



ANALYSIS OF SOIL NEMATODS PLANTATIONS PLANTED IN MELILOTUS OFFICINALIS DESCR

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Annotation

Medicinal plants are the main raw material for the pharmaceutical industry. The study of soil fauna, soil composition, and the proper organization of optimal soil conditions for plants are important factors in obtaining high yields for pharmacology from various types of medicinal plants. Medicinal herbs (*Melilotus Officinalis* Descr.) Are used in medicine as a emollient and effects (wound absorption). In the plantations planted in *Melilotus Officinalis* Descr., various microorganisms, bacteria and soil nematodes have a significant impact on plant growth, development and yield. *Melilotus Officinalis* Descr. in cultivated field soils, the nematode fauna is dominated by plant roots and nematodes found in the soil around the roots.

Key words: nematodes, soil, medicinal plants, saprobionts, agriculture.

Introduction

Today in our country a great deal of attention is paid to the cultivation of medicinal plants, the expansion of their plantations and the acclimatization of various medicinal plants. Presidential Decree No. PQ-4901 of November 26, 2020 "On measures to expand the scope of scientific research on the cultivation and processing of medicinal plants, the development of their seed production" The adoption of the resolution shows that the reproduction of plantations of medicinal plants and the determination of their soil analysis is one of the urgent issues. According to the World Health Organization, 60% of the available drugs are drugs derived from medicinal plant raw materials. At present, 112 species of medicinal plants are used in official medicine in the Republic of Uzbekistan, and 80% of these medicinal plants are naturally growing plants. Naturally growing medicinal plants also have limited raw material reserves, and the protection of them, the study of their bioecological properties, the proper use of raw materials and the development of scientifically based methods of reproduction are among the urgent issues. It is important to study the soil fauna of the fields planted with medicinal crops.





Microorganisms, viruses and nematodes live in the soil and have different positive and negative effects on the plant organism. Nematodes are found in large numbers in the soil and form the bulk of multicellular organisms. The process of decomposition of any organic matter in the soil occurs in the presence of nematodes, and the soil is saturated with organic and mineral substances. Many species of nematodes parasitize various organs of humans, animals and plants, cause many infectious diseases in humans and animals, leading to a decrease in plant productivity. The body of roundworms This layer protects them from any harmful substances. The mature cuticle layer is the main means of protection, allowing it to survive in a variety of environmental conditions. The pattern of movement of nematodes is also unique, they move differently in different layers. . [2].

Research material and methodology. One of the urgent issues is the identification of various pathogenic microorganisms in the plantations of medicinal plants and the development of measures to combat them. Nematodes in the fields planted with medicinal algae (*Melilotus Officinalis* Descr.) Belong to different groups of species in terms of root and peripheral composition of the plant. The study of the soil fauna of the fields planted in Kashgar is very important for the agricultural and pharmaceutical industries. Medicinal Kashgarbeda is a 2-year-old plant of the family Fabaceae, 50-100 cm tall (sometimes even larger). The root is a branched arrow root. The leaves are compound with 3 petals, the flowers are in small yellow inflorescences. The fruit is an ovoid, obtuse, gray, hairless, single-seeded pod. Its above-ground part is distinguished by its medicinal properties. [3] .There is a group of nematodes in the soil that greatly contribute to the improvement of soil condition. Nematodes, which directly damage plants, are directly involved not only in themselves, but also in the spread of bacterial, fungal and viral diseases that they bring with them.

Various methods are used to study the fauna of soil nematodes. The Berman method is widely used in phytohelminthology for soil and plant sampling. Envelope soil samples were collected from field soil originally planted in Kashgar (*Melilotus Officinalis* Descr.). Soils for the study were taken from the Khiva Mamun Academy of Khorezm region in the north-western part of Uzbekistan, where medicinal plants were planted. The soils of the area are alluvial, meadow, sandy, bald and desert soils. The Berman method is based on the active release of phytonematodes from the affected plant specimens, and the released nematodes sink to the bottom of the fistula-test tube. To determine the

