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MONITORING THE SPREAD OF FUNGAL DISEASES IN ORNAMENTAL PLANTS AND MEASURES TO COMBAT IT

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Abstract: According to modern imagination, fungi have plant-like unlimited growth, cell polarity, animal-like heterotrophic nutrition, glycogen production, and a cell membrane composed of chitin. Depending on the living conditions, the number of ulam varies. For example, in aerobic conditions, there were 3-8 in 5% Ii glucose, 10-20 in 1% Ii glucose, and no mitochondria were found in anaerobic conditions. Enzymes are produced in mitochondria, nucleic acids, proteins, carbohydrates, and fats are accumulated.
Keywords: monitoring, fungal diseases, ornamental plants, measures, combat.

They also have animal-like characteristics with growths and increases the exchange of nitrogen and carbohydrates, mycelium Its composition consists of chitin. Connect the similarities with the teenagers is to feed on nectar and grow endlessly. The property of making is well developed, thanks to which they are in different conditions grows faster than it can break down organic matter, produces many physiologically active substances. Lurnla, amino acids, proteins, vitamins, enzymes are among the substances actively synthesized by fungi. These materials are widely used in biotechnological processes, food processing, medicine and agriculture.

The negative damage of the fungus manifests itself in causing disease in agricultural plants, spoilage of food production, deterioration of human and animal health. The evolution of fungi is leading to the formation of new microcenoses in nature and the emergence of new parasitic properties.

The science that studies fungi is called mycology (mycorrhizal, logos means science, teaching) and is a part of botany. He studies the morphology, biology, anatomy, physiology, biochemistry, ecology, geography and role of fungi in nature. In the following years, medical mycology and veterinary mycology also began to develop. Yeast fungi are used to cover bread, protein-rich sharnpinones and veshinkas are used to prepare lean taorns.

The structure of fungi. Fungi are microorganisms without chlorophyll.

The vegetative body is composed of unicellular thallus (Thallophuta) and multicellular hypha (Mucata). According to modern imagination, fungi have plant-like unlimited growth, cell polarity, animal-like heterotrophic nutrition, glycogen production, and a cell membrane composed of chitin.

A fungal cell is composed of a membrane, cytoplasm, endoplasmic reticulum, mitochondria, ribosome, vacuole and nucleus.

According to the structure of the nucleus, fungi belong to eukaryotic organisms.

The cell membrane consists of an outer and an inner layer and is 0.2 μm thick. The outer layer protects the cell. Polysaccharides, proteins, and polyphosphates make up 80-90% of the cell composition.

The basis consists of chitin and cellulose. It also contains up to 20% glucuronic acid, mannose, galactose, and glucose.

Chitin, protein and fat are also found in the cell membrane. For example, the skin of the Aspergillus niger fungus cell contains glucose, mannose, arabinose (73-83%), hexosamine (9-13%), lipids 2-7%, protein 0.5-2.0%, phosphorus. will be 0.1%. Chitin makes up more than 60% of the dry mass of the cell membrane. The cell membrane is multi-layered and can be broken down by fennets.

Protoplast of fungi. The fluid inside the cells is the protoplast it is called, it presses against the cell wall under the influence of pressure. In it all metabolic processes occurring in the cell are carried out. Fusion of protoplasts through pores in the cell membrane possible Mitochondria and nucleus are located in the protoplast.

The cytoplasmic membrane is formed between the cell membrane and the cytoplasm. Its function is to control the substances entering and leaving the cell. Cell cytoplasm is composed of organelles of filamentous, tubular and vesicular structure. Among the organelles located in the cytoplasm is the Golgi complex. It is formed in the nuclear membrane, hyphae barriers, conidia. Cytoplasm contains proteins, amino acids, RNA, carbohydrates, and fats.

A vacuole is a round organelle that can be seen quickly. Toxic substances accumulate in it, and unnecessary substances for the cell are also formed.

Lysosomes are formed in the form of bubbles around the Golgi complex. Their function is to remove metabolites that are harmful to the cell.

The core is surrounded by a two-layer shell, made up of the nucleus-chromosome and DNA. One, two in fungi or many nuclei are formed. Its size is 2-3 μm and its function is DNA provides replication, transfers genetic characteristics from generation to generation.

