

NUTAN MAHAVIDYALYA SAILU, DIST. PARBHANI

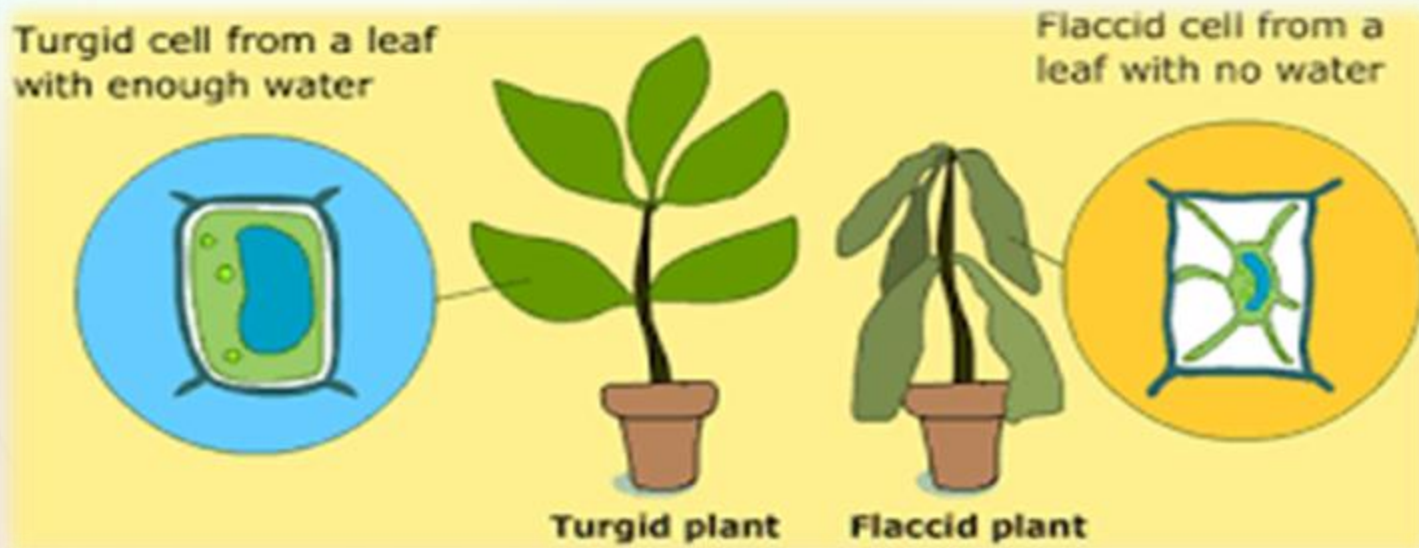
UNIT-I PLANT WATER RELATIONS

IMPORTANCE OF WATER IN PLANT LIFE

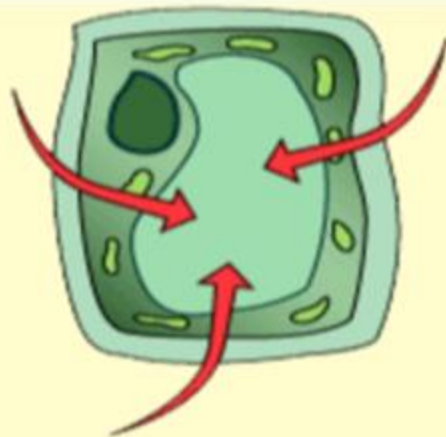


DR. KANTHALE P. R.
HEAD DEPARTMENT OF BOTANY

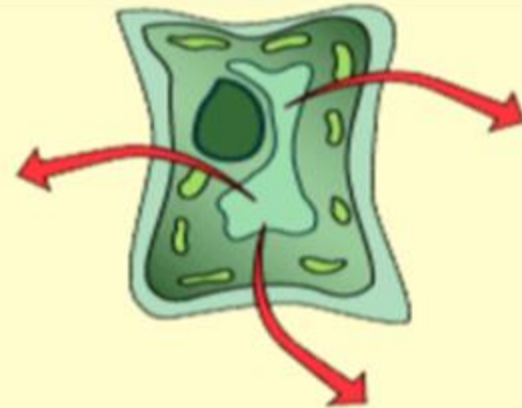
- Water is a constituent of protoplasm
- It helps to maintain turgidity of cells and plant organ



- Water helps to maintain the turgidity of cell walls.
- Water helps in cell enlargement due to turgor pressure and cell division which ultimately increase the growth of plant

