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Fungi and their structure, reproduction

Annotation: This phylum includes fungi (Mycophyta or Fundi) and slimes (Myxophyta). Their thallus is often not made up of cells, but of threads called hyphae, which form the mycelium. The hyphal wall is usually composed of chitin and partly cellulose. The vegetative body of benthic fungi and slimes consists of plasmodium or pseudoplasmodium. All of them are heterotrophic organisms, reproduction and spread of which are carried out with the help of various spores. The reserves consist of glycogen, which is similar to animal starch.

Key words: Phycomycetes and their representatives, life, structure, reproduction, nutrition, importance?

Fungi are a unique section of bottom plants, which includes more than 100,000 species. It differs from algae by the lack of color and chlorophyll in its vegetative body, and from bacteria by the presence of a typical nucleus. Their vegetative body consists of threads called hyphae. Hyphae, in turn, unite and form mycelia. Mycelium is located in unicellular or multicellular, mononuclear and multinucleated substrate in the soil, in plant corms, in the cells and tissues of living plants, in the animal body, and only their fruit bodies, spore-forming organs, come out. . Mycelium has a surface with a very high osmotic pressure and the ability to absorb (push) water and nutrients dissolved in water.

Bottom fungi do not have mycelium. Its vegetative body is multinucleate, consisting of a microscopically small, glabrous or pustulous fragment of protoplasm, outwardly similar to the siphonous algae of the green algae.

The mycelium of higher fungi consists of filaments divided into uninucleate cells separated by hyphae. Only some of their representatives have cellulose in the cell membrane, most of the membrane consists of polysaccharides. Spores are present in the diurnal cysts between the cells. Protoplasm is located along the cell wall. They lack chromophores and plastids. The reserve products are fat and glycogen. Valutin is also found in some species. The color

of fungi depends on the color of pigments in the cell membrane, cytoplasm, vacuole. New cell formation and mycelial growth usually occur in the cells located at the tips of the thallus.

Fungi reproduce vegetatively, asexually and sexually. Vegetative reproduction takes place by cutting off some parts of the mycelium, budding, forming chlamydospores and sclerotia.

Fungi are heterotrophic organisms in terms of nutrition. Heterotrophic nutrition is divided into two types.

1. Eating without parasites

2. Eating without saprophytes

The process of asexual reproduction involves the formation of endogenous and exogenous spores, which are formed in special branches of the mycelium, and these spores consist of one, two or several colored or colorless cells.

Endogenous spores are characteristic of benthic fungi and are formed in a special cell that is specialized and separated from the main hyphae by a stamen. Depending on the type of plant, motile zoospores and non-motile spores are formed in these cells. Exogenous spores of asexual reproduction are often referred to as conidia. Conidia are formed singly or in chains at the end of special hyphae of the mycelium, on the side, from a simple, branched substrate. Conidia are characteristic of higher fungi adapted to dry environments.

Sexual reproduction of fungi is extremely diverse. Bottom fungi have a more complex structure in the form of halogamy and isogamy, and sexual reproduction in representatives and higher fungi takes place in the form of oogamy, zygogamy and conjugation.

The zygote passes a certain rest period, the zygote germinates from the reduction division and forms a zoospore or a short hypha with a zoosporangium, sporangium or conidia.

The entire period of individual development of fungal fungi is haploid, diploid is only the zygote. The sexual reproduction of multicellular, mycelial higher fungi is extremely different according to their external appearance - as a result of the fluid transfer of the body fluid differentiated into some of their reproductive organs, in others, small inactive cells - spermatozoa - fertilize. The reproductive organs of the third type of fungi are reduced, and fertilization occurs by the transfer of the protoplast from one vegetative body to another, or by the fusion of nuclei in one cell.

During sexual reproduction in higher fungi, after the protoplasm is condensed, the nuclei do not condense immediately, they multiply within a certain time and form dikaryons in pairs.

The diploid nucleus formed by the sexual fusion of nuclei (karyogamy) divides many times reducionally, and the resulting haploid nuclei are the nuclei of sexual reproduction.

