

Ecological and Taxonomic Characteristics of Parasitic Phytonematoids Found in Rice Plants in the Southern Regions of Uzbekistan

Khaydarova Pardaxol Bobokulovna

Doctor of philosophy (Ph. D) Biology

Abdullaeva Dilduza Rixsikhodjaevna

Doctor of philosophy (Ph. D) Biology

Tashkent State Pedagogical University named after Nizami

Annotation: The course "Phytohelnthology" studies representatives of the group of animals organisms, among which there are serious pests of many s / x cultures. The name "nematodes" (nem - "thread", oides - "like") indicates the appearance of the animals of this group. These are elongated worms, round in diameter, the size of which varies enormously. As well as small (0.1-0.2 mm long) types of roundworms are such as e.g. some parasites of warm-blooded animals, lengthwhich to- reaches up to 8 meters and they are in the placenta of cetaceans. All nematodes are environmentally practical and therefore are widely distributed strangers all over the globe. So, free-living nematodes live in the seas, in fresh water swing and in the soil. Not a single saprobiological can do without the participation of nematodes. sky process. Typically 100 cm³ arable soil 4000-5000 nematodes, species the composition of which will largely depend on the soil and climatic factor and plantabout the cover. In the soil, nematodes make up 90% from all discovered multicellular living organisms. Many nemato- they adapted to life in other organisms and became obligate or optional parasites. From the general helminthological science, which comprehensively studies parasitic worms and diseases associated with them in the human body and animals, a special direction stands out - phytohelnthology, which studies plant parasites and diseases identified by them and takespro intermediate place between entomology and phytopathology.

Key words: Phytohelminthology, helminthological science, entomology and phytopathology, Ministry of Agriculture, Rice selection, cultivation techniques.

Phytohelminths are real plant pests. Characteristically constant lingering stay in plant organs and powerful development of the esophageal glands, the secret of which affects the tissues of the plant - the host, and originate from changes not only in the damaged organ, but also in the plant as a whole. They de- affect specific pathogenic effects, and nonspecific pathogenic effects. According to the methods of parasitism, phytohelminths are divided into two groups: migratory and sedentary (sedentary, sedentary). For migrants males and females retain their typical slender body shape and can move in plant and soil. Among them, ecto- and endoparasites are distinguished. Ectoparasites feed on the surface of plant organs and in the process All life cycles move from one food place to another.

Endoparasites or internal ones in the affected organ cause necro- shl and ulcers. Sedentary phytohelminths have developed very special trophic connections with the plant host. Phytohelminths stimulate the formation of giant cells in plant tissues, they themselves feed on their contents bench press. Females acquire a swollen shape, and lose the ability to actively change of place and they become sedentary. Phytohelminths of nonspecific pathogenic effect, I meet growing in plant tissues, affected by other diseases. They do not call there are characteristic signs of pthohelminthiasis. Paramonov believes that the leaders of this group feed not only on the cells of the affected plants, but also mycelium of associated fungi. Phyohelminths with a specific pathogenic effect, causing specific phytohelminthiases and parasitic only in tissues of healthy th plants. Unlike saprobic nematodes in mycohelminths and phyto- helminths mouth turned into a sharp hollow needlesy or stiletto. With stylet parasitic nematodes pierce plant cells, hyphae mushrooms and feed on their contents. Mycohelminths are typical mycophages; they live off healthy, non- damaged fungi, piercing the wall of the mycelium and sucking out its contents my. Their role can be twofold.

On the one hand, they can be harmful - mi, when they parasitize on carnivores (trichoderma) and on fungi - mycorrhizal formulators and cultivated mushrooms (champignons), on the other hand, when mycohelminths inhibit the development of phytopathogenic fungi, their role useful and they can be used in the biological fight against parasites cic mushrooms of plants.

To establish to which environmental group the found in the plant material of the nematode, you can apply a fairly simple reception - place nematodes in a 1% solution of methylene blue. Parasitism you will be stained within 1 minute, for coloring eusaprobionts it is necessary to wait for 5-10 minutes, the devisaprobionts will color in 15 minutes, and phytohelminths - the mint will not color at all. This is ensured by the fact that the outer cover cuticle - differs in its permeable properties. Phytohelminths have the greatest ability to delay penetration of various substances from the environment into the body cavity. Consequently phytohelminths are well protected from various external influences.