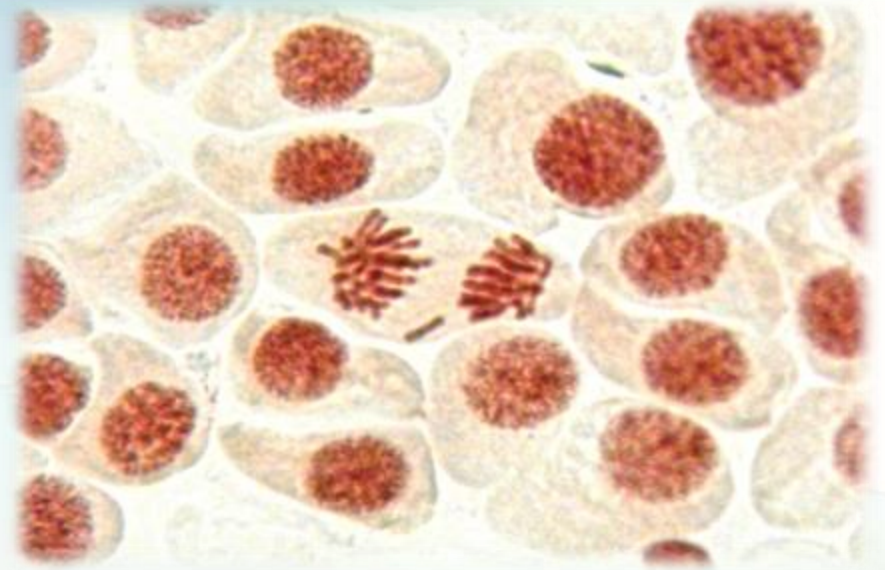


TURGID CELL:
water enters by osmosis,
vacuole swells and
pushes against cell wall



