

USEFUL AND HARMFUL MOBILE FAUNA STRUCTURE OF MAIZE CROP FROM STUDY AREA IN 2007

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Abstract

The research was conducted in the village Clinceni - Ilfov, in order to assess the structure of phytophagous and entomophagous fauna of maize agroecosystems in 2007.

Entomophagous and phytophagous fauna was collected in 21 to 23 March and 16 to 18 April 2007 by means of Barber traps.

The material analyzed included a total of 398 individuals, of which 303 belonging to the harmful fauna and 95 individuals belonging to useful fauna.

Entomophagous fauna are represented by: Fam. Chironomidae, Fam. Formicidae, Ord. Collembola, Pleurophorus caesus Panz., Pterostichus cupreus L., Pterostichus niger Schall., Carabus cancellatus L., Nabis fesus L. Phytophagous fauna are represented by: Anthicus hispidus Ross., Zabrus tenebrioides Goeze., Drasterius bimaculatus Rossi., Harpalus pubescens Mull., Phyllotreta nemorum L., Agriotes pilosus Panz., Opatrum sabulosum L., Tanymericus dilaticollis Gyll.

INTRODUCTION

The research was conducted in the Clinceni village Ilfov County, in order to assess the structure of useful and harmful fauna of agroecosystems in 2007.

MATERIAL AND METHODS

Useful and harmful fauna was collected from 21 to 23 March and from 16 to 18 April 2007 by means of Barber traps.

The traps were filled with 4% formaldehyde for 48 hours open. Animals collected in traps soil were kept in a 70° solution of alcohol and were determined in the laboratory. Since not all specimens could be determined by the level of species, their classification was made on gender, family, order or class.

RESULTS AND DISCUSSION

The material analyzed included a total of 398 individuals, of which 303 belonging to the useful fauna and 95 individuals belonging to harmful fauna.

Useful fauna

The 303 samples taken in two periods - in March and April, belonging to 10 systematic units, grouped in a class-*Insecta*. Class *Insecta* is represented by five orders - *Collembola*, *Heteroptera* with Fam. *Nabidae*, with *Hymenoptera* Fam. *Formicidae*, *Coleoptera* with Fam. *Carabidae*, *Scarabaeidae*, *Staphilinidae* and *Diptera* with Fam. *Sciaridae* and *Chironomidae*.

Table 1

Relative numerical abundance of the useful mobile fauna from maize crop - Clinceni 2007

Ord. no.	Group and specie	21.03.2007 - 23.03.2007		16.04.2007 - 18.04.2007	
		No.	Ab. (%)	No.	Ab. (%)
CLASS INSECTA					
1	Ord. COLLEMBOLA	0	0.00	85	48.85
Ord. HETEROPTERA					
Fam. NABIDAE					
2	<i>Nabis ferus</i> L.	1	0.78	2	1.15
Ord. HYMENOPTERA					
3	Fam. FORMICIDAE	22	17.05	43	24.71
Ord. COLEOPTERA					
Fam. CARABIDAE					
4	<i>Pterostichus cupreus</i> L.	3	2.33	1	0.57
5	<i>Pterostichus niger</i> Schall.	5	3.88	1	0.57
Fam. SCARABEIDAE					
6	<i>Aphodius luridus</i> Fabritius	3	2.33	1	0.57
7	<i>Pleurophorus caesus</i> Panz.	4	3.10	4	2.30
8	Fam. STAPHYLINIDAE	5	3.88	3	1.72
Ord. DIPTERA					
9	Fam. SCIARIDAE	4	3.10	1	0.57
10	Fam. CHIRONOMIDAE	82	63.57	33	18.97
TOTAL USEFUL FAUNA		129	100.00	174	100.00

Table 2

Relative numerical abundance of the harmful mobile fauna from maize crop - Clinceni 2007

Ord. no.	Group and specie	21.03.2007 - 23.03.2007		16.04.2007 - 18.04.2007	
		No.	Ab. (%)	No.	Ab. (%)
CLASA INSECTA					
Ord. ORTOPTERA					
Fam. GRILLIDAE					
1	<i>Gryllus desertus</i> Pall	2	4.35	3	6.12
Ord. COLEOPTERA					
Fam. CARABIDAE					
2	<i>Zabrus tenebrioides</i> Goeze.	5	10.87	7	14.29
3	<i>Harpalus aeneus</i> Mull.	1	2.17	4	8.16
4	<i>Harpalus distinguendus</i> Duft.	2	4.35	1	2.04
5	<i>Harpalus pubescens</i> Mull.	6	13.04	1	2.04
6	<i>Bembidion properans</i> Steph.	2	4.35	0	0.00
Fam. ELATERIDAE					
7	<i>Agriotes pilosus</i> Panz.	3	6.52	1	2.04
8	<i>Drasterius bimaculatus</i> Rossi.	5	10.87	11	22.45
Fam. TENEBRIOIDAE					
9	<i>Opatrum sabulosum</i> L.	2	4.35	4	8.16
Fam. SCARABAEIDAE					
10	<i>Pentodon idiota</i> Ross.	1	2.17	1	2.04
Fam. CHRYSOMELIDAE					
11	<i>Phyllotreta nemorum</i> L.	6	13.04	2	4.08
12	<i>Chaectonema tibialis</i> Illi.	2	4.35	2	4.08
Fam. CURCULIONIDAE					
13	<i>Tanymecus dillaticollis</i> Gyll.	1	2.17	1	2.04
Fam. ANTHICIDAE					
14	<i>Anthicus hispidus</i> Ross.	7	15.22	11	22.45
Ord. DIPTERA					
Fam. BIBIONIDAE					
15	<i>Bibio hortulanus</i> L.	1	2.17	0	0.00
TOTAL HARMFUL FAUNA		46	100.00	49	100.00

