Ls. Nutrition in plants

→ **Nutrition**: The process of taking in nutrients and then utilizing them to perform various life processes like growth and development

Modes of Nutrition

Autotrophic

Nutrition in which living organisms make their own food utilizing simple inorganic substances like Co_2, H_2o from environment, such organisms are called autotrophs

Eg. Green plants, algae

Heterotrophic

Nutrition in which certain organisms take food from green plants directly or inderctly. These organisms cannot make their own food, such organisms are called Heterotrophs

Eg. Non green plants, fungi

→ **Autotrophs** - Organisms which prepare their own food are called autotrophs.
Eg- Green Plants

→ **Photosynthesis :-**

It is the process by which green Plants prepare food by using carbondioxide, water in the presence of sunlight and chlorophyll.

Chemical equation for photosynthesis

$$6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} \underset{\text{Glucose}}{C_6H_{12}O_6} + 6O_2$$

→ Conditions necessary for photosynthesis

* Carbondioxide from air through stomata.
* Water from soil through roots.
* Chlorophyll - green pigment in leaves.
* Sunlight

Note: Plants prepare food in the form of glucose and store in the form of starch

1. Carbondioxide

* Plants take in carbondioxide from the atmosphere through stomata.

* Tiny pores present on either sides of the leaf.
* Each pore is called stomata which is surrounded by two bean shaped structures called Guard cells.

Gaurd cells rotate the opening and closing of stomata.

Stomata helps in gaseous exchange in photosynthesis.

Transpiration is loss of water in the form of water vapour through stomata.

2. Chlorophyll: Green colour of it due to presence of chlorophyll.

* Chlorophyll trap sunlight and helps the green plants during photosynthesis.

3. Water

Roots present in the underground will absorb water along with minerals from the soil and transfart them to leaves through vascular bundles

4. Sunlight

It helps the green plants to undergo ~~photosynthesis~~ photochemical reaction to prepare their own food.

→ Nutrients required by plants

Carbohydrate in the form of starch

Plants obtain protein in the form of nitrogen

compounds by adding fertilizer

→ Heterotrophics ~~nutrition~~

Organisms which do not prepare their own food and depend on other organisms for the sake of food.

→ Heterotrophic Nutrition -

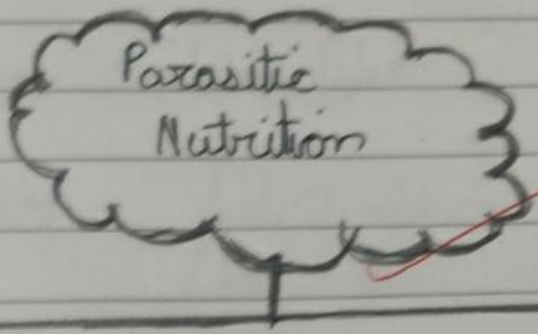
Nutrition in which certain organisms take food from green plants directly or indirectly These organisms can't make their own food. Such organisms are called Heterotrophs or Consumers

Eg: Non green plants, Fungi

→ Types of Heterotrophic Nutrition

1. Parasitic
2. Saprophytic
3. ~~Insectivorous~~ Insectivorous
4. Symbiosis

1. **Parasitic Nutrition** :- Nutrition in non-green plants (Parasites) live in or on green plants (host) for the sake of food and nutrition



Complete Parasite	Partial Parasite
* Parasites which depend on host plants for the sake of food & Water	* Parasites which depend on host parasite either for the sake of food or Water
* Eg: Cuscuta, Rafflesia	Eg: Mistle Toe

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2. Saprophytic Nutrition :- Nutrition obtained from dead and decaying plants and animals. These organisms are called Saprophytes.

Eg : Fungi, Indian Pipe

3 Insectivores : Autotrophic plants which feed on insects to supply their nitrogen

Pitcher

Eg : Pitcher Plant, Venus flytrap.

Utricularia

4. Symbiosys - Its an interdependence or a mutual assosiation of 2 organisms is which both the organisms are benefited

Eg Rhizobium, Leguminous

* Rhizobium : Provides nitrogen to legume plants.

* Legume : provides shelter to Rhizobium.
Eg : Lichens ; (algae, fungi)

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Algae => Provide food for fungi
Fungi => Provides nutrition for algae

* Replenishment of nutrients in the soil can be done by :-

=) Adding manure
=) Growing ~~to~~ legume plant
=) Using fertilizers
=) Decomposers. They play a major role by adding nutrients back to the soil by decomposing dead -Eg- decaying organisms

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