FLACCID CELL:
water lost from cell,
vacuole shrinks,
cell loses shape

Cell division

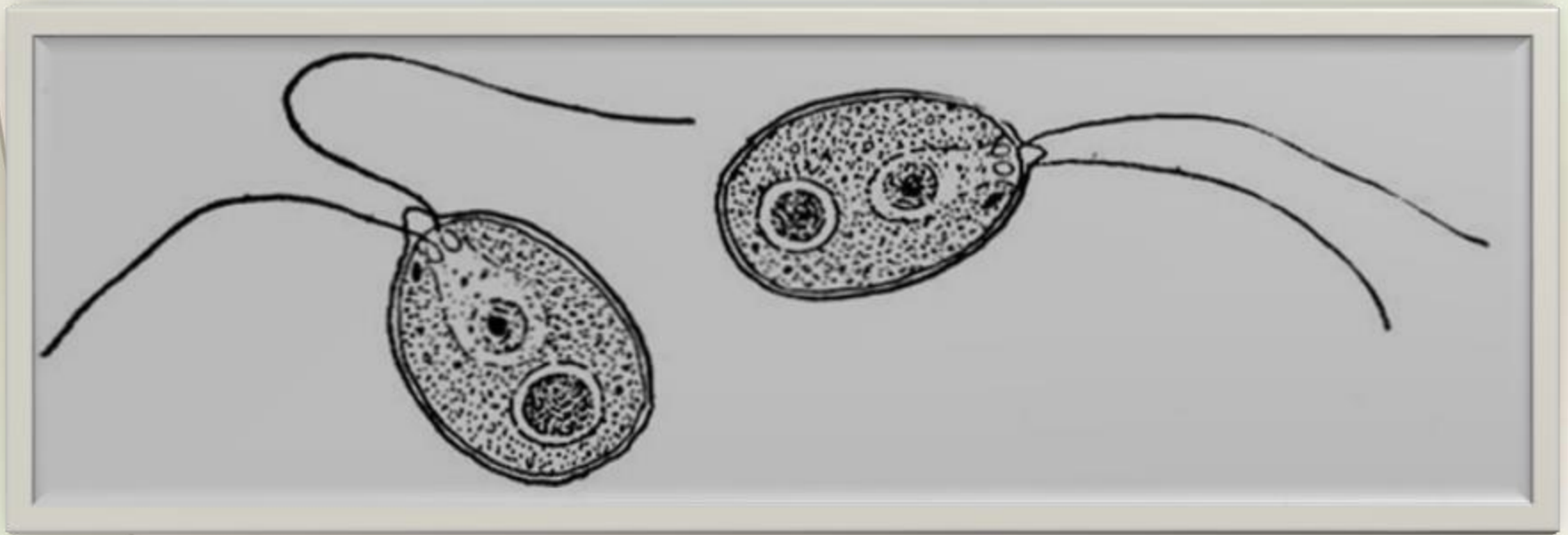


Growth

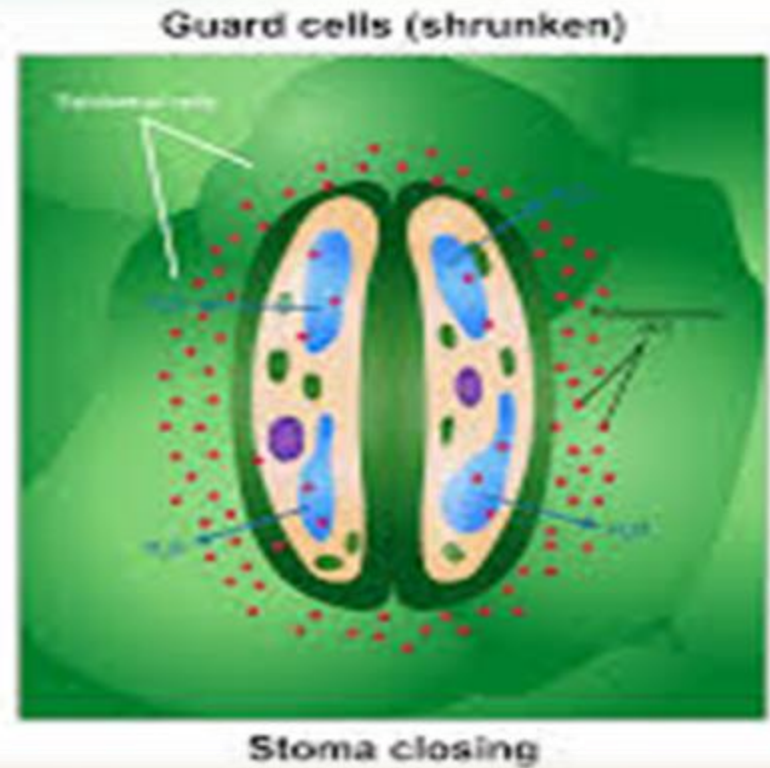
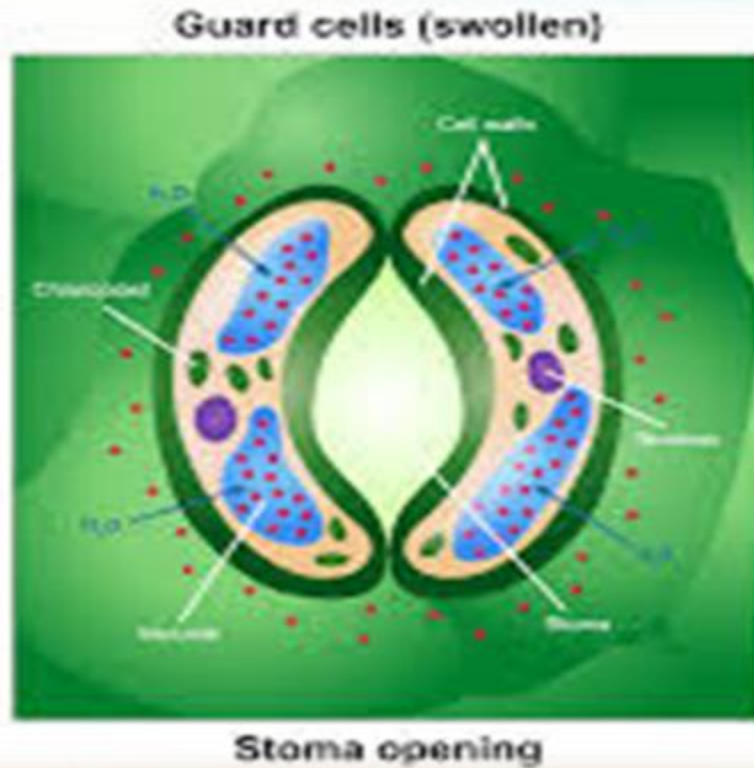
- Water is essential for the germination of seeds



- Water regulates the temperature and cools the plant
- Water plays a significant role in movement of asexual spore and gametes



