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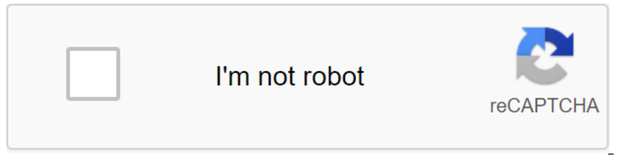

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It is a question-and-answer forum for students, teachers and visitors to the general village to exchange articles, answers and notes. Answer now and help others. Answer Now Here's How It Works: Anyone can ask a question Anyone can answer the best answers voted and climb to the top of THE LEARNING OBJECTIVES Describe ecology and reproduction Ascomycetes Most known mushrooms belong to Phylum Ascomycota, which is characterized by the formation of ascus (multiple, asci), a bag-like structure that contains haplids. Many accomicets have commercial significance. Some play useful roles, such as yeast used in baking, brewing and fermenting wine, as well as truffles and slaces, which are held as gourmet delicacies. Aspergillus oryzae is used in rice fermentation for sake production. Other accomicetes parasitize plants and animals, including humans. For example, fungal pneumonia poses a significant threat to AIDS patients who have a weakened immune system. Ascomicets not only infect and destroy crops directly, but also produce poisonous secondary metabolites that make crops unsuitable for consumption. Philament accomicetes produce a gif separated by a perforated sept, which allows the cytoplasm to be pumped from one cell to another. Conidia and asci, which are used respectively for asexual and sexual reproductions, are usually separated from the vegetative gif blocked (not perforated) sept. Asexual reproduction is frequent and involves the production of conidiophors, which releases haploid conidiospores. Sexual reproduction begins with the development of special gifs from any of the two types of mating strains. The male strain produces ateridia (multiple: antheridia) and the female strain develops askania (multiple: asconia). In fertilization, ateridia and askania are combined into plasmogoma without nuclear fusion. There is a special ascogenic gif in which pairs of nuclei migrate: one of the male strain and one of the female strain. In each acoustics, two or more haploid ascospores merge their nuclei into cariogamia. During sexual reproduction, thousands of asci fill the fruit-bearing body called ascocarp. The diploid nucleus generates haploid nuclei in meiosis. Ascospores are then released, sprout and form a gif that spreads in the environment and begin a new miselia. Figure (PageIndex{1}): Issue of Ascospores: Bright light micrograph of the field shows how ascosporas are released from the asha in the fungus Talaromyces flavus var. flavus. Figure (PageIndex{1}): life cycle of ascomicete: the life cycle of ascomice is characterized by the production of asci during the sexual phase. The haploid phase is the predominant phase of the life cycle. Key points of Ascomycota yeast mushrooms used in baking, and fermentation of wine, as well as delicacies such as and sales. The icaments are filamentous and produce a gif separated by a perforated sept. Ascomicets often multiply asexuality, which leads to the production of conidiophors, which are released by haploid conidiospores. Sexual reproduction requires two types of mating strains: the male strain that produces anteridi, and the female strain that develops ascion. Anteridius and ascoy are combined into plasmoamy during fertilization, followed by the fusion of nuclei in asce. In ascocarp, the fruiting body, thousands of asci pass meiosis to produce haploid ascospores ready to be released to the world. Key terms of plasmogamy: the stage of sexual reproduction of the adherence of the cytoplasm of two parents of Michelia without fusion of nuclei Ascomycota: taxonomic division in the kingdom of Mushroom; those mushrooms that produce spores in a microscopic sporangium called ascus ascus: a bag shaped cage present in ascomycete mushrooms; is a reproductive cell in which meiosis and additional cell division produce eight spores of ascospore: sexually produced spores from ascus fungus ascomycetes conidia: asexual, non-motyl spores of a fungus, named after the Greek word for dust, konia; also known as conidiospores and mitospores antheridia: a haploid structure or organ producing and containing male gamers (so-called anterozoids or sperm) present in lower plants, such as mosses and ferns, primitive vascular psilotophytes, and mushrooms of ascophynia: haploid structure or organ producing and containing female gamers in some ascomycota mushrooms Ascocarp: sporocarp ascomicite, usually cup-like ascomicet: any fungus filumacom Asycota, characterized by the production of a bag , or ascus, which contains real estate spores In members of this class, asci small, evanescent, and produced at different levels within ascocarp. Most species have a fully enclosed ascocarp called cleistothecium, but in some it is an ostiolat. Tehy is widespread in occurrence, but is often associated with seeds, soils, and some of them animal parasites. An important order in this class are plant pathogens, commonly called powdery mold. Most of the known mushrooms belong to the phylum-ascomicote, which is characterized by the formation of ascus (multiple, ashi), a sac-shaped structure that contains haploid ascospores. Many accomicets have commercial significance. Some play useful roles, such as yeast used in baking, brewing and fermenting wine, as well as truffles and slaces, which are held as gourmet delicacies. Aspergillus oryzae is used in rice fermentation for sake production. Other accomicetes parasitize plants and animals, including humans. For example, fungal pneumonia poses a significant threat to AIDS patients who have immune system. Ascomycetes not only infect and destroy crops they also produce poisonous secondary metabolites that make crops unfit for consumption. Philament accomicetes produce a gif separated by a perforated sept, which allows the