Thus, in the development cycle of higher fungi, three phases normally alternate: haploid, dikaryon, diploid. The diploid phase usually takes a very short time, while the haploid and dikaryon phases vary depending on the type of fungus. Spores formed as a result of the sexual process are formed endogenously in bags of 8 in special cells, where karyogamy and reduction division took place, or ecdogenously in 4 on special cells called basidia.

Entogenous spores are called ascospores, and exogenous spores are called diospores. In the development cycle of fungi, the formation of sexual and asexual spores alternates regularly, and the formation of sexual spores is the end of the development cycle. Fungi are found in rotting logs, plant roots, soil, wooden bridges and damp wooden structures. They take an active part in the mineralization of organic substances in wet soils rich in humus. There are annual, biennial and perennial species of fungi. Perennial parasitic fungi live all their lives in association with the host plant, infecting it, rotting it, and even when the host plant dries up, it enters the saprophytic stage of nutrition and lives in its decayed parts. Most of the parasitic fungi parasitize plants and animals.

Species of parasitic fungi that switch to saprophytic nutrition after the death of the host plant are called facultative parasites. Fungi that feed only on the parasite are called obligate parasites. The main reason that fungi often parasitize plants is that they contain enzymes that break down plant carbohydrates and cell membranes, and the acidic reaction environment is convenient for them. In a protein-rich animal organism, fungi cannot withstand the competition of bacteria, because bacteria multiply rapidly and create a working environment in the animal organism.

According to the energy of sexual reproduction, fungi are superior to all bottom plants, the fruiting body of some fungi produces 1-7 million spores.

There is no clear idea about the origin of fungi. Undoubtedly, fungi are among the most ancient plants. Some botanists believe that fungi originated from algae and later lost their chlorophyll during historical development. Their filamentous representatives, the structure of spores and sporangia, the fusion of the product of one cell with the other in the sexual process, indicates that they are close to algae. Other scientists believe that the first ancestors of fungi are cellless simple animals.

The lack of chlorophyll in fungi is also interpreted differently. According to the opinion of some scientists, fungi originated from algae, but in the course of historical development, due to their nutrition, they lost their chlorophyll and became parasitic and saprophytic. Another group of botanists explains that fungi were chlorophyll-free at the beginning of the

prehistoric period, and that they descended from fungi. The evolution of fungi has changed towards aquatic life, and in the process of historical development, zoospore (motile spore) production has decreased, and mainly non-motile spores have been produced. The development of fungi is intrinsically related to angiosperms. It has been found that most of the fungi live by parasitizing angiosperms and decomposing them with sopradiot cells.

The division of fungi cannot be said to have a definitive classification that will satisfy the majority without considering it to be thoroughly and comprehensively studied and subjected to many revisions. Conditionally, it is recommended to study this unique section of the plant world, divided into bottom and top fungi. They, in turn, are divided into appropriate classes.

Reference:

1. Comparative study of ecological groups of hippohae rhamnoides Phytonematoids growing in the zarafshan oasis
2. KS Boltaev, AN Mamedov
3. Galaxy international interdisciplinary research journal 9 (9), 101-104 13 2021
4. Клинические особенности течения ветряной оспы у взрослых в современных климатических условиях
5. ГМ Одилова, ША Рустамова, НИ Мамарасулова, КС Болтаев
6. Вопросы науки и образования, 70-78 12 2019
7. Состояние внешнего дыхания у больных детей со среднетяжелым течением пищевого ботулизма
8. ДА Хужакулов, МИ Юсупов, ХШ Шайкулов, КС Болтаев
9. Вопросы науки и образования, 79-86 12 2019
10. STREPTOKOKK AVLODIGA MANSUB BAKTERIYALARNING PATOGENLIK XUSUSIYATLARINING TAHLILI
11. AU Azimovich, BK Sultonuvich, MM Zokirovna
12. Talqin va tadqiqotlar ilmiy-uslubiy jurnali 1 (13), 95-101 8 2022
13. A comparative study of nematoda facilities of shortage plants and trees in zarafshan forest biotopes
14. BK Sultonovich, MN Isrofilovna, JF Abdusalomovna, OP Olimovna
15. Academicia Globe: Inderscience Research 3 (5), 1-5 7 2022
16. Исследование микрофлоры содержимого эхинококковых пузырей по морфологическому соотношению и определение ее чувствительности к антибиотикам
17. АМ Вахидова, ГН Худаярова, КС Болтаев

