

SPECIES AND TROPHIC DIVERSITY OF SOIL NEMATODES IN THE “CODRII” NATURE RESERVE

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Abstract. *Species diversity and trophic structure of nematode communities from different types of forests of the “Codrii” Forest Reserve located in the central part of Moldova have been studied. A total of 144 species of soil nematodes belonging to 97 genera and 11 orders were identified. Most of nematode species are bacterivores - 52 species (36.2% from total number of species), followed by plant feeders - 26 species including mainly ectoparasites (18%), omnivores - 26 (18%), predators - 20 (13.8%), fungivores - 17 (11.8%) and substrate ingestion - 3 (2.2%). In the nematode communities bacterivores and omnivores were dominant both qualitatively and quantitatively. The highest species diversity was revealed in beech forest (65 species) than in lime-ash (49) and maple-hornbeam (42). In the natural and protected forests the high diversity of predators, rare and endemic species is noted.*

Keywords: *soil nematodes, species diversity, trophic groups, “Codrii” Nature Reserve.*

Rezumat. *Diversitatea specifică și structura trofică a nematodelor de sol din Rezervația Naturală „Codrii”. S-a studiat structura trofică și diversitatea specifică a comunităților de nematode colectate din diverse tipuri de păduri din Rezervația „Codrii”, zona Centrul Moldovei. Nematodele colectate aparțin la specii din 97 genuri și 11 ordine. Dintre grupele trofice de nematode o semnificație considerabilă ocupă bacteriofagii - 52 specii (36.2% din numărul total de specii), urmate de fitoparazite - 26 specii, în deosebi ectoparaziți (18%), omnivore - 26 (18%), prădători - 20 (13.8%), micofagi - 17 (11.8%) și substrate ingestion - 3 (2.2%). Nematodele bacteriofagii și omnivore predomină constant asupra altor grupe trofice. Din cele 3 tipuri de păduri cercetate, s-a constatat, că cei mai mare diversitate de nematode s-a semnalat în crîngurile mixte de fagi și stejari (65 specii), iar în cele de tei cu frasin (49) și arțar cu carpen (42). În pădurile naturale și protejate se menține o diversitate înaltă de prădători și numai aici se întîlnesc specii rare și endemice din diferite taxonomice.*

Cuvinte cheie: *nematode de sol, diversitatea de specii, structura trofică, Rezervația Naturală „Codrii”.*

INTRODUCTION

The “Codrii” is the oldest scientific nature reserve in Moldova where the main forest trees are oaks and beeches. The natural reserves, especially the forests, represent the principle sources of protection and conservation of biodiversity. Their biotic communities are formed without constant and strong anthropogenic influence throughout long time. Therefore, they can be considered as original models of different communities where species are adapted and responding to the physical factors and the interrelationships among species were formed. Nematodes are the most diverse group between invertebrates that inhabit the forest soil and litter and also have high densities. They occupy the important positions in soil food chains feeding the primary decomposers (bacteria and fungi) and being the consumers (plant feeders, predators and omnivores). They are the main catalyst of some soil processes, especially mineralization and humification of dead organic matter, responsible for cycling of soil nutrients and self-purification of water, due to their interaction with bacteria, algae and fungi (WASILEWSKA, 1997; BONGERS & FERRIS, 1999).

The first data about the soil nematodes of the “Codrii” Nature Reserve are noted from 60-70th years of last century in papers: NESTEROV (1963, 1973, 1976, 1979) and the most detailed research has done after the 90th years (POIRAS, 1996, 1998, 2005, 2006; GEBRE, NESTEROV, OKOPNII, 1994; BUSMACHIU, POIRAS, TCACIUC, 2000; BUSMACHIU, POIRAS, 2001). In the “Codrii Reserve” some species of soil nematodes were found and described as new species for science such as: *Drilocephalobus moldavicus* LISETHKAJA, 1958, *Wilsonema agrarum* NESTEROV, 1970, *Aporcelaimellus amplexor* NESTEROV & LISETHKAJA, 1965, *Crateronema lozovensis* NESTEROV, 1976; *Belondira moldavica* NESTEROV, 1976, *Laurophragus lauri* NESTEROV, 1976, *Alirhabdites clavatus* NESTEROV, 1979, *Oxydirus terramoldavicus* GHEBRE & NESTEROV, 1994, *Tylencholaimus pacificus* NESTEROV, 1979, *Tripyla longicaudata* NESTEROV, 1979; *Diphtherophora tegumenta* POIRAS & NESTEROV, 1996.

