

PHYTONEMATODES OF THE APRICOT (*PRUNUS ARMENIACA*) IN THE SOUTHERN REGIONS OF THE SURKHANDARYA REGION OF UZBEKISTAN

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ABSTRACT:

The article provides data on the fauna and distribution of phytonematodes in the root soil and root system of apricot plants in the southern regions of the Surkhandarya region of Uzbekistan. In the fauna of phytonematodes in apricot plants, numerous species were *Cephalobus persegnis*, *Chiloplacus sclerovaginat*, *Ch. quintastratus*, *Panagrolaimus rigidus*, *Aphelenchus avenae*, *Aphelenchoides parietinus*, *A. composticola*, *A. limberi*, *A. blastophthorus*, *A. graminis*, *Helicotylenchus erythrinae*, *Pratylenchus pratensis* and *Ditylenchus dipsaci*.

KEYWORDS: Apricot, phytonematodes, order, fauna, root soil, root system, pararisobionts, eusaprobionts, devisaprobionts, phytohelminths of nonspecific pathogenic effect, phytohelminths of specific pathogenic effect.

INTRODUCTION:

Today in the world, providing the population with high-quality fruits is one of the most important tasks. Especially, in recent years, the high harmfulness from parasitic plant nematodes of fruit trees and shrubs, has led to a decrease in productivity and a deterioration

in the quality of products. Therefore, the disclosure of the variety of phytonematodes in different agrocenoses, the peculiarities of their species composition, distribution, identification of parasitic species and the development of integrated measures to combat them, acquire an important scientific and practical significance.

The development of subtropical fruit growing in Uzbekistan is an urgent task in solving economic and social problems and, first of all, the problems of providing the population with high-quality and diverse medicinal food products.

Common apricot (*Prunus armeniaca*) is a fruit tree species from the Apricot (*Armeniaca*) section of the *Prunus* genus of the Rosaceae family. Apricot is also called the fruits of the common apricot, like other types of apricot, from which several types of dried fruits are produced, first of all - kaisu, dried apricots, and also apricot.

MATERIALS:

To study the faunistic complex of phytonematodes of apricot plants in the period from 2019 to 2021. We collected phytonematodes from the root soil and root system of plants in 10 shirkat farms from 5 (southern) districts of the Surkhandarya region of the Republic of Uzbekistan. The studies were

carried out by the generally accepted route method [3].

During the phytohelminthological study, 500 samples of soil and root system of apricot plants were collected and analyzed.

METHODS:

Phytonematodes were removed by the Berman funnel method and fixed with a 4% formalin solution. Enlightenment of nematodes was carried out in a mixture of glycerol with alcohol (1: 3), and permanent preparations on glycerol were prepared for in-office processing of the material according to the Seinhorst method [7]. Soil samples for the presence of cysts forming nematodes were usually analyzed according to the standard Decker method [1].

The species composition of nematodes was studied under an MBR-3 microscope. To determine the species, we used morphometric indicators obtained according to the generally accepted De Man formula [4] in its modification according to Micoletzky [6]. The degree of dominance of phytonematodes in plant and soil samples was determined from the percentage state of individuals of certain species to the number of all those found by Witkowsky [5].

RESEARCH RESULTS:

As a result of the phytohelminthological studies carried out in apricot orchards in the southern regions of the Surkhandarya region of Uzbekistan, we found a total of 31 species of phytonematodes belonging to 21 genera, 14 families, 4 orders and 2 subclasses. The discovered nematodes are distributed according to orders as follows: the order Dorylaimida is represented by 5 species, the order Rhabditida-7, Aphelenchida-9 and Tylenchida-10 species (table).

Table. Taxonomic composition of apricot plant nematodes (by order)

Orders	Number of species	%	Number of individuals	%
Dorylaimida	5	16,1	105	8,9
Rhabditida	7	22,6	223	18,8
Aphelenchida	9	29,0	552	46,6
Tylenchida	10	32,3	305	25,7
Total:	31	100	1185	100

The results of the research showed that among the orders in terms of species composition, the order Tylenchida occupies the first place, which is 32.3% of the detected nematode species of apricot plants. In terms of the number of individuals, the first place is occupied by the Aphelenchida order, which is 46.6% of the total number of detected phytonematodes.

DISCUSSION:

Phytonematodes identified from the roots and rhizosphere of apricot plants, according to the ecological classification of A.A. Paramonov [2], belong to 5 ecological groups: pararisobionts, devisaprobionts, eusaprobionts, phytohelminths of a nonspecific pathogenic effect, phytohelminths of a specific pathogenic effect. Pararisobionts were found mainly in the apricot rhizosphere, where 86.3% of the total number of nematodes were recorded. The species *Eudorylaimus pratensis*, *E. similis*, *D.communis* are found in the root soil of plants in large numbers. The species *Nyngolaimus brachyurus*, *Enchodorella penetrans*, and *Leptonchus obtusus* are the smallest in terms of the number of individuals.

Representatives of the group of devisaprobionts were found in the root system and rhizosphere of plants. The species *Cephalobus persegnis*, *Eucephalobus oxyuroides*, *Acrobelides buetschlii*, *Chiloplacus propinquus*, *Ch.sclerovaginatius*, *P.rigidus* found in the rhizosphere and the root system of

apricot plants are the most numerous in terms of the number of individuals. The species *Proteroplectus varians*, *Heterocephalobus latus*, *Cervidellus serratus* were in insignificant numbers in terms of the number of individuals. The species *Proteroplectus varians*, *Heterocephalobus latus*, *C. serratus* are found only in the rhizosphere of apricot plants.

From eusaprobies *Rh. brevispina* is found in large numbers in the root system of plants and in the root soil. *Rhabditis intermedia* is found only in the rhizosphere of plants, and in the smallest number of individuals.

The most numerous in terms of the number of species and individuals was the group of phytohelminths of nonspecific pathogenic effect. The species *Aphelenchus avenae*, *Aphelenchoides parietinus*, *A. bicaudatus*, *A. blastophthorus*, *A. composticola*, *A. graminis*, *A. limberi*, *A. macronucleatus*, *D. myceliophagus* were found in the rhizosphere and apricot root system, and were the most numerous in terms of the number of individuals. Phytonematodes *A. cylindricaudatus*, *A. eremitus*, *Seinura citri*, *Filenchus leptosoma*, *Aglenchus agricola* were insignificant in terms of the number of individuals. Species *A. eremitus*, *S. citri*, *A. agricola* were found only in the rhizosphere of plants, the rest of the species were recorded in the root system and root soil.

Among the phytohelminths with a specific pathogenic effect, the dominant species were *Bitylenchus dubius*, *Quiniculcius capitatus*, *Helicotylenchus dihystra*, *H. erythrinae*, *Pratylenchus pratensis*, *Paratylenchus hamatus*, *Ditylenchus dipsaci*. They were found in the rhizosphere and the root system of plants, and were the most numerous in terms of the number of individuals. The species *Xiphinema basiri*, *X. elongatum* were found in single specimens only in the rhizosphere of apricot plants.

CONCLUSION:

The analysis of the conducted studies showed that the fauna of phytonematodes of apricot plants in the southern regions of the Surkhandarya region of the republic is insufficient. Therefore, carrying out large-scale phytohelminthological studies, determining the faunistic complex of phytonematodes in apricot orchards of this territory and justifying measures to combat parasitic species are of great scientific and practical importance in the fruit growing of Uzbekistan.

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