

"CHAPTER NO. 07"

Date 23-Nov-2024

"PROTISTS AND FUNGI"

=> Three Domain System

- | | |
|--------------------|---------------|
| 1- Domain Archaea | } Prokaryotes |
| 2- Domain Bacteria | |
| 3- Domain Eukarya | } Eukaryotes |

Summative
SLO. 1, 7, 8,
9, 10

↓
Animalia Plantae Protist Fungi

KINGDOM PROTIST: [POLYPHYLETIC]

=> Protista → Greek word (Protistos) → which means
"They are called so" ← "The very first" ↓
because they are the first group of Eukaryotes
evolved from Prokaryotes.

- Q Why Protists are called 'very first'?
- Q What is the basis of name 'protist'?
- Q Why are Protists named so?

"UNIFYING FEATURES"

- Eukaryotes
- Unicellular / Multicellular
- Direct descendent of Prokaryotes
- They are exclusions of all other Eukaryotes

"DIVERSITY AMONG PROTISTS"

- Size: - Microscopic (Protozoans) → 60 m (Brown Algae)
- Body Structure: - Unicellular → Multicellular
- Unicellular → ① Solitary → ② Colony

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→ Multicellular → (1) Filamentous → (2) Compact (Thallus)

"NUTRITION"

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→ Autotrophic Protists perform oxygenic photosynthesis
→ Heterotrophic Protists,

↓
Absorptive
mode

↓
Ingestive
mode

"REPRODUCTION"

→ Asexually (All individual)
→ Sexually (Gametes formation)
↓
Meiosis
→ Fertilization or syngamy
↓
(union of gametes)

* Absorptive Mode :-

Enzyme body se release
kerte hen, wo enzyme body
se bahir hi digestion krt
Phir us digested food ko
Ingest kerte hen.

* Ingestive Mode :-

Take In food, Phir
andar hi andar digestion
hoti he

"LOCOMOTION"

→ Sedentary / Stationary
→ Motile → Variety of locomotory
Flagella ↔ organs
↓
Pseudopodia Cilia

"CLASSIFICATION"

→ Animal like : Protozoa
→ Plant like : Algae
→ Fungal like : Slime Mold,
Water Mold

"MODES OF LIFE"

→ Free living organisms
→ Symbiots
→ Parasitic / Pathogens
→ Saprophytes

Q Why Protists are called
Polyphyletic?

'Poly' means many or more than
one and phyletic means evolution
They are called so, cause they
have d/f origins.

KINGDOM FUNGAL

Date:

→ Fungal Thallus (Body) is called Mycelium

Thallus → Leaf, Stem & Roots

can't be d/f in these bodies

- Eukaryotic Organisms
- Multicellular except yeast
- Cell wall → Chitin.
- No centrioles present
- Plastids are absent
- Heterotrophs.

→ Acc. to evolutionist that they were evolved, 570 million years ago

→ They might arise from red algae

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COMPARISON B/w Fungi - Q

Similarities: - and plants

- Presence of cell wall
- Lack of centriole
- Non-motile

Differences: -

- Cell wall of chitin
- Mode of Nutrition

Mutualism

Lichens

(Dual Organisms)

(Basidiomycetes, Ascomycetes)

(Mycobionts) (helps in attachment)

Fungal (90%) (absorb water & minerals)

Algae (10%) (Photosynthesis → Food Prepare)
(Phycobionts) (Cyanobacteria) (green algae)

Date:

"Mycorrhizae"

Fungal (water ~~and~~ abs. & mineral)
(Protection against pathogens) (absorb K, Na, S, P)

Roots of
Higher (shelter and food
Plants Provides)

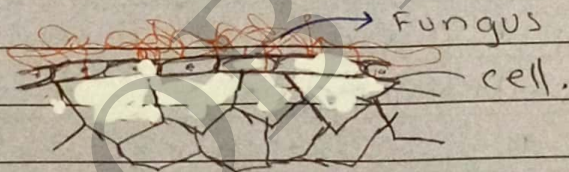
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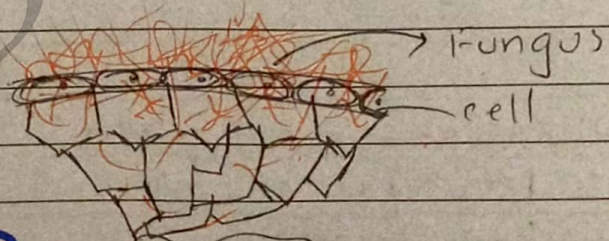
Ectomycorrhiza Association

Fungal cannot penetrate inside the root cells. Either outside epidermis or in interstitial spaces.



Endomycorrhiza Association

Fungal can penetrate inside the root cell.



Edible Fungal

- Not poisonous
- Used in Making Soya Sauce
- 200 edible

Culinary
Medicinal
Industrial

Poisonous → road stools

Toxic Fungal

- Can cause toxications & Hallucinations
- Amanita^(genus) → destroying angel,
- Amanita phalloids → death cap

Date:

Ecological Role Of Fungi

Beneficial Role

①

- Decomposition
- Nutrients Cycle
- Nature's recyclers
- * Leaves, woods etc ki decomposition kar ke un mein se nutrients soil ko wapis lautate hen
- * Is se soil bahot Fertile and nutrient-full si ban jai gi.

②

- Mycorrhizal Association
- * Association between Fungi and Roots of Plants.
- * Enhance in nutrients uptake

③

- Predators
- Soil ecosystem
- * round worms ka shikar kerti hen.

④

- Biotransformation
- Pollutant degradation

Harmful Role

①

- Plant diseases
- * Ascomycots
 - Brown rot
 - Apple Scab
 (In fruits, cherries etc)
- * Basidiomycots
 - Smuts → Rusts
 (In cereal crops)

②

- Animal diseases
- * Superficial Infections
- * Systematic Infections
- * Ergotism
- * Pneumocystis
- Pneumonia

- * Decomposition wale time jo CO₂ release hoti he us se Carbon cycle hota h
- * Mycorrhizal association ki wajah se 75% CO₂ under land hoti he.

⑤

- Carbon Cycle
- Humus formation
- Soil enriching
- Supp. diverse ecosystem



- * Plastic, wood, ya jo b environment mein para hota he us ko degrade karta he.