## **Transport in Xylem Vessels**

Water evaporates from cells in the leaf.

Xylem vessels transport water from the roots to the leaves Leaf air spaces become filled with water vapour.

Water vapour diffuses out of the leaves when stomata are open.

Cohesion
between water
molecules holds
the water
column
together in
xylem vessels

Water is thought to travel through cell walls in the leaf and root.

Adhesion of water molecules to cell walls causes a capillary effect

Root hair cells use active transport to take up nitrates and other ions from the soil.

High concentration of dissolved ions in root hair cells promotes osmosis.

Water is absorbed from the soil into root hair cells.

Holes in the cell walls of xylem cells helps the flow of water

Spiral
thickening in
xylem vessels
prevents
them
collapsing
under tension

Water lost from the leaf by transpiration causes tension between water molecules.