Harmfulness of phytohelminths and economic damage to Agriculture Symptoms observed in plants with nematode infestation, depend on the species of the parasite, the age and type of the host plant, as well as from the site of the lesion, the most characteristic: root galls, ulcers in different layers of tissue, dry rot, abnormal formation of root and branching roots, growth inhibition, thickening and bending of stems and leaves, discoloration - necrosis, stem, leafy, flowering and mixed Galls. According to Metlitsky, 1996 at the II International Nematodological congress, in which more than 400 scientists from 54 countries, over 3,000 species of phytohelminths have been recorded, giving rise to all cultivated plants annually destroy about 10% of the world's plant products. The total losses are estimated at \$ 100 billion.

Decrease harvest of field, vegetable, industrial, fodder, fruit and berry crops due to phytohelminths is on average 6–25%. In some cases, crop losses are 70–90%. In addition to direct lower harvest, they carry viruses, fungal and bacterial diseases, reduce the efficiency of using mineral and organic fertilizers, lead to mass death of plants in drought and during their overwintering. To rot - food stocks. When evaluated on a 5-point system, the most harmful nematode species of the genus *Meloidodityne* are recognized in the world, then with significant gap from *Heterodera*, *Urobodera*, *Ditylenchus*, *Tylenchulus*. In Europe, however, the genus *Heterodera*, *Clobodera*, *Meloidodityne*. Modern costs for the study of plant nematodes and development measures to combat them does not exceed \$ 125 million or about 0.2% the cost of losses from nematodes, which is clearly not enough.

The digestive and sex organs are located in the body cavity or protocoele. system. The digestive system of tubular nematodes and sub- is divided into three sections: the anterior, middle, and hind gut. Front and the last section has a cuticular chitinous lining, in contrast to middle department. The anterior gut consists of the mouth and esophagus. The oral cavity or stoma in certain systematic groups of ena is different and consists of five departments: cheilostomy, prostomy, mesostomy, metastoma and melostoma, the internal structure of these departments varies. The most characteristic type of stoma is the Phasmidian subclass, where most of the species we are interested in are worn, consider the oral cavity (rhabditoid stoma).

The anterior three sections of rhabditids have a cylindrical shape. Fixed dentate appendages are located on the metostome. - onkhi. A cephaloboid stoma is characterized by a constriction between the cheilostomy and simple and ring-shaped of the remaining parts of the oral cavity. Cephalobids when feeding on plants, lip and head probes are used for fur natural destruction of plant tissue, fragments of which the nematode allowed into the esophagus. The diplogasteroid oral cavity, in contrast to the rhabditid stoma, has shortened first three sections. In the metastoma, instead of onchs, they form there are mobile teeth. The appearance of mobile teeth in the oral cavity is di- plogasterid is associated with the predation of these nematodes. The telenchoid stoma is transformed into a stylet, which was formed from the nokof the oral cavity, is the most characteristic organ of phytohelminths. Stiletto in the nematode esophagus receives only liquid food. The phytohelminth stylet can be simple or complex. Simple sty- years - elongated conical point, cylindrical body and base with thickened walls.

The complex stylet is distinguished by the development at the base of three thickenings - the basal heads, to which the muscles that extend the stylet are attached. In- Stylet gating occurs due to the elasticity of the esophageal tissues. Dorilaimoid stoma of root nematodes is represented by a spear, which was formed from the tooth of the cuticular outgrowth in the oral cavity, which The second serves to pierce the membranes of plant cells. The esophagus follows the oral cavity. It consists of the following parts stev: procorpus,metacorpul bulb, isthmus or isthmus, cor- dialal section or cordial bulb. The rhabditoid esophagus is characterized by a powerful development of muscles, the muscles of the metacorpul bulb are especially strongly developed. Isthmus embrace- chen by the periopharyngeal nerve ring and the musculature is less

developed here. The cardinal bulb is in the form of onions, where the grinding takes place food lumps entering the stoma. In rhabditids, esophageal jelly Threats are poorly developed, since in most of them they belong to saprobionts. The structure of the diplogasteroid esophagus resembles a rhabditoid esophagus, but the cardiac department is devoid of musculature, the associated crushing apparatus, and turned into a purely glandular formation. These changes are like changes in the stoma are due to the transition to predation. Movable meta- Ostomy teeth serve as diplogasterides to tear the victim's body wall. The cephaloboid esophagus is thickened-cylindrical. Cardiac a muscle-type bulb with a crushing apparatus. Telenchoid structure esophagus is found in typical phytohelminths, the presence of summer and powerfully developed glands of the cardiac department. The aphelinchoid esophagus is also found in true phytohelminths. The esophageal glands do not form a cardiac bulb, but free but hang down into the body cavity. The doraclaimoid esophagus consists of two sections, the anterior thin go, almost devoid of muscles and posterior thickened with powerful radi- muscle muscles. Dorylaymoid foode is found in nematodes of the subclass aphas- midday. The midgut is a single-layer tube endoderm cells, where food is absorbed. The middle intestine is devoid of musculature and glands. Food already processed by enzymes comes here secretion of the esophageal glands. Pain accumulates in the walls of the midgut. the same amount of reserve nutrients, and then this part of the intestinal ka takes on the importance of a fat body.

