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19/MHS01/351

BIO 102

1. DIVISION ----- CLASS

Thallophyta------phycotinae (Algae) , Mycotinae (fungi )

Bryophyta -----Hepaticae( liverworts ), Musci (mosses )

Pteridophyta--- psilotinate (Psilotinate), Lycopodinae (Lycopodium), Equisetinae (Horsetail) ,Filicinae(ferns)

Spermatophyta---- Gymnospermae (Gymnosperm), Angiospermae (Angiosperm)

1. -Algae serves as food to human and livestock.

-Algae is highly nutritious because it has high content in protein and high concentration in vitamins, trace element.

-Algae serves as thickening agent for the ice cream, shampoo and drug industries.

-Brown algae yield Alginic acid that is used to stabilize emulsion and suspension.

-Sea weeds contains three chemicals that are extensively essential in the food, pharmaceutical, textile, cosmetics industries.

-Different species of red algae provide agar and carrageen which is used for various scientific research.

-Algae wards off disease.

-Algae have high iodine content. Hence, they prevent goiter.

1. Unicellular form of algae

Taking chlamydomonas as an example

This is found in stagnant water, posses flagella for mobility, cellulose cell wall, nucleus which carries all genetic information, stigma which is the eyespot is for photoreception, pyrenoid helps to convert manufactured sugar to starch,the mitochondria mediate the elaboration of energy molecules.

1. Reproduction can be either vegetative(asexual) or sexual.

Vegetative (asexual): This produces daughter chlamydomonas with same quality and quantity of genetic material as the mother cells. This is a mitotic cell division that in unicellular organism is responsible for the increase in number and in multicellular organism is responsible for increase in size.

Sexual reproduction: this involves the union of sex cell, aggregation of cells in a colony occurs under unfavorable conditions. These cell pair by their posterior ends. This pairing is said to be isogamous because the pairing cells (gametes) are morphologically identical.

1. Colonial forms in Algae
* Volvox
* Pandorina

Pandorina

-Sexual reproduction is anisogamous.

-unicellular motile thallus.

- it is a genus of green algea.

Volvox

-Sexual reproduction is oogamus.

-multicellular motile thallus.

-it is a complex form of pandorina.

1. Fucus

This is a genus of brown Algae whose species are often found on rocks in intertidal zones of the sea shores. The plant body is flattened, dichotomously-branched thallus with a mid rib, a vegetative apex and a multicellular disc, with which plants are attached to the rock. The plant body also have air bladders which is believed to aid the plant to float on water. They vary in terms of if the sex cells are in the same sexual chambers or in different sexual chambers on different plant bodies. Sexual reproduction is oogamous.