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RESEARCH ON CARABID SPECIES IN SOME WHEAT CROPS, DEPENDING ON THE APPLIED TECHNOLOGY

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Abstract
The observations were made in 2022 on a wheat crop in two experimental variants, depending on the treatment scheme applied. In variant 1, number of treatments were applied to combat pathogens and pests in wheat cultivation in an ecological system, and in variant 2, where wheat was grown in a conventional system, were applied the treatments of against pathogens and pests. For the collection of the carabid species were used, the Barber traps -type ground, which worked from May to July. In both experimental stationary, were made six harvests on the following dates: 15.05; 26.05; 12.06; 26.06; 10.07; and 24.04. Regarding the results obtained in first variant 1, were collected 263 specimens and 140 specimens in second variant. In variant number 1, were collected a total of 26 species, and in variant number2, only 5 species were collected. The species with the highest number of specimens in the two variants were Pterostichus cylindricus, Pseudophonus pubescens, and Harpalus distinguendus.

Keywords: ecological and conventional system, wheat crop, Barber traps.

1. INTRODUCTION

The study of *Coleoptera* (beetles) appears to be a scientific and practical necessity, considering especially their frequency on the Earth's meridians, the large number of species that include them (over 250,000), the largest in the Insecta class, which groups over a million species, and the many species that cause damage to world agriculture (Baban, 2005).

The first works on the study of insects in general and coleoptera in particular appear in the 17th century (Redi, etc.); in the 18th century, numerous species of beetles were described by Fabricius, Latreille, and in the 19th century, by Reitter, etc. The first works in our country regarding the study of coleoptera refer to Banat and Transylvania, Bielz (1865), and the most representative work belongs to Seidlitz (1891), "Fauna Transylvanica." Of the same scientific value is the work of Fleck (1906), in which he describes over 2400 species, especially in Muntenia and Dobrogea (Antonescu, 2012). The coleopterofauna research developed continuously after 1920, in Romania, and after 1950 also in Oltenia, publishing numerous works, such as Marcu (1927–1967) and Bobârnac (1955–1985) for Oltenia, Ieniştea (1956–1976) for Dobrogea and Muntenia, Panin (1941–1965) for Romania, etc. (Bobîrnac et al, 1999).

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In this paper, we present some coleopteran species that were identified in wheat crops in Oradea country.

2. MATERIALS AND METHODS

The entomological material was collected in a wheat crop with the help of Barber-type soil traps from May to July 2022. Two variants were used, namely: Variant 1 (V1) with 12 repetitions in an organic wheat crop, without chemical treatments; and Variant 2 (V2) with 12 repetitions in a conventional wheat crop, where chemical treatments against pathogens and pests were applied.
The collection of entomological material (invertebrate species) was done periodically at intervals of about two weeks on the following dates: 15.05; 29.05; 12.06; 26.06; 10.07; and 27.07.
At each collection of the material, the NaCl-25% solution was replaced with another one, and the collected material was cleaned of vegetable remains, soil, or other impurities, and the species of carbides collected were identified in the laboratory (Tălmaciu et al., 2007).

3. RESULTS AND DISCUSSIONS

The situation at each of the six collections is presented as follows:
At the first collection carried out on May 15, 2022, in the ecological version, 70 carabid specimens belonging to a number of 15 species were collected, while in the conventional version, 37 specimens were collected, belonging to a number of 3 species.
During the second collection, carried out on May 29, 2022, 54 carabid specimens belonging to a number of 15 species were collected in the ecological version, and 27 specimens belonging to a number of 3 species were collected in the conventional version.
During the 3rd collection, carried out on June 12, 2022, a total of 45 specimens of carabids belonging to a total of 10 species were collected in the ecological version, and in the conventional version, 20 specimens were collected belonging to a total of 4 species.
During the IV collection, carried out on June 26, 2022, 49 specimens of carabids belonging to a number of 35 species were collected in the ecological version, while in the conventional version, 20 specimens were collected belonging to a number of 4 species.
At the V collection, carried out on July 10, 2022, a total of 33 specimens belonging to 10 species were collected in the ecological version, and in the conventional version, 15 specimens of carabids belonging to a total of 3 species were collected.
At the 6th collection, carried out on July 24, 2022, a total of 17 specimens belonging to 5 species were collected in the ecological version, and 10 specimens of carabids belonging to a total of 2 species were collected in the conventional version.
Regarding the dynamics of the abundance of carabid species collected in the two variants, the situation is as follows: In variant 1, the most specimens were collected during the first collection (170) on 15.05, followed by the fourth collection on 26.06.2022.
In variant 2, the most specimens of carabids were collected during the I harvest, on 15.05, followed by the II and III harvests on 26.05 and 12.06, respectively.

