

# Transpiration and Translocation

## 1- Transpiration

### ► Definition:

Transpiration is the process of water **movement** through a plant and its **evaporation** from aerial parts, such as leaves, stems and flowers.

► Water movement carry out by special tissue of plant called **Xylem tubes**

### ► Xylem Tubes:

#### Structure:

a) made up of **dead cells** joined end to end with no end walls between them

b) they are made up of **Lignin** material that **strengthen** the tube

#### Function:

a) they carry out water and minerals ions from **root to stem and leaves**

b) movement of water and ion from root to leave through xylem tube called

### **Transpiration stream**

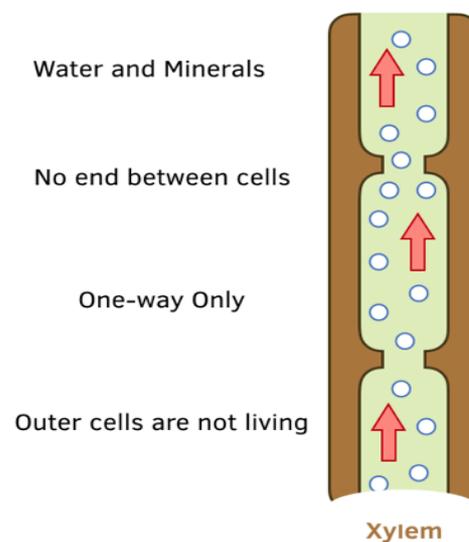
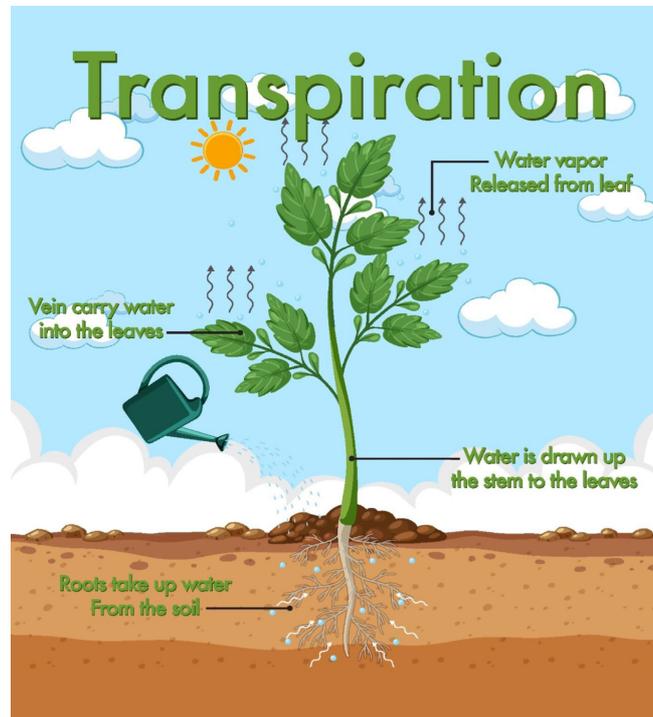


Fig 1. Xylem Vessels.



## 2- Translocation

### ► Definition:

The transport of materials from the leaves to other parts of the plant.

- Plants do not eat food. Instead, plants gain energy from the sun and nutrients in the soil.
- This transport happens to a special tissue called Phloem tissue or tubes

### ► Phloem tubes:

#### Structure:

a) made up of **columns of elongated living cell** with the **small pores** in the end of the wall

b) these pore allow **dissolved food** to flow through the tubes

#### Function:

a) transport food substance (mainly **dissolved sugar**) made in leaves during the process of **Photosynthesis**.

b) some food used **immediately** and some food is **store**

c) transport goes in **both direction**.

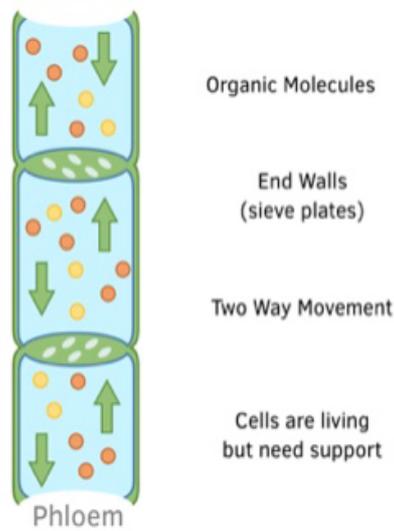


Fig 1. The Phloem.

