Introduction

All the living organisms, plants and animals require food. The organism needs to take food to obtain energy and minerals for growth and repair of damage part of the body.

The process of taking food by an organism as well as the utilization of this food to survive is called nutrition.

Plants can make their own food but animals depend upon the plants and other animals for their food.

Mode of Nutrition in Plants

The method of obtaining and consuming food by living organisms are called modes of nutrition.

On the basis of their modes of nutrition all the organisms can be divided into two main groups:- **Autotrophs and Heterotrophs.**



Autotrophs: Those organisms which can make their food by themselves from simple substances like carbon dioxide and water by the process of photosynthesis are called **autotrophs**.

Heterotrophs: Those organisms which cannot make their food by themselves and depend upon plants or animals for their food are called **heterotrophs**.



(b) Partial parasitic plant: This plant has green leaves and can synthesizes their food but depend on host plant for water and minerals. e.g. Mistletoe,Sandalwood.





2. Saprophytic Plants: These plants obtain their food from dead and decaying matter of animal and plants. They release digestive juices on dead and decaying matter and convert it into a solution. Then they absorb nutrients from it in soluble forms.



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Mushroom



Bread Mould

For Example: Fungi (bread moulds, mushrooms, some bacteria (Bacillus vulgaris). Fungi appears as a green, white or brown coloured patches. Microscopically they show thread like structures called **hyphae**. The network of hyphae is called **mycelium**.

3. Symbiotic Plants: Mutual relationship between two organisms in which both organisms are benefitted and they share shelter and nutrients is called Symbiosis. These organisms are called Symbionts. Certain fungi live in the roots of trees (Mycorrhizae). The plant provides nutrients to the fungi and fungi help the plant to take up water and nutrients from the soil.

Lichens are symbiotic association between algae and fungi in which a fungi provide shelter, water and minerals to the algae and algae provide food to fungi by photosynthesis.

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Lichen

Leguminous plants like gram, moong, urad, peas and beans have nodules in which Rhizobium bacteria is found. This Rhizobium converts atmospheric nitrogen into nitrates for leguminous plant.

4. Insectivorous plants: Some plants can trap insects and digest them to obtain nitrogen are called Insectivorous plants. These plants are green but found in nitrogen deficient soil and have devices to trap insects. These plants are known as partial autotrophs. E.g. Pitcher plant (Nepenthes), Venus flytrap, Sundew, and Bladderwort.



In pitcher plant leaf is modified into pitcher. Leaf apex forms a lid which helps in opening and closing of pitcher. Inside pitcher downwardly directed hairs are present which does not let an insect to come out. When insects sit on opening of pitcher, it slips down and is trapped by hairs then a lid gets closed and insect is digested by digestive juice secreted by pitcher.