cytoplasm to be pumped from one cell to another. Conidia and asci, which are used respectively for asexual and sexual reproductions, are usually separated from the vegetative gif blocked (not perforated) sept. Figure 1. Click for more. The life cycle of ascomicet is characterized by the production of asci during the sexual phase. The haploid phase is the predominant phase of the life cycle. Figure 2. The bright light of the micrograph field shows ascospores released from the asci in the fungus Talaromyces flavus var. flavus. (credit: modification of the work of Dr. Lucille George, CDC; bar scale data from Matt Russell) Asexual reproduction is frequent and involves the production of conidiophors, which releases haploid conidiospores. Sexual reproduction begins with the development of a special gif from one of two types of mating strains (Figure 1). The male strain produces ateridia and the female strain develops ascuniia. In fertilization, ateridia and askania are combined into plasmogoma without nuclear fusion. There is a special ascogenic gif in which pairs of nuclei migrate: one of the male strain and one of the female strain. In each acoustics, two or more haploid ascospores merge their nuclei into cariogamia. During sexual reproduction, thousands of asci fill the fruit-bearing body called ascocarp. The diploid nucleus generates haploid nuclei in meiosis. Ascospores are then released, sprouted and form gifs that spread in the environment and begin a new Michelia (Figure 2). Which of the following statements is true? The dicariotic ascus, which is formed in Ascocarpa, is exposed to cariogemia, meiosis and mitosis and forms eight ascosporus. Diploid ascus, which is formed in Ascocarpa, is exposed to cariogamia, meiosis and mitosis and forms eight ascospores. The haploid zygota, which forms in Ascocarpa, is exposed to cariogamia, meiosis and mitosis and forms eight ascosporus. The dicaric ascus, which forms in Ascocarpa, is exposed to plasmogemia, meiosis and mitosis and forms eight ascosporus. Contribute! Did you have an idea to improve this content? We will love your contribution. Improve this pageBeh more department or filum mushrooms Ascomycota Sarcoscypha coccinea Scientific classification Kingdom: Mushrooms Subkingdom: Dikarya Division: Ascomycota (Burke.) Kaval.-See. (1998) Divisions/Classes Pezizomycotina Arthoniomycetes Coniomybomycetes Dotidometes Eurothyomicetes Geoglossomicetes Labulbeniometes Lecanoromitetes Leoti Lichimicetes Orbiliomycetes Pezizomycetes Sordariomycetes Xonoylmycetes Inappropriate orders Lachmiales Itchiclahmadion Triblidiales Saccharomycotina Saccharomycetes Archaeorhizomyces Neolectomycetes Neolectomycetes Schizosaccharomycetes Taphrinomycetes Ascomycota is a filum of the kingdom of Mushrooms, which, together with Basidiomycota, forms the subkingdom of Dikarya. Its members are commonly known as bagchet mushrooms or ascomicetes. It is the largest phylum mushroom, with over 64,000 species. The defining feature of this fungal group is ascus (Greek: ἀσκός (ascos), which means bag or wine), a microscopic sexual structure in which unmotil spores, called ascospores, are formed. However, some types of Ascomycota are asexual, meaning that they do not have a sexual cycle and thus do not form asci or ascospores. Familiar examples of baggy mushrooms include slices, truffles, beer yeast and baker's yeast, dead fingers and cup mushrooms. Fungal symbionts in most lichens (freely referred to ascolinchens) such as Cladinia belong to Ascomicota. Ascomicota is a monophyletic group (it contains all descendants of one common ancestor). Previously placed in Deuteromycota along with asexual species from other fungal dachshunds, asexual (or anamorphic) accomcetes are now identified and classified on the basis of morphological or physiological similarities with ascus-bearing dachs, as well as phylogenetic analysis of DNA sequences. Ascomicets are particularly used for humans as sources of medicinal compounds, such as antibiotics, for fermentation of bread, alcoholic beverages and cheese. Penicilli species on cheeses and those who produce antibiotics to treat bacterial infectious diseases are examples of accomicets. Many accomicetes are pathogens, both animals, including humans, and plants. Examples of accomicetes that can cause infections in humans include Candida albicans, Aspergillus niger and several dozen species that cause skin infections. Many plant-based accomicetes include apple scabs, exploding rice, arseed mushrooms, black knot, and powdered mold. Several types of accomicets are biological model organisms in laboratory studies. The most famous, Neurospora crassa, several types of yeast, and Aspergillus species are used in many genetics and cell biology studies. Asexual reproduction in ascomycetes and their characteristics Ascomycetes: Ascomycetes are controversial shooters. These are fungi that produce microscopic spores inside special, elongated cells or bags known as asci, which give the group its name. Asexual reproduction: Asexual reproduction is the dominant form of distribution in Ascomycota, and is responsible for the rapid spread of these fungi in new areas. Asexual reproduction of accomicetes is very diverse from both a structural and functional point of view. The most important and common conidia production, but chlamyodosporas are also often produced. In addition, Ascomycota also reproduce asexually through budding. Conidia Formation: Unclothed reproduction can occur through reproductive spores, conidia. Asexual, immovable haploid fungus spores, which are named after the Greek word for dust (conia), are therefore also known as conidiospores and mitospores. Conidiosporas usually contain one nucleus and are products of mitotic cell divisions and are thus sometimes called mitospores, which are genetically identical to the mycelium from which they originate. They are usually