Wasan Jassim

Microbiology lap

12th

Algae

algae, members of a group of predominantly aquatic photosynthetic organisms of the kingdom **Protista**. Algae have many types of **life cycles,** and they range in size from microscopic *Micromonas* **species** to giant **kelps** that reach 60 metres (200 feet) in length.

Algal classification: Algae are being distributed in two kingdoms:

1-monera: prokaryotic algae (cyanophyta) are placed in the monera

2-protista: eukaryotic algae (all other algal divisions) are placed in the Protista

The primary classification of algae is based on the following criteria:

1-photosynthesis pigments

2-nature of food reserves

3-nature of cell wall components

4-type, number and attachment of flagella

5-cell structure

Algae are classified in to seven divisions

1- Division: Cyanophyta (Blue-green algae)

Class:cyanophyceae (myxophyceae)

2- Division: Chlorophyta (Green algae)

Class: chlorophyeae

Class: charophyceae

3- Division: Euglenophyta (Euglenoids)

Class: Euglenophyceae

4- Division: chrysophyta (Yellow-green)

Class: chrysophyceae

Class: xanthophyceae

Class: bacillariophyceae (Diatomes)

5- Division:pyrrophyta (Dinoflagellates)

Class: desmophyceae

Class:dinophyceae

6- Division: phaeophyta(Brown algae)

Class:isogenerate

Class: heterogenerate

Class:cyclosporae

7- Division: Rhodophyta(Red algae)

Class:Rhodophyceae

Chlamydomonas

All *Chlamydomonas* are motile, unicellular organisms. Cells are generally spherical to cylindrical in shape, but may be elongately spindle-shaped, and a papilla may be present or absent. Chloroplasts are green and usually cup-shaped. A key feature of the genus is its two anterior flagella, each as long as the other.

Scientific classification	
Clade:	Viridiplantae
Division:	Chlorophyta
Class:	Chlorophyceae
Order:	Chlamydomonadales
Family:	Chlamydomonadaceae
Genus:	*Chlamydomonas*

Blue Green Algae

Blue-green algae, also known as Cyanobacteria, are photosynthetic bacteria that can exist as single cells or colonies. They contain a green pigment called Chlorophyll a and other pigments such as carotenoids and phycobilins. These bacteria are commonly found in marine and freshwater environments, including dams, rivers, reservoirs, lakes, and hot springs.

Classification Blue Green Algae

Kingdom	Bacteria
Phylum	Cyanobacteria
Class	Cyanophyceae
Order	Chroococcales,Nostocales, Oscillatoriales, Synechococcales
Family	Chroococcaceae, Nostocaceae, Oscillatoriaceae, Synechococcaceae
Genus	*Microcystis*, *Nostoc*, *Oscillatoria*, *Synechococcus*
Species	Many species of Cyanobacteria

Chu10 liquid algae growth medium

T	Article	Weight($gm.L^{-1}$)
1	$Ca(NO_3)_2$	0.4
2	K_2HPO_4	0.1
3	Na_2CO_3	0.2
4	$MgSO^4$	0.25
5	Na_2Sio_3	0.25
6	Ferric Ammoniwm Citrate	0.05

Table (1-1) Components of the standard liquid algae growth medium Chu10

These components shown in Table (1-1) are dissolved in a liter of distilled water, then the pH of the medium is adjusted to (7.8-7.6) using a pH meter, solutions (0.1NaOH) and diluted HCI acid (1N). The prepared medium is distributed into 250 ml glass flasks, 100 ml for each flask, then the mouth of the flasks is closed with aluminum foil and sterilized with an autoclave at a temperature of 121 °C and a pressure of 1 for 20 minutes.