Bhagirathi Bal Shiksha Sadan Secondary School
Class - VIIth Subject - Science
Ch-1 Nutrition In Plants

Food → Food provides energy and helps in growth and reproduction

Components of Food

Carbohydrates, Proteins, Fats, Vitamins, minerals, Roughage-water

Nutrition → The process of taking in food and using it for growth, metabolism and repair.

Mode of Nutrition

Autotrophic Nutrition

Auto + trophos means self + nourishment

Synthesize their own food. This process of synthesizing food is called autotrophic nutrition.

Autotrophs → Green plants prepare food for themselves. They are called autotrophs.

Heterotrophic Nutrition

Heteros + trophos means other + nourishment.

obtain their food from other. This process of obtaining food is called heterotrophic nutrition

Hetrotrophs → They cannot synthesize their own food

Types of Hetrotrophs → (i) Herbivores (ii) Carnivores (iii) Omnivores

* Answer the following questions.

1. Why are animals and humans called heterotrophs?
2. Write the major components of food.
3. Which type of nutrition is shown by green plants?
4. Write the difference between
   (i) Autotrophs and hetrotrophs
   (ii) Herbivores and Carnivores.

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Topic - Ch - 1 Nutrition In Plants

Photosynthesis → The chemical process through which green plants combine carbon dioxide and water in the presence of sunlight to prepare food in the form of glucose is called photosynthesis.

Factors Affecting Photosynthesis →

1. Light intensity
2. Nature of light :
3. Carbon dioxide and water
4. Temperature

Role of leaves in photosynthesis → The inner structure of leaf shows two important features:

i) Presence of chlorophyll. Chlorophyll is present in Chloroplasts. Chloroplasts are the sides of photosynthesis.

ii) presence of small pores called stomata. Stomata helps in the exchange of gases.

Other Mode of Nutrition in plants :-

1. Parasitic nutrition (ii) Insectivorous Nutrition
3. Saprophytic Nutrition (iv) Symbiotic Nutrition

i) Parasitic Nutrition → The mode of nutrition in which plants drerive their food from other green plants is called parasitic nutrition. For eg. Cuscuta, Mistletoe, Rafflesia etc.

ii) Insectivorous Nutrition → Some plants have special structural features that help them to trap insects and are commonly known as carnivorous plants. These plants digest the insects by secreting digestive juices and absorb the nutrients from them. For Eg- Pitcher plant venus flytrap etc.

iii) Saprophytic Nutrition :- The saprophytic plants derive nutrition from dead and decaying Plants and animals. For eg. Mushrooms, moulds.

iv) Symbiotic Nutrition → When two organisms live together and share shelter and nutrients, their association is called Symbiosis. In this, both the plants are benefited from each other. For eg. Linchens

Replenishment of Nutrients in the soil →

Nutrients in the soil are replenished by adding fertilisers and manures. fertilisers and manures contain Plants nutrients and minerals like nitrogen, Phosphorus. Crops need a lot of nitrogen to make proteins. They need nitrogen in soluble form. The bacterium called Rhizobium can take atmospheric nitrogen and convert it into a soluble form.

* Answer the following questions :-

1. Describe photosynthesis. Name the various Factors affecting photosynthesis.
2. What is saprotrophic mode of Nutrition ? Give two examples.
3. Describe the term symbiosis. Give the name of a plant that exhibits symbiotic relationship.
4. Describe the role of leaves in photosynthesis.
5. How are the soil nutrients replenished ?
6. Describe the role of alga and fungus in lichens.
7. Why does an insectivorous plant catch or trap an insect ?

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Work Sheet

A. Choose the correct option

(i) Autotrophs are also called —
(a) Producers (b) Consumer (c) Omnivores

(ii) Leaves exchange gases through the
(a) Roots (b) Stems (c) Stomata

(iii) Insectivorous plants are found in soil deficient in
(a) oxygen (b) carbon dioxide (c) nitrogen.

(iv) The association of two different organisms in which both are benefited is
(a) parasitic (b) Symbiosis (c) Saprophytes.

B. Fill in the blanks.

1. Green plants are called — since they synthesise their own food.
2. The food synthesised by the plants is stored as ____
3. In photosynthesis solar energy is captured by the pigment called ____
4. During photosynthesis plants take in ____
5. Plants release ____ during photosynthesis.

C. Match the following.

Column I	Column II
1. Chlorophyll	(a) Bacteria
2. Nitrogen	(b) Heterotrophs
3. Amarbel	(c) Pitcher plant
4. Animals	(d) Leaf
5. Insects	(e) Parasite

d. Answer in one-two words.

1. Kind of energy transformation during photosynthesis.
2. The mode of nutrition in green plant.
3. The green pigment present in green leaves.
4. The mode of nutrition in animals.
5. It helps plants to take up water from the soil