In recent years, special attention has been paid to the cultivation of agricultural products, increasing exports, the introduction of modern technologies in the industry and the rational use of water resources. However, today's growing water shortages, population growth, and other human factors are necessitating the introduction of water-saving technologies to grow water-intensive crops. In order to improve the continuous and efficient system of cultivation, storage and processing of rice in the country, to provide the domestic consumer market with rice products and increase export potential, to strengthen research in this area and the widespread use of water-saving technologies in rice cultivation: 1. Elite seed farms on the basis of rice clusters of the Ministry of Agriculture, the Ministry of Innovative Development, the Council of Farmers, Dehkan Farms and Landowners of Uzbekistan or rice farms growing rice in the permitted areas (hereinafter in places - Seed farms). Bunda: The Seed Development Center, in

cooperation with the Rice Research Institute, will establish a system of generational seed multiplication on seed farms; Seed farms receive and organize the propagation of high-quality seeds from foreign companies under quarantine control or from the Rice Research Institute; land is allocated for the cultivation of elite and pedigree rice in accordance with the legislation; sown seed rice fields will be tested and certified in accordance with the established procedure; Seed farms clean, sort and pack the seed rice. Deputy Prime Minister Sh.M. Ganiev, the Ministry of Agriculture (J.A. Khodjayev) together with the Council of Ministers of the Republic of Karakalpakstan and regional administrations to take measures to establish seed farms in the regions in accordance with Annex 1. 2. To establish a procedure according to which from June 1, 2021, the issuance of a certificate of conformity to seed rice is also allowed to be carried out by duly accredited legal entities. 3. The Ministry of Innovative Development, as an exception, from February 1, 2021 to announce a competition of targeted projects for up to 5 years related to the development of rice selection, cultivation techniques and seed systems in the framework of scientific and technical programs. At the same time, it should be taken into account that the fundamental and practical projects in the field of selection are a logical continuation of previous projects and ensure their continuity. 4. Ministry of Agriculture (J.A. Khodjayev) Ministry of Water Resources(Sh.R. Khamrayev) and the Academy of Sciences (B.S. Yuldashev): to develop a program of crop rotation of rice in accordance with the soil and climatic conditions of the regions and to keep track of the area under crops, as well as to establish a system of crop rotation on seed farms. At the same time, a science-based crop rotation system will be introduced to prevent the cultivation of rice in one field for more than 2 years; To study the soil and climatic conditions of Khorezm region, to carry out pilot projects on import of seeds of high-yielding varieties of rice from abroad and their propagation in local conditions. At the same time, based on the results of the experiment, measures will be taken to apply this practice in other regions of the country. 5. The Council of Ministers of the Republic of Karakalpakstan, regional administrations, the Ministry of Agriculture, the Ministry of Water Resources, the Council of Farmers, Dehkan Farms and Landowners of Uzbekistan in order to widely use water-saving technologies in rice cultivation: By 2021, transplant at least 20 percent of

the total rice area, introduce at least 50 percent of the land leveling system using laser equipment, and plant at least 30 percent of the rice using modern seed drills;