formed at the ends of specialized hyfai, conidiophores. Depending on the species, they can be scattered by wind or water, or animals. Conidiophores can simply branch from miselia or they can be formed in fetal bodies. The gif that creates a sporing (conditioning) tip can be very similar to a normal hyphal tip, or it can be differentiated. The most common differentiation is the formation of a cell in the form of a bottle called filid, from which spores are formed. Not all of these asexual structures are one gif. In some groups, conidiurs (structures bearing conidia) are aggregated to form a thick structure. For example, in the moniliales order, they are all of the same gifs, except for aggregations, called coremia or synnema. These structures produce as well as corn-to-drink, with many condiment produced en masse from aggregated conidiophores. A variety of conidia and conidio supports sometimes develop into asexual sporocarps with different characteristics (e.g. acervulus, pycnidium, sporodochium). Some types of accomicets form their structures in the tissues of plants like parasites or saprophytes. These fungi evolved more complex asexual sporing structures, probably influenced by the cultural conditions of plant tissue as a substrate. These structures are called sporodochium. This is a pillow of conidiophors, created from pseudo-parenchomatous stroma in plant tissue. Pycnidium is a globose-shaped flask parenchymatous structure, lined on its inner wall with conidiopers. Acervulus is a flat saucer shaped bed conidiops produced under the cuticle of plants that eventually erupt through the cuticle to disperse. 2) Budding: The asexual breeding process in the ascomice also includes a budding, which we clearly observe in yeast. This is called the blastyk process. It involves blowing or blebbing from the hyphal tip of the wall. The blastic process may involve all layers of the wall, or there may not be a new cell wall synthesized that is extruded from inside the old wall. The initial budding event can be seen as the development of a chitin ring around the point where the bud is about to appear. This strengthens and stabilizes the cell wall. Enzymatic activity and turgoric pressure act to weaken and squeeze out the cell wall. At this stage, a new material of the cell wall is activated. Cell contents to the cell of offspring, and as the final phase of mitosis mitosis a cell plate is formed, the point at which the new cell wall will grow inwards. The characteristics of Ascomycota ascomicets are morphologically diverse. The group includes organisms from single-celled yeast to complex cup fungi. 98% of lichens have Ascomycota as a fungal part of lichen. There are 2,000 identified genera and 30,000 species of Ascomycota. A unifying characteristic among these diverse groups is the presence of a reproductive structure known as acoustics, although in some cases it plays a reduced role in the life cycle. Many accomicets have commercial significance. Some play useful roles, such as yeast used in baking, brewing and fermenting wine, as well as truffles and slaces, which are held as gourmet delicacies. Many of them cause tree diseases such as Dutch wreth disease and apple malformations. Some of the plant pathogenic ascomycetes are apple scabs, exploding rice, spores mushrooms, black knot, and powdered mold. Yeast is used to produce alcoholic beverages and bread. Penicillia mold is used to produce the antibiotic penicillin. Almost half of all Ascomycota phium members form symbiotic associations with algae to form lichens. Others, such as sheavls (highly valued edible mushrooms), form important micorhizal relationships with plants, thus providing increased absorption of water and nutrients and, in some cases, protection from insects. Almost all accomicets are terrestrial or parasitic. However, some have adapted to marine or freshwater environments. The cell walls of the gif are variatively composed of chitin and β glucans, as in Basidiomycota. However, these fibers are installed in the glycoprotein matrix containing galactose and mannose sugars. Miselium accomicetes usually consists of septate gif. However, there is not necessarily any fixed number of cores in each of the units. The septum walls have pore septums that provide the cytoplasmic continuity of the entire individual gif. Under the appropriate conditions, the nucleus can also migrate between the septums through the pores of the septum. The unique character of Ascomycota (but not present in all ascomycetes) is the presence of woronin organs on either side of the septa separating the hypaty segments that control the septum pores. If the adjacent gif is torn, the body of the raven blocks the pores to prevent the loss of the cytoplasm in the torn compartment. The raven's bodies are spherical, hexagonal or rectangular membrane structures with a crystalline protein matrix. Modern classification There are three subfiles that are described and adopted: Pezizomycotina are the largest subphylum and contains all ascomycetes that produce Ascocarpas (fruit bodies), except for one kind, Neolecta, in This is roughly equivalent to the previous taxon, Euascomycetes. Pezizomycotina includes most of the majority asco, such as truffles, spores, ascolins, mushroom cups (discomycetes), pyrenomycetes, lorchel and caterpillar fungus. It also contains microscopic mushrooms such as powdered molds, dermatophytic mushrooms and labulbenias. Saccharomycotina make up the majority of true yeasts such as bakery yeast and Candida, which are single-celled (single-celled) fungi that reproduce vegetatively budding. Most of these species have previously been classified in a taxon called hemaskycetes. Taphrinomycotina include a disparate and basal group in Ascomycota, which was recognized after molecular (DNA) tests. The taxon was originally called Archiascomycetes (or Archaeascomycetes). It