



PHYTONEMATODES OF SOME FRUIT TREES IN THE SURKHANDARYA REGION OF UZBEKISTAN

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Annotation

The article provides data on the fauna, taxonomic composition and distribution of plant nematodes of fruit trees in the conditions of the Surkhandarya region of Uzbekistan. As a result of the study, 35 species of plant nematodes belonging to 24 genera, 15 families, 4 orders and 2 subclasses were registered in the root system and rhizosphere of some fruit trees (apricot, peach).

Keywords: fauna, distribution, plant nematodes, Surkhandarya region, fruit trees, apricot, peach, root system, root soil.

Introduction

Of great importance in the life of every person is the production of fruit and berry crops - one of the most important components of medical and dietary nutrition, a source of vitamins and other vital areas of nutrition that ensure stable longevity and a healthy lifestyle from infancy to old age.

In recent years, mass drying of shoots, branches and plants has been noted in natural and agrobiocenoses, leading to the death of orchards and berries. In the complex of harmful organisms, phytoparasitic nematodes have received the greatest distribution and economic importance.





It is known that phytoparasitic nematodes can cause serious crop losses and are among the most significant pests of various agricultural crops, especially perennial fruit and berry crops.

The role and significance of phytoparasitic nematodes for agricultural crops is not limited to parasitism on the roots, vegetative and reproductive organs of host plants. Numerous species of nematodes are carriers of viral, fungal and bacterial infections. Phytoparasitic nematodes carry out their vital activity either in the soil as ecto- and endoparasites and usually damage the underground parts of plants, or as endoparasites of aboveground organs [3].

The purpose of our research was to study the species composition, distribution and ecology of plant nematodes of fruit trees in the conditions of the Surkhandarya region of Uzbekistan. The paper presents the preliminary results of our research. Comprehensive scientific work on the study of the fauna of phytonematodes of fruit trees in the southern part of the Republic of Uzbekistan continues.

Material and Research Methods

The material for this work was samples of some fruit trees (common apricot (*Prunus armeniaca* L.), common peach (*Persica vulgaris* Mill.)), collected in orchards in the Surkhandarya region. The preparation of samples for analysis was carried out in the summer period of 2021-2022. The studies were carried out by the generally accepted route method [2]. To study the nematodological complex of fruit trees, 275 plant and 275 soil samples were collected and analyzed. Of these, 1022 plant nematodes were extracted by various methods.

Phytonematodes were extracted by the Berman funnel method and fixed with 4% formalin solution. The nematodes were clarified in a mixture of glycerol and alcohol (1:3), and permanent preparations on glycerol were prepared for laboratory processing of the material according to the Seinhorst method [7]. Soil samples for the presence of the cyst nematode were usually analyzed according to the standard Dekker method [1].

The species composition of nematodes was studied under an MBR-3 microscope. Species were identified using morphometric parameters obtained according to the generally accepted De Man formula [4] in its modification according to Micoletzky [6]. The degree of dominance of plant nematodes in plant and soil samples was determined from the percentage of individuals of individual species to the number of all detected by Witkowsky [5].





Results

This paper presents the results of a preliminary analysis of the selected material. As a result of nematological studies of fruit trees in the Surkhandarya region of Uzbekistan, we found 35 species of plant nematodes belonging to 22 genera, 14 families, 4 orders and 2 subclasses.

Apricot Nematodes

In our material, in the roots and rhizosphere of sea buckthorn plants, we identified 19 species of phytonematodes belonging to 13 genera, 10 families, 4 orders, and 2 subclasses. Species *Tylencholaimus minimus*, *Diphtherophora communis*, *Eucephalobus oxyuroides*, *Panagrolaimus rigidus*, *Aphelenchus avenae*, *Aphelenchoides parietinus*, *Quinisulcius capitatus*, *Helicotylenchus dihystrera*, *H.erythrinae* were found in large numbers in the root system and root soil of sea buckthorn. Species *Rhabditis brevispina*, *Filenchus leptosoma*, *Aglenchus agricola* were found in insignificant amounts.

Peach Nematodes

In the root system and root soil of hawthorn, 16 species of phytonematodes belonging to 11 genera, 9 families, 4 orders and 2 subclasses have been registered. Among the found phytonematodes, *Cephalobus persegnis*, *Acrobeloides buetschlii*, *Chiloplacus quintastratus*, *Panagrolaimus rigidus*, *Aphelenchus avenae*, *Aphelenchoides parietinus*, *A.composticola*, *Quinisulcius capitatus*, *Helicotylenchus dihystrera*, *H.erythrinae*, and *Ditylenchus dipsaci* species dominated. Species *Rhabditis brevispina*, *Xiphinema basiri*, *X.elongatum* were few in number of individuals.

Conclusion

The analysis of the conducted studies showed that the fauna, ecology, systematics, features of the distribution of plant nematodes of fruit trees in the conditions of the Surkhandarya region of Uzbekistan are insufficient. Therefore, conducting large-scale phytohelminthological studies in this area, determining the faunistic complex of phytonematodes of fruit trees and substantiating measures to combat parasitic species are of great scientific and practical importance in the national economy of Uzbekistan.





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