Each part of the conidia has one nucleus. Mitochondria is the source of energy in the cell. It is external and surrounded by an inner membrane, inside which crystals are formed. Depending on the living conditions, the number of ulam varies. For example, in aerobic conditions, there were 3-8 in 5% Ii glucose, 10-20 in 1% Ii glucose, and no mitochondria were found in anaerobic conditions. Enzymes are produced in mitochondria, nucleic acids, proteins, carbohydrates, and fats are accumulated.

Ribosomes store RNA produced in the nucleus. They are divided into transport, ribosomal, and informative types. Ribosomes Separation by centrifugation is possible. Apart from these, spare substances such as fats and riboflavins are also stored in the cells.

The morphological structure of the fungus is different, and its body is one or form a multicellular mycelium. They are in the process of reproduction produces conidia, sacs, basidiospores A hypha is a filamentous morphological structure of cylindrical shape. of hyphae At the end, a multinucleated cytoplasm is located, and a new cell is formed does. Hyphae not jointed, jointed, celli and is acellular. Cellular hyphae are saccular, basidia, and characteristic of immature fungi. At the tip of the hyphae new cells are formed. Cytoplasm, nucleus and mitochondria, and vacuoles are also formed in old cells. Yeast fungi do not form true hyphae. Their vegetative body consisting of a single cell, either by division or by budding increases. The thallus (body) of some fungi using rhizoids adheres to the substrate.

The mycelium is formed by the development and fusion of hyphae of fungi. A fungal colony is formed by the growth of a single conidia under favorable soil conditions and under laboratory conditions.

The mycelium of the fungus grows very quickly in saprophytic species (Mucor) and slowly in pathogenic species (Verticillium). The rhizoids formed from the mycelium serve to connect the fungus with the nutrient medium, and the sporangia reproduce asexually.

A mycelium formed by growing a colony from a fungal spore is the upper part. In the study of the morphology of fungi colony growth rate, mycelium branching, branching properties are meant. Morphological of the fungal colony, systematic properties Chapeki or suslo growing in a nutrient medium is studied. Colony growth phases are:

Developing resistant crop varieties to combat disease and planting, improving the phytosanitary status of plantations and chemical control measures should be applied.

A number of works have been carried out on the eradication of fungal diseases in trees and bushes in the territory of Uzbekistan . Including, in 1958, B.D. Kleiner made a great contribution to the study of the mycoflora of Uzbekistan by publishing works called “Species composition of fungi that cause diseases of tree species and shrubs in the mountains of Uzbekistan and their systematic characteristics” in “Diseases of wild fruit species”. In his first work, the author identified 120 types and forms of fungi and studied the laws of their distribution in the mountainous regions of Uzbekistan.

According to his information, the most species of fungi that cause disease in higher plants belong to the class of imperfect fungi (57 species), followed by rust fungi, 43 species, and cystic fungi. According to B.D.Kleiner, bottom fungi are not found at all in trees and shrubs. According to the information provided in his second work, the fungus that causes walnut brown spot disease and apple scab disease is the most widespread and infects 87-89 % of trees. Also, 90-100% of trees and bushes of hawthorn, cherry, almond and sedum are affected by various fungal diseases. Given the enormous damage caused by these common diseases 12, it emphasizes the importance of treating and preventing them. A number of scientists of our Republic have made a worthy contribution to the development of the science of phytopathology. Professor MA Karimov studied alfalfa diseases in our country and developed measures to combat them.

S.S.Ramazonova's many years of scientific research related to the spread of systematics and biology of fungi belonging to the Verticillium genus found in our country, revealed the laws of its formation. Under the leadership of the scientist, extensive scientific and research work was carried out on the study of diseases of cotton, mulberry, fruit trees, grain crops. I.M.Azimjonov studied the species composition of Verticillium fungi involved in the origin of wilt disease of fruit trees and mulberries, and explained that the increase in the economic damage of the disease is related to environmental conditions. As a result of mycological investigations in Kashkadarya region, 364 species and 49 forms of fungi on higher plants were identified, 178 of them are new to the region, 24 are new to the mycoflora of Uzbekistan, and 2 are new to science. In addition to the composition of species, similarity coefficients of mycoflora of Kashkadarya with other regions, distribution of fungi in vertical regions, changes in growth by seasons and distribution of higher plants by species were also described in these works. Works similar to the above were carried out for Namangan region, in which Y.S.Soliyeva and large - scale research was carried out by Y.Sh.G'afforov in 2000-2004. During the last 5-6 years, studies of the mycological flora of Uzbekistan have been carried out. Because organizing expeditions to carry out floristic work, conducting research in unexplored areas and making additions to published monographic descriptors are almost not being carried out. The research of fungal diseases of agricultural plants by the staff of the Scientific Research Institute of Plant Protection of the UzFA and professors of the Uzbekistan Agrarian University is continuing well. In 2012-2013, in order to study the fungal diseases of landscape trees, scientific trips were organized in the vicinity of 9 schools, agribusiness and entrepreneurship college and Tinchlik streets

in the city of Karshi. MBI-3 microscopes were used to isolate fungi from plants, determine their systematic location and study their structure.