Approve proposals to plant at least 40 percent of the total rice area by 2022, to introduce a laser leveling system in at least 70 percent, and to plant at least 50 percent of the rice using modern seed drills. Deputy Prime Minister Sh.M. Ganiev, together with the Chairman of the Council of Ministers of the Republic of Karakalpakstan and the governors of the regions, should take measures to fully implement these proposals and further expand them from 2023. 6. Council of Ministers of the Republic of Karakalpakstan (Sariev QR), Khorezm region khokimiyat (FU Ermanov), Ministry of Innovative Development (IY Abdurahmonov), Ministry of Water Resources (Sh.R. Khamrayev), Ministry of Agriculture (JA Khodjayev) and in collaboration with the Academy of Sciences (BS Yuldashev) during the rice planting season 2021, as an experiment, in the relevant areas: Cultivation of rice on 500 hectares using drainage water; Cultivation of rice on an area of 50 hectares using traditional irrigation methods, but without watering at night; Establish rice cultivation on 20 hectares by drip irrigation and drip irrigation on 20 hectares. The Ministry of Agriculture should submit a detailed report on the results of the experiment and a program of measures for the widespread use of these planting and irrigation technologies in 2022 to the Cabinet of Ministers by December 1, 2021. 7. To determine that till December 31, 2021 the agricultural producers who have bought modern seed drills and the equipment for sowing of rice, will be reimbursed from the State budget up to 20% of cost of the purchased seed drills and the equipment for planting. . The Ministry of Agriculture (J.A. Khodjayev) together with the Ministry of Finance (T.A. Ishmetov) within a month to develop a procedure for reimbursement of part of the cost of equipment in accordance with this paragraph and submit it to the Cabinet of Ministers. 8. For the purpose of cultivation and processing of rice, imported rice varieties and hybrid seeds, laboratory equipment and machinery, modern agricultural machinery and equipment, grain drying equipment and components will be formed in the prescribed manner until January 1, 2023. be exempted from customs duties in accordance with the lists. 9. The following: Forecast of rice cultivation for the harvest of 2021 in the Republic of Karakalpakstan and regions in accordance with Annex 2; Forecast indicators of placement of rice varieties and superelite seed rice production for the 2021 harvest in scientific institutions of the Republic of Karakalpakstan and regions in accordance with Annex 3; To approve the Comprehensive

program of measures for development of rice in Uzbekistan for 2021-2022 (further - the Program) according to appendix 4. Prime Minister Deputy Sh.M. Ganiev, the Ministry of Agriculture (J.A. Khodjayev) together with the Council of Ministers of the Republic of Karakalpakstan and regional administrations to ensure the implementation of these forecasts and the implementation of the Program. 10. The Ministry of Agriculture (J.A. Khodjayev) together with the Ministry of Higher and Secondary Special Education (A.Kh. Tashkulov): within a month to submit a proposal to the Cabinet of Ministers to increase the quota for admission to the Tashkent State Agrarian University and its branches, Andijan Institute of Agriculture and Agrotechnology in the field of rice; Take measures to establish a joint faculty of the Nukus branch of the Tashkent State Agrarian University and the Vietnam Agrarian University in the Republic of Karakalpakstan by June 1, 2021; within two months to take measures to send young professionals and specialists to foreign centers to improve their skills in specialized centers of the world (Japan, China, Russia, South Korea, Philippines, etc.). 11. In order to ensure food security through the timely achievement of the indicators specified in this resolution, as well as to establish an effective control system in this regard: a) Prosecutor General's Office (Sh.J. Rakhimov), Department for Combating Economic Crimes under the Prosecutor General's Office (D.F. Rakhimov): to inspect on-site the planting of rice on land, its timely implementation of measures for the supply of seeds, seedlings, mineral fertilizers and water in accordance with Annexes 1 and 2 to this resolution; to establish constant control over planting of seedlings in rice fields, leveling with the help of laser equipment and introduction of modern systems of sowing of rice by means of modern seed drills provided by Item 5 of this resolution; to identify cases of unregistered rice cultivation in the territory of the republic and take measures to formalize them in accordance with the legislation; to ensure strict observance of the requirements of this resolution and to take appropriate measures in accordance with the law against those responsible for violating it; submit information on the work done to the Presidential Administration of the Republic of Uzbekistan on a monthly basis.

b) Ministry of Agriculture (MI Ruzmetov), Cadastre Agency under the State Tax Committee (FC Umarov), Ministry of Information Technologies and Communications (KA Yuldashev) using drones to place rice crops in accordance with this resolution organization, as well as assist in the detection of illegal rice fields;

c) The Inspectorate for Control over the Agro-Industrial Complex under the Cabinet of Ministers (AD Vakhobov), the Ministry of Internal Affairs (SA Nishanbayev), the Ministry of Water Resources (Sh.R. Khamrayev) and the Ministry of Agriculture (JA Khodjayev) are provided for in this paragraph. to render all possible assistance in implementation of actions;

g) Deputy Prime Minister Sh.M. Ganiev:

within two weeks to approve the address list of agricultural producers based on the forecast indicators of rice production for the 2021 harvest under this resolution;

in the regions of the republic, in accordance with the requirements of this resolution, to take measures to increase rice cultivation and the widespread introduction of technologies that save seeds, fertilizers, water and other resources.

