Plasmolysis and Deplasmolysis in Peels of Rhoeo Leaf in Hypertonic and Hypotonic Solution Using Sodium Chloride

AIM: To demonstrate plasmolysis and de-plasmolysis in peels of Rhoeo leaf in hypertonic and hypotonic solution using sodium chloride.

REQUIREMENTS: Rhoeo leaf, glass slides, cover slips, dropper, sodium chloride, filter paper

THEORY: When a plant cell is placed in a concentrated salt solution, water from the cell sap flows out due to exosmosis.

The loss of water from the cell sap causes contraction or shrinkage of the protoplasm since the cell wall is firm and less elastic, it cannot keep pace with the contraction of the plasma membrane. Ultimately, the protoplasm separates from the cell wall and assumes a spherical shape. It is called plasmolysis

When a plasmolyzed cell is placed in water or hypertonic solution it absorbs water due to endosmosis and its protoplasm assumes the original shape it is called de-plasmolysis.

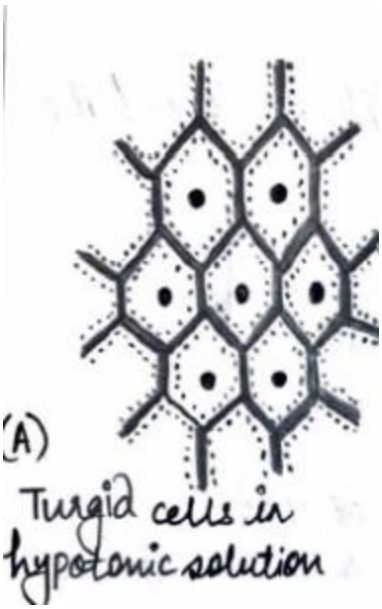
Plasmolysis is, this can be defined as the shrinkage of the protoplast of a cell from its cell wall due to exosmosis in a hypertonic solution.

OBSERVATION: the cell in dilute solution appears turgid due to endosmosis while the cells in concentrated shows plasmolysis due to exosmosis.

When the concentrated solution is replaced with water the protoplast of cells require its original shape,

PRECAUTIONS: The peel should not be exposed or dried.
The slide should be kept dry by removing extra solution with the filter paper.

DEMONSTRATION OF PLASMOLYSIS AND DEPLASMOLYSIS



Turgid Cells in Hypotonic Solution