- Water plays a significant role in opening and closing of stomata



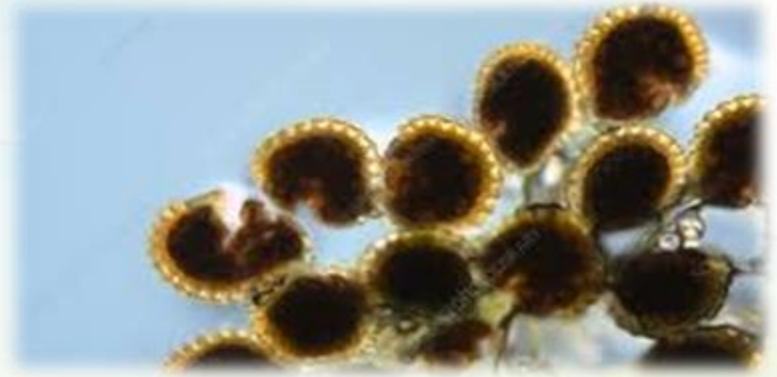
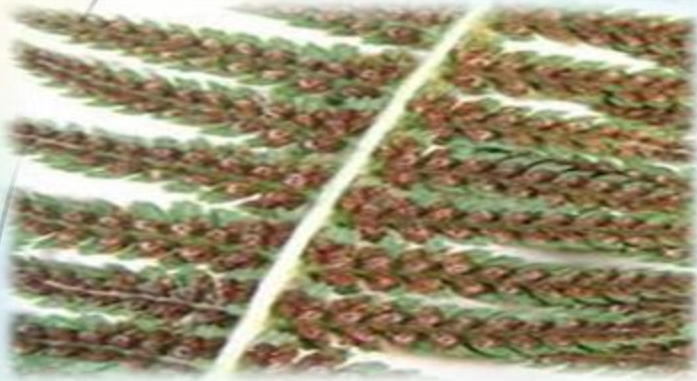
- Water plays a significant role in fruit dehiscence and seed dispersal



Fruit dehiscence

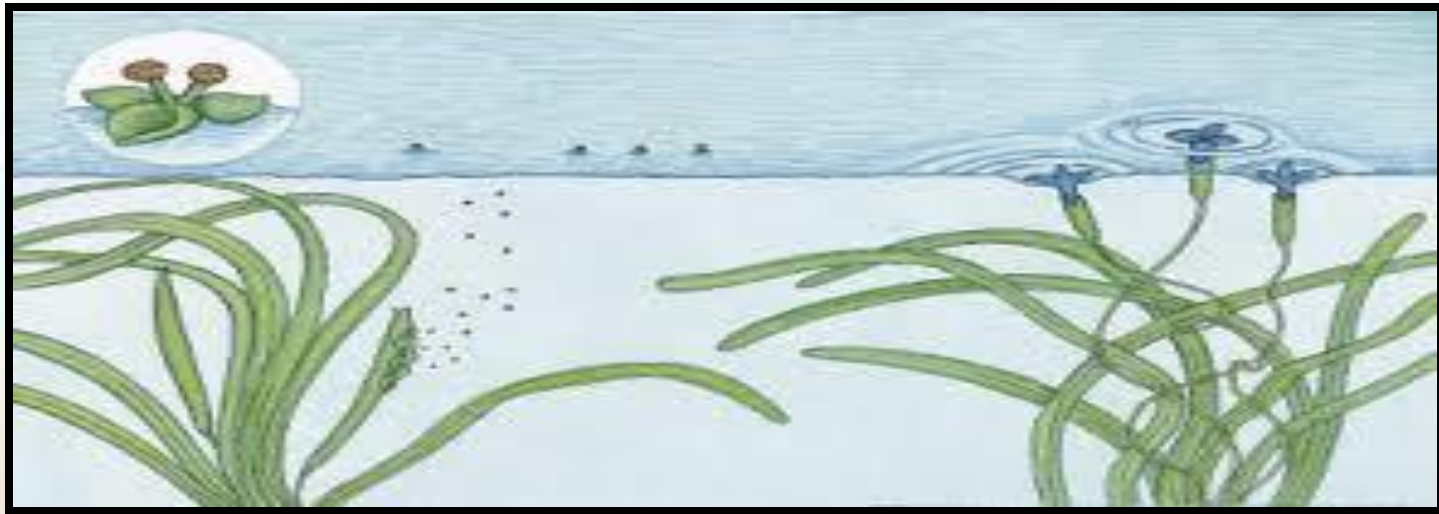


- Water plays a significant role in dehiscence of sporangia and dispersal of spores