18. Academy, 8-10 5 2020
19. Экологическое группирование нематодофауны тугайных растений
20. КС Болтаев, ФА Жамалова, НИ Мамарасулова
21. Вестник Хорезмской академии Маъмуна 5, 79 4 2021
22. Краевые задачи типа линейного сопряжения для уравнения типа Гельмгольца смешанного типа с сингулярной линией
23. КС Болтаев
24. Материалы международной научной конференции и" Дифференциальные и … 3 2008
25. ВОЗБУДИТЕЛИ МИКОЗОВ СЛЕПНЕЙ НА ТЕРРИТОРИИ РАЗЛИЧНЫХ РЕГИОНОВ УЗБЕКИСТАНА
26. ФА Жамалова, КС Болтаев, ДГ Шодиева
27. GOLDEN BRAIN 1 (3), 28-34 1 2023
28. Представления многообразия решений для обобщ¨ енной системы Коши-Римана специального вида с сингулярной линией в исключительных случаях
29. КС Болтаев
30. Современные проблемы математики и её приложений, 8-10
31. Farrukh S. TREATMENT OF MYOCARDIAL INFARCTION AND FIRST AID." science and Innovation" International Scientific Journal. ISSN: 2181-3337, 1 (3), 317–320. – 2022.
32. Shernazarov F. TYPES OF HEMORRHAGIC DISEASES //CHANGES IN NEWBOENS, THEIR EARLY DIAGNOSIS.–2022.
33. Shernazarov F. F. CONGENITAL HEART DISEASE-CAUSES, CLASSIFICATION, DIAGNOSIS, TREATMENT, COMPLICATIONS, CONSEQUENCES //Eurasian Journal of Medical and Natural Sciences. – 2022. – Т. 2. – №. 3. – С. 84-89.
34. Shernazarov F. MICROCIRCULATION DISORDERS IN THE VASCULAR SYSTEM OF THE BULBAR CONJUNCTIVA IN THE INITIAL MANIFESTATIONS OF CEREBRAL BLOOD SUPPLY DEFICIENCY. – 2022.
35. F. Shernazarov THE PROBLEM OF INSOMNIA CAUSES OF SLEEP DISORDER, REMEDIES AT HOME // SAI. 2023. №D1. URL: https://cyberleninka.ru/article/n/the-problem-of-insomnia-causes-of-sleep-disorder-remedies-at-home (дата обращения: 11.02.2023).
36. F. Shernazarov HYMORITIS SYMPTOMS, TREATMENT, METHODS OF FOLK MEDICINE, PREVENTION // SAI. 2023. №D1. URL: https://cyberleninka.ru/article/n/hymoritis-symptoms-treatment-methods-of-folk-medicine-prevention (дата обращения: 11.02.2023).

