

Lab: algal storage and diagnosis

Preservation solutions:

Samples for phytoplankton analysis should be preserved immediately after collection by adding Preservation solutions that used for algal samples storage in fields or in laboratory to sustain normal algal shape for diagnosis and counting of collected algal samples. also to reduce bacterial activity and autolysis of algal cells. These solutions are:

1- 4% formalin solution: this solution used to prevent growth of bacterial and fungal cells within algal samples.

2- Lugols solution: consisting of(iodine, potassium iodine, glacial acetic acid and distilled water)

iodine in this solution is bacteriostatic. Also iodine interact with starch that found within algal cell wall to give dark color for algal cells, this facilitate examination and counting.

Diagnosis of algae:

A) Diagnosis of Non diatomic algae

Non diatomic algal species are examined under microscope after preparing **temporary slides**. These types of slide are prepared by :

1- Add drop of algal sample on clean slide

2- Add a drop of water or diluted glycerol (1 glycerol:1 water)(to prevent sample drying)

3- Add cover slip slightly on sample .then examined algae under 10 and 40 X

B) Diagnosis of diatomic algae: diatomic algal species are examined under microscope after preparing **permanent slides**. These types of slide are prepared by:

1- Algal samples are boiled for about 10 min. with adding inorganic acids as (chromic ,nitric acid, sulfuric acid) **to degrade organic matter in samples and obtain pure diatomic sample.**

2- Add drop of pure diatomic sample on clean slide and dry on hot plate

3- Add cover slip (which contain drop of Canada balsam) on dried diatomic slide.

Algae physiology

- 4- Putt in hot plate for five min. and transfer slide to homogenized surface (to ensure good distribution of Canada balsam all of the sample).
- 5- After 24 hr. examined under microscope.

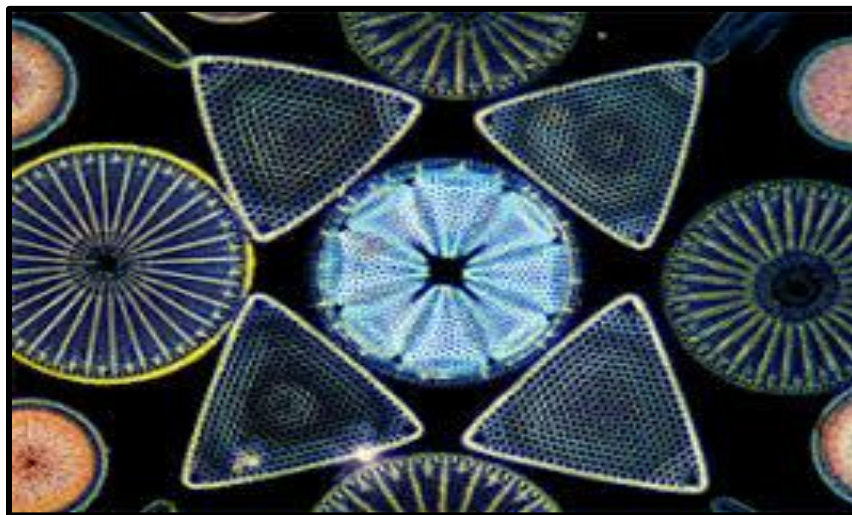
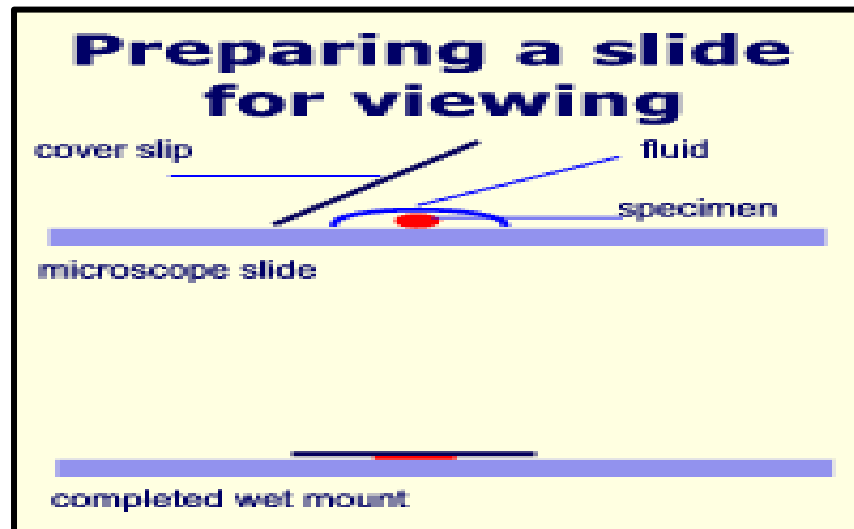


Figure: Diatomic algae