

COMPARATIVE STUDY OF ECOLOGICAL GROUPS OF HIPPOHAE RHAMNOIDES PHYTONEMATOIDS GROWING IN THE ZARAFSHAN OASIS

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ANNOTATION

As a result of the study of nematodes of the dwarf retail plant growing in the tugai forests of Akdarya and Karadarya oases and Jambay reserve, 88 species of phytонematoids belonging to 6 genera, 28 families and genera were identified. A comparison of nematodes derived from the root and peripheral soil of this plant revealed that 65 species of nematodes were associated with the peripheral soil and 46 species with the rhizome.

Keywords: phytонematoids, xerophiles, mesophiles, hydrophiles, eurybiants, Mountford index.

RELEVANCE OF THE STUDY

Retail phytonutrients have not been studied not only in Uzbekistan but also abroad. The rational use of natural resources for the rapid development of the Uzbek economy poses great challenges to the science of zoology. In particular, tugai biotopes form a unique colorful landscape, which is usually inhabited by wild plants. For a long time, the plant world interacts with other organisms in the environment. These organisms also include nematodes.

RESEARCH METHODS

To study the composition of nematodes living in the soil around the retailer and its roots, in 2018 in the Samarkand region, the northern tributary of the Zarafshan River was studied in the Akdarya and the southern tributary of the Karadarya tugai forests and Jambay reserve. A total of 105 plant samples were collected. Nematodes in root and soil samples were isolated under laboratory conditions by the Berman method.

RESULTS

85 species of nematodes belonging to 5 genera were found in the roots of the retail plant and in the soil around its roots. In particular, 42 species (298 nematodes) were found in Aqdarya, Qoradarya (161 nematodes) and 46 species (223 nematodes) in the retail areas of Jambay reserve. A comparison of the number and species composition of nematodes found in the roots of the retail plant and in the surrounding soil shows that they differ greatly from each other.

The largest number and species of nematodes were isolated from the soil around the root of the retailer, 63 species, and 44 species of nematodes from the root.

From the ecological groups, devisaprobiots have 33 species of nematodes, which belong to the following genera: *Lectus*, *Proteroplectus*, *Panagrolaimus*, *Cephalobus*, *Eucephalobus*, *Heterocephalobus*, *Acrobeloides*, *Acrobelloides*, *Cervidellus*, *Chiloplacus*. Typical ecological-trophic parasites include *Pratylenchus pratensis*, *P. tulaganovi*, *P. vulnus*, *Helicotylenchus multicinotus*, *Paratylenchus microdorus*, *P. nanus*, *Heterodera* — such species have been observed to be widespread. *Tylenchus filiformis* and *T. Kirjanova* were identified as nematodes belonging to potential ecological-trophic parasites. *Aphelenchus avenae*, *A. cylindricaudatus*, *A. maximus*, *Aphelenchoides blastophthorus*, *A. goeldii*, *A. limberi*, *A. parietinus*, *A. sacohari*, *A. subparietinus* were found to be more common than other species of nematodes. Typical saprobionts include *Rhabditis brevispina*, *Rh. filiformis*, *Mesorhabditis iheritieri* were noted. *Eudorulaimus carteri*, *E. monohystera*, *E. muchabbatae*, *E. paraobtisicaudatus*, *E. parvus*, *Aporolaimellus obtusicaudatus*, *Tulencholaimellus minimus* were identified from polytrophic ecological-trophic group nematodes in the retail root and surrounding soil samples we collected. Of the typical ecological-trophic parasites, *Pratylenchus prater* was found to be relatively common in the retail root. These nematodes feed on the sap of plant stem cells and cause fungi to enter the plant body to cause various diseases. From the above data, it can be seen that among the nematode species found in and around the root of the retailer, there are representatives of all ecological groups. To determine the percentage of the number of representatives of all found nematode species, we used the terms proposed by T. Vitkovsky (Witkowski, 1966). Based on this, we divided them into 5 groups depending on the ratio of the number of identified nematodes. Eudominant if more than 10% of all nematodes encountered; 5% and 10% each-dominant; 2% to 5% -recipient: We considered less than 1% to be a subresident. *Acrobelloides butschlii* was eudominant, accounting for 25.9% of all found nematodes. *Eudorylaimus monohystera* (5.8%), *Aporoelaimellus obtusitus* (5.8%), *Mesorhabditic monohystera* (7.7%), *Aphelencholides perietinus* (7.6%) and *Aph. sacchari* (7.8%) predominated.

Species belonging to the subdominant group include:

Tylencholaimus minimus (3.4%), *Chiloplacus propinquus* (4.4%), *Aphelenchus avenae* (2.5%), *Eucephalobus oxyuroides* (2.5%), *Celobus persegnis*. The following species were residual: *Pratylenchus pratensis* (1.7%), *Acrobeloides ciliatus*, *Panagrolaimus rig* (1.5%) and *Aphelenchoides limberi* (1.05%). All other species were found to belong to the subresident group. The highest number of nematodes was found in the retail roots in and around the Jambay Reserve, less in the Akdarya Valley and even less in the Karadarya Oasis. If we compare the species of nematodes and their total number in the above-mentioned biotopes, we can see that there are significant differences between them.

