SPREAD OF PARASITIC PLANT NEMATODES IN SURKHANDARYA REGION

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Abstract. This study analyzes the distribution of parasitic nematodes on over 20 species of cultivated and weed plants in the Surkhandarya region. Approximately 50 species of parasitic nematodes were recorded, including four species of gall nematodes. Additionally, representatives of the genera *Pratylenchus*, *Tylenchorhynchus*, *Paratylenchus*, *Helicotylenchus*, and *Rotylenchus* were identified.

Keywords: Nematodes, parasites, fauna, *Meloidogyne*, *Pratylenchus*, *Tylenchorhynchus*, *Paratylenchus*, *Helicotylenchus*, *Rotylenchus*.

The Surkhandarya region, characterized by its subtropical climate, supports the growth of subtropical crops such as bay laurel, fig, pomegranate, persimmon, jujube, peanut, cotton, and various vegetable and melon crops. The diversity of crops in the region is of interest in terms of their infestation by phytoparasitic nematodes.

According to limited literature and our studies, approximately 55 species of parasitic nematodes have been registered on various plants in the Surkhandarya region. This article lists these nematodes with indications of their host plants and locations. The sequence of species is presented according to their harmfulness.

Materials and Methods. The study was based on samples of subtropical fruit trees and vegetable-melon crops collected from agrocenoses in the Surkhandarya region. The research was conducted using the standard survey method. Samples were collected during the summer seasons.

Phytoparasitic nematodes were extracted using Berlese funnels and preserved in a 4% formalin solution. Clearing of nematodes was performed with a mixture of glycerin and alcohol.

Soil samples for cyst-forming nematodes were analyzed using Seinhorst's rapid method and Decker's standard methodology. Species identification was performed under a microscope based on morphological parameters using de Man’s formula.

Results and Discussion

Gall Nematodes. The first record of nematodes parasitizing plant roots dates back to the mid-19th century. In 1855, M. Berkeley described root galls on greenhouse cucumbers containing numerous microscopic eggs and larvae.

In 1877, French naturalist Jobert discovered root galls on coffee trees in Brazil. Under the microscope, he identified small pear-shaped females and transparent eggs containing thread-like worms.

By 1887, E.A. Göldi published observations of coffee tree diseases, including root galls caused by *Meloidogyne exigua*.

Pratylenchus. Several species of *Pratylenchus* were found in the Surkhandarya region, including *P. pratensis*, *P. penetrans*, *P. convallariae*, and *P. crenatus*. These nematodes were recorded on crops such as sugarcane, figs, and pomegranate, as well as weeds like crabgrass.

Tylenchorhynchus. Species such as *T. dubius*, *T. cylindricus*, and *T. nanus* were identified in large numbers on crops like sugarcane and cotton, as well as on weeds. Severe infestations were associated with poor root development and reddish spots on affected plants.

Helicotylenchus. Nematodes like *H. erythrinae*, *H. multicinctus*, and *H. nanus* were found in the root systems of laurel, jujube, persimmon, and melons. These nematodes were associated with significant plant damage, affecting growth and productivity.

Rotylenchus. Species of *Rotylenchus* were recorded in areas like the Denau and Sherabad districts, affecting sugarcane, pomegranate, and tomatoes.

Conclusion. The parasitic nematodes identified in the agrocenoses of the Surkhandarya region have both theoretical and practical significance. Further studies are needed to develop effective management strategies for these pests.

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