

Photosynthesis

Cellulose

Glucose

Respiration

Starch

Oxygen

Water

Roots

Carbon  
dioxide

Chloroplasts

Leaves

Soluble

Distribution

Glucose

Temperature

# B2.2

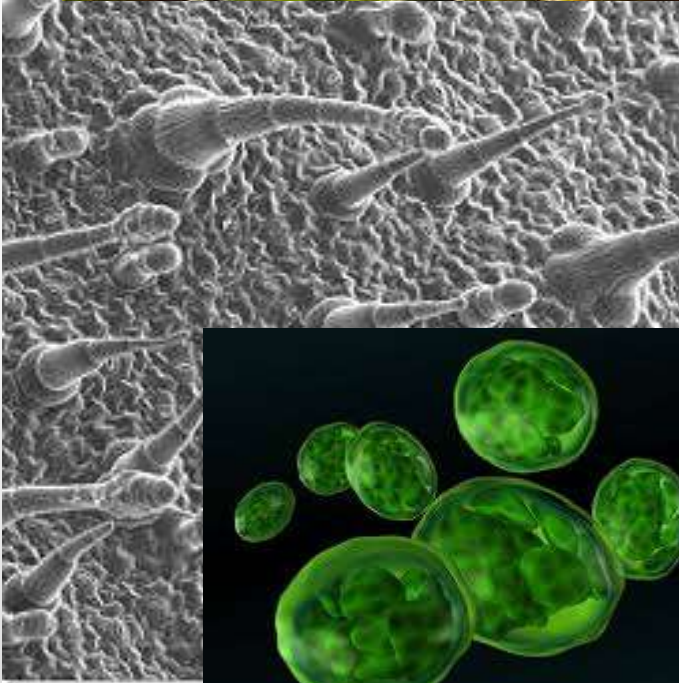
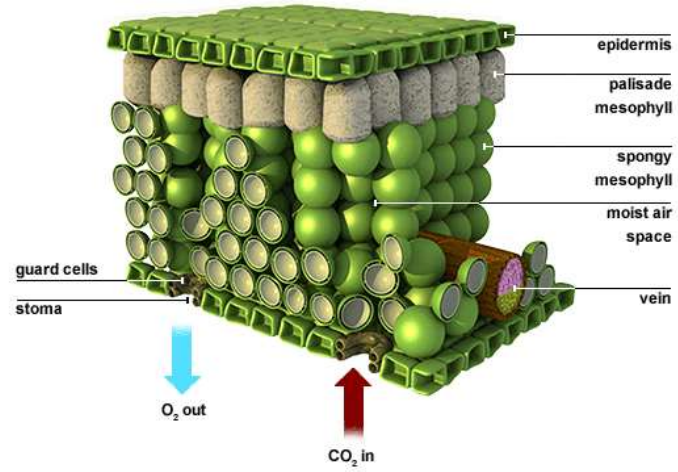
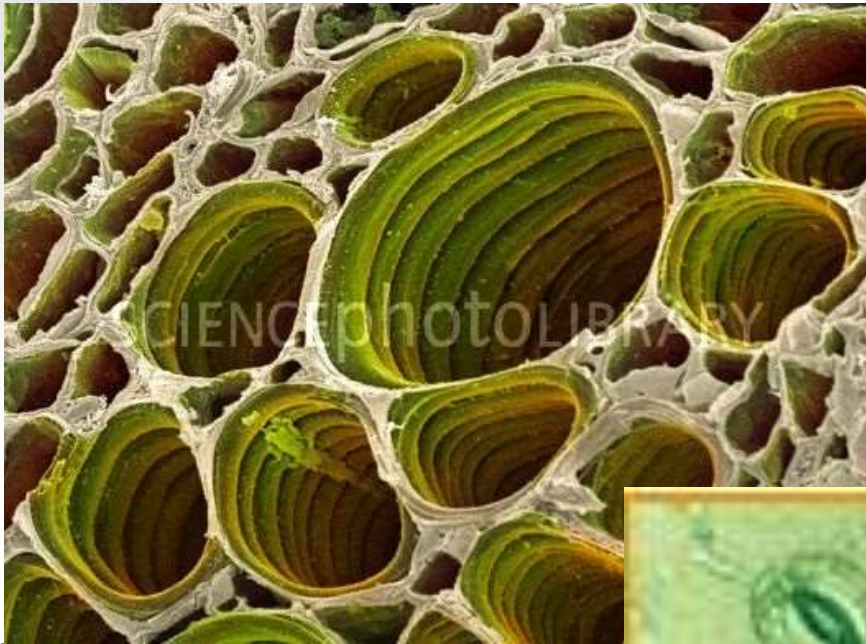
Distribution

