

**PRELIMINARY INVESTIGATION ON THE
EARTHWORM SPECIES (*OLIGOCHAETA-
LUMBRICIDAE*) PRESENT IN SOILS FROM THE
PERIMETER OF CIUREA- IAȘI, IN THE
CONDITIONS OF THE YEAR 2012**

**INVESTIGAȚII PRELIMINARE PRIVIND SPECIILE DE
LUMBRICIDE (*OLIGOCHAETA-LUMBRICIDAE*) PREZENTE ÎN
SOLURILE DIN PERIMETRUL COMUNEI CIUREA- JUD. IAȘI,
ÎN CONDIȚIILE ECOLOGICE ALE ANULUI 2012**

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Abstract: Earthworm fauna (*Oligochaeta-Lumbricidae*) is an important component of the soil fauna, useful Species may show different biological particularities, may be small, medium or large, porfirinic, smoky pigment or may be lacking pigment, can consume or produce humus etc. Also their contribution to changing the structure and composition of soils may be different, some species can be important indicators of the degree of pollution of the soil, the other being the evolution of indicators such as soils. In the period of vegetation of 2012. I started investigating lumbricide species existing in the surrounding pasture soils have the Ciurea County, this investigation arise for 3 years in succession, in order to confirm the results.

Key words: Earthworms, environment, biodiversity, faunal investigation.

Rezumat: Fauna de lumbricide (*Oligochaeta-Lumbricidae*) reprezintă o componentă importantă a macrosegmentului numit faună utilă din sol. Speciile întâlnite pot prezenta particularități biologice diferite, pot avea talie mică, medie sau mare, pigment porfirinic, fumuriu sau pot fi lipsite de pigment, pot consuma humus sau pot produce humus etc. De asemenea, contribuția lor la modificarea structurii și compoziției solurilor poate fi diferită, unele specii pot fi indicatori importanți ai gradului de poluare din sol, altele fiind indicatori ai evoluției solurilor respective în timp. În perioada de vegetație a anului 2012 am demarat investigarea speciilor de lumbricide existente în solurile din pășunile limitrofe ale comunei Ciurea, urmând ca investigarea să decurgă timp de 3 ani succesiv, pentru confirmarea rezultatelor.

Cuvinte cheie: răme, mediu, biodiversitate, investigarea faunei

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INTRODUCTION

The main component of terrestrial ecosystems is the soil, and the main component of the soil invertebrate fauna is represented by earthworms. They belong to the phylum *Annelida*, class *Oligochaeta* and are known for their beneficial effects on the soil, either by aeration or by enriching it with humus (Pop, 1949).

The density of individuals of different species of earthworms in a year depending on how land use, environmental factors, and of course depending on the species that are there. Generally there is some density peaks recorded in rainy and cooler months of the year, like April, June, September and November.

MATERIAL AND METHOD

Biological material sought was collected from an orchard of apple, cultivated in classical system, grass silage, 12 years old, belonging to the perimeter of a particular , in Ciurea, Iasi County.

Sampling was done randomly at each harvest and preferred other areas of the orchard.

Sampling of biological material was performed by the classical method, ie digging of pits of various sizes, with depths up to 50 cm manual sorting of individuals. This method has been used to extract endogeic and epigeal earthworm species. For anec earthworms extraction was done by using irritating substances.

Biological material collected was then analyzed and determined in the laboratory, and the data were interpreted ecologically. (Pop et al., 2003; Pop and Wink, 2004)

Collection of biological material was carried out monthly from April to October.

RESULTS AND DISCUSSIONS

On soils orchards number density of earthworms individuals varies between 125,000 and 150,000 / ha. In general, these soils are the three groups of worms known as: epigeal, endogeic and anec.

Epigeal species are active on the surface, under fallen logs, under rocks or river banks, endogeic species can be found up to 2 m deep and the anecic at greater depths.

Because of these features and the fact that research in the field is limited by the lack of efficient means, had dug pits up to 50 cm deep, so species were only collected sporadically epigeal and endogeic.

The growing season of 2012 was extremely difficult to develop this group of invertebrates. Thus they received in April of moisture produced by earlier snow and there was a peak of their activities, including reproductive activity, then came extremely dry months with temperatures alternating with short periods of heavy rainfall and destructive.

All of these climate changes have reduced the number of harvest and number of individuals collected. They were thus collected and determined five species with a total of 66 individuals (table 1).

Table 1

Lumbricide species (*Oligochaeta*, *Lumbricidae*) collected in 2012

No.	Species	April	May	June	July	August	Sept.	Oct.
1	<i>Eisenia fetida</i>	16	2	-	-	-	2	4
2	<i>Lumbricus rubellus</i>	14	4	1	-	-	6	2
3	<i>Lumbricus terrestris</i>	7	2	-	-	-	2	1
4	<i>Dendrobaena octaedra</i>	2	-	-	-	-	-	-
5	<i>Dendrobaena submontana</i>	1	-	-	-	-	-	-
6	Cocoons	67	18	-	-	4	46	-

Were also collected and a number of 135 cocoons, distributed mainly at the onset of spring and autumn.

Among the species collected species with the largest number of individuals collected was *Lumbricus rubellus*-27 individuals, followed by *Eisenia fetida* 24 individuals (table 2).

Table 2

Numerical and percentage share of species collected

No.	Species	N. individuals	% from total
1	<i>Eisenia fetida</i>	24	36,35
2	<i>Lumbricus rubellus</i>	27	40,90
3	<i>Lumbricus terrestris</i>	12	18,18
4	<i>Dendrobaena octaedra</i>	2	3,03
5	<i>Dendrobaena submontana</i>	1	1,51
	Total	66	100

CONCLUSIONS

Year 2012 was not a favorable year for the developmental earthworms and excessive drought prevented proper collection of biological material.

However identified five species *Eisenia fetida*, *Lumbricus rubellus*, *Lumbricus terrestris* *Dendrobaena octahedra*, *Dendrobaena submontane* with a total of 66 individuals.(Pop, Victor, 1949)

Maximum of individuals collected was recorded in April, that since May report the individuals to be fewer in number.

Also in May was recorded and a maximum reproduction formations, respectively cocoons. Another peak was recorded in September.

The species with the highest number of individuals collected were *Lumbricus rubellus* with 40.9% of the total individuals and *Eisenia fetida* with 36.35% of individuals. Research will continue in the coming years.

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