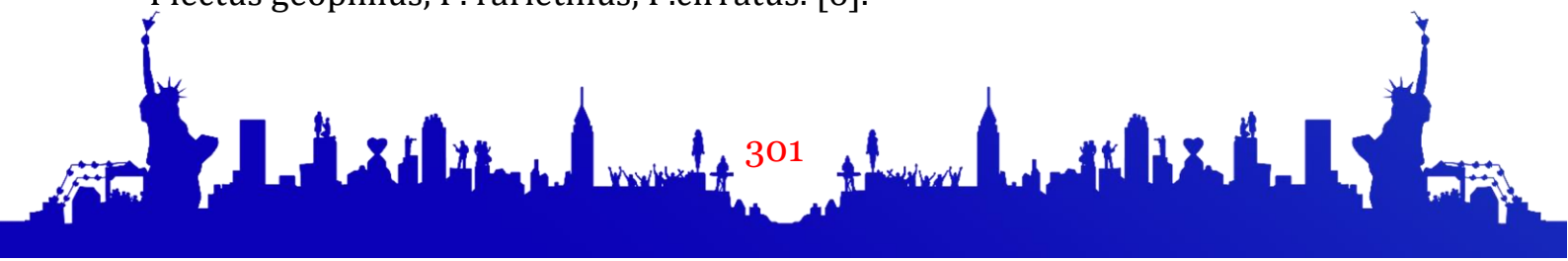




total number and type of phytohelminths in plant organs, plastic or glass funnels with a diameter of 12-15 cm are used. The thinned part of the funnel is covered with a 10-15 cm rubber hose and clamped using a clamp spring. In the next free part of the rubber hose is placed an entomological test tube for the collection of phytonutrients. The funnels are placed on a flat screen made of iron or plasma with a diameter of 10-12 cm and a grid of 0.5-2 mm. The funnel is filled with pure tap water or 0.15-0.3% hydrogen peroxide solution in such a way that the plant specimens placed on the sieve should be completely immersed in the liquid. In addition, plant specimens can be placed on a milk (cotton) filter or hygroscopic cotton to allow the nematodes to be isolated cleanly in the test tube. In Kashgar (*Melilotus Officinalis* Descr.), A label with the sample number and date taken from the field soil planted is placed on the edge of the funnel.

Conclusions and conclusions. The species composition was determined using nematode detectors isolated from the soil of medicinal kashkarbeda by the Berman method. Phytonematoids are taken through a entomological needle into a watch glass dripping with a drop of water. They are then given a mixture of alcohol-glycerin (one part alcohol, one part glycerin) and left for a day. For the preparation of permanent drugs, nematodes are taken from the watch glass to glycerin-gelatin. [1]. The morphological description of phytonematoids is systematic. In determining the type of nematodes, it is necessary to know their body structure, using the formula of de Man (1884) and formulas modified by Metlitsky.

In Kashgar (around the root and family of *Melilotus Officinalis* Descr.) 7 families, 32 species of nematodes belonging to 21 genera were identified. According to the ecological classification of AA Paramonov and in addition to the systematics of OZ Metlisky, TV Volkova, AS Eroshenko, nematodes are divided into the following 4 groups: pararizobionts, eusaprobionts, devisaprobionts, phytogements. [4]. In the upper layer of the root (0-30 cm) of the medicinal plant were found 6 nematodes belonging to 3 groups, and in the deeper layer of the root (30-60 cm) 15 nematodes of 8 species were found. Soil samples from the soil around the roots were taken from the top and bottom soils along 2 horizons as above. 5 3 types of namados were identified in the upper layer and 6 3 types in the lower layer. Devisaprobionts or semi-saprozoic nematodes are nematodes that feed on humus or dead organic matter and are found in living, healthy plant tissues, and the following have been found in the experiment: *Plectus geophilus*, *P. rarietinus*, *P. cirratus*. [6].





Eusaprobionts are true saprobiotic nematodes. They are common in damaged saprobiotic centers of plant tissues and actively spread pathogens to healthy plant tissues. (*Rh.oxycerca*, *Rh.intermedia*). [5] Two species of phytoparasites were found. Parasites that cause real damage to plants in this group cause nematodes. No parasitobionts were found in the soil.

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