# Organisms in the environment

Limiting factors

Photosynthesis

Quadrats



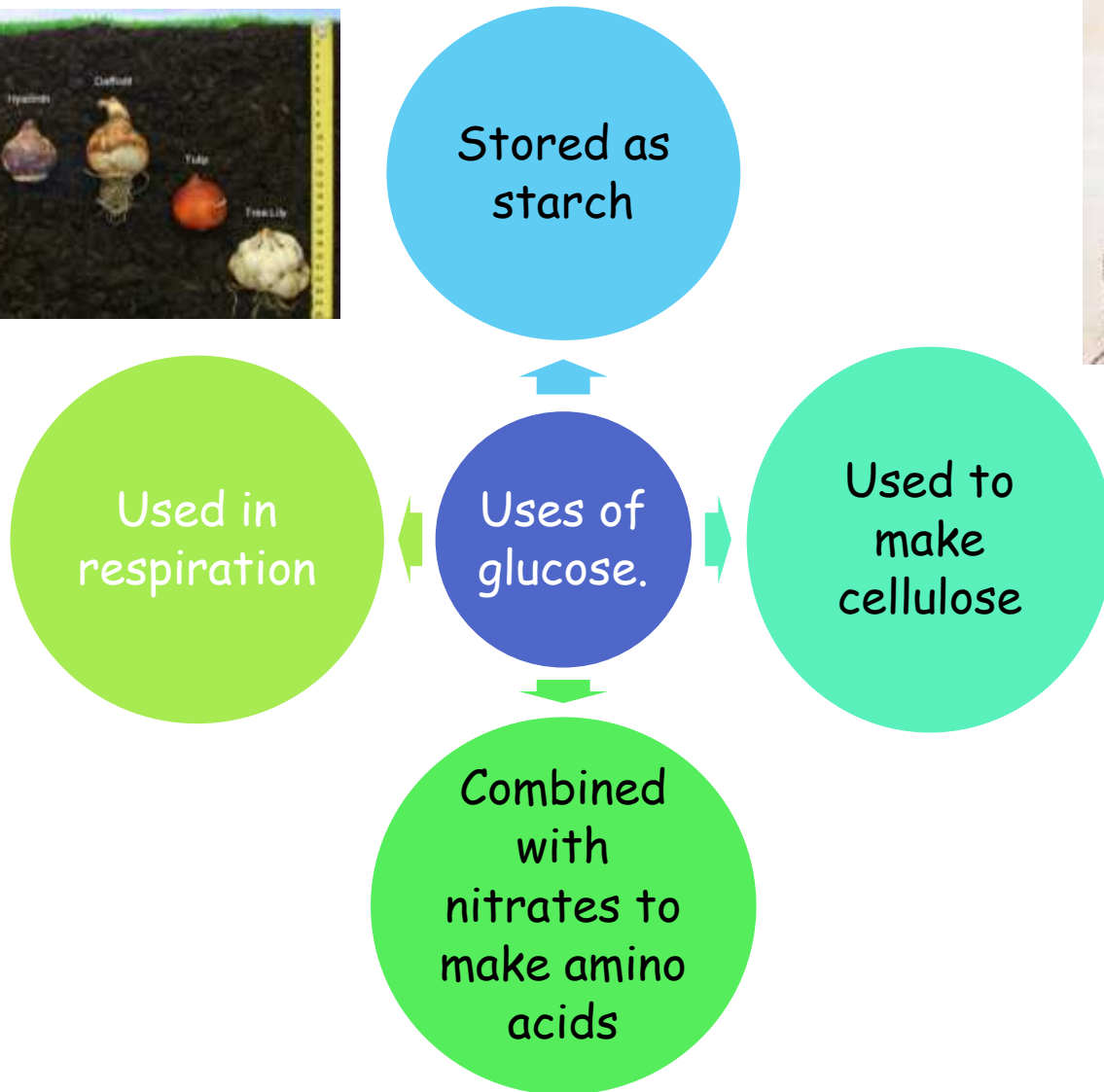
# Three factors can affect photosynthesis