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Table 1. The collection situation for the two variants from the wheat crop in 2022

No	Name of species	Harvest 1- V1- 15.05.2022												Total	V2- 15.05.2022												Total
		C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12		C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	
1.	*Carabus coriaceus*	1	0	0	0	0	0	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2.	*Carabus cancellatus*	1	0	0	1	0	0	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3.	*Pterostichus cylindricus*	2	0	2	2	0	2	1	3	0	2	3	0	**17**	0	0	1	2	1	0	4	5	1	3	4	1	**22**
4.	*Pseudophonus pubescens*	3	2	1	2	1	2	3	2	1	3	2	2	**24**	5	3	0	3	0	1	2	0	0	0	0	0	**14**
5.	*Harpalus distinguendus*	1	2	0	1	1	0	1	0	0	0	0	0	**6**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6.	*Calatus fuscipes*	0	1	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7.	*Pseudophonus griseus*	0	1	0	1	0	0	2	0	0	0	0	0	**5**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8.	*Platynus assimilis*	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9.	*Pterostichus niger*	0	0	0	1	1	0	0	0	1	0	0	0	**3**	0	0	0	0	0	0	0	1	0	0	0	0	**1**
10.	*Pterostichus vulgaris*	0	0	0	0	0	1	0	2	0	0	1	0	**4**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11.	*Amara aenea*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12.	*Amara familiaris*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
13.	*Carabus intricatus*	0	0	0	0	0	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
14.	*Harpalus smaragdinus*	0	0	0	0	0	0	0	0	1	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
15.	*Amara similata*	0	0	0	0	0	0	0	0	0	0	1	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total 15 species		8	6	4	8	3	5	10	8	3	5	7	2	**70**	5	3	1	5	1	1	6	5	1	3	4	1	**37**
		Harvest 2 - V1- 29.05.2022												**Total**	**V2 - 29.05.2022**												**Total**
1.	*Pterostichus cylindricus*	1	2	0	0	0	1	2	1	3	2	0	2	**14**	3	0	0	2	0	3	4	2	0	3	1	0	**18**

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2.	*Harpalus aeneus*	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3.	*Harpalus distinguendus*	1	0	1	1	0	0	1	0	0	0	1	0	**5**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4.	*Pseudophonus pubescens*	1	0	1	2	0	0	0	4	2	3	2	0	**15**	0	0	0	0	0	0	1	2	0	2	3	0	**8**
5.	*Pterostichus niger*	1	0	1	0	0	0	1	0	0	0	0	1	**4**	0	0	0	0	0	1	0	0	0	0	0	0	**1**
6.	*Calatus fuscipes*	0	0	0	2	0	0	1	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7.	*Platynus assimilis*	0	0	0	1	0	0	0	0	0	0	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8.	*Carabus scabriusculus*	0	0	0	1	0	0	0	0	0	0	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9.	*Carabus auronitens*	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10.	*Pseudophonus griseus*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11.	*Nebria brevicollis*	0	0	0	0	0	0	2	1	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12.	*Brachynus crepitans*	0	0	0	0	0	0	0	0	0	0	1	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
13.	*Carabus cancellatus*	0	0	0	0	0	0	0	0	0	0	1	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
14.	*Carabus coriaceus*	0	0	0	0	0	0	0	0	0	0	1	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total 14 species		**4**	**2**	**3**	**8**	**0**	**1**	**8**	**6**	**5**	**5**	**9**	**3**	**54**	**3**	**0**	**0**	**2**	**0**	**4**	**5**	**4**	**0**	**5**	**4**	**0**	**27**
		Harvest 3 - V1- 12.06.2022												**Total**	**V2 - 12.06.2022**												**Total**
1.	*Pterostichus niger*	1	1	0	1	0	0	1	0	0	0	0	0	**4**	0	0	0	0	0	0	0	0	0	1	0	0	**1**
2.	*Pseudophonus pubescens*	2	0	0	0	0	3	0	2	0	0	0	0	**7**	0	0	0	0	0	0	1	2	0	1	3	0	**7**
3.	*Platynus assimilis*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4.	*Calatus melanocephalus*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5.	*Pterostichus*	0	2	2	4	1	0	2	1	2	2	3	4	**23**	3	0	0	2	0	3	4	2	0	3	1	0	**18**