Taking into account that the substrate is of primary importance in determining the systematic position of fungi, we determined the systematic position of each herbarium plant. Then, the appearance symptoms of disease - causing fungi in these herbariums were examined, preparations were made and their mycelia, the structure of reproductive organs (sporangia and conidia bundles, spores, conidia, fruit bodies, sac formation, sac formation) were examined under a microscope were carefully studied. For this purpose, a drop of water was added to the glass of the thoroughly washed and dried object, and a small thin piece taken from the studied part of the plant was placed. The preparation was closed with a coverslip and observed first under the small objective of the microscope, then through the x-40 objective. A mixture of alcohol, glycerin and water (1:1:1) was used for the preparation of temporary preparations (Meisel, Gudkina, 1953). It is important to use special methods when isolating fungi from plant parts.

For this, plant parts must be cleaned of external microflora. 96% alcohol was used in order not to contaminate the objects being examined with external miroflora. The studied part of the plant was kept in the prepared solution for 1-2 minutes, then washed several times in sterilized water. Also, 1:300 diluted formalin solution, 30 minutes, 1% bromine water (several seconds), 2% manganese solution (15 minutes) were also used. Some tree branches and stems were first soaked in alcohol, then heated in a flame, and then the fungi inside them were extracted. Definitions, reference books and monographs of Sagdullayeva, XM Kirgizbayeva, FX Fayziyeva (1986-1995) and others were used.

The fungi that caused the disease were isolated from the herbarium prepared from the leaves of some diseased ornamental trees in laboratory conditions. For this purpose, the moistened chamber method recommended by N.A.Naumov (1937), V.I.Bilay (1977). Examination and detection of diseases was carried out at the Botany Department of Karshi State University. Parasitic fungal species live mainly on the surface of plant organs or inside the tissue. The washing method was used to isolate the fungal species on the surface of the diseased plant. For this purpose, a part of the tested plant is washed in sterilized water, and the spores and conidia of the washed fungus are examined under a microscope. When sterilizing the surface of diseased tree organs, the leaves and branches of ornamental trees are kept in alcohol for a few seconds, held in the flame of an alcohol burner, then immersed in distilled water and placed in a humid chamber in Petri dishes. The third and fourth days of the experiment are observed under a microscope.

The size of the mycelium and reproductive organs is of primary importance in the identification of most fungi . Therefore, they were measured using ocular and objective micrometers. It should also be emphasized that although most of the fungis produce visible spots and borders on various organs of the infected plants, observation of their reproductive organs under a microscope is never possible. Usually, such fungi are immature in terms of the formation of reproductive organs or may be delayed as a result of the influence of the external environment. Plants with symptoms of this disease were cut from the organs, placed in humid chambers with sterilized filter paper at 1 atmospheric pressure and + 1210 C, and special habitats were prepared and grown in them. For this, they were kept in a 27-280 C thermostat for 2-3 days and then viewed under a microscope. Taking into account that the substrate is of primary importance in determining the systematic position of fungi, we determined the systematic position of each herbarium plant.

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added to the glass of the thoroughly washed and dried object, and a small thin piece taken from the studied part of the plant was placed. The preparation was closed with a coverslip and observed first under the small objective of the microscope, then through the x-40 objective. A mixture of alcohol, glycerin and water (1:1:1) was used for the preparation of temporary preparations (Meisel, Gudkina, 1953). 16 It is important to use special methods correctly when isolating fungi from plant parts . For this, plant parts must be cleaned of external microflora. The studied part of the plant was kept in the prepared solution for 1-2 minutes, then washed several times in sterilized water. It was also used in 1:300 diluted formalin solution for 30 minutes, 1% bromine water (several seconds), 2% manganese solution (15 minutes).

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