37. I. Shernazarov, F. Shernazarov NATIONAL-CULTURAL FEATURES IN THE TRANSLATION PROCESS // SAI. 2023. №B1. URL: https://cyberleninka.ru/article/n/national-cultural-features-in-the-translation-process (дата обращения: 11.02.2023).
38. I. Shernazarov, F. Shernazarov PROBLEMS OF TRANSLATION OF FEATURES RELATED TO THE WAY OF LIFE OF PEOPLES // SAI. 2023. №B1. URL: https://cyberleninka.ru/article/n/problems-of-translation-of-features-related-to-the-way-of-life-of-peoples (дата обращения: 11.02.2023).
39. Shernazarov F. GENETIC MARKERS FOR THE DEVELOPMENT OF DIABETIC RETINOPATHY //Science and Innovation. – 2022. – T. 1. – №. 8. – C. 919-923.
40. Shernazarov F. Madaminov M. et al. CAUSES, SYMPTOMS, DIAGNOSIS AND TREATMENT OF KIDNEY STONES (UROLITHIASIS) //Science and Innovation. – 2022. – T. 1. – №. 8. – C. 760-765.
41. Shernazarov F. SIGNIFICANCE OF ENDOTHELIAL DYSFUNCTION IN THE DEVELOPMENT OF RETINOPATHY IN PATIENTS WITH AH AND WAYS OF ITS CORRECTION //Science and Innovation. – 2022. – T. 1. – №. 8. – C. 101-113.
42. Shernazarov F. THE ROLE OF C-REACTIVE PROTEIN IN THE PATHOGENESIS OF VISUAL VASCULAR DISEASES IN PATIENTS WITH ARTERIAL HYPERTENSION //Science and Innovation. – 2022. – T. 1. – №. 8. – C. 114-121.
43. et al. COMBINED DENTAL AND EYE PATHOLOGY //Science and Innovation. – 2022. – T. 1. – №. 8. – C. 91-100.
44. Farhod o'g'li S. F. GASTRIT—SABABLARI, ALOMATLARI, TASHXISLASH, DAVOLASH, DORILAR, ASORATLARI, OLDINI OLISH //Лучший инноватор в области науки. – 2022. – T. 1. – №. 1. – C. 103-107.
45. F. Shernazarov SYMPTOMS OF HYMORITIS, TREATMENT, METHODS OF FOLK MEDICINE, PREVENTION // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/symptoms-of-hymoritis-treatment-methods-of-folk-medicine-prevention (дата обращения: 11.02.2023).
46. Shernazarov F. WHITE TONGUE OR FORMATION OF WHITE EYES CAUSES, METHODS OF TREATMENT //Science and innovation. – 2022. – T. 1. – №. D8. – C. 766-770.
47. F. Shernazarov SORE THROAT IN ADULTS AND CHILDREN, SYMPTOMS, CAUSES, TREATMENT, TIPS // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/sore-throat-in-adults-and-children-symptoms-causes-treatment-tips (дата обращения: 11.02.2023).
48. F. Shernazarov FLU SYMPTOMS, FORM, CAUSES, DIAGNOSIS, TREATMENT AND PREVENTION // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/flu-

symptoms-form-causes-diagnosis-treatment-and-prevention (дата обращения: 11.02.2023).

49., F. Shernazarov ACUTE TONSILLITIS (ANGINA) CAUSES, COMPLICATIONS, DIAGNOSIS, TREATMENT, PREVENTION // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/acute-tonsillitis-angina-causes-complications-diagnosis-treatment-prevention (дата обращения: 11.02.2023).

50. F. Shernazarov BREAST CANCER DETECTION METHODS, SYMPTOMS, CAUSES, TREATMENT // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/breast-cancer-detection-methods-symptoms-causes-treatment (дата обращения: 11.02.2023).

51. F. Shernazarov TINTING IN THE EAR CAUSES, DEVELOPMENT, TREATMENT AND PREVENTION OF NOISE IN THE EAR // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/tinting-in-the-ear-causes-development-treatment-and-prevention-of-noise-in-the-ear (дата обращения: 11.02.2023).

52. F. Shernazarov CAUSES, CONSEQUENCES, DIAGNOSIS AND TREATMENT OF LONG-SHORT LEGS // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/causes-consequences-diagnosis-and-treatment-of-long-short-legs (дата обращения: 11.02.2023).

53. F. Shernazarov NEUROSE CAUSES AND MECHANISMS OF DEVELOPMENT, SYMPTOMS, TREATMENT, PREVENTION // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/neurose-causes-and-mechanisms-of-development-symptoms-treatment-prevention (дата обращения: 11.02.2023).

54. F. Shernazarov INSOMNIA PROBLEM CAUSES OF SLEEP DISORDER, HELP MEASURES AT HOME // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/insomnia-problem-causes-of-sleep-disorder-help-measures-at-home (дата обращения: 11.02.2023).

55. Farrukh Shernazarov, MICROCIRCULATION DISORDERS IN THE VASCULAR SYSTEM OF THE BULBAR CONJUNCTIVA IN THE INITIAL MANIFESTATIONS OF CEREBRAL BLOOD SUPPLY DEFICIENCY // SAI. 2022. №Special Issue 2. URL: https://cyberleninka.ru/article/n/microcirculation-disorders-in-the-vascular-system-of-the-bulbar-conjunctiva-in-the-initial-manifestations-of-cerebral-blood-supply (дата обращения: 11.02.2023).