The species diversity, abundance, trophic composition of soil nematodes have been studied in the different types of forests of the “Codrii” Nature Reserve during more that fifteen years. Also this paper includes all existed data on the soil nematodes founded in this forest reserve considered according to modern taxonomic revisions. Most of the species of nematodes presented in this paper have been included in the “Fauna Europaea” database 2004 from Moldova (<http://www.faunaeur.org>). Classification of Phylum Nematoda accepted in the “Fauna Europaea” database is used in this paper.

MATERIALS AND METHODS

Site description

The «Codrii» Nature Reserve (taking up about 5,700 ha) is situated on the height with 200 - 300 m (maximum 429 m) altitudes, between 47°06'N and 28°21'E in the Central-Moldavian Codrii Height.

The vegetation in the reserve is the oak and beech middle-European type. Among different types of forests the following trees are predominated: beech – **Fs*** (*Fagus sylvatica* L. with *Quercus spp.*), lime – ash – **TFe** (*Tilia tomentosa* MOENCH., *T. cordata* MILL., *Fraxinus excelsior* L.), maple – hornbeam – **ACb** (*Acer campestre* L., *A. platanoides* L., *Carpinus betulus* L.) and other mixed forests – **Mix**. Most species of grassland are *Aegopodium podagraria* L., *Allium ursinum* L., *Asperula odorata* L., *Asarum europaeum* L., *Carex brevicollis* DC., *C. pilosa* Scop., *Campanula rapunculoides* L., *Galeobdolon luteum* L. etc. (* - abbreviation of types of forests used to show the species of nematodes noted in these forests).

The general types of soils are brown forest soil, podsollic sandy loam with the humus – alluvial horizon, weakly acid (pH = 6.5), middle humus content (5.59 – 5.23 % in A) and grey forest soil, hydromorphic sandy clay with the humus – alluvial horizon, more rich in humus (6.29 – 4.88 % in A), pH = 7.6.

The climatic conditions of reserve are characterized by an annual mean temperature of 8,7°C (absolute annual minimum – minus 30°C, maximum – plus 40°C) and an annual mean sum precipitation of 446 mm (in book: Nature of “Codrii” Reserve, 1984).

Sampling and extraction

Samples were collected from litter and 0 – 15 cm of soil in five replications (each sample) in the different forest types during more than fifteen years. Nematodes were extracted by sieving and decanting standard methods of brass screens and Baermann funnels and fixed in hot 4% formaldehyde solution. The nematode specimens were identified on mass-slides to species using the keys and species description by Nesterov, 1979, ANDRASSY, 1984, NICKLE, 1991, JAIRAJPURI, 1992, SIDDIQI, 2000, ANDRASSY, 2005 etc. The nematode trophic groups were given according to YEATS et al. (1993).

RESULTS AND DISCUSSIONS

The species structure of soil nematode communities of the «Codrii» Nature Reserve includes 144 species of 97 genera and 11 orders. The highest number of species were noted from orders *Dorylaimida* - 38 species (26.4% from total number of species), *Rhabditida* - 32 (22.2%), *Tylenchida* - 23 (15.9%) followed (in descending order) by *Plectida* - 12 species (8.3%), *Mononchida* - 9 (6.2%), *Triplonchida* - 9 (6.2%), *Aphelenchida* - 8 (5.6%), *Chromadorida* - 5 (3.8%), *Enoplida* - 4 (2.7%), *Monhysterida* - 3 (2.0%) and *Araeolaimida* - 1 (0.7%).