In March 2007 there were 129 specimens collected, and in April 2007 were 174 specimens collected.

Useful fauna has been revealed by Fam. Fam Chironomidae to 115 specimens, Formicidae with 65 specimens and 85 specimens Order Collembola.

The relative abundance order to:

- Fam. *Chironomidae* has 63.57% relative abundance in March and 18.97% in April;
- Fam. *Formicidae* has the relative abundance of 17.05% in March and 24.71% in April;
- Order Collembola has 0% relative abundance in March and 48.85% in April;
- *Pleurophorus caesus* Panz. has relative abundance 3.10% in March and 2.30% in April;
- *Pterostichus cupreus* L. has relative abundance in March 2.33% and 0.57% in April;
- *Pterostichus niger* Schall. has relative abundance 3.88% in March and 0.57% in April;
- *Carabus canceollatus* L. has in March relative abundance 2.35% and 3.37% in April;
- *Nabis ferus* L. has 0.78% relative abundance in March and 1.15% in April;
- Fam. *Sciaridae* has relative abundance in March 3.10% and 0.57% in April.

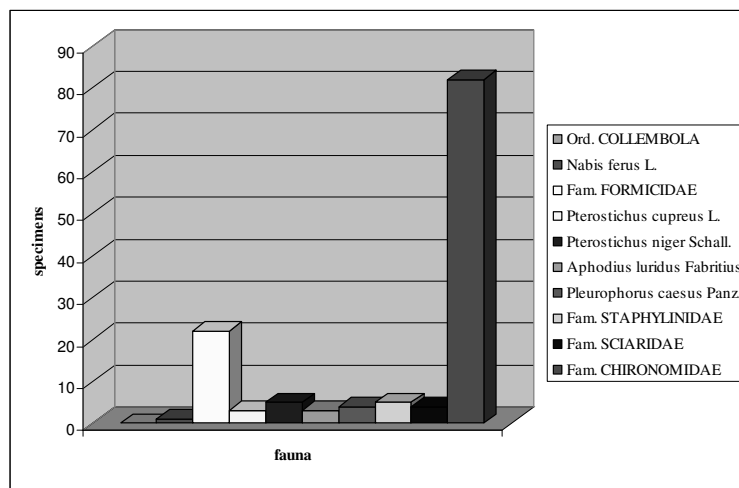


Fig. 1. Useful fauna of the mobile surface of maize crop Clinceni - March 2007

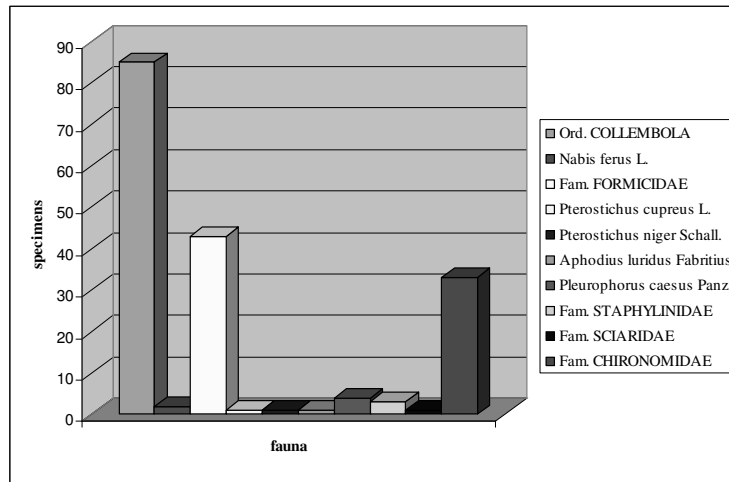


Fig. 2. Useful fauna of the mobile surface of maize crop Clinceni - April 2007

Harmful fauna

It included 15 taxons with a total of 95 specimens, grouped into one class - *Insecta*. Class *Insecta* was represented by three orders - the *Orthoptera* with Fam. *Gryllidae*, the Order *Coleoptera* with Fam. *Carabidae*, *Elateridae*, *Tenebrioidae*, *Chrysomelidae*, *Curculionidae* and *Anthicidae* and the Order *Diptera* with Fam. *Bibionidae*.

