



# Plankton 3

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# 7. Environment

- ▶ Freshwater (*Limnoplankton*)
- ▶ Lakes (*Heleoplankton*)
- ▶ Rivers (*Potamoplankton*)
- ▶ Spring waters (*Krenoplankton*)
- ▶ Salt water (*Haloplankton*)
- ▶ Still water (*Stagnoplankton*)
- ▶ Cold water (*Psicrophil plankton*)
- ▶ Hot water (*Thermophilic plankton*)
- ▶ Certain salinity (*Stenohaline plankton*)
- ▶ Different salinity (*Euryhaline plankton*)

## 8. Abundance

- ▶ **Monotonus plankton:** 75% of the population are the same species
- ▶ **Privalent plankton:** More than 50% are the same species in the population
- ▶ **Polimiktik plankton:** The individuals which belong to the population are in the same environment as quantitative and qualitative
- ▶ **Planktomictic plankton:** Very less species and individuals are found (Polluted waters or during winter)

# 9. *According to reproduction*

**a. Sexual reproduction:** Generally, in reproduction of algae occurs by being formed zygotes from the cells of male and female individuals and being formed a new algae from the zygote.

Sexual reproduction is divided into three groups according to their germ cells' size, morphology, being able to move and being unable to move.

- ▶ **Isogamy:** Both of the germ cells have the same size and are able to move.
- ▶ **Anisogamy:** One of cell is small other one is big and also both of them are able to move.
- ▶ **Oogamy:** Female cell is big and unable to move, male cell is small and able to move.

1. *With division;*

- ▶ Cells get bigger and bigger, division as colony (*The fragmentation*)
- ▶ *Thallus* (body) is divided or main plant's growth
- ▶ Cell is divided after it gets a certain size (*Desmidiaceae*).
- ▶ Cells are divided mitotically (the same two cells), however the growth does not end. Every cell forms a new cover (hypoteka) (*Bacillariophyceae*).
- ▶ Cells are divided through vertically (*Flagellata*).

## 2. *By forming zoospores*

- a. The nucleus of the vegetative cell which forms the algae is divided by mitosis
- b. One or more zoospores are formed
- c. Cell membrane is broken and the zoospores comes out
- d. Zoospores have flagella and move in the water
- e. These zoospores become algae by developing

## b. Asexual reproduction:

- ▶ It is seen in primitive groups.
- ▶ In some groups of algae, there are some great similarities between asexual reproduction and vegetative reproduction.

In asexual reproduction;  
In some algae;

- ▶ Some cells are break up from the main cell by differentiating itself and become a new individual.
- ▶ In this differentiation the protoplasts which are in the cell create zoospores with or without whips and creat motionless aplanaspores.
- ▶ In some species, they do not separate from each other, like a shape of a well developed cell they are found together (For instance: *Chlorococcales*).



Formation of asexual spores in cells;

- ▶ Mitotic nucleus division and
- ▶ division of Protoplasm (*Chamydomonas*)

***In Chlamydomonas;***

- ▶ With the vertical and horizontal division in cell; 2, 4 or 8 zoospores are formed.
- ▶ The whole cell becomes a zoosporangium.

***In Oedogonium:***

- The cell creates only one zoospores.

### *In Vaucheria:*

- ▶ Found a well developed zoospores
- ▶ There are flagella with different lengths on the Zoospores

### *In Ulothrix:*

- ▶ The number of zoospores is between 1-4
- ▶ The size of zoospores are different

### *In Volvox:*

- ▶ Some special new colonies are formed in colonies