List of nematode species from different forest types found in “Codrii” Nature Reserve

(In brackets after the name of species there is an abbreviation of type of forest where the species has been found)

Order Tylenchida: *Aglenchus agricola* (DE MAN, 1884) MEYL, 1960 (Fs, TFe); *Coslenchus costatus* (DE MAN, 1921) (Fs, TFe, ACb); *Filenchus thornei* (ANDRASSY, 1954) (Mix); *Lelenchus leptosoma* (DE MAN, 1880) (Fs, TFe, ACb); *L. minutus* (COBB, 1893) (Mix); *Psilenchus hilarulus* DE MAN, 1921 (Mix); *Tylenchus davainei* BASTIAN, 1865 (Fs, TFe); *T. elegans* DE MAN, 1876 (Mix); *Malenchus fusiformis* THORNE & MALEK, 1968 (Fs); *Ditylenchus triformis* HIRSCHMAN & SASSER, 1955 (Mix); *Merlinius brevidens* (ALLEN, 1955) (Mix); *Bitylenchus dubius* (BUTSCHLI, 1873) (Fs, TFe, ACb); *Pratylenchus neglectus* (RENSCH, 1924) (Mix); *Helicotylenchus crenatus* DAS, 1960 (Fs); *H. vulgaris* YUEN, 1964 (Fs, TFe, ACb); *Rotylenchus incultus* SHER, 1965 (Mix); *Criconemoides informis* (MICOLETZKY, 1922) (Mix); *C. zavadskii* (TULAGANOV, 1941) RASKI, 1955 (Mix); *Mesocriconema beljaevae* (KIRJANOVA, 1948) IVANOVA, 1976 (TFe, ACb); *Nothocriconemoides lineolatus* (MASS, LOOF & DE GRISSE, 1971) (Mix); *Gracilacus audriellus* (BROWN, 1959) RASKI, 1962 (Mix); *G. crenatus* (CORBETT, 1966) (Mix); *Paratylenchus hamatus* THORNE & ALLEN, 1950 (TFe).

Order Aphelenchida: *Aphelenchus avenae* BASTIAN, 1865 (Fs, TFe, ACb); *Paraphelenchus amblyurus* STEINER, 1934 (Fs); *Aphelenchoides asterocaudatus* DAS, 1960 (Mix); *A. bicaudatus* (IMAMURA, 1931) FILIPJEV & SCH. STEKHOVEN, 1941 (Fs); *A. saprophilus* FRANKLIN, 1957 (Fs, TFe, ACb); *A. subtenuis* (COBB, 1926) STEINER & BUHRER, 1932 (Fs, TFe, ACb); *Seimura diversa* (PAESLER, 1957) GOODEY, 1960 (Mix), *S. oxura* (PAESLER, 1957) (Mix).

Order Rhabditida: *Mesorhabditis inarimensis* (MEYL, 1953) (Fs); *M. signifiera* (BARANOVSKAJA, 1959) BAKER, 1962 (Fs, TFe, ACb); *Protorhabditis filiformis* (BUTSCHLI, 1873) (Fs, TFe, ACb); *P. xylocola* (KORNER in Osche, 1952) DOUGHERTY, 1953 (Fs); *Rhabditis cucumeris* (MARCINOWSKI, 1909) (Mix); *Diploscapter coronatus* (COBB, 1893) (TFe); *Bunonema richtersi* JAGERSKIOELD, 1905 (Fs); *Acrobeles ciliatus* LINSTOW, 1877 (Fs, TFe, ACb); *Acrobeloides buetschlii* (DE MAN, 1884) (Fs, TFe, ACb); *A. iliazensis* PAESLER, 1941 (Mix); *A. nanus* (DE MAN, 1880) ANDERSON, 1968 (Fs, TFe, ACb); *A. tricornis* THORNE, 1925 (Fs, TFe); *Acrobelophis soosi* (ANDRASSY, 1953) (Mix); *Acrolobus emarginatus* (DE MAN, 1880) THORNE, 1937 (Mix); *Cephalobus persegnis* BASTIAN, 1865 (Fs, TFe); *Cervidellus serratus* (THORNE, 1925) THORNE, 1937 (TFe, ACb); *Chiloplacus lentus* (MAUPAS, 1900) THORNE, 1937 (Fs, TFe, ACb); *Ch. propinquus* (DE MAN, 1921) THORNE, 1937 (Mix); *Eucephalobus mucronatus* (KOZLOWSKA & ROGUSKA-WASILEVSKA, 1963) (Fs); *E. oxyuroides* (DE MAN, 1876) STEINER, 1963 (Fs, TFe); *E. paracornutus* de CONINCK, 1943 (TFe, ACb); *E. striatus* (BASTIAN, 1865) THORNE, 1937 (Fs); *Heterocephalobus buchneri* (MEYL, 1955) (Fs); *H. latus* (COBB, 1906) (Mix); *Pseudacrobeles laevis* (THORNE, 1937) (Fs); *P. teres* (THORNE, 1937) (ACb); *Panagrolaimus rigidus* (SCHNEIDER, 1866) THORNE, 1937 (Fs); *Teratocephalus terrestris* (BUTSCHLI, 1873) DE MAN,