- 1. Temperature - the best temperature is about 30°C - anything above 40°C will slow photosynthesis right down*
- 2. CO<sub>2</sub> - if there is more carbon dioxide photosynthesis will happen quicker*
- 3. Light - if there is more light photosynthesis happens faster*





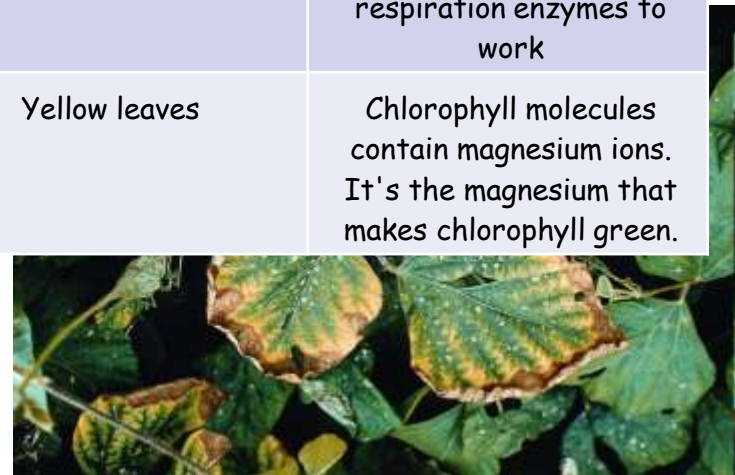
# Uses for glucose



# Deficiency disease caused by a lack of:



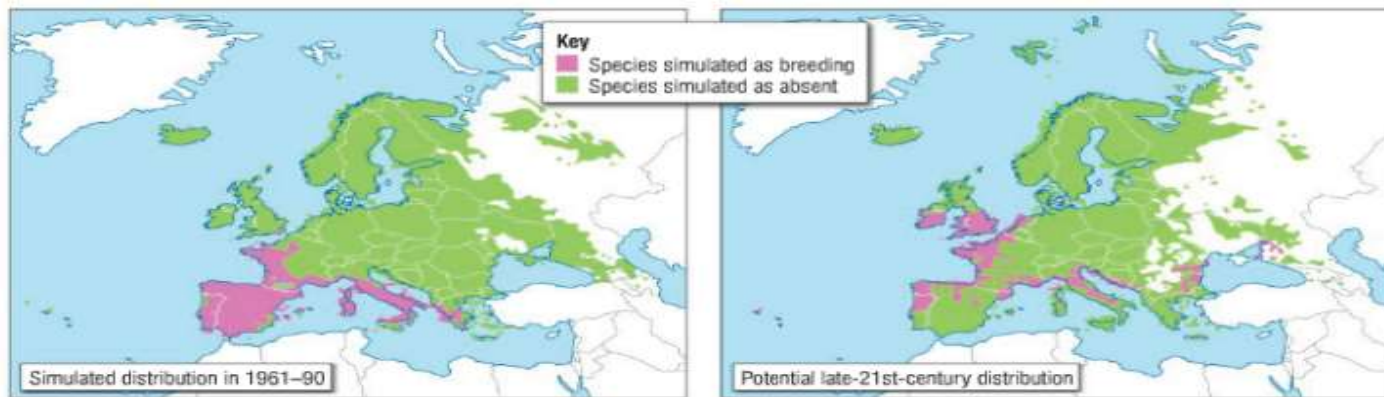
Mineral	Use	Deficiency symptoms	Explanation
Nitrate ions ( $\text{NO}_3^-$ )	Building proteins and growth	Poor growth and yellow leaves	All amino acids contain nitrogen. Amino acids are the building blocks of protein.
Phosphate ions ( $\text{PO}_4^{3-}$ )	Respiration and growth	Poor root growth and discoloured leaves	A component of DNA molecules and cell membranes
Potassium ions ( $\text{K}^+$ )	Respiration and photosynthesis	Poor flower and fruit growth, discoloured leaves	Must be present for photosynthesis and respiration enzymes to work
Magnesium ions ( $\text{Mg}^{2+}$ )	Photosynthesis	Yellow leaves	Chlorophyll molecules contain magnesium ions. It's the magnesium that makes chlorophyll green.