56. F. Shernazarov ЗНАЧЕНИЕ ДИСФУНКЦИИ ЭНДОТЕЛИЯ В РАЗВИТИЕ РЕТИНОПАТИИ У БОЛЬНЫХ АГ И ПУТИ ЕГО КОРРЕКЦИИ // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/znachenie-disfunktsii-endoteliya-v-razvitie-retinopatii-u-bolnyh-ag-i-puti-ego-korrektsii (дата обращения: 11.02.2023).

57. F. Shernazarov СОЧЕТАННАЯ СТОМАТОЛОГИЧЕСКАЯ И ГЛАЗНАЯ ПАТОЛОГИЯ // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/sochetannaya-stomatologicheskaya-i-glaznaya-patologiya (дата обращения: 11.02.2023).
58. F. Shernazarov РОЛЬ С–РЕАКТИВНОГО БЕЛКА В ПАТОГЕНЕЗЕ СОСУДИСТЫХ ЗАБОЛЕВАНИЙ ОРГАНА ЗРЕНИЯ У БОЛЬНЫХ АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИЕЙ // SAI. 2022. №D8. URL: https://cyberleninka.ru/article/n/rol-s-reaktivnogo-belka-v-patogeneze-sosudistyh-zabolevaniy-organa-zreniya-u-bolnyh-arterialnoy-gipertenziey (дата обращения: 11.02.2023).
59. F. Shernazarov, .CAUSES, SYMPTOMS, APPEARANCE, TREATMENT OF VARICOSE VEINS // SAI. 2022. №D7. URL: https://cyberleninka.ru/article/n/causes-symptoms-appearance-treatment-of-varicose-veins (дата обращения: 11.02.2023). F. Shernazarov, J. Tohirova, D. Jalalova TYPES OF HEMORRHAGIC DISEASES, CHANGES IN NEWBOENS, THEIR EARLY DIAGNOSIS // SAI. 2022. №D5. URL: https://cyberleninka.ru/article/n/types-of-hemorrhagic-diseases-changes-in-newboens-their-early-diagnosis (дата обращения: 11.02.2023).
60. Rakhimova M. INFERTILITY IN WOMEN-CLASSIFICATION, SYMPTOMS, CAUSES AND FACTORS, RECOMMENDATIONS FOR WOMEN //Science and Innovation. – 2022. – Т. 1. – №. 7. – С. 245-250.
61. Абдурахмонов И. Р., Шамсиев Д. Ф. ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ МЕСТНОЙ АНТИБИОТИКОТЕРАПИИ В ЛЕЧЕНИИ ПАРАНАЗАЛЬНОГО СИНУСИТА У ДЕТЕЙ С ЦЕРЕБРАЛЬНЫМ ПАРАЛИЧЕМ //НАУКА И ОБРАЗОВАНИЕ: СОХРАНЯЯ ПРОШЛОЕ, СОЗДАЁМ БУДУЩЕЕ. – 2021. – С. 336-338.
62. Абдурахмонов И. Р. ИССЛЕДОВАНИЕ МУКОЦИЛИАРНОЙ ТРАНСПОРТНОЙ ФУНКЦИИ СЛИЗИСТОЙ ОБОЛОЧКИ ПОЛОСТИ НОСА У БОЛЬНЫХ С ПАРАНАЗАЛЬНЫМ СИНУСИТОМ НА ФОНЕ ДЕТСКОГО ЦЕРЕБРАЛЬНОГО ПАРАЛИЧА //Актуальные аспекты медицинской деятельности. – 2021. – С. 256-259.
63. Тураев Хикматилла Негматович, Абдурахмонов Илхом Рустамович ВЛИЯНИЕ БУДЕСОНИДА НА КАЧЕСТВО ЖИЗНИ ПАЦИЕНТОВ С БРОНХИАЛЬНЫМ ОБСТРУКТИВНЫМ СИНДРОМОМ // Вопросы науки и образования. 2021. №7 (132). URL: https://cyberleninka.ru/article/n/vliyanie-budesonida-na-kachestvo-zhizni-patsientov-s-bronhialnym-obstruktivnym-sindromom (дата обращения: 04.03.2022).