1876 (Fs); *Pristionchus lheritieri* (MAUPAS, 1919) (Mix); *Drilocephalobus moldavicus* LISETHKAJA, 1958 (Mix); *Alirhabditis clavatus* NESTEROV, 1979 (Mix).

Order Araeolaimida: *Cylindrolaimus communis* DE MAN, 1880 (Fs, TFe, ACb).

Order Chromadorida: *Punctodora ratzeburgensis* (LINSTOW, 1976) (Mix); *Achromadora micoletzkyi* (STEFANSKI, 1915) (Mix); *A. ruricola* (DE MAN, 1880) MICOLETZKY, 1925 (Mix); *Prodesmodora terricola* ALTHERR, 1925 (Mix); *Odontolaimus chlorurus* DE MAN, 1880 (Mix).

Order Enoplida: *Alaimus editorus* SIDDIQI & HUSAIN, 1967 (Fs, TFe); *A. primitivus* DE MAN, 1880; *Paramphidelus dolichurus* (DE MAN, 1876) THORNE, 1939 (Mix) *P. pseudobulbosus* (ALTHERR, 1953)(Mix).

Order Monhysterida: *Eumonhystera filiformis* (BASTIAN, 1865) (Fs); *E. vulgaris* (DE MAN, 1880) (Mix); *Geomonhystera aenariensis* (MEYL, 1953) (Fs).

Order Plectida: *Anaplectus granulatus* (BASTIAN, 1865) de CONINCK et SCH. STEKHOVEN, 1913 (Fs, TF, ACb); *Ceratoplectus armatus* (BUTSCHLI, 1873) (TFe, ACb); *Plectus longicaudatus* BUTSCHLI, 1873 (Fs); *P. parietinus* BASTIAN, 1865 (TFe, ACb); *P. parvus* BASTIAN, 1865 (ACb); *P. rizophilus* DE MAN, 1880 (Fs, TFe, ACb); *Tylocephalus auriculatus* (BUTSCHLI, 1873) ANDERSON, 1966 (Fs); *Wilsonema agrarum* NESTEROV, 1970 (Fs); *W. otophorum* (DE MAN, 1880) COBB, 1913 (Fs, ACb); *Bastiania gracilis* DE MAN, 1876 (TFe). *Rhabdolaimus terrestris* DE MAN, 1880 (Mix); *Aulolaimus oxycephalus* DE MAN, 1880 (Mix).

Order Mononchida: *Clarkus papillatus* (BASTIAN, 1865) JAIRAJPURI, 1970 (Fs, TFe, ACb); *Mononchus truncatus* BASTIAN, 1865 (Fs, TFe, ACb); *Coomansus zschokkei* (MENZEL, 1913) (Fs); *Prionchulus muscorum* (DUJARDIN, 1845) WU & HOEPLI, 1928 (Fs, TFe); *Mylonchulus brachyuris* (BUTSCHLI, 1873) ALTHERR, 1954 (TFe); *M. curvicaudatus* MULVEY & JENSEN, 1967 (Mix); *M. rotundicaudatus* (SKWARRA, 1921) ANDRASSY, 1958 (Mix); *M. sigmaturus* (COBB, 1917) (Fs, ACb); *Anatonchus tridentatus* (DE MAN, 1876) DE CONINCK, 1939 (Fs, ACb).

