



Modes of Nutrition

Van Helmont's Experiment (1648):

Jan Baptista van Helmont conducted an experiment where he grew a willow tree in a pot for five years. He observed that although the tree increased in size significantly, the soil mass showed negligible reduction. This led him to conclude that plant growth was not primarily due to soil consumption. However, he mistakenly assumed that water was the sole contributor to plant growth.

Joseph Priestley and Photosynthesis (1771):

Modes of Nutrition:

The methods by which organisms obtain food are called modes of nutrition. There are two primary modes:

- i. **Autotrophic Nutrition**
- ii. **Heterotrophic Nutrition**

Autotrophic Nutrition:

Green plants take in carbon dioxide and water from their surroundings.

Using the Sun's energy, which is trapped by the green pigment chlorophyll, they transform these substances into glucose and oxygen.

Organisms that can make their own food from simple substances through the process of photosynthesis are called **autotrophs**, and their mode of nutrition is **autotrophic nutrition**.

Green plants not only produce food for themselves but also supply food to non-green plants and animals.

Heterotrophic Nutrition:

Organisms that cannot synthesize their own food through photosynthesis rely on green plants or other animals for nourishment.

These organisms are called heterotrophs, and their mode of nutrition is heterotrophic nutrition.