includes hyphal fungi (Neolecta, Taphrina, Archaeorhizomyces), fissile yeast (Schizosaccharomyces), and mammalian lung parasite Pneumocystis. Outdated taxa names A few outdated taxa based on morphological features are still used from time to time for ascomicota species. These include the following sexual (teleomorphic) groups defined by the structures of their sexual fetal bodies: discoomecetes, which included all species that form apothecia; pyrenomycetes that included all bag mushrooms that formed peresthesia or pseudothesis, or any structure resembling these morphological structures; and Plectomycetes, which included those species that form cleistothecia. Hemiascomcetes included yeast and yeast-like mushrooms that have now been placed in Saccharomycotina or Taphrinomycotina, while Euascomycetes included the remaining species of Ascomycota, which are now in Pezizomycotina, and Neolecta, which are found in Taphrinomycotina. Some ascomicets do not reproduce sexually or are known to produce no asci and therefore anamorphic species. Those anamorphs that produce conidia (mitospores) have previously been described as mitosporal ascomicotes. Some taxonomists placed this group in a separate artificial filum, Deuteromycota (or Fungi Imperfecti). Where recent molecular analyses have revealed close links to the ascus-carrying tach, anamorphic species have been grouped into Ascomycota, despite the lack of defining ascus. Sexual and asexual isolates of the same species usually have different names of binomial species, such as aspergillus nidulans and Emericella nidulans, for asexual and sexual isolates, respectively, of the same species. Species of Deuteromycota have been classified as Coelomycetes if they produce their conidia per minute flask or saucer form conidiomata, known technically as pycnidia and acervuli. Hyfomycetes were those species where conidiophoids (i.e. hypal structures carrying condiment-forming cells at the end) are free or poorly organized. They are mostly isolated, but also appear as bundles of cells aligned parallel (described as or as mass shape pillows (described as sporodochial). Morphology Member of the genus Cordyceps, parasitic on arthropods. Notice the elongated stromata. The species is unknown, possibly Cordyceps ignota. Most species grow as filamentous, microscopic structures called gifs or as novice single cells (yeast). Many interconnected gifs form thallus, commonly called mycelium, which is commonly referred to as mold when seen with the naked eye (macroscopic). During sexual reproduction, many Ascomycota usually produce large amounts of asci. Asca is often found in a multicellular, sometimes easily visible fruit structure, ascocarpe (also called ascom). Ascocarps come in a very large variety of shapes: cup-shaped, club-shaped, potato-like, spongy, seed-like, oozing and pimple-like, coral-like, nit-like, golf-ball-shaped, perforated tennis ball-like, pillow-shaped, shabby and feathered in miniature (Laboulbeniales), a microscopic classic Greek shield. Their texture can also be very variable, including meaty, like charcoal (carbon), leather, rubber, gelatinous, mucous, powdery, or pob-web-like. Ascocarps come in several colors such as red, orange, yellow, brown, black, or, less often, green or blue. Some ascomiceicic fungi, such as Saccharomyces cerevisiae, grow as single-celled yeast, which during sexual reproduction develops into ass, and do not form a fruit-bearing body. Candles fungus in its asexual state, Xylaria hypoxylon In a lichigned species, the thallus fungus determines the shape of a symbiotic colony. Some dimorphic species, such as Candida albicans, can switch between growth as single cells and filamentous, multicellular gifs. Other types of pleomorphic, exhibit asexual (anamorphic), as well as sexual (teleomorphic) forms of growth. With the exception of lichens, the unproductive (vegetative) mycelium of most acemicets is usually invisible because it is usually embedded in the substrate, such as soil, or grows on or inside the living host, and only ascoma can be seen in the fruit. Pigmentation such as melanin in the hypny walls, along with prolific growth on surfaces can lead to visible mold colonies; Examples include Cladosporium species that form black spots on bathroom seals and other wet areas. Many accomicetes cause food damage, and therefore pellicles or moldy layers that develop on jams, juices and other products are mycelium of these species or sometimes Mucoromycotina and almost never Basidiomycota. The absentee forms that develop on plants, especially in the tropics are thalli of many species. (Clarification required) Ascocarp from the sock contains Pharmacy. Large masses of yeast cells, asci or ascus-like cells, or conidia can also form macroscopic structures. Structure. Example. A type of pneumocystis can colonize the lung cavities (visible in X-rays), causing a form of pneumonia. Asci of Ascosphaera fills the larvae of honey bees and pupa, causing mummification with chalk, hence the name small pud. Yeast for small colonies in vitro and in vivo, as well as excessive growth of Candida species in the mouth or vagina cause thrush, a form of candidiasis. Cell walls of ascomicetes almost always contain chitin and β-glucans, and fission in the gif, called septa, are the internal boundaries of individual cells (or compartments). The cell wall and septa give the hyfa stability and stiffness and can prevent the loss of cytoplasm in the event of local damage to the cell wall and cell membrane. The septa usually have a small hole in the center that functions as a cytoplastic bond between neighboring cells, and sometimes allows the cell movement of nuclei within the gif. The vegetative gif of most ascomicetes contains only one nucleus per cell (uninucleate gif), but multinucleat cells may also be present, especially in the apical regions of gif cultivation. Metabolism