

Transpiration

Chapter 5: Transpiration · Topic 1

Key Concept

Stomata, tiny pores mainly on leaf surfaces, open and close to regulate transpiration, controlled by the turgidity of surrounding guard cells.

Transpiration creates a 'pull' (transpiration pull) that helps draw water upward through the xylem from roots to leaves, aiding water transport.

Factors affecting transpiration rate include temperature, humidity, wind speed, and light intensity, all altering the rate of water loss.

Transpiration also helps cool the plant, similar to sweating in humans, preventing overheating during high temperatures.

Quick Revision Notes

- Stomata: pores mainly on leaves, regulate transpiration.
- Guard cell turgidity controls stomata opening/closing.
- Transpiration creates a 'pull' effect.
- This pull draws water up through xylem.
- Factors: temperature, humidity, wind, light.
- These affect the rate of transpiration.
- Transpiration cools the plant.
- This is similar to sweating in humans.

Practice Questions

- 1 Diagram a stoma showing guard cells.
- 2 Explain how transpiration pull helps water transport.
- 3 Discuss factors that increase transpiration rate.
- 4 Research an experiment to measure transpiration rate.
- 5 Compare transpiration to sweating in humans.
- 6 Explain transpiration in your own words.