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	cylindricus																										
6.	*Pterostichus vulgaris*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7.	*Pterostichus lepidus*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8.	*Pseudophonus griseus*	0	0	0	0	0	0	3	0	0	0	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9.	*Calatus fuscipes*	0	0	0	0	0	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10.	*Harpalus distinguendus*	0	0	0	0	0	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total 10 species		**5**	**3**	**2**	**5**	**1**	**3**	**8**	**7**	**1**	**2**	**3**	**4**	**45**	**3**	**0**	**0**	**02**	**0**	**3**	**5**	**4**	**0**	**5**	**4**	**0**	**26**
		Harvest 4 - V1- 26.06.2022												**Total**	**V2 - 26.06.2022**												**Total**
1.	*Carabus coriaceus*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2.	*Harpalus distinguendus*	2	0	0	0	0	1	2	2	0	0	1	0	**8**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3.	*Pseudophonus pubescens*	1	0	0	1	0	1	2	0	0	0	0	0	**5**	0	0	0	0	0	0	0	1	0	0	0	0	**1**
4.	*Calatus fuscipes*	1	0	0	0	0	1	1	0	0	0	1	0	**4**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5.	*Pterostichus cupreus*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6.	*Pseudophonus griseus*	1	0	0	0	0	1	1	1	0	0	1	0	**5**	0	0	0	0	0	0	0	1	0	0	0	0	**1**
7.	*Pterostichus niger*	0	1	1	0	0	0	0	1	0	1	0	0	**4**	0	0	0	0	0	0	0	0	0	0	0	1	**1**
8.	*Pterostichus cylindricus*	0	2	1	1	1	1	1	2	2	2	1	1	**15**	2	0	1	0	3	3	3	3	0	0	2	0	**17**
9.	*Harpalus aeneus*	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10.	*Carabus intricatus*	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11.	*Carabus auratus*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12.	*Harpalus tardus*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
13.	*Nebria brevicollis*	0	0	0	0	0	0	1	0	0	0	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total 13 species		7	3	2	4	1	5	10	6	2	3	5	1	49	2	0	1	0	3	3	3	5	0	0	2	1	**20**

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		Harvest 5 - V1- 10.07.2022												Total	V2 - 10.07.2022												Total
1.	*Pterostichus niger*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	1	0	0	0	0	0	**1**
2.	*Pseudophonus pubescens*	1	0	0	2	0	0	0	4	0	1	3	0	**11**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3.	*Pseudophonus griseus*	1	1	0	1	0	1	1	0	0	1	1	0	**7**	0	0	0	1	0	0	1	1	0	0	1	0	**4**
4.	*Pterostichus nigrita*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5.	*Pterostichus cylindricus*	0	0	0	0	2	0	1	0	0	0	0	2	**5**	1	1	0	1	0	0	2	3	0	1	1	0	**10**
6.	*Harpalus distinguendus*	0	0	0	0	0	0	2	0	0	1	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7.	*Calatus fuscipes*	0	0	0	0	0	0	2	0	0	1	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8.	*Nebria brevicollis*	0	0	0	0	0	0	0	0	1	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9.	*Zabrus tenebrionides*	0	0	0	0	0	0	0	0	0	1	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total 7 species		**4**	**1**	**0**	**3**	**2**	**1**	**6**	**4**	**1**	**5**	**4**	**2**	**33**	**1**	**1**	**0**	**2**	**0**	**0**	**4**	**4**	**0**	**1**	**2**	**0**	**15**
		Harvest 6 - V1- 24.07.2022												**Total**	**V2 - 24.07.2022**												**Total**
1.	*Pterostichus cylindricus*	1	1	0	1	0	1	1	1	0	1	0	1	**8**	1	0	0	0	0	0	2	2	0	1	1	0	**7**
2.	*Pseudophonus pubescens*	1	0	0	1	0	0	1	1	0	0	0	2	**6**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3.	*Harpalus distinguendus*	1	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4.	*Pseudophonus griseus*	0	0	0	0	0	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5.	*Pterostichus niger*	0	0	0	0	0	0	0	0	0	0	1	0	**1**	0	1	0	1	0	0	0	0	0	0	1	0	**3**
Total 13 species		**3**	**1**	**0**	**2**	**0**	**1**	**3**	**2**	**0**	**1**	**1**	**3**	**17**	**1**	**1**	**0**	**1**	**0**	**0**	**2**	**2**	**0**	**1**	**2**	**0**	**10**

