

Chapter 11

TRANSPORT IN PLANTS

Plasmolysis:

The behaviour of the plant cells with regard to water movement depends on the surrounding solution.

Isotonic solution:

If water potential of cell cytoplasm and surrounding solution is equal then the solution is isotonic net movement of water is zero.

Hypotonic:

If surrounding solution is more diluted than cell cytoplasm then it is hypotonic endosmosis occurs.

Hypertonic:

If the cell cytoplasm is more diluted than surrounding solution then it is exosmosis occurs.

Shrinkage of protoplasm when plant cell is kept in hypertonic solution due to exosmosis is called plasmolysis.

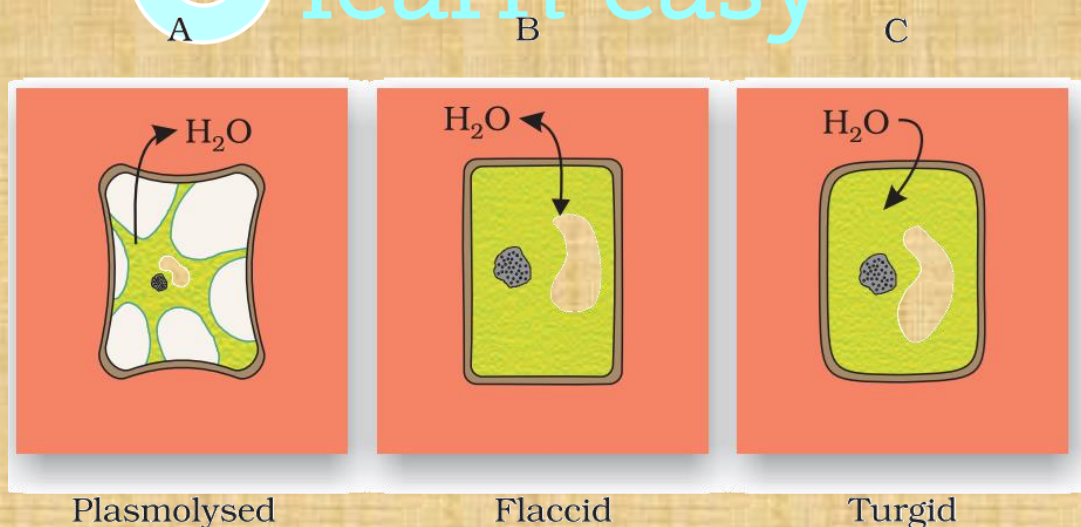


Fig. Plant cell plasmolysis

First water loss occurs from cytoplasm and from vacuole.

Deplasmolysis, Plasmolysed cell when kept hypotonic solution it will come back to its position.

Imbibition:

Imbibition is a special type of diffusion in this water is absorbed solids – Colloids causing them to increase in volume.

- Absorption of water by seeds and dry wood are examples of imbibition.

Water potential gradient between the absorbent and liquid imbibed is essential for imbibition.

- The affinity between the adsorbent and the liquid is also pre-requisite.