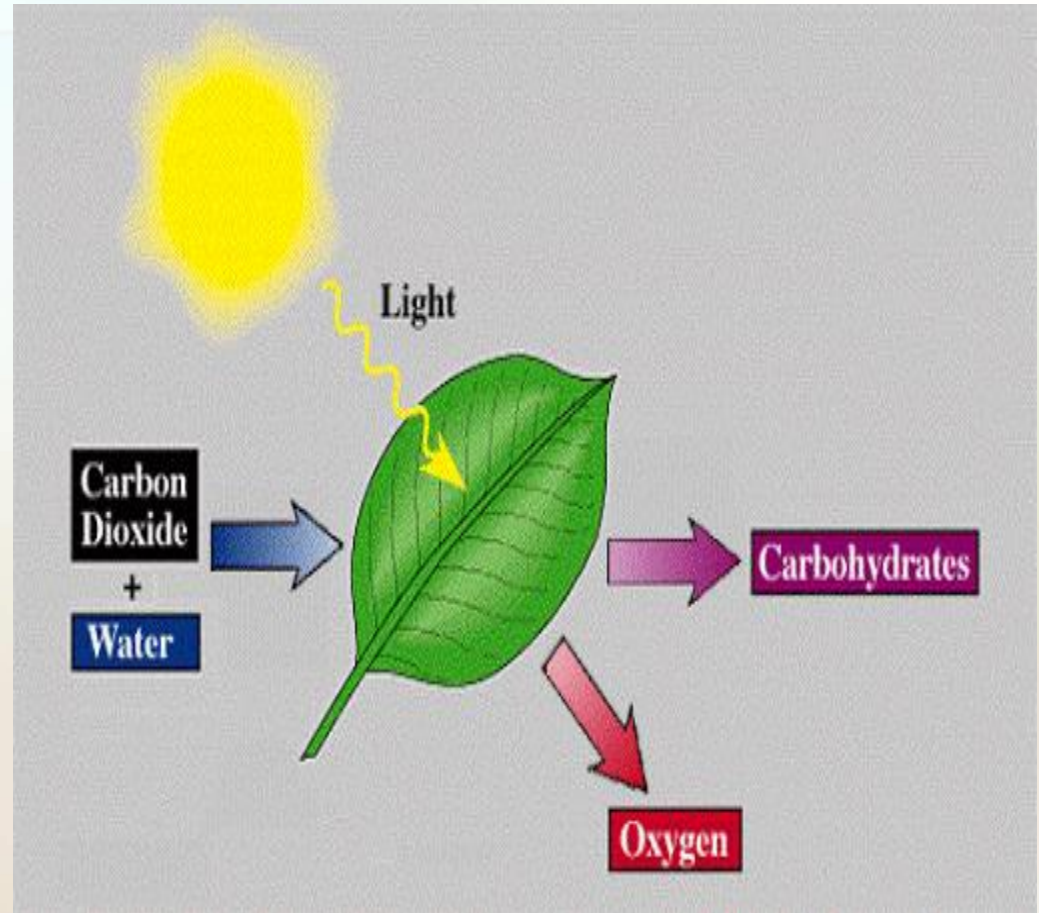
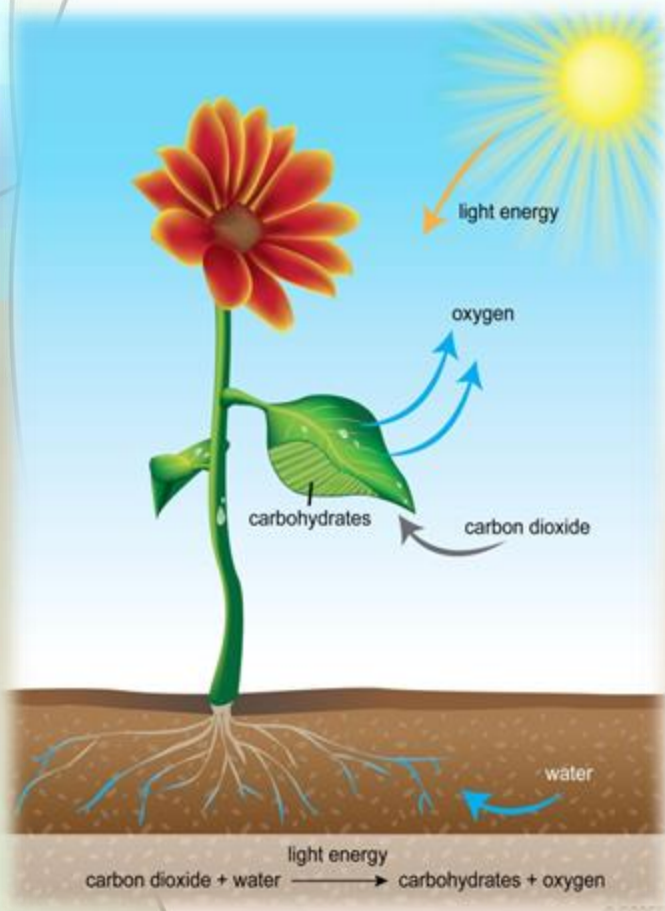


