

1. Nutrition in Plants

Nutrients: Those components of food that are essential for our body are called nutrients.

Nutrition: Nutrition is the method of taking and consuming food by living organisms.

Types of nutrition:

There are two types of nutrition -

(i) Autotrophic Nutrition: The method of nutrition in which the organisms synthesize their food itself, is called autotrophic nutrition.

This type of nutrition occurs in plants all green.

(ii) Heterotrophic Nutrition: Animals and most other organisms consume food synthesized by plants. They are called heterotrophic nutrition.

Like - humans, animals, insects, amoeba, fungus, frogs, and mushrooms Etc.

Types of Heterotrophic nutrition in plants -

There are two types of heterotrophic nutrition -

(A) Saprophytic Mode of Nutrition: The method of nutrition in which the organisms obtain their food by dead-decay substances, this type of nutrition is called Saprophytic Mode of nutrition. For example, mushrooms, fungus and some bacteria are examples.

(B) Parasitic Mode of Nutrition: The method of nutrition in which the organism depends on food made by other organisms, this type of nutrition is called parasitic mode of nutrition.

An example of this, is Cuscuta .

Difference between parasites and Saprophytes:

Parasites:

- (i) They get their food from other organisms.
- (ii) Parasites usually live on or above the body of the host.

Saprophytes:

(i) Saprophytes get their nutrition from the living and dead and decay organic substances of living organisms.

(II) Saprophytes live on dead and rotten substances.

Require food/energy for organisms:

The need for food in organism is due to the following reasons:

(I) Need to take food:

(II) Get energy to do work.

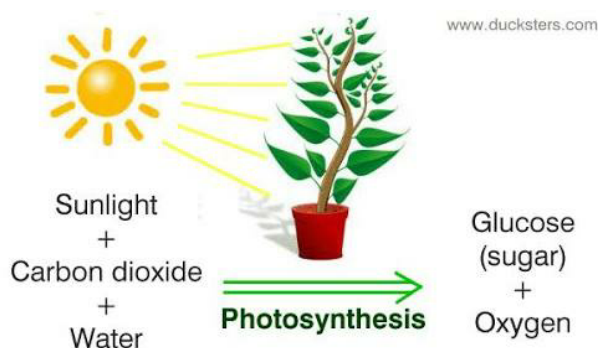
(III) Build up body.

(IV) Repair damages in the body.

(V) Maintain the function of the body.

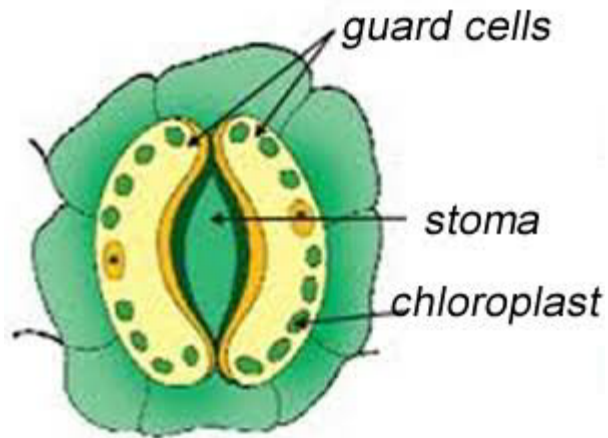
Photosynthesis: Green plants make their food themselves in the presence of sunlight and chlorophyll. This process is called photosynthesis.

Equation of reaction occurring during photosynthesis:



Leaves are Food Factory of Plants: Only plants are the only living organisms who can make their food with the help of water, carbon dioxide and minerals. All these substances are available in their surroundings. Since the plants are synthesised in their leaves in plants, therefore, leaves are the food factories of the plant.

Stomata: On the surfaces of leaves, there are many small holes are present, by which gaseous exchanges are taken place through these holes. These holes are called



stomata.

Stomata in the leaves

Functions of the stoma in the leaves:

- (i) Gaseous exchanges are taken place through the stomata.
- (ii) The process of transpiration in plants is also taken place through the stomata.

- (iii) Light energy is also absorbed by the stomata in the plants.

Chlorophyll: The leaves contain a green pigment called chlorophyll.

Function of chlorophyll: It provides green color to the leaves.

Process of food synthesis in plants: In plants, the synthesis of food is taken place in their leaves. The water and minerals present in the soil are transported to the leaves through the stems by absorbing by root in plants. The small tiny holes e.i stomata present on the surface of the leaves absorb carbon dioxide present in the air. Photosynthesis is a chemical reaction occurring in the leaves in which water and carbon dioxide are used by plants as raw materials, this reaction occurs in the presence of sunlight and chlorophyll. After this reaction carbohydrates (glucose) and oxygen are formed. Carbohydrates are used as energy by the plants to store them in leaves for energy consumption, while the oxygen comes back out in environment by the stomata.

Function of photosynthesis in other parts of plants besides leaves:

In addition to the leaves, photosynthesis also occurs in other green parts of plants such as green stems and green branches. In order to reduce water decantion by transpiration in desert plants, the leaves

Time to check knowledge:

1) Match the following Column ;

Column I	Column II
(a) Saprotroph	(i) Pitcher plant
(b) Chlorophyll	(ii) Food factory of plants
(c) Bacteria <i>Rhizobium</i>	(iii) Green plant leaf
(d) <i>Cuscuta</i>	(iv) Fungi
(e) Insects	(v) N ₂ -fixing
(f) Mango tree	(vi) Stomata
(g) Leaf	(vii) Parasite
(h) Tiny pores present on leaf	(viii) Raw material
(i) CO ₂ and water	(ix) Saprophyte
(j) Mushroom	(x) Autotroph

2) Distinguish between parasite and saprophyte.

3) Name the following

a) A parasitic plant with yellow, Slender and tubular stem.

b) A plant that has both autotrophic and hetrotropic mode of nutrition.

c) The process through which leaves exchange gases .

4) what is Nutrition.write it's type.