The Akdarya oasis was identified in 288 nematodes belonging to 42 species from soil samples around the roots and roots of retailers. All of them belong to the family Chromadorida (7 species 13 nematodes), Dorylaimida (5 species 36 nematodes), Rhabditi (22 species 207 nematodes), Tylenchi (8 species 42 nematodes). Among the nematodes found in the retail root, *Heterodera* sp. can be displayed. Comparing the number of nematodes found in the soil around the root

and the root, it became clear that more nematodes were distributed in the soil around the root (251 nematodes) and less in the root (77 nematodes).

Aporcelaimellus obtusicaudatus, *Mesorhabditis monhystera*, *Eucephalobus oxyurooides*, *Chiloplacus propinquus* are *symmetricus*. 10 species of nematodes were identified from the roots of reptiles taken from the Akdarya valley. Of these, *Cephalobus persegnis*, *Aphelenchoides parietinus* are unique to the root. The soil around the roots showed an abundance of nematodes. 251 nematodes, including 40 species, were found here. From nematodes belonging to typical ecological-trophic parasites, species belonging to the genus *Heterodera* were recorded. *Tylenchus kirjanovae* species was identified from nematodes belonging to potential ecological-trophic parasites. Thus, the species composition of nematodes distributed in the Akdarya retail chains and their distribution in the retail roots and soil is unique.

The species composition and quantity of phytonematooids in the Karadarya oasis are unique. There are 31 species of 161 nematodes in Chromadorida (3 species in 10 nematodes), Enopli (2 species and 46 species), Rhabditi (10 species in 28 nematodes), Tylenchi (13 species and 76 species nematode). Among the typical ecological-trophic parasites were found *Pratylenchus pratensis*, *P. tulaganovi*, *P. vulnus*, *Helicotylenchus multicinctus*, *Paratylenchus microdorus*, *P. nanus*.

Most of the nematodes were isolated from the root soil (87 nematodes) and relatively few from the root (74 nematodes). Compared to other species, *Eudorylaimus monohystera* has shown superiority in terms of *Aphelenchoides parieticos*. There were 16 species of nematodes in the retail root and 74 species in the soil around the root. Of these, *Paralongidorus maximus* as ectoparasite, *Panagrolaimus longicaudatus*, *Encephalobus mucronatus*, *Cervidellus insubricus*, *Paraphelenchus pseudoparietinus*, *Aphelenchoides goeldii*, *Aph. Limberi*, *Aph.* Species such as *Subparietinus*, *Pratylenchus pratensis*, *P. tulaganovi* were found only at the root. Of the species found in the soil, *Eudorylaimus monohystera* differs from other species in numerical superiority. *Acobeloides butschlii*, *Aph*, are common species for soil and root. The number and species composition of nematodes in the Jambay Nature Reserve are also unique. In the Jambay Nature Reserve, 423 phytonemotes of 46 species were found in the growing retail space and surrounding soil. They belong to the families Enopli (2 species, 2 nematodes), Dorylaimida (9 species, 56 nematodes), Rhabditi (24 species and 232 nematodes) and Tylenchida (11 species 77 nematodes). *Aphelenchoides blastophorus*, *Pr. Pratensis* was noted. 28 species of nematodes were recorded from the roots and 52 species from the soil of the reptiles growing in the territory of Jambay reserve. One of the most common nematodes was *Acobeloides butschlii*. Of the identified nematodes, 14 species were found only in the root and 17 species in the soil only. 14 species were found both in the root and in the soil.

CONCLUSION

Thus, the distribution of nematodes in the retail plant and around its roots, the composition of the species has its own characteristics. The results of the analysis showed that the habitat of nematodes (the cell of the plant and its root environment) to some extent affects the formation of their species composition and grouping.

LITERATURES

- 1) Baermann G. Eine einfache Methode zur Auffindung von Anklystomum (Nematoden) Larven in Erdproben. Geneesk. Tijdschr. Nederl. India, 57: 131-137.
- 2) Witkowski T. Structura zgrapowania nicilni Zyzjacych uglebie upraw rolniczych. – Stud. Soc. Sci. Taruml. – 1966
- 3) Замотайлов А. С. Фитогельминтология: курс лекций для обучения по программам подготовки научно-педагогических кадров в аспирантуре – 35.06.01 Сельское хозяйство, направленность (профиль) – Защита растений / сост.. – Краснодар : КубГАУ, 2015. – 70 с.
- 4) Рахматова М.У., Бекмурадов А.С. Результаты изучения распространения фауны фитонематод гранатовых агроценозов Сурхандарьинской области Узбекистана // Universum: химия и биология : электрон. научн. журн. 2018. № 11 (53).
- 5) Хуррамов Ш.Х. Нематоды субтропических плодовых культур Средней Азии и меры борьбы с ними // - Ташкент.: Фан. 2003. С. 1-333.
- 6) Rossouw J., van Rensburg L., Claassens S., van Rensburg P. J. Jansen. Nematodes as indicators of ecosystem development during platinum mine tailings reclamation. The Environmentalist. 2008. Vol. 28. Issue 2. P . 99–107.
- 7) Tomar V. V. S., Ahmad W. Food web diagnostics and functional diversity of soil inhabiting nematodes in a natural woodland. Helminthologia. Vol. 46, 2009.Issue 3. P.