- Water also helps in pollination in aquatic plants

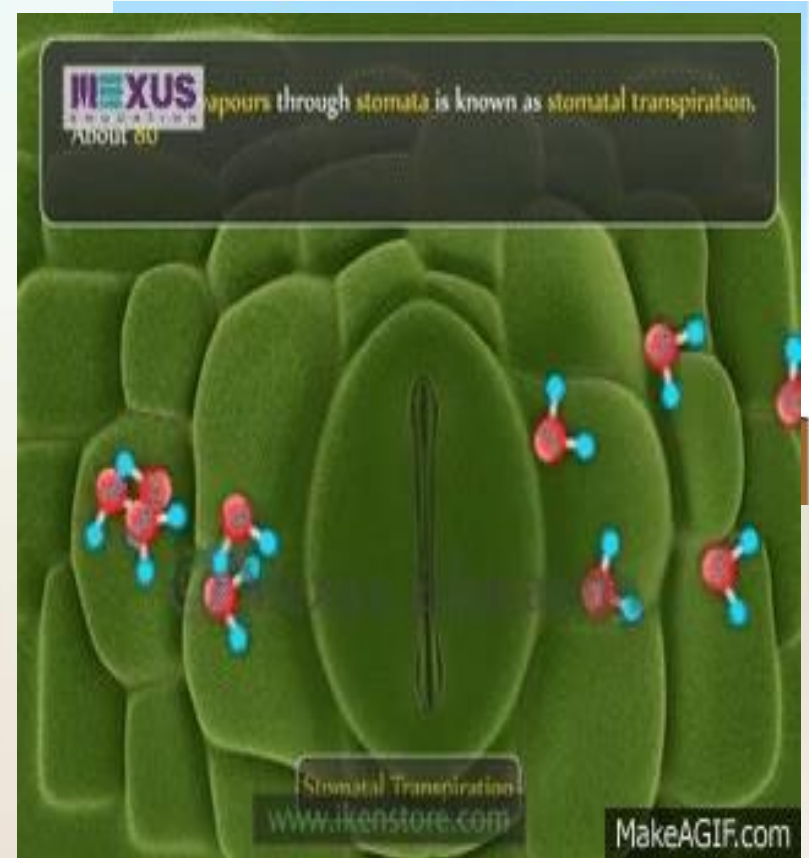
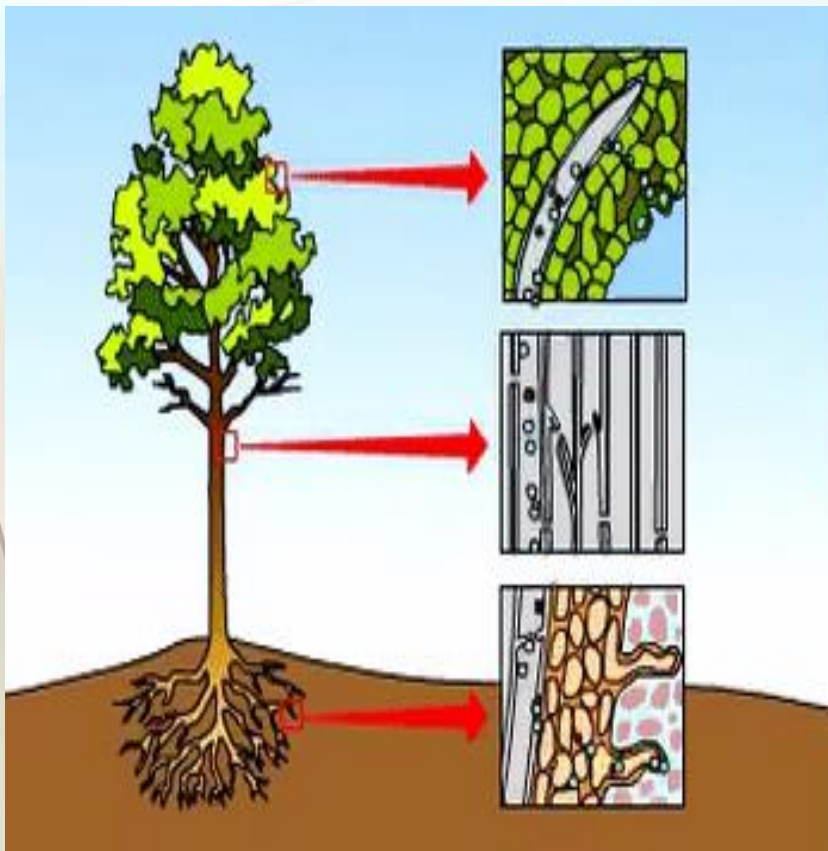