In March 2007, there were 46 specimens collected, and in April 2007 and 49 specimens were collected.

Harmful fauna is highlighted by *Zabrus tenebrioides* Goeze. with 12 specimens, *Harpalus pubescens* Mull. with 7 specimens, *Anthicus hispidus* Ross. with 18 specimens and *Phyllotreta nemorum* L. with 8 specimens collected.

The relative abundance order to:

- *Anthicus hispidus* Ross. has relative abundance 15.22% in March and 22.45% in April;
- *Zabrus tenebrioides* Goeze. has relative abundance 10.87% in March and 14.29% in April;
- *Drasterius bimaculatus* Rossi. has relative abundance 10.87% in March and 22.45% in April;
- *Harpalus pubescens* Mull. has relative abundance 13.04% in March and 2.04% in April;
- *Phyllotreta nemorum* L. has relative abundance 13.04% in March and 4.08% in April;

- *Agriotes pilosus* Panz. has relative abundance 6.52% in March and 2.04% in April;
- *Opatrum sabulosum* L. has relative abundance in March 4.35% and 8.16% in April;
- *Tanymecus dilaticollis* Gyll. has relative abundance 2.17% in March and 2.04% in April.

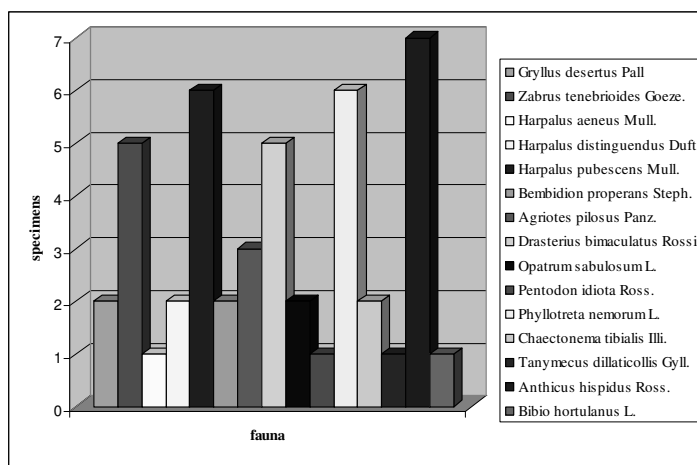


Fig. 3. Mobile harmful fauna on the soil surface of maize crop Clinceni - March 2007

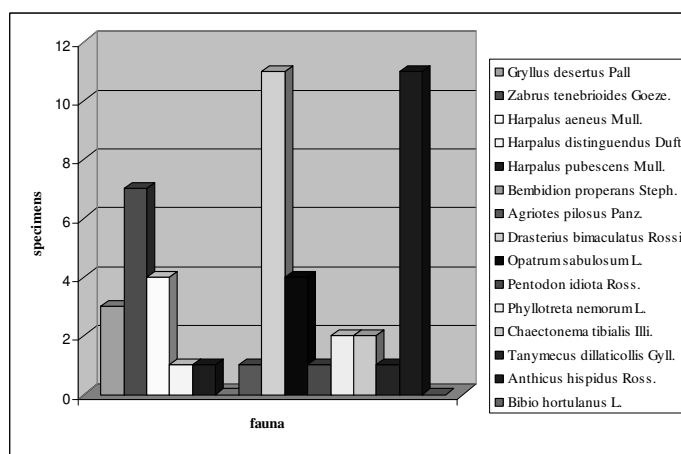


Fig. 4. Mobile harmful fauna on the soil surface of maize crop Clinceni - April 2007

CONCLUSIONS

1. Research was conducted Clinceni area in March and April in 2007, obtaining useful information on harmful fauna, by Barber traps method.
2. The useful fauna structure in March climate is favorable to *Chironomidae* which had an abundant number of 82 specimens and species *Pterostichus niger* Schall. the numerical abundance of five copies, and in April the climate is favorable to *Formicidae*, which had an abundant number of 43 specimens and to *Collembola* with numerical abundance of 85 specimens.
3. In the structure of harmful fauna, in March the climate is suitable species *Phyllotreta nemorum* L., which has an abundance of 6 numerical specimens, *Harpalus pubescens* Mull. 6 specimens and *Agriotes pilosus* Panz. 3 specimens and in April the climate is favorable for the species *Opatrum sabulosum* L. 4 specimens, *Drasterius bimaculatus* Rossi species with 11 specimens and species *Anthicus hispidus* Ross. 11 specimens.

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