Order Dorylaimida: *Laimydorus filiformis* (BASTIAN, 1865) SIDDIQI, 1969 (Fs); *Prodorylaimus vixamicus* (Andrassy, 1962) SIDDIQI, 1969 (TFe); *Mesodorylaimus bastiani* (BUTSCHLI, 1873) ANDRASSY, 1959 (Fs, TFe, ACb); *M. centrocerus* (DE MAN, 1880) (Fs, TFe, ACb); *M. mesonyctius* (KREIS, 1930) (Fs, TFe, ACb); *Aporcelaimellus amplexor* (NESTEROV & LISETZKAJA, 1965) HEUNS, 1965 (Mix); *A. krygeri* (DITLEVSEN, 1928) HEYNS, 1965 (Mix); *A. obtusicaudatus* (BASTIAN, 1865) HEYNS, 1965 (Fs, TFe, ACb); *Paraxonchium laetificans* (ANDRASSY, 1956) (Fs); *Discolaimium cylindricum* THORNE, 1939 (Mix); *Discolaimus major* (THORNE, 1939) LOOF, 1964 (Fs, TFe, ACb); *Dorydorella bryophila* (DE MAN, 1880) ANDRASSY, 1959 (Mix); *Ecumenicus monohystera* (DE MAN, 1880) ANDRASSY, 1959 (Fs, ACb); *Epidorylaimus lugdunensis* (DE MAN, 1880) ANDRASSY, 1959 (ACb); *Eudorylaimus acuticauda* (DE MAN, 1880) (Fs, TFe); *E. brunetti* (MEYL, 1953) ANDRASSY, 1959 (Fs, TFe, ACb); *E. bureshi* (ANDRASSY, 1958) ANDRASSY, 1959 (TFe); *E. curvatus* (THORNE et SWANGER, 1938) ANDRASSY, 1959; *E. simus* (ANDRASSY, 1958) (Mix); *Microdorylaimus parvus* (DE MAN, 1880) (Fs, ACb); *Thonus ettersbergensis* (DE MAN, 1885) ANDRASSY, 1959 (Fs, TFe, ACb); *T. minutus* (BUTSCHLI, 1873) (Fs, TFe); *Enchodelus microdorus* SCHIEMER, 1965 (Mix); *Longidorella parva* THORNE, 1939 (Mix); *Longidorus elongatus* (DE MAN, 1876) THORNE & SWANGER, 1936 (Mix); *Xiphinema rivesi* DALMASSO, 1969 (Mix); *Oxydirus terramoldavicus* GHEBRE & NESTEROV, 1994 (ACb); *Tylencholaimus nanus* THORNE, 1939 (Mix); *T. pacificus* NESTEROV, 1979 (Fs, ACb); *T. stecki* STEINER, 1914 (Fs, TFe, ACb); *Leptonchus granulatus* COBB, 1920 (Mix); *Tylencholaimellus affinis* (BRAKENHOFF, 1914) THORNE, 1939 (Mix); *T. coronatus* THORNE, 1939 (Fs, TFe, ACb); *Aquatides aquaticus* THORNE, 1930 (Mix); *Nygolaimus bisexualis* THORNE, 1930 (Mix); *N. brachyuris* (DE MAN, 1880) THORNE, 1930 (Fs, TFe, ACb); *Belondira moldavica* NESTEROV, 1976 (Mix); *Laurophragus lauri* NESTEROV, 1976 (Mix).

