

PHOTOSYNTHESIS

Leaves are the food factories of plants. The synthesis of food in plants occurs in leaves. Therefore, all the raw materials must reach there. Water and minerals present in the soil are absorbed by the roots and transported to the leaves. Carbon dioxide from air is taken in through the tiny pores present on the surface of the leaves. These pores are surrounded by 'guard cells'. Such pores are called stomata.

Water and minerals are transported to the leaves by the vessels which run like pipes throughout the root, the stem, the branches and the leaves. They form a continuous path or passage for the nutrients to reach the leaf.

The leaves have a green pigment called chlorophyll. It helps leaves to capture the energy of the sunlight. This energy is used to synthesise (prepare) food from carbon dioxide and water. Since the synthesis of food occurs in the presence of sunlight, it is called photosynthesis (Photo: light; synthesis : to combine). So we find that chlorophyll, sunlight, carbon dioxide and water are necessary to carry out the process of photosynthesis. It is a unique process on the earth. The solar energy is captured by the leaves and stored in the plant in the form of food. Thus, sun is the ultimate source of energy for all living organisms.

In the absence of photosynthesis there would not be any plants. The survival of almost all living organisms directly or indirectly depends upon the food made by the plants. Besides, oxygen which is essential for the survival of all living organisms is produced during photosynthesis. In the absence of photosynthesis, life would be impossible on the earth.

During photosynthesis, chlorophyll containing cells of leaves, in the presence of sunlight, use carbon dioxide and water to synthesise carbohydrates. During the process oxygen is released. The carbohydrates ultimately get converted into starch. The presence of starch in leaves indicates the occurrence of photosynthesis. The starch is also a carbohydrate.

Complete the following question

Fill in the blanks:

(a) Green plants are called _____ since they synthesise their own food.

(b) The food synthesised by the plants is stored as _____.

(c) In photosynthesis solar energy is captured by the pigment called _____.

(d) During photosynthesis plants take in _____ and release _____.

Choose the correct option from the following:

a. Which part of the plant gets carbon dioxide from the air for photosynthesis.

(i) root hair (ii) stomata (iii) leaf veins (iv) sepals

b. Plants take carbon dioxide from the atmosphere mainly through their:

(i) roots (ii) stem (iii) flowers (iv) leaves