12. Khorezm regional khokimiyat (F.U. Ermanov) until July 1, 2021:

Construction of an administrative laboratory building on the vacant land in the territory of Chinobod MMTP of Gurlan district of Khorezm branch of the Rice Research Institute and provision of necessary agricultural machinery, laboratory equipment at the expense of the overfulfilled part of the local budget revenue plan take measures;

Ensure that 200 hectares of irrigated land are allocated in Gurlan district.

13. Ministry of Agriculture (J.A. Khodjayev):

a) According to the calculations of the Rice Research Institute, the World Bank's "Agriculture in the Republic of Uzbekistan" to provide allocation of the means attracted within the project "Modernization of economy";

b) within two months together with the concerned ministries and departments:

the procedure for selecting seed farms for the cultivation of seed rice belonging to the super-elite, elite and subsequent generations;

to submit to the Cabinet of Ministers proposals on amendments and additions to the legislation arising from this resolution.

14. To discuss the implementation of this resolution on a quarterly basis, to monitor the activities of the agencies responsible for its implementation, Deputy Prime Minister Sh.M. Let Ganiev be in charge.

To report to the President of the Republic of Uzbekistan on a quarterly basis on the effectiveness of the measures taken.

President of the Republic of Uzbekistan Sh. MIRZIYOYEV

If rice is planted as an additional crop on 11,000 hectares of land in the regions, the volume of rice cultivation will reach 380,000 tons.

During his visit to Khorezm region on December 12-13, President Islam Karimov also got acquainted with agricultural projects. He gave instructions on the specialization of districts, the development of new lands, the introduction of sprinkler irrigation systems. Tasks have also been set to ensure fairness in rice planting and to allocate land to the population, thereby providing employment and lifting people out of poverty.

At the same time, it is very important to ensure the growth of food security in our country. In particular, the beauty of our table and the cultivation of rice, which plays a key role in the preparation of dishes that have become a brand of our country. During his visits to Khorezm region in 2018, 2019, 2020, the President will analyze the shortcomings in the rice sector, among other areas, study best international practices, apply low-water technologies, introduce fish farming in rice fields. had given special assignments.

But this is not enough to fully satisfy the internal need. This, in turn, requires the effective use of new technologies. In particular, if rice is planted as an additional crop on 11,000 hectares of land in the regions, the volume of rice cultivation will reach 380,000 tons. Therefore, in the Republic of Karakalpakstan, Khorezm, Syrdarya regions and the Fergana Valley, instructions have been given to plant rice as a secondary crop.

Scientists and specialists of the Research Institute of Irrigation and Water Problems of the Ministry of Water Resources have prepared scientifically based recommendations on the technology of rice cultivation, planting seedlings as a secondary crop on farmland, arable land. It

has the advantages of transplanting rice as a secondary crop after irrigation in irrigated and saline soils, efficient use of water and other resources, improving land reclamation and, on this basis, accelerating the ripening period of rice by 20-25 days and increasing yields. containing specific information about the upgrade. This technology saves 40% of annual water consumption per hectare, 60% of seed rice, 100% of chemical herbicides, 25% of mineral fertilizers, 40% of labor, and 20-25 days of rice. More than 3-3.5 tons of rice per hectare will be harvested.

Negative effects of flood irrigation and the advantages of planting in a new way. Currently, rice paddy irrigation, prolonged water retention, leads to disruption of groundwater flow. In flood irrigation, 15-20% of mineral fertilizers are discharged by water. In addition, various weeds increase and they interfere with the rice crop, reducing product quality, increasing overhead costs, and lowering economic efficiency. In our country, early, middle and late varieties of rice can be planted as seedlings as the main and secondary crops. In 40-45 days, the worries and costs of flooding and burning rice in large areas will disappear on their own. When planted as a secondary crop, rice is planted as a seed in nurseries and grown for up to 35 days, depending on the biological characteristics of the varieties, and is treated here with water and fertilizer. The yield of such seedlings is at least 25-30% higher than that of rice sown from seed and irrigated. Their stems are strong, the rate of harvest is very high, resistant to wind. It is often observed that all varieties of rice grown from seed often grow poorly, rot and lie down during the harvest. As a result, the crop is lost in the field, the possibility of harvesting with a combine is reduced, and productivity is reduced.

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