

KINGDOM FUNGI

GENERAL

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- Structure
 - most are _____
 - _____ – threadlike filaments
 - basic structural unit of a fungus
 - mycelium – _____
 - cell walls made of _____
 - few unicellular species (i.e. yeasts)
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- extracellular digestion; use enzymes
- decomposers = _____
 - “_____” – dead in Latin
- parasites = absorb nutrients from living cells of host
 - _____ = specialized hyphae that penetrate & grow in the host cells
 - * i.e. yeast infection
- mutualism = help themselves and host
 - * i.e.- roots of plants
- Reproduction
 - Asexual
 - _____ = pieces break off and form new whole fungi
 - _____ = mitosis causes a new individual to form; eventually it separates from the parent
 - Sexual
 -
 - produced by sporangia (sac in which spores are made)
 - often the only part of a fungus you can see
- Adaptations for survival
 - spores are _____
 - huge numbers are produced from 1 parent
 - spread by many different ways (water, wind, birds, insects)

TYPES OF FUNGI

1. Phylum Zygomycota “_____”
 - 1500 species
 - * i.e. bread mold = _____
 - mainly decomposers

- both sexual and asexual stages of life cycle
 - asexual reproduction with _____
 - sexual reproduction with thick-walled spores (see below)
- _____ = hyphae that grow _____ along the surface of the food source
- _____ = hyphae that grow _____ into the food source
- * Forms _____ = _____ that are adapted to withstanding unfavorable conditions

2. Phylum Ascomycota “_____”

- 30,000 species = largest group
 - *i.e. morels & truffles
 - *i.e. plant diseases = apple scab, Dutch elm disease
 - *i.e. animal diseases = yeast infection
- both sexual and asexual stages of life cycle
- _____ = sac-like structure in which sexual spores are produced
 - _____ = spores that develop in the ascus
- _____ = hyphae that rise up from the mycelium
 - _____ = asexual spores that develop from the tips of conidiophores
 - produce spores in groups of ____; are _____
- *Unicellular fungus = _____
 - reproduce _____
 - important for baking and brewing!
 - also important in genetics; have large chromosomes
 - vaccine for hepatitis B = splicing human genes w/yeast cells

3. Phylum Basidiomycota “_____”

- 25,000 species = most familiar
 - *i.e. _____
- both sexual and asexual stages of life cycle
- _____ = club-shaped hyphae in which sexual spores are produced
 - usually produces a short-lived reproductive structure i.e. mushroom cap and stalk
 - _____ = sexual spores produced by the basidia
 - produce spores in groups of ____; are _____

4. Phylum Deuteromycota “_____”
- 25,000 species = no known sexual stage in life cycle
 - *i.e. _____ = antibiotics
 - only asexual reproduction; sexual cycle has not been observed by a mycologist
 - “_____” = fungus “_____” = one who studies
 - uses = making soy sauce; Penicillin; citric acid = gives soft drinks, candies & jellies their tart flavor; and blue-veined cheeses

MUTUALISTIC RELATIONSHIPS WITH FUNGI

- both organisms benefit from the relationship
1. _____
- symbiotic relationship in which a fungus lives in close relationship w/ _____
 - fungal partner is usually a _____; some are zygomycetes
 - fungus increases _____ that move into the plant by increasing the _____ of the plant’s roots
 - *i.e. copper & phosphorous
 - also may help _____ around the plant
 - fungus receives _____ from the plant
 - *i.e. sugars and amino acids
 - _____ of all plant species have mycorrhizae associated with their root systems
 - relationship makes plants larger and more productive
 - some plant species cannot survive w/o them!
 - *i.e. orchid seeds will not grow into a plant without a mycorrhizal fungus to provide them with H₂O & nutrients
2. Lichens
- _____ of lichens
 - symbiotic association b/w a _____ and a _____
 - fungal partner is usually _____
 - fungus forms a tangled web of hyphae in which the algae grow
 - forms a spongy structure that looks like _____
 - grow very slowly = very large lichens are thought to be _____
 - need only light, air, and minerals to grow
 - photosynthetic green algae _____
 - fungus retains _____
 - can live in harsh & barren habitats
 - usually among the 1ST organisms to live in an area

* i.e. arid deserts; on bare rocks in hot sun or bitter cold winds; just below timber line on mountain peaks; and in the arctic tundra

FOSSILS

- fossils show how fungi evolved
- fossils of fungi are rare b/c _____
- oldest fossils of fungi are 450-500 myo

