

Nutrition in flowering plants

What is photosynthesis?

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What energy conversion happens in photosynthesis?

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Word equation for photosynthesis?

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Balanced symbol equation for photosynthesis?

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What is a limiting factor?

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Which three factors affect the rate of photosynthesis?

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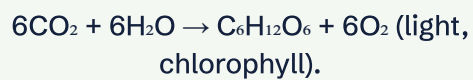
Why does the rate fall at high temperature?

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Which leaf cells do most photosynthesis, and why?

Light energy is converted to chemical energy, stored in glucose.

The process by which plants make glucose from carbon dioxide and water, using light energy absorbed by chlorophyll.



Carbon dioxide + water → glucose + oxygen (in the presence of light and chlorophyll).

Carbon dioxide concentration, light intensity and temperature.

A factor in short supply that stops the rate of a process from increasing.

Palisade mesophyll cells: packed with chloroplasts and close to the light at the top of the leaf.

The enzymes controlling photosynthesis are denatured above their optimum temperature.

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Why does the spongy mesophyll have air spaces?

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How is the upper epidermis adapted for photosynthesis?

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Why do plants need magnesium ions?

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Why do plants need nitrate ions?

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How can you measure the rate of photosynthesis in pondweed?

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How is light intensity changed in the pondweed practical?

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Why is a plant destarched before a starch test?

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Why is a leaf boiled in ethanol before the iodine test?

It is thin and transparent, so light passes through to the palisade cells.

So carbon dioxide can diffuse through the leaf to the cells and oxygen can diffuse out.

To make amino acids for proteins. A shortage causes stunted growth.

To make chlorophyll. A shortage makes the leaves yellow.

By changing the distance between the lamp and the plant.

Count the oxygen bubbles released per minute, or measure the volume of gas collected.

Ethanol removes chlorophyll so the colour change can be seen. Turn off the Bunsen burner first.

So any starch found was made during the investigation. It is kept in the dark for 24 to 48 hours.

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What does a variegated leaf show in the starch test?

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How do you show that carbon dioxide is needed for photosynthesis?

Compare a leaf in a flask with soda lime, which absorbs carbon dioxide, with a control leaf. Test both for starch.

Only the green areas turn blue-black, so chlorophyll is needed for photosynthesis.