



# Distribution of Xylem & Phloem

Transverse  
Cross Section



Stem Transverse  
Cross Section

Longitudinal Stem  
Cross Section

Longitudinal  
Cross Section

Transverse Root Cross Section

Transverse Leaf Cross Section

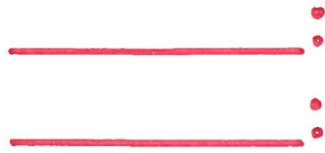


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Transpiration

# Transport in Plants : Xylem

- 1
- 2
- 3
- 4
- 5



Xylem:



Cohesion

Cohesion - Tension Theory



Factors Affecting the Rate of Transpiration

- 1)
- 2)
- 3)
- 4)
- ↳



# Mass Transport in Plants: Phloem

## Phloem:

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1)

2)

## Evidence for Mass Flow / Translocation

### → Radioactive Labeling

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### → Ringing Experiments

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### However...

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Source

# Mass Flow Hypothesis / Translocation

1 2 3 4 5

Sink



1)

2)

3)

4)





# Apoplast, Symplast & Vacuolar Pathways

1 2 3 4 5

→ Apoplast Pathway

→ Vacuolar Pathway

→ Symplast Pathway

→ Casparian Strip

→

→



# Gas Exchange in Plants

Mesophyll

## Gas Exchange in Plants

## Adaptations for Plants

Stomata

Guard Cells



- 1)
- 2)
- 3)
- 
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Stomata Close to Save Water





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Hydrophyte

# Hydrophytes

- 1
- 2
- 3
- 4
- 5

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Water Lilies

Adaptation

Benefit

Xerophyte

