

## Fungi

### I. Introduction

#### A. Taxonomy

Domain: Eukarya

Kingdom: Fungi

#### B. General characteristics

Cellular organization

Heterotrophic

Chitin cell wall

External digestion

Reproduction – sexual & asexual

#### C. General morphology

Hypha(e) – may be septate or aseptate

Mycelium (mycelia)

Reproductive structures

Sporangium (sporangia)

Mushroom

#### D. General life cycle

Diploid vs. Haploid

Meiosis (from  $2n$  to  $n$ )

Cytoplasmic fusion ( $n+n$ , dikaryotic = 2 distinct nuclei in each cell)

Nuclear fusion (from  $n+n$  to  $2n$  = one nucleus)

### II. Major groups of fungi

#### A. Basidiomycota: the club fungi

Structures: Basidiocarp

Basidiospores

#### B. Ascomycota: the sac fungi

Structures: Ascocarp

Ascospores

Many are pathogens

#### C. Zygomycota: the zygote fungi

Structures: Zygosporangium

Sporangia

#### D. Chytrids: the flagellated fungi

Structures: Motile spores and gametes

#### E. Glomeromycetes: the fungi imperfecti

No known sexual reproduction

Grow in soil on plant roots

### III. Fungal Symbionts

#### A. Lichen

Fungus with algae (or cyanobacteria) living inside it

#### B. Mycorrhizae

Fungus living in plant roots