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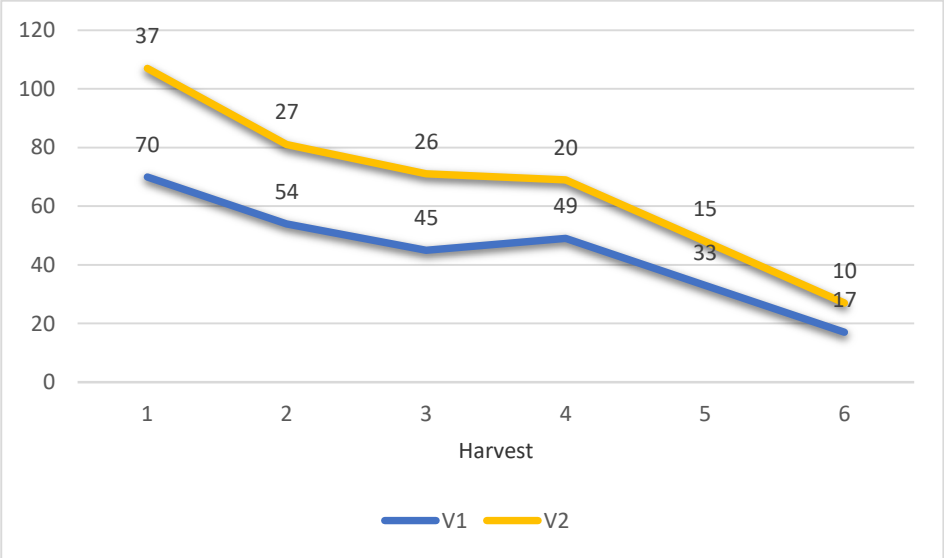

Fig. 1. Disposition of the number of specimens collected in the two experimental variants

The fewest specimens for both variants (Table 2) were collected at the last harvest carried out on July 24, 2022, with a total of 17 specimens for V1 and 10 specimens for V2.

Regarding the structure and abundance of the species collected in the two variants (Figure 1), the situation is as follows:

In variant 1, 263 specimens belonging to a total of 26 species were collected. The species *Pterostichus cylindricus* had the most specimens with 82 specimens, followed by *Pseudophonus pubescens* with 74 specimens and *Pseudophonus griseus* with 17 specimens.

In second variant 140 specimens belonging to a total of five species were collected. The species with the highest number of specimens were *Pterostichus cylindricus*, with 92 specimens, and *Pseudophonus pubescens*, with 25 specimens.

Table 2. The structure and abundance of the species collected in the two variants during the observation period

No.	1st Variant		No.	2nd Variant	
	Name of species	No. of samples		Name of species	No. of samples
1.	*Carabus coriaceus*	4	1.	*Pterostichus cylindricus*	92
2.	*Carabus cancelatus*	3	2.	*Pseudophonus pubescens*	25
3.	*Pterostichus cylindricus*	82	3.	*Pterostichus niger*	7
4.	*Pseudophonus pubescens*	74	4.	*Harpalus distinguendus*	11
5.	*Harpalus distinguendus*	25	5.	*Pseudophonus griseus*	5
6.	*Calatus fuscipes*	13			
7.	*Pseudophonus griseus*	17			
8.	*Platynus assimilis*	2			
9.	*Pterostichus niger*	15			
10.	*Pterostichus vulgaris*	5			
11.	*Amara aenea*	1			
12.	*Amara familiaris*	1			
13.	*Carabus intricatus*	1			
14.	*Harpalus smaragdinus*	1			

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15.	*Amara similata*	1			
16.	*Harpalus aeneus*	2			
17.	*Carabus scabriusculus*	2			
18.	*Carabus auronitens*	1			
19.	*Nebria brevicollis*	6			
20.	*Brachynus crepitans*	1			
21.	*Calatus melanocephalus*	1			
22.	*Pterostichus lepidus*	1			
23.	*Pterostichus cupreus*	1			
24.	*Carabus uronitens*	1			
25.	*Harpalus tardus*	1			
26.	*Zabrus tenebrionides*	1			
Total 26 species		263	Total 5 species		140

Regarding the species common to the two variants (Table 3), there were 5 of them, namely: *Pterostichus cylindricus*, which also had the largest number of specimens (92) in second variant and 82 samples in first variant, followed by the species *Pseudophonus pubescens* with 74 samples in first variant and 25 samples at second variant.