- To activate enzyme water is essential
- Water help in translocation of enzymes and hormones in plant

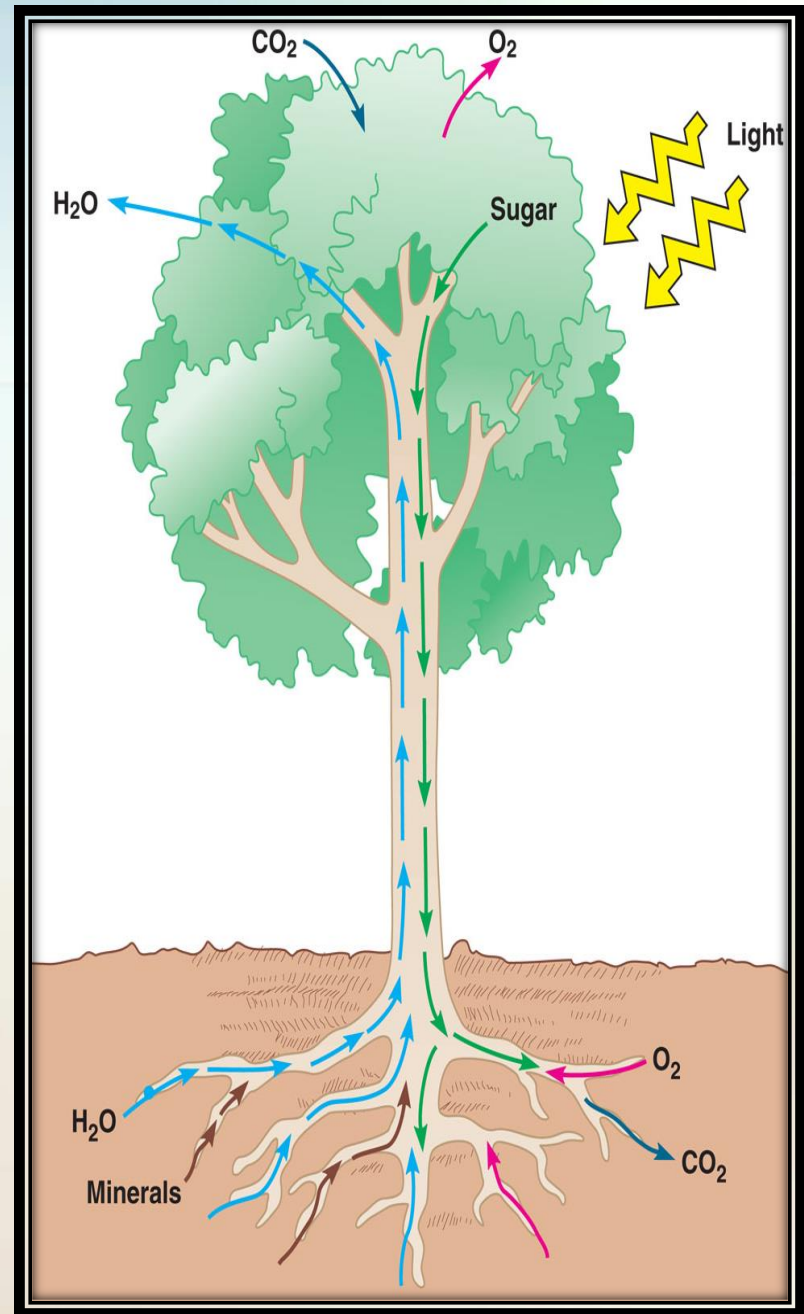
- They are used for photosynthesis and the end product is also conveyed through water to various plant parts