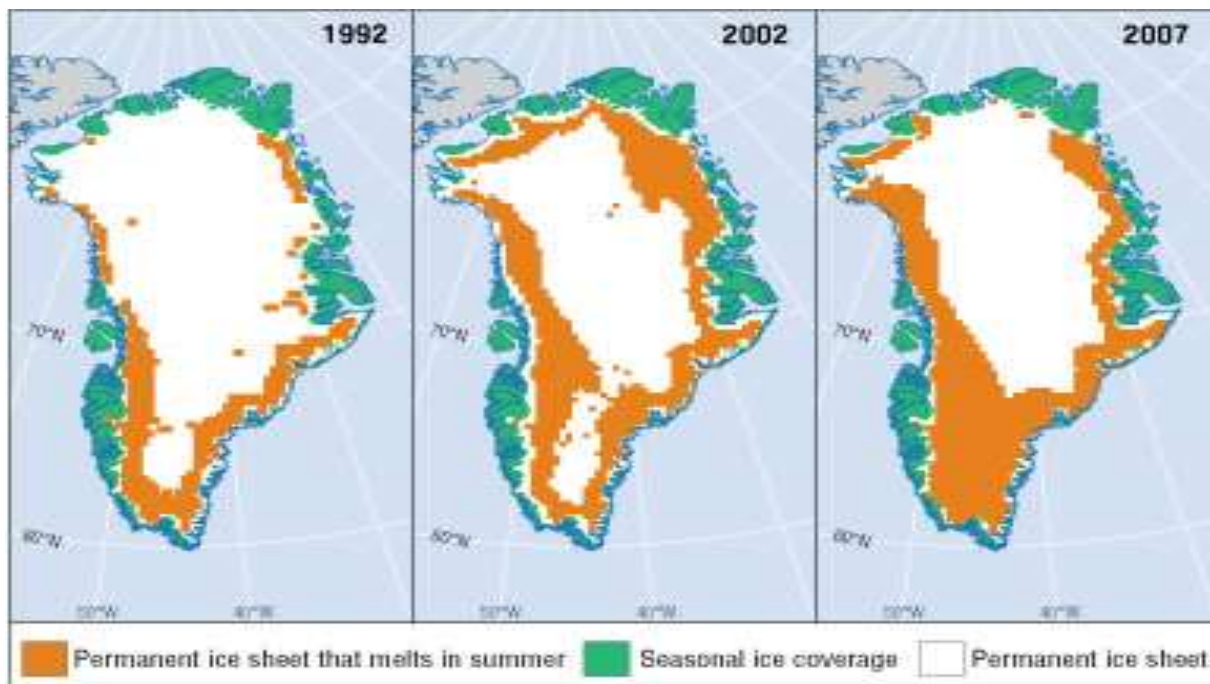
# Organisms need:

- The correct temperature
- The right nutrients
- The right amount of light
- Water
- Oxygen and carbon dioxide





**Figure 2** The maps show how scientists think the distribution of these birds might change in the future





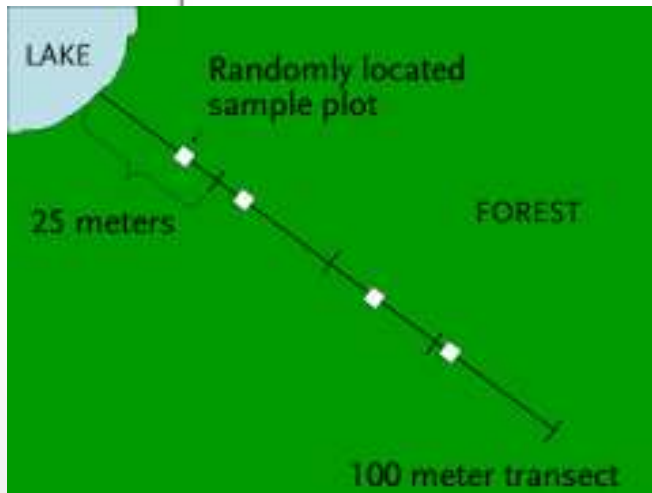
# Distribution of species

## Word bank:

Reproducible - if **someone else** repeated the practical with the same method the results would still be the same

Repeatable - if the same method is carried out again **by you** the results will be the same

Control variable - everything that needed to be kept the same



# Distribution of species

To record the distribution of species you can:

## Randomly

- Through quadrats
- Count the number/amount of species within the quadrat

## Use a transect:

- Take a reading from equal distances along the transect (e.g. every 5m)
- Measure the amount/number of species within the quadrat
- Repeat these readings to create a **mean**. You can also compare your results to others to determine if they're **reproducible**.
- These readings could be repeated in a **different area**.