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EMBOSSED NEMATODES PARASITIC IN ARTIFICIAL BIOCENOSES AND THEIR DESCRIPTION

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Abstract
Parasitic nematodes are one of the main pests causing damage to agricultural crops. Therefore, the study of their structure, bioecology and distribution characteristics is considered a necessary factor that helps to increase productivity and quality.

Keywords: Root knot nematodes, Meloidogyne incognita, Meloidogyne Güeldi, sexual dimorphism, stylet, bulb.

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Introduction

It is known that agriculture is one of the sectors that has an indispensable and important place in the national economy of Uzbekistan. In 2010, 54% of Uzbekistan's gross domestic product (GDP) was agricultural products. For this reason, it is important to direct scientific achievements to eliminate existing problems in agriculture. One of the factors hindering the development of agriculture is the death of plants due to pests. One of the parasitic nematodes that cause great damage to agricultural crops in Uzbekistan are nematodes of the genus Meloidogyne Güeldi, 1887, which are considered dangerous pathogens. The soil-climatic conditions of our republic are affected by nematodes (Meloidogyne). Meloidogyne male filamentous, en. 1.2-1.9 mm, female pear-shaped, uz. 0.8–1 mm. It parasitizes the underground part of various plants and creates a swelling (bump). It especially strongly harms vegetables (melons, pumpkins, watermelons), vegetables (potatoes, cucumbers, tomatoes, carrots), technical crops (hemp, cotton in some places). Female nematodes lay several hundred to 2,000 eggs per year in a special egg sac (ootheca). puts The larvae hatch from the eggs into the soil and penetrate the young roots. Under the influence of nematode nematodes, bumps with a diameter of 4 mm to several cm (sometimes 25-30 cm) appear on the plant affected by nematodes. Infected plants slow down their growth and development, wilt or completely dry up during hot summers. More than 60 types of nematodes on Earth, including 5 species in Uzbekistan (southern, Javan, peanut, cotton, northern nematodes) damage crops and more than 250 species of cultivated, ornamental, foreign and wild plants have been recorded as parasites. The taxonomic position of these nematodes is as follows:

Type Roundworms – Nemathelmintes Class Nematoda – Nematoda Subclass Secernentes – Secernentea Order Tylenchida – Tylenchida

Araxis bump nematode - Meloidogyne arenaria harms wheat and some grain crops. Nematode bumps are formed instead of grains in infected wheat ears. There are 15-17 thousand nematode larvae in the state of anabiosis in the bump. Larvae can be kept alive in dry grains for up to 20 years. When the larvae fall into moist soil with grain, they leave the soil through the water-soaked ridge and enter the leaf axils through the roots of wheatgrass. When the wheat ear

shoots, it goes to the flower bud; it feeds, matures and reproduces in this place. Fertilized female nematodes lay up to 2500 eggs, each egg hatches into an invasive larva.

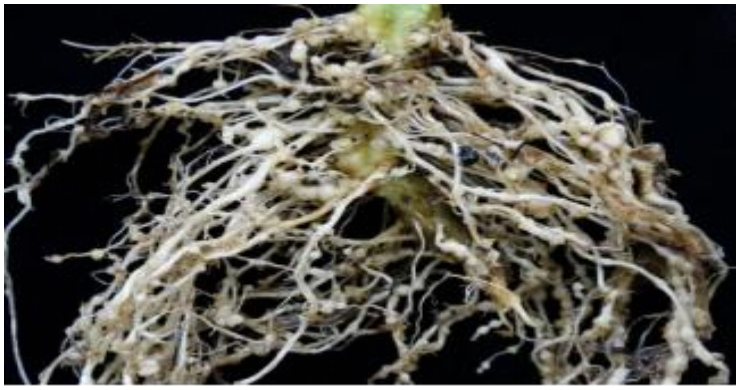

Fig. 1. Embossments formed by the Araxis nematode on the root

2. Cotton boll nematode - M. incognita acrita Cotton bollworm nematode M. acrita causes great damage to cotton and other crops in the southern regions. Nematodes cause great damage to crops in areas with light soils, killing 40-60% of the crop. The nematode causes great damage to more than 200 plants, especially wheat, cucumber, tomato, melon, potato, hemp, and cotton.3. Southern relief nematode - M. incognita

Fig. 2. Vegetables infected with Southern nematode

4. Javan relief nematode - M.javanica
5. Northern relief nematode - M.hapla

A disease caused by nematodes in plants is called meloidognosis. The initial external symptoms of meloidoginosis are manifested in the form of retardation of growth in the above-ground parts of the plant, paleness of the leaves (chlorosis), crushing and premature ripening of fruits. In the case of relatively severe damage to plants, the leaves of the plant wither and parts of the stem begin to dry, where the drying process begins from the lower part of the plant stem. During the next development, the plant dies completely as a result of damage. It is noted that newly planted sprouts and seedlings in areas of soil heavily infected with nematodes completely dry up. In some cases, it is noted that the plant dies before the swelling occurs in the root. In some cases, as a result of the strong resistance of plants to nematodes, symptoms of the disease are imperceptibly reflected in the above-ground parts of the plant in the initial period of meloidoginosis. However, as a result of the development of the disease in the next

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stages, the number of larvae in the root of the plant increases and the development of disease symptoms increases. In turn, this process can develop as a result of irregular irrigation of crop fields in dry weather conditions. As mentioned above, in addition to the external symptoms of meloidoginosis disease in the above-ground parts of the plant, the swelling of the root of the plant under the influence of nematodes begins a few weeks after the entry of the invasive larvae. The size of the bumps formed on the root of the plant is considered to depend on the specific condition of the parasite type, and it is also noted that these sizes depend on the disease resistance of the plant, nutritional conditions and a number of other factors.

It is known that agrotechnical and chemical methods of combating plant-damaging nematodes are used today. When using chemical methods, chlorpicrin, nemagon, methyl chloride preparations are used. As a result of the use of chemical drugs, nematodes get used to them, besides, chemical drugs have an effect on beneficial organisms in the soil without having the desired effect. In addition, it leads to the accumulation of chemicals in the soil and the deterioration of the soil composition. Therefore, it is necessary to pay great attention to biotechnological methods to eliminate the main disadvantages of using chemical methods to protect plants from nematodes. Also, in the fight against harmful nematodes, measures such as plowing the soil and drying it in the sun, planting varieties of crops resistant to nematodes, crop rotation, drying the soil in the sun, and steaming the soil in greenhouses. it will be appropriate if used. Biotechnology requires the production of technologies for the production of viruses, bacteria, fungi, simple animals and insects, as well as biologically active substances (antibiotics, hormones, pheromones) of living organisms in the protection of plants. Therefore, finding methods of biological control against nematodes is a very important and urgent problem. Control measures: plowing the soil and drying it in the sun, planting crop varieties resistant to nematodes, crop rotation, drying the soil in the sun, steaming the soil in greenhouses.

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