Water helps in the transpiration, which is very essential for maintaining the absorption of nutrient from the soil

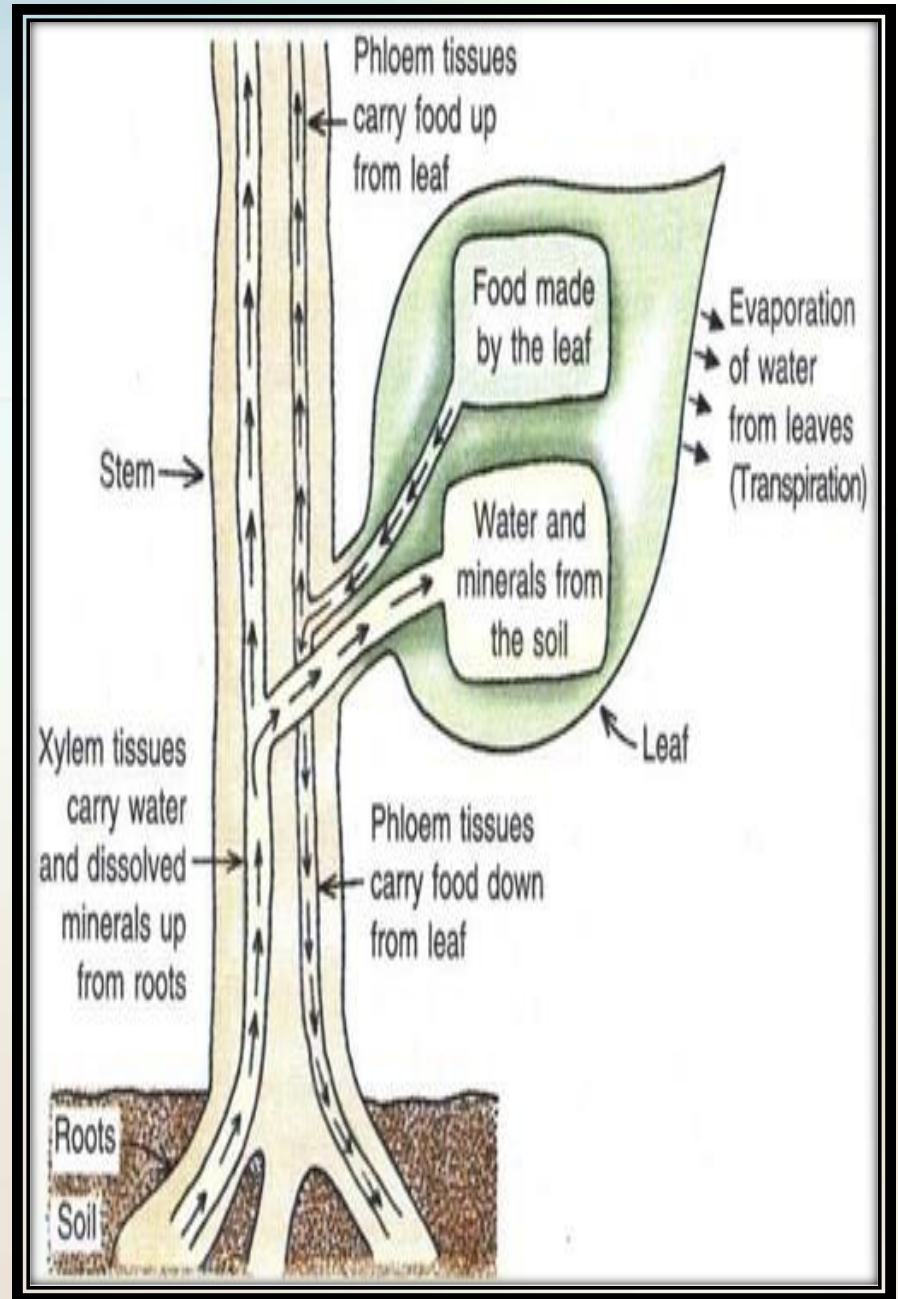


- Water is essential in hydraulic process in the plant. It helps in the conversion of starch to sugar
- Water dissolves the nutrients present in the soil which is then transported to the various parts of the plant.



- Water provides a medium for transportation of food and minerals within the plant.

- Water is also a reactant in the hydrolysis of plant food reserves such as starch.





Thanks