Table 3. The structure and abundance of the common species collected in the two variants

No.	Name of species	Variants		Total samples
		V1	**V2**	
1.	*Pterostichus cylindricus*	82	92	174
2.	*Pseudophonus pubescens*	74	25	99
3.	*Harpalus distinguendus*	25	11	36
4.	*Pterostichus niger*	15	7	22
5.	*Pseudophonus griseus*	17	5	22
Total 5 common species		213	140	

4. CONCLUSIONS

At each of the 6 collections of carabid species in ecological version 1, the most specimens and species were collected compared to the conventional version (V2), as follows:

During the first harvest, 70 specimens belonging to a number of 15 species were collected in variant 1, compared to 37 specimens belonging to only 3 species.

During the second harvest, a total of 54 specimens belonging to a total of 14 species were collected in the first variant compared to the conventional variant, where 27 specimens belonging to only 3 species were collected.

At the IIIa harvest, a total of 45 specimens belonging to 10 species were collected in the ecological variant, compared to 26 specimens also belonging to 3 species.

At the harvest of IV a, a total of 49 specimens belonging to 13 species were collected in the ecological version, while in the conventional version, 20 specimens belonging to 4 species were collected.

At the harvest of V, a total of 33 specimens belonging to a total of 10 species were collected in the ecological version, while in the conventional version, 15 specimens were collected belonging to a total of 3 species.

At the 6th harvest, a number of 5 species were collected in the ecological version, while in the conventional version, 20 carabid specimens belonging to a number of 2 species were collected.

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During the entire duration of the observations in 2022, in total 263 specimens belonging to a number of 26 species were collected in the ecological variant, while in the conventional variant, 140 specimens of carabids belonging to only 5 species were colle cted.
A number of five species were common to the two variants: *Pterostichus cylindricus, Pseudophonus pubescens, Pterostichus niger, Haarpalus distinguendus*, and *Pseudophonus griseus*.
The species with the largest number of specimens collected in the two variants were *Pterostichus cylindricus, Pseudophonus pubescens*, and *Harpalus distinguendus*.

5. REFERENCES

Antonescu C., Tălmaciu M., Robu T., Antonescu M.C., Zaharia M.S., (2012), Comments on the useful and harmful entomofauna according to some treatment seed corn and wheat lots of years, 2011-2012 Trifesti SC ASTRA SRL, Iasi. Scientific Papers USAMV Iasi, Agronomy series, 55, 77-80. ISSN 1454-7414.

Baban E., (2005). Diversity of coleoptera (Coleoptera: Carabidae, Rhysodidae, Silphidae, Scarabaeidae, Cucujidae, Cerambycidae) in gorun forest mixed with hornbeam // Anal. Ştiinţ. ale USM. Chişinău, 2005, p. 184-188.

Bobîrnac C., Marcu O., Cimisliu C., (1999), Contributions to the knowledge of the systematics and ecology of the coleopterofauna in the subcarpathian area of Oltenia in the last 70 years (1928-1998), Oltenia Study, Stientific National Museum of Oltenia, 15, 96-99.

Panin S., 1951, Determinant of harmful and useful coleoptera from the S.S.R., Publishing House State for Lit. Science. and Didac., Bucureşti

Reitter E., 1908 - Fauna Germanica. Die Käfer des Deutschen Reiches Band I, Stuttgart.

Tălmaciu N., TălmaciuM., Diaconu A., 2007, Contributions to the study of the carabidae fauna (*Coleoptera*) of the pastures of eastern Romania, Scientific Papers Vol.XXXIX, 2nd part, Publishing House Agroprint Timişoara, 423-429.ISSN 1221-5279.

Tălmaciu N,, Tălmaciu M., Păuneţ P**.** 2008, Researches regarding the coleopters fauna from a natural pasture located in the eastern Romania, Scientific Papers USAMV Iasi, Faculty of Horticulture, 1355-1360.

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