Like other fungal fila, ascomycota are heterotrophic organisms that require organic compounds as energy sources. They are produced by feeding on a variety of organic substrates, including dead matter, food, or as symbionts in or on other living organisms. To get these nutrients out of the environment, ascomicet mushrooms secrete powerful digestive enzymes that break down organic matter into smaller molecules, which are then taken into the cell. Many species live on dead plant materials such as leaves, branches or logs. Some species colonize plants, animals or other fungi as parasites or mutual symbionts and receive all their metabolic energy in the form of nutrients from the tissues of their hosts. Thanks to its long evolutionary history, Ascomycota have developed the ability to destroy almost all organic matter. Unlike most organisms, they can use their own enzymes to digest plant biopolymeers such as cellulose or lignin. Collagen, a abundant structural protein in animals, and keratin , the protein that forms hair and nails, can also serve as a food source. Unusual examples include Aureobasidium pullulans, which feeds on wall paint, and kerosene fungus Amorphotheca resinae, which feeds on aviation fuel (causing occasional problems for the aviation industry) and can sometimes block fuel pipes. Other species can withstand high osmotic stress and grow, for example, on salted fish, and some ascomicets are aquatic. Ascomycota is highly specialized; For example, some species attack only one particular leg of one particular species of insect. Many Ascomycota engage in symbiotic relationships, such as in the associations with green algae or cyanobacteria, in which the fungal symbion directly receives photosynthesis products. Like many basidiomycetes and Glomeromycota, some askycetes form symbiosis with plants by colonizing the roots to form mycordhisal associations. Ascomycota is also a few carnivorous fungi that have developed hypnish traps to capture small protests such as amoeba, as well as roundworms (Nematode), rotifers, tardigrades, and small arthropods such as tails (Collembola). Hypomyces completus on the culture of medium distribution and habitat Ascomycota are represented in all earth ecosystems around the world, occurring on all continents, including Antarctica. Controversy and fragments of hyphal are dispersed across the atmosphere and freshwater environment, as well as ocean beaches and tidal zones. The distribution of species is variable; while some are found on all continents, others, such as the white tuber magnatum truffle, are found only in isolated places in Italy and Eastern Europe. The distribution of plant-parasitic species is often limited to the distribution of the host; for example, Cyttaria is only located on Nothofagus (southern beech) in the southern hemisphere. Reproduction of asexual reproduction of asexual reproduction is the dominant form of distribution in Ascomicota and is responsible for the rapid spread of these fungi to new areas. It occurs through vegetative reproductive spores, conidia. Conidiosporas usually contain one nucleus and are products of mitotic cell divisions and are thus sometimes called mitospores, which are genetically identical to the mycelium from which they originate. They are usually formed at the ends of specialized hyfai, conidiophores. Depending on the species, they can be scattered by wind or water, or animals. Asexual spores Different types of asexual spores can be determined by color, shape, and how they are released as individual spores. Types of spores can be used as taxonomic symbols in the classification in Ascomycota. The most common types are single-cell spores, which are marked by amerospor. If the spores are divided into two parts by a cross-wall (septum), it is called didimospor. Conidiospora trichoderma aggressive, diameter about 3 microns Conidiophora forms genus Aspergillus, Conidiogenes blastico-fialydia conidis Trihoderma harzianum, conidiogenesis blastico-fialidical conidiides Trihoderma fertile with vasoid violets and newly formed conidia at their ends (bright points) When there are two or more transverse walls, classification depends on the shape of spores. If the septals are transverse as the steps of the stairs, it is phragmospore, and if they possess a clean structure like this dictyospore. In staurospores the ray-like arms radiate from the central the whole argument is shaken like a spring. Very long spores, similar to worms, with a ratio of length to diameter of more than 15:1, are called scolecospores. Conidiogenesis and dehiscation Important characteristics of anamorphs ascomicota are conidiogenesis, which involves the formation of spores and dehisection (separation from the parent structure). Conidiogenesis corresponds to embryology in animals and plants and can be divided into two fundamental forms of development: blasty conidiogenesis, where spores are already obvious before it separates from the conidiogenic gif, and thallic conidiogenesis, during which a cross-wall is formed and a newly created cell develops into spores. Disputes may or may not be created in a large-scale specialized structure that helps spread them. These two main types can be further classified as: blastyco-acropetal (repeated budding at the tip of the conidiogenic gif, so that the chain of spores is formed with the youngest spores at the tip), blastyko-synchronous (simultaneous spore formation from the central cell, sometimes with secondary acropetal circuits formed from the original spore), blastico-simpodial (re-formation of spores) so that the oldest spores is at the main tip), blastico-nellidical (each dispute is separated and left a ring-shaped scar left by previous disputes), blastico-fiadic (controversy arises and is thrown out of the open ends of special conidio cells, called fialides, which remain permanent in length), basoxic (where the chain of conidia, in successively younger stages of development, radiates from the mother cell), blastic-regressive (controversy separated by the formation of crusaders near the tip of conidiogenic gif, which thus becomes shorter), thallic-artrick (double-tissue cylindrical walls called arthrocondia; sometimes every second cell dies, leaving the artrocodium free), thallic-single (large convex cell separates from conidiogenic gif, forms internal walls, and develops to phragmospore). Sometimes condiiums are produced in structures visible to the naked eye, which help to spread spores. These structures are called conidiomata (the only one: conidioma), and can take the form of pycnidia (which flasks form and originate in fungal tissue) or akervuli (which have the shape of a pillow and originate in the host tissue). Dehisculation occurs in two ways. In the shizolitic dechisivity between the cells, a double separation wall with a central lamella (layer) is formed; the central layer then collapses, thus freeing up the spores. In resolic dehisection, the cell wall that connects spores on the outer degenerates and releases Heterocariosis and Parasexuality Several types of ascomicota are not known have a sex cycle. Such asexual species may be subjected to genetic recombination between individuals as a result of processes associated with heterocariosis and parasexual events. Parasexuality refers to the process of heterocariosis caused by the merging of two gifs belonging to different individuals, a process called anatomosis, followed by a series of events leading to genetically different cell nuclei in mycelium. The fusion of nuclei is not followed by meyotic events, such as the formation of a geith and leads to an increase in the number of chromosomes on the nucleus. The mitotic crossover can allow recombination, i.e. the exchange of genetic material between homologous chromosomes. The number of chromosomes can then be restored to a haploid state by nuclear fission, with each nuclei genetically different from the original parent nuclei. As an alternative, the nucleus may lose some chromosomes, leading to aneuploid cells. Candida albicans (Class Saccharomycetes) is an example of a fungus that has a parasexual cycle (see Candida Albicans and a parasexual cycle). Sexual reproduction of Ascus of Hypocrea virens with eight two-cell ascospores Sexual reproduction in Ascomycota leads to the formation of ascus, the structure that defines this fungal group and distinguishes it from other fungal phila. Ascus is a tubular-shaped vessel, meiosporangium, which contains sexual spores produced by meiosis and which are called ascosporas. In addition to a few exceptions, such as Candida albicans, most ascomicetes are haploid, i.e. contain one set of chromosomes per nucleus. During sexual reproduction there is a diploid phase, which is usually very short, and meiosis restores the haploid state. The sexual cycle of one well-studied representative species Ascomycota is described in more detail in Neurospora crassa. Also, an adaptive basis for maintaining sexual reproduction in Ascomycota mushrooms was considered by Wallen and Perlin. They concluded that the most plausible reason for maintaining this possibility was the benefit of repairing DNA damage through recombination, which occurs during meiosis. DNA damage can be caused by various stresses, such as nutrient restriction. The formation of sexual spores The sexual part of the life cycle begins when two hyphal structures mate. In the case of ogomalic species, mating is included between the gif of the same fungal clone, while in heterothalic species, two hyfas must occur from fungal clones that differ genetically, i.e. those that have a different type of mating. Mating types are characteristic of fungi and roughly correspond to the sexes of plants and animals; however, one species can have more than two types of mating, which sometimes leads to complex vegetative systems Adaptive mating type function is discussed in Neurospora crassa. Gametangia Gametangia sexual structures formed from gifs are generative cells. A very thin gif called trihogin comes out of one gametangium, ascoin, and merges with the gametangium (anteridi) of other fungal isolate. The nuclei in the anteride then migrate to ascoy, and plasmohamia-mixing is cytoplasm-going. Unlike animals and plants, plasmogamy is not immediately accompanied by the fusion of nuclei (called cariogamia). Instead, the nuclei of the two gifs form pairs, initiating a dicariophase of the genital cycle, during which the pairs of nuclei are simultaneously divided. The fusion of paired nuclei leads to a mixing of genetic material and recombination, followed by meiosis. A similar sex cycle is present in red algae (Rodofita). The discarded hypothesis was that the second event of cariogramia occurred in ascognia before ascognia, resulting in a tetraploid nucleus that is divided into four diploid nuclei by meiosis and then eight haploid nuclei as a result of a proposed process called brachymyosis, but this hypothesis was disproved in the 1950s. These gifs are called ascogenous or fertile gifs. They are supported by vegetative mycelium containing single- (or mono-) nucleate gif, which are sterile. Mycelium, containing both sterile and fertile gifs, can grow into a fruit-bearing body, ascocarp, which can contain millions of fertile gifs. Ascocarp is the fetal body of the sexual phase in Ascomycota. There are five morphologically different types of Ascocarp, namely: Naked asci: they occur in simple ascomycetes; asci are produced on the surface of the body. Peritecia: Asci are found in a flask shaped ascom (peritecia) with at times (ostiole) at the top. Cleistothecia: Ascocarp (cleistothecium) is spherical and closed. Apothecia: asci are found in a bowl of ascoma shape (apothetion). They are sometimes called cup mushrooms. Pseudothecia: Asci with two layers produced in pseudotations that look like a peritium. Ascospores are irregular. Sexual structures are formed in the fruit layer of ascocarpa, the hymen. At one end of the ascogenic gif, characteristic U-shaped hooks develop that curve back opposite the direction of gif growth. The two nuclei contained in the apical part of each gif are divided so that the strands of their mitotic spindles run in parallel, creating two pairs of genetically different nuclei. One of the daughter's core migrates close to the hook, while the other core of the daughter finds the basal part of the gif. Formation of two parallel cross walls then divides the gif into three sections: one on the hook with one core, one in the basal gif, which contains one nucleus, and one that separates the U-shaped part, which contains the other two nuclei. The apotheca chart (typical cup-like reproductive structures of Ascomycetes) showing sterile tissues as well as developing and mature asci. The fusion of nuclei (cariogamia) occurs in the U-shaped cells of the hymen, and leads to the formation of a diploid zigota. The zygote grows into an ascus, an elongated tubular or cylindrical capsule shape. Mayosis then results in four haploid nuclei, usually followed by further mitotic fission, resulting in eight nuclei in each ascus. The nuclei along with some cytoplasm become enclosed in the membrane and cell wall to cause ascospores that are aligned inside the ascus like peas in a pod. When the ass can be opened, the ascospores can be scattered by the wind, while in some cases spores are forcibly thrown away by the form of ascus; Some species have evolved spores of guns that can throw out ascospores up to 30 cm. When spores reach a suitable substrate, they germinate, form a new gif that restarts the fungal life cycle. The form of ascus is important for classification and is divided into four main types: unitantin-oprculus, unitonic-inoperable, bitunicate or proto-tunicate. Read more about this in the article of the magazine Ogonek Atsi. Ascomycota ecology plays a central role in most terrestrial ecosystems. They are important decomposing, breaking down organic materials such as dead leaves and animals, and helping detritivores (animals that feed on decomposing material) to get their nutrients. Ascomicets together with other fungi can break down large molecules such as cellulose or lignin, and thus play an important role in nutritional cycling, such as the carbon cycle. Ascomycota fruit and vegetable bodies provide food for many animals ranging from insects and slugs and snails (Gastropoda) to rodents and larger mammals such as deer and wild boars. Many ascomicets also form symbiotic relationships with other organisms, including plants and animals. Lichens Home article: Lishine Probably since the beginning of its evolutionary history, Ascomycota have formed symbiotic associations with green algae (chlorophyte), and other species of algae and cyanobacteria. These mutual associations are widely known as lichens, and can grow and persist in terrestrial regions of the Earth, which are inhospitable to other organisms and are characterized by extreme temperatures and humidity, including the Arctic, Antarctica, deserts and mountain peaks. While the partner of photo-autotrophic algae generates metabolic energy through photosynthesis, the fungus offers a stable, supportive matrix and protects cells from radiation and dehydration. About 42% of ascomycota (about 18,000 species) form lichens, and almost all fungal partners belong to Ascomycota. Ascomycota. Mushrooms and endophytes members of Ascomycota form two important types of relationships with plants: both mycorris mushrooms and both endophytes. Mycorrhiza are symbiotic associations of fungi with root plant systems that can be vital for growth and perseverance for the plant. The thin mycelium fungus network increases the absorption of mineral salts that occur at low levels in the soil. In exchange, the plant provides the fungus with metabolic energy in the form of photosynthetic products. Endophic mushrooms live inside plants, and those that form mutual or commens association with the owner do not damage their owners. The exact nature of the relationship between endophytic fungus and host depends on the species, and in some cases fungal colonization of plants may give greater resistance to insects, roundworms (nematodes) and bacteria; in the case of herbal endophites, fungal symbionium produces poisonous alkaloids that can affect the health of herbivorous (herbivorous) mammals and deter or kill herbivorous insects. The symbiotic relationship with animals Of several Xylaria genus ascomicets colonize the nests of leaf-cutter ants and other attini mushroom ants, as well as the termite fungal gardens (Isopter). Since they do not generate fruit-bearing bodies until the insects leave the nests, it is suspected that, as confirmed in some cases, basidiomycot species can be cultivated. (Clarification) Bark beetles (Scolytidae family) are important symbiotic partners of ascomicetes. Female beetles transport fungal spores to new owners in characteristic ways in their skin, mycetangia. Beetle tunnels into wood and into large chambers in which they lay eggs. Spores released from mycetangia germinate in a gif that can break wood. The beetle larvae then feed on fungal mycelium, and, reaching maturity, carry new spores with them to resume the cycle of infection. A well-known example of this is the Dutch wreth disease caused by Ophiostoma ulmi, which is carried by the European bark beetle Scolytus multistriatus. Plant disease interactions Are one of their most harmful roles as an agent of many plant diseases. For example: Dutch elm disease, caused by closely related species Ophiostoma ulmi and Ophiostoma novo-ulmi, has resulted in the death of many elms in Europe and North America. Originally asian Cryphonectria parasitiz is responsible for the attack Sweet Chestnuts (Castanea sativa), and virtually eliminated the once widespread American chestnut

