

Photosynthesis

This section examines the physiology of photosynthesis and how it related to agriculture and food production. The value of photosynthesis as an oxygen producing process is examined and is related to the maintenance of the composition of the atmosphere. Photosynthesis is a chemical reaction in plants to make food. It only occurs in the presence of light.

Word Equation

Carbon Dioxide + Water → glucose + oxygen

Symbol Equation

$CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$ Requirements for Photosynthesis

Light Energy CO_2 H_2O Rate of Photosynthesis - can be measured by how much O_2 is given off.

Limiting Factors - you need all three for photosynthesis to occur Light - Light increases, rate of photosynthesis increases up to a certain point CO_2 - CO_2 increases, rate of photosynthesis increases up to a certain point Temperature - must not get too hot or too cold Overcoming Limiting Factors Light - artificial light, during night, especially red or blue, grow in unshaded areas CO_2 - Have a canister of CO_2 in greenhouse Temperature - find a warmer place. Use a greenhouse The Leaf

CO_2 enters through the stomata Spongy cells have a space for exchange of gasses Chloroplasts in palisade cells, on the upper surface of leaf, most light on that part Xylem - Carries water from roots to leaf. Phloem carries glucose from leaves to rest of the plant. Is starch produced by photosynthesis

Put leaf in boiling water for 15 seconds. This kills it, makes it soft, makes cell walls permeable Put leaf in alcohol in test tube. Put the test tube in hot water bath. This decolourises it. Remove and wash the leaf Put iodine of the leaf If starch is present, the leaf turns blue black.

Nitrogen - Nitrogen as nitrates is absorbed from the soil to make protein.

You will also need to know tests for whether a plant needs light, does it need CO_2 , and is O_2 produced.

The first two can be done with putting them without the variable, and then testing for starch.

Oxygen test will come here later. Check it on google you will find it.

About the Author

Source: <http://crampuppy.com>