



## 2) Casparian Strip:

It is the tangential as well as radial walls of endodermal cells having the deposition of water impermeable suberin.

**Imbibition:** Imbibition is the phenomenon of adsorption of water or any other liquid by the solid particles of a substance without forming a solution.

**Some examples of Imbibition:**

- (i) If a dry piece of wood is placed in water, it swells and increases in its volume.
- (ii) If dry gum or pieces of agar-agar are placed in water, they swell and their volume increases.
- (iii) When seeds are placed in water they swell up.

**Mass flow:** Mass flow is the movement of substances (water, minerals and food) in bulk from one point to another as a result of pressure differences between two points.

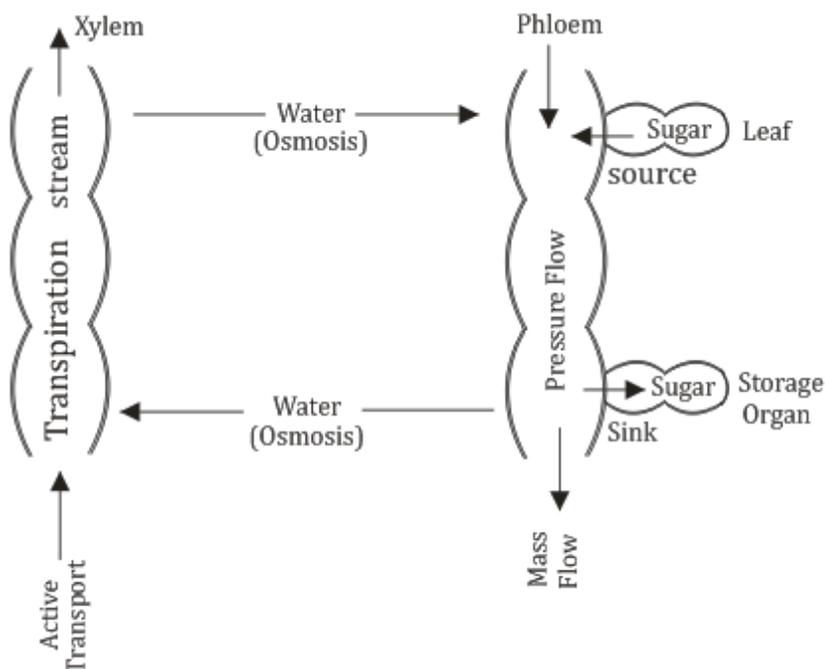
**Transport of water in plant:**

- Water is absorbed by root hairs, then water moves up to xylem by two pathways – **Apoplast and Symplast pathway**.
- The transport of water to the tops of trees occurs through xylem vessels.
- The forces of adhesion and cohesion maintain a thin and unbroken column of water in the capillaries of xylem vessels through which it travels upward.
- Water is mainly pulled by transpiration from leaves.

**(Cohesion-Tension-Transpiration Pulls Model) Root pressure:** A hydrostatic pressure existing in roots which push the water up in xylem vessels.

**Guttation:** The water loss in its liquid phase at night and early morning through special openings of vein near the tip of leaves.

**Transpiration:** The loss of water through stomata of leaves and other aerial parts of plants in form of water vapor.



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