(Castanea dentata), a corn disease (zeya may), which is particularly common in North America, caused by Cochliobolus heterostrophus. Taprina deformance causes a leaf of peach curl. Uncinula necator is responsible for the powdery mold disease that attacks Monilinia species cause brown rot of stone fruits such as peaches (Prunus persica) and sour cherries (Prunus ceranus). Members of Ascomycota such as Stachybotrys chartarum are responsible for the fading of wool textiles, which is a common problem, especially in the tropics. Blue-green, red and brown shapes attack and spoil food - for example, Penicillium italicum rots oranges. Cereals infected with the fusarium graminearum contain mycotoxins such as deoxinivalenol (DON), which causes ear fusarium decline and damage to the skin and mucous membrane when eating pigs. Human disease interaction aspergillus fumigatus, the most common cause of fungal infection in the lungs of immune compromised patients often leads to death. Also the most common cause of allergic bronchopulmonary aspergillosis, which is common in patients with cystic fibrosis as well as asthma. Candida albicans, yeast that attacks the mucous membranes, can cause an infection of the mouth or vagina called thrush or candidiasis, and is also blamed for yeast allergies. Mushrooms like Epidermophyton cause skin infections, but are not very dangerous for people with a healthy immune system. However, if the immune system is damaged they can be life-threatening; for example, Pneumocystis jirovecii is responsible for severe lung infections that occur in AIDS patients. Ergot (Claviceps purpurea) is a direct threat to humans when it attacks wheat or rye and produces highly poisonous alkaloids, causing ergotism when consumed. Symptoms include hallucinations, stomach cramps, and burning in the limbs (St. Anthony's Fire). Aspergillus flavus, which grows on peanuts and other hosts, generates aflatoxin, which damages the liver and is highly carcinogenic. Histoplasm capsule causes histoplasmosis, which affects immunocompromised patients. Blastomyces dermatitidis is a causal agent of blascomicosis, an invasive and often serious fungal infection, sometimes found in humans and other animals in regions where the fungus is endemic. Paracoccidioides brasiliensis and Paracoccidioides lutzii are causal agents of paracoccidioidomycosis. Coccidioides immitis and Coccidioides posadasii are the causal agent of coccidioidomicosis (valley fever). Talaromyces marneffei, formerly called Penicillium marneffei causes talaromycosis beneficial effects to humans, on the other hand, ascus mushrooms have brought some important benefits to humanity. The most famous case may be the mold penicillium chrysogenum (formerly Penicillium notatum), which is likely to attack competing bacteria, produces an antibiotic that, called penicillin, revolutionized the treatment of bacterial infectious diseases in the 20th century. Medical value niveum as an immunosuppressor is hard to exaggerate. He singles out ciclosporin, which, as well as being given to Organ transplantation to prevent rejection is also prescribed for autoimmune diseases such as multiple sclerosis, although there are some doubts about the long-term side effects of the treatment. Stilton cheese streaks with Penicillium roqueforti Some ascomicet mushrooms can be modified relatively easily through genetic engineering procedures. They can then produce beneficial proteins such as insulin, human growth hormone, or TPa, which is used to dissolve blood clots. Several species are common models of organisms in biology, including Saccharomyces cerevisiae, Schizosaccharomyces pombe, and Neurospora crassa. The genomes of a number of ascomicet fungi were completely sequenced. Baker's yeast (Saccharomyces cerevisiae) is used to produce bread, beer and wine, during which the process of sugar such as glucose or sucrose is fermented to make ethanol and carbon dioxide. Most winemakers use it to produce ethanol, with carbon dioxide released into the atmosphere during fermentation. Brewers and traditional sparkling wine producers use both primary fermentation for alcohol and secondary carbon dioxide bubbles, which provide drinks with a sparkling texture in the case of wine and desirable foam in the case of beer. Penicillium camemberti enzymes play a role in the production of Camembert and Brie cheeses, while Penicillium roqueforti cheeses do the same for Gorgonzola, Roquefort and Stilton. In Asia, Aspergillus oryzae is added to the pulp-soaked soybeans to make soy sauce, and is used to break down starch in rice and other grains into simple sugars for fermentation in East Asian alcoholic beverages such as Huangju and sake. Finally, some members of Ascomycota are choosing edible; (Morchella spp.), truffles (Tuber spp.) and lobster mushrooms (Hypomyces lactifluorum) are among the most sought-after fungal delicacies. See also the List of Families Ascomycota incertae sedis List of ascomycota births incertae sedis Notes - Cavalier-Smith, T. (1998). A revised system of life of six kingdoms. Biological reviews of the Cambridge Philosophical Society. 73 (3): 203–266. doi:10.1111/j.1469-185X.1998.tb00030.x. PMID 9809012. Kirk et al., page 55. Lutzoni F; et al. (2004). Assembling the fungal tree of life: the progress, classification and evolution of subcellular traits. American Botany Magazine. 91 (10): 1446–80. doi:10.3732/ajb.91.10.1446. PMID 21652303. James TY; et al. (2006). Reconstruction of the early evolution of fungi using six gene phylogen. Nature. 443 (7113): 818–22. Bibkod:2006Natur.443. 818J. doi:10.1038/nature05110. PMID 17051209. S2CID 4302864. McCoy, Peter (2016). Radical michology. Press. 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