Order Triplonchida: *Diphtherophora communis* DE MAN, 1880 (Fs); *D. tegumenta* POIRAS & NESTEROV, 1996 (Mix); *Trichodorus primitivus* (DE MAN, 1880) MICOLETZKY, 1922 (Mix); *Prismatolaimus dolichurus* DE MAN, 1880 (Fs, TFe); *P. intermedius* (BUTSCHLI, 1873) DE MAN, 1880 (Mix); *Tripyla filicaudata* DE MAN, 1880 (Mix); *T. longicaudata* NESTEROV, 1979 (Fs, ACb); *Trischistoma monohystera* (DE MAN, 1880) YEATES, 1971 (TFe); *Tobrilus imberbis* (ANDRASSY, 1953) ANDRASSY, 1959 (ACb).

Most of nematode species are bacterivores - 52 species (36.2% from total number of species), followed by plant feeders - 26 species including mainly ectoparasites (18%), omnivores - 26 (18%), predators - 20 (13.8%), fungivores - 17 (11.8%) and substrate ingestion - 3 (2.2%) (nematode trophic groups by Yeats *et al.*, 1993).

Among bacterivores genera *Mesorhabditis*, *Pelodera*, *Rhabditis*, *Acrobeles*, *Acrobeloides*, *Chiloplacus*, *Eucephalobus*, *Stegelletina*, *Plectus*, *Aulolaimus*, *Prismatolaimus*, *Alaimus* and fungivores genera *Aphelenchus*, *Paraphelenchus*, *Aphelenchoides* are abundant and often presented. In all studied forests the ratio of fungivores to bacterivores F/B<1 show a constant preponderance of bacterivores. The fungivores-bacterivores compose an important component of the litter decomposer community. The prevalence of bacterivores in the studied deciduous forests was similar to that recorded for beech and mixed forests in other countries (like in the study of POPOVICI, 1984, 1993 etc.).

The herbivores are mainly composed of non-obligatory plant parasites as ectoparasites and root hair feeders especially genera *Filenchus*, *Lelenchus*, *Malenchus* and *Tylenchus*. Only endoparasities *Pratylenchus neglectus*, ectoparasities *Helicotylenchus crenatus*, *H. vulgaris*, *Rotylenchus incultus* and virus vector species *Longidorus elongans*, *Xiphinema rivesi*, *Trichodorus primitivus* could cause some depressions or diseases of forest plants.

The major part of predators from genera *Tripyla*, *Clarkus*, *Anatonchus*, *Prionchulus*, *Mylonchulus*, *Aquatides* and *Nygolaimus* is located in humiferous soil horizon. The omnivores with large size from genera *Aporcelaimellus*, *Mesodorylaimus*, *Eudorylaimus*, *Epidorylaimus* and *Thonus* are well presented in all soil layers and forest types.

The abundance of nematode communities has a wide range of values, comprised between $1.4 - 2.3 \times 10^6 \text{ex/m}^2$ depending on the type of forest and well-defined layer of surface litter. Among the typical forests of the “Codrii” Nature Reserve the richness of the nematode fauna is better represented in beech forest (65 species) as compared with lime – ash (49) and maple – hornbeam (42). Also 45 species of nematodes have found in other mixed forests from the random samples. A high coefficient of affinity by Soerensen between nematode communities of beech and lime-ash forests is noted (0.58).

There are 12 dominant taxa ($D > 3.1 - 5.1 - 10.1 \%$ from total abundance) in three forest types studied (Fig. 1). Genera *Eudorylaimus*, *Aphelenchoides* and *Plectus* developed abundant populations both in litter (L) and in mineral soil horizon (A). The species such as *Mesodorylaimus bastiani*, *Eucephalobus striatus* and *Wilsonema otophorum* are predominant in litter, while *Helicotylenchus vulgaris*, *Mylonchulus sigmaturus* and *Tylencholaimus pacificus* are mostly located in deeper soil layers (Fig.1).

