

CONSIDERATIONS REGARDING THE LUMBRICIDAE FAUNA (*OLIGOCHAETA- LUMBRICIDAE*) FROM THE REGION OF SACUTA FOREST RANGE, THE COUNTY OF SUCEAVA

CONSIDERAȚII PRIVIND FAUNA DE LUMBRICIDE (*OLIGOCHAETA- LUMBRICIDAE*) DIN REGIUNEA CANTON SILVIC SĂCUȚA, JUDEȚUL SUCEAVA

BĂDEANU Marinela¹, ȘUTEU Daniela²

¹University of Agricultural Sciences and Veterinary Medicine Iasi, Romania

²“Gheorghe Asachi” Technical University Iasi, Romania

Abstract. *Sacuta forest range, in the county of Suceava is responsible for the maintenance, conservation and exploitation of some important areas of land cultivated with deciduous trees, as well as coniferous trees. It is known that the soil macro-fauna is determined by the structure of the vegetation which grows on it. This paper focuses on the structure and biodiversity of the Lumbricidae fauna sampled from the merging area between the deciduous and coniferous wood, being part of a process of analysis of the structure Lumbricidae species which are presently found on the territories of the counties in Moldavia.*

Key words: environment, fauna, lumbricidae, pollution, greenhouses.

Rezumat. *Cantonul silvic Săcuța, județul Suceava, este responsabil cu întreținerea, conservarea dar și exploatarea unor suprafețe importante, cultivate cu specii de arbori de foioase dar și de rășinoase. Se cunoaște faptul ca macrofauna de sol este determinată și de structura vegetației care crește pe solul respectiv. Lucrarea de față, urmărește stabilirea structurii biodiversității speciilor de lumbricide colectate la locul de întâlnire dintre pădurea de foioase și cea de rășinoase, înscriindu-se într-un proces de analiză a structurii speciilor de lumbricide existente la ora actuală pe teritoriul județelor din Moldova.*

Cuvinte cheie: mediu, faună, lumbricide, poluare, sere.

MATERIAL AND METHOD

The biological material was collected by classical methods (digging and soil sieving) from the area of Sacuta forest range, county of Suceava. The digging area is a young nursery of coniferous trees, in the neighbourhood of the deciduous wood. We also mention that there is an artificial pond at approximately 50 m.

The material once collected, it was washed, deposited and transported to the laboratory, in 10% ethyl alcohol. In the laboratory, the collected Lumbricidae were analysed in order to be identified and they were measured so as to establish the ecological parameters of each group.

For identification there were taken into consideration the following data: length and diameter of the specimens, shape of the head, the total number of

segments which form the body, the position and shape of the clitellus. All these data were recorded and compared in order to establish the characteristic limits of each species.

RESULTS AND DISCUSSIONS

The collection was undertaken from a soil layer of 1-50 cm depth. There were taken biological samples belonging to 6 species of Lumbricidae.

Collected species: *Eisenia foetida*; *Eisenia submontana*; *Lumbricus castaneus f. Typica*; *Lumbricus rubellus*; *Dendrobaena rubida*; *Eiseniella tetraedra typica*.

Eisenia foetida is a pigmented species, especially on the back, with red-purple stripes and it prefers fat soils, as it is often present in the decaying garbage; its ecological parametres are the following:

- **Variations in length** - between 80-100 mm-6 specimens (100), between 101- 150 mm- 3 specimens.
- **Diametre** – minimum-4mm (1 specimen-11,1%), maximum- 6mm (6 specimens- 66,6%) .
- **Position of the clitellus:** on segments 29-36– 7 specimens (77,7%), on segments 28-36-3 specimens (22,2%).
- **Total number of body segments:** minimum-118, maximum-150.

Eisenia submontana is a pigmented species, the colour of the body is uneven, it has red-purple stripes on the back and sides. It is characterized by the following ecological traits:

- **Variations in length** - between 80- 180 mm-2 specimens (100%).
- **Diametre** – minimum-4mm (1 specimen-50 %), maximum - 6mm (1 specimen - 50%) average - 5%
- **Position of the clitellus:** on segments 26-33– 1 specimen (50 %), on segments 27-34-1 specimen (50 %)
- **Total number of body segments:** minimum-135, maximum-137

Lumbricus castaneus f. typica is a pigmented species, with red-purple stripes on the back and it prefers wet, swampy soils.

It presents the following morphological characteristics:

- **Variations in length** - between 30- 45 mm-1 specimen (16,6%),45- 85 -3 specimens (50%), more than 85 mm-2 specimens (33,3%).Average length: 70 mm.
- **Diametre** – minimum -3mm (1 specimen-16,6 %), maximum - 5 mm (1 specimen - 16,6 %) average - 4 mm.
- **Position of the clitellus:** on segments 28-33– 1 specimen (100 %).

- **Total number of segments / body:** minimum-45, maximum-120.

Lumbricus rubellus species is brown – purple, bright, frequently found under logs or fallen trunks. The specimens from this species have the following morphological characteristics:

- **Variations in length** – between 50- 100 mm-2 specimens (50 %),100-150 -2 specimens (50%). Average length: 113,7
- **Diametre** – minimum -4mm (1 specimen-25 %), maximum- 6 mm (2 specimens- 50 %) average - 4 mm.
- **Position of the clitellus:** on segments 26-32– 1 specimen (25%).26-33 (2 specimens-50 %), 27-33 (1 specimen - 25%)
- **Total number of segments / body:** minimum-95, maximum-140. Average number: 125,75.

Dendrobaena rubida species is red-purple on the back, it is frequently present under logs or fallen trunks. The specimens of this species have the following morphological traits:

- **Variations in length** - between 40- 80 mm-2 specimens (100 %). Average length: 80 mm.
- **Diametre** – 4 mm-100%.
- **Position of the clitellus:** on segments 26-32– 2 specimens (100 %).
- **Total number of segments / body:** minimum-87, maximum-90. Average number: 88,5.

Eiseniella tetraedra f. typica species is red-brown and it is an amphibious. The specimens of this species present the following morphological characteristics:

- **Variations in length** - between 30- 60 mm-7 specimens(63,63 %),60-100 -4 specimens (36,36b%). Average length: 59,5
- **Diametre** – min-2mm (8 specimens-72,72 %), maximum- 3 mm (3 specimens- 27,27 %) average- 2,27 mm.
- **Position of the clitellus:** on segments 22-26– 8 specimens (72,72 %).22-27 (1 specimen-9,09 %), 23-27 (2 specimens- 18,18 %)
- **Total number of body segments:** minimum-71, maximum-90. Average number: 78.

CONCLUSIONS

As human technology develops, it is more and more important to study the influence it has on the environment; on the soil, water, air, flora and fauna.

From the above mentioned area there were collected 6 species of Lumbricidae, mostly species of purple pigment, epigeic, specific to fertile lands, excessively wet.

The ecological parametres which were determined rank within the characteristic limits of the species.

The collected species belong to the categories which have a significant ecological impact on the soils of deceduous forests, as they are the ones which process the organic matter and improve the quality of the soil.

REFERENCES

1. **Brady N.C., Weil R.R., 2002** - *The Nature and Properties of Soils*.13th.ed.Pearson Education,
2. **McGrath S., 1998** - *Soil Remediation: Criteria and indications of soil quality*.
Trans 16th World Cong Soil Sci Montpellier, Symp.