-	-	1
45.	Cyphocleonus tigrinus	-	-	-	-	-	-	1	-	-	-	1
46.	Galeruca tanacetii	-	-	-	-	-	-	1	-	-	1	2
47.	Pseudophonus cinereus	-	-	-	-	-	-	1	-	-	1	2
48.	Silpha carinata	-	-	-	-	-	-	1	-	-	1	2
49.	Cantharis obscura	-	-	-	-	-	-	-	-	-	2	2
50.	Elater nigerrimus	-	-	-	-	-	-	-	-	-	1	1
	Total	130	126	108	69	111	123	58	37	34	15	811

In variant 2 (table 4), a total of 1022 specimens belonging to 78 species were collected throughout the observation period.

The species with the largest number of specimens collected were:

Pseudophonus pubescens with 225 specimens, *Harmonia axyridis* with 161 specimens, *Pseudophonus griseus* with 104 specimens, *Pterostichus cylindricus* with 79 specimens and *Pentodon idiota* with 48 specimens.

Table 4. Centralized situation of collections in the Maize crop, variant 2 (ecological)

Nr .crt	Species	Harvest										Total
		I	II	III	IV	V	VI	VII	VIII	IX	X	
1.	<i>Abax carrinatus</i>			1			2					3
2.	<i>Ablattaria laevigata</i>									1		1
3.	<i>Adalia bipunctata</i>		12			10	2					24
4.	<i>Adalia decempunctata</i>		7			14						21
5.	<i>Agriotes lineatus</i>	1										1
6.	<i>Amara aenea</i>				1	1	1					3
7.	<i>Amara apricaria</i>				1							1
8.	<i>Amara crenata</i>			1								1
9.	<i>Amphimallon solstitialis</i>	3										3
10.	<i>Anisodactylus signatus</i>					1						1
11.	<i>Bembidion properans</i>				4							4
12.	<i>Blaps mortisaga</i>	1			3		1	13	1			19
13.	<i>Bothynoderes punctiventris</i>									1		1
14.	<i>Brachynus crepitans</i>										1	1
15.	<i>Calathus fuscipes</i>	1		1	1							3
16.	<i>Canharis fusca</i>			1				3		1		5
17.	<i>Cantharis nigricans</i>	3										3
18.	<i>Cantharis obscura</i>			1								1
19.	<i>Carabus cancellatus</i>				1							1
20.	<i>Carabus coriaceus</i>		1									1
21.	<i>Carabus intricatus</i>		1									1
22.	<i>Cassida atrata</i>						1					1
23.	<i>Cerambyx scopolii</i>									1		1
24.	<i>Cetonia aurata</i>	1						2		1		4
25.	<i>Coccinella 10-punctata</i>	6		6	4		8	4		1		29
26.	<i>Coccinella septempunctata</i>		4	3	1	2	6		2		1	19
27.	<i>Crypticus quisquilius</i>						1					1
28.	<i>Cyphocleonus tigrinus</i>								1			1
29.	<i>Dorcadion aethiops</i>	2	1	3	3	1	5	2	3	4	2	26
30.	<i>Dorcadion murrayi</i>	2	8	5		4	6	1		1	3	30
31.	<i>Dorcadion pedestre</i>	3	1	2		2	2	2			1	13
32.	<i>Elater nigerrimus</i>										1	1
33.	<i>Eusomus ovulum</i>	1										1
34.	<i>Galeruca tanaceti</i>										1	1
35.	<i>Harmonia axyridis</i>	13	33	19	11	31	35	7	4	8		161
36.	<i>Harmonia quadripunctata</i>		4									4
37.	<i>Harpalus aeneus</i>	1	2	1	2	1		2				9
38.	<i>Harpalus distinguendus</i>	4	1	3	3	5	7	3	2	2	2	32
39.	<i>Harpalus rufus</i>	1										1
40.	<i>Harpalus tardus</i>				1	1						2
41.	<i>Hister quadrimaculatus</i>	3		2						1		6
42.	<i>Lamia textor</i>							1				1
43.	<i>Nebria brevicollis</i>	2					1					3
44.	<i>Notaris bimaculatus</i>										1	1
45.	<i>Onthophagus vacca</i>	1										1
46.	<i>Opatrum sabulosum</i>			1	1		3		1			6
47.	<i>Ophonus azureus</i>	1	3		2		1					7
48.	<i>Ophonus puncticollis</i>	1	1		2	1						5
49.	<i>Otiorrhynchus corvus</i>	6		2	1		2	1				12
50.	<i>Otiorrhynchus niger</i>						1					1
51.	<i>Oxymirus cursor</i>		1									1
52.	<i>Pentodon idiota</i>	5	3	5	2	3	8	8	9	5		48

53.	Phytodecta fornicata		3		1							4
54.	Platynaspis luteorubra									2		2
55.	Pseudocleonus cinereus		3		1							4
56.	Pseudophonus griseus	10	22	10	12	6	12	15	9	7	1	104
57.	Pseudophonus pubescens	35	58	31	39	27	17	4	6	1	7	225
58.	Pterostichus melas			1								1
59.	Pterostichus cylindricus	10	11	1	7	11	13	9	10	3	4	79
60.	Pterostichus koyi	1										1
61.	Pterostichus marginalis						1					1
62.	Pterostichus niger	1		1	1	1	2	2	2	4		14
63.	Pterostichus vulgaris		1	1			1					3
64.	Scaphomorphus poricollis					1						1
65.	Sciaphobus scitulus					3						3
66.	Scymnus apetzi									1		1
67.	Scymnus frontalis	1	5		1		2		2	1	1	13
68.	Silpha carinata										1	1
69.	Sphenophorus striatopunctatus					1						1
70.	Stelidota geminata					1						1
71.	Subcoccinella 24punctata		1				2					3
72.	Tanymecus dilaticolis	1										1
73.	Tanymecus palliatus			1								1
74.	Tenebrio molitor				1							1
75.	Tenebrio opacus	10			13				1	1		25
76.	Trogoderma granarium									1		1
77.	Valgus haemipterus	1										1
78.	Valgus hemipterus									1		1
Total		132	187	103	120	128	144	79	53	46	30	1021

In variant 2, the most frequently collected species were: *Pseudophonus pubescens*, *Pseudophonus griseus*, *Harpalus distinguendus*, *Dorcadion aetiops*, *Dorcadion murrayi*, *Pentodon idiota*, *Dorcadion pedestre* and *Pterostichus cylindricus* (table 4).

In variant 1, the most frequently collected species were: *Pseudophonus pubescens*, *Pseudophonus griseus*, *Dorcadion murrayi*, *Harmonia axyridis* and *Dorcadion aetiops*.

CONCLUSIONS.

The largest number of specimens, 1022, were collected in the organic variant compared to 811 specimens and 50 species in the variant where treatments were applied.

The largest number of specimens were collected in the organic variant during the second harvest, when 187 specimens were collected, while in the same harvest, 126 specimens were collected in the variant with chemical treatments.

In the variant with chemical treatments, the largest number of specimens was in the

first harvest, and on the same date, in the second variant, 132 specimens of beetles were collected.

The most frequently collected species and those that recorded the largest number of specimens, in both variants, were: *Pseudophonus pubescens*, *Pseudophonus griseus*, *Harmonia axyridis*, *Pterostichus cylindricus*, *Dorcadion aetiops*, *Harpalus distinguendus*, *Pentodon idiota* and *Dorcadion murrayi*.

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