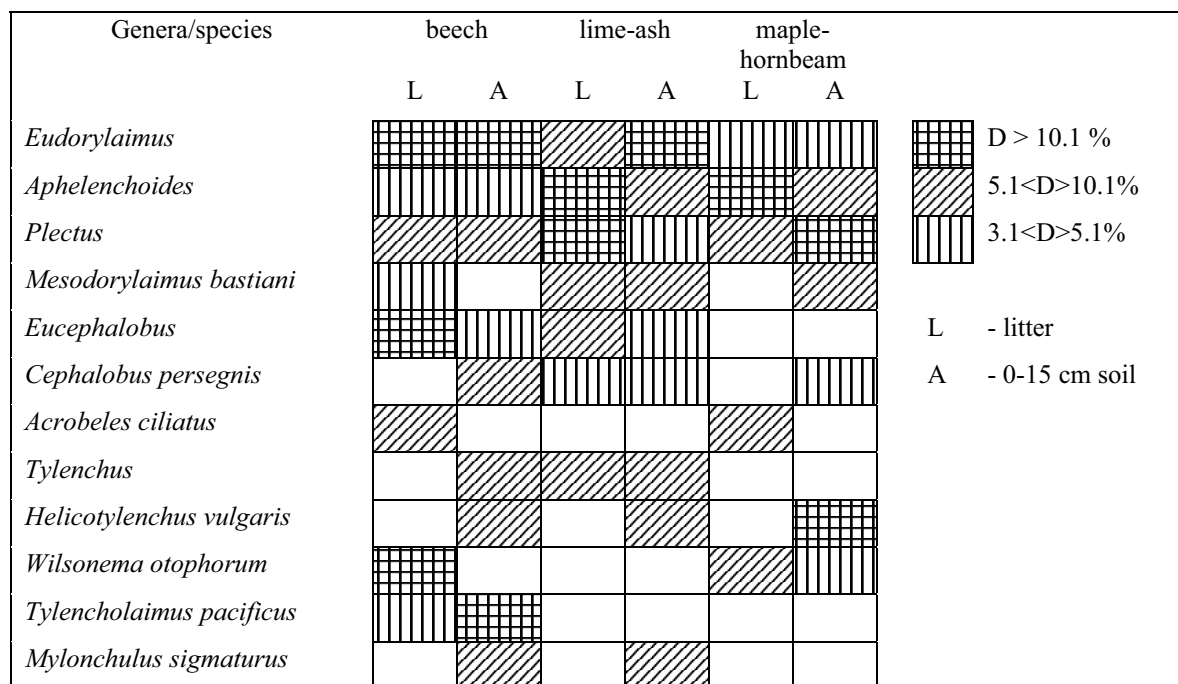
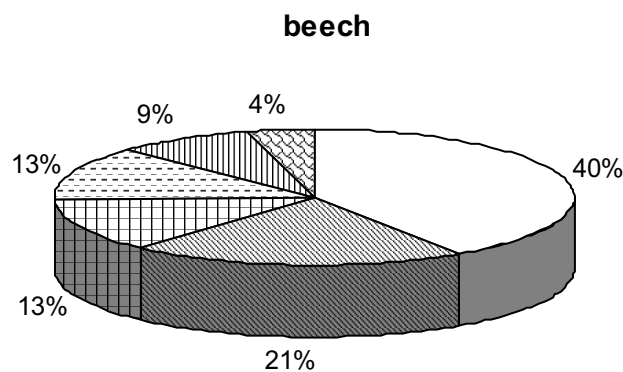


Fig. 1. Distribution of the dominant nematode taxa (D) in the different forest types of the «Codrii» Nature Reserve.
 Fig. 1. Distribuția și dominanța speciilor de nematode (D) în diferite tipuri de păduri din Rezervația Naturală «Codrii».

In the trophic structure of nematode communities of all studied forests such as beech, lime – ash and maple – hornbeam the dominant groups both qualitatively and quantitatively were bacterivores (35 - 40 %) and omnivores (21 - 29 %) than followed plant feeders (9 - 18 %), predators (10 - 15 %), fungivores (9 - 13 %) and substrate ingestion (0 - 4 %) nematodes (Fig. 2). Such considerable prevalence of bacterivores with short life cycles shows on the active decaying processes of a forest litter especially in beech forest. The high species diverse and abundance of omnivores and predators can be observed only in the stable biocenose without the anthropogenic influence as these nematodes have the long life cycles and most of them are sensitive to any changes in the environmental conditions. Among plant parasites the ectoparasites of plant roots and nematodes feeding on epidermal cells and root hairs predominated in the studied forests. Only few species of endoparasites from genus *Pratylenchus* and semi-endoparasites from genera *Helicotylenchus*, *Rotylenchus*, *Tylenchorhynchus*, *Bitylenchus* were revealed. Their populations were no numerous and they cannot be the cause of the serious damages for the roots of forest plants.



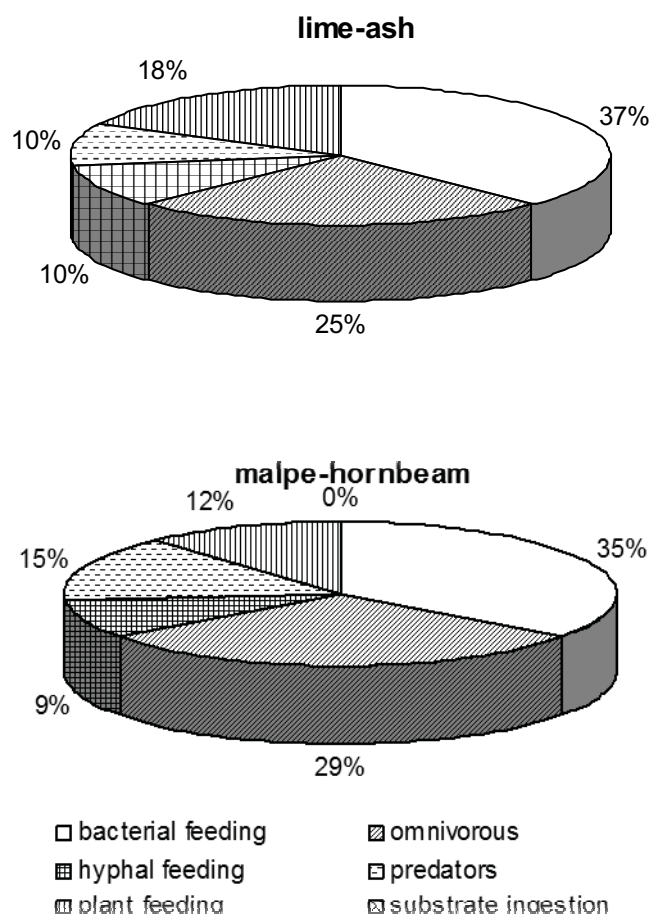


Fig. 2. Trophic structure of nematode communities from different forest types of «Codrii» Nature Reserve.
Fig. 2. Structura trofică a comunităților de nematode din diferite tipuri de păduri din Rezervația Naturală «Codrii».

CONCLUSIONS

A high number of species and trophic diversity of soil nematodes were found in the “Codrii” Nature Reserve. At present 144 species of soil nematodes belonging to 97 genera and 11 orders were identified in the different types of forests. The biggest number of species were noted from orders Dorylaimida - 38 species (26.4% from total number of species), Rhabditida – 32 (22.2%), Tylenchida – 23 (15.9%) followed (in descending order) by Plectida - 12 species (8.3%), Mononchida – 9 (6.2%), Triplonchida – 9 (6.2%), Aphelenchida – 8 (5.6%), Chromadorida – 5 (3.8%), Enoplida – 4 (2.7%), Monhysterida – 3 (2.0%) and Araeolaimida – 1 (0.7%). Most of nematode species are bacterivores - 52 species (36.2% from total number of species), followed by plant feeders – 26 species including mainly ectoparasites (18%), omnivores - 26 (18%), predators - 20 (13.8%), fungivores - 17 (11.8%) and substrate ingestion - 3 (2.2%). In the nematode communities bacterivores and omnivores were dominant both qualitatively and quantitatively. The highest species diversity was revealed in beech (65 species) than in lime-ash (49), maple-hornbeam (42) and other mixed forests (45). In the natural and protected forests the high diversity of predators, rare and endemic species is noted. We assume that the number of species of this group can be much more in the “Codrii” Nature Reserve and it is necessary to continue the taxonomic study of soil nematode fauna there.

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