



Main Source of Nutrition for Plants

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Introduction

The study of the chemical elements and compounds required for plant growth, metabolism, and external supply is known as plant nutrition. The plant is unable to complete a standard without it. Soil is an essential source of nutrients for plant growth. Nitrogen (N), phosphorus (P), and potassium (K) are the three most important nutrients (K). The trio known as NPK is made up of them. Calcium, magnesium, and sulphur are also essential nutrients. Autotrophs are plants that produce their own food in the presence of sunlight. Sunlight energy is converted into chemical energy by plants. In the presence of chlorophyll, they produce their own food using carbon dioxide, water, and sunlight.

The most abundant element in the plant is carbon. Hydrogen and oxygen are two other structure elements. Photosynthesis undergoes a dark reaction at night, which provides nutrients to the plants. The dark reaction, also known as the light-independent reaction of photosynthesis, uses ATP and NADPH formed by light reactions to synthesise food. While photosynthesis provides food for all green plants, they also require nutrients from the soil. These dissolve in water and are absorbed by the plant's roots. Nitrogen (N), phosphorous (P), and potassium (K) are the three most essential plant

nutrients (K). There are two types of nutrition: vegetarian and non- vegetarian. Autotrophic – Autotrophic feeding is exhibited by plants, which are referred to as primary producers. Light, carbon dioxide, and water are used by plants to synthesise their food. Heterotrophic – Animals and humans are both heterotrophs, meaning they depend on plants for food.

Plants need nutrients in the same way that animals do. They need them in order to germinate, develop, combat diseases and pests, and reproduce. Plants, like animals, need nutrients in larger, smaller, or trace quantities to remain healthy. Mineral nutrients are important components of cell structures and metabolites, as well as in osmotic and turgor-related processes, energy transfer reactions, enzyme- catalyzed reactions, and plant reproduction. The effective discharge of these functions is critical to plant productivity. Nitrates ingested through the roots are dragged into the plant, where they are converted into 20 different amino acids. These amino acids are converted to proteins in ribosomes, which are unique structures found in cells. Other than carbohydrates, plants get the majority of their nutrients from the soil through their roots. If the soil is lacking in any nutrient, it is enriched with fertiliser so that plants can absorb it through their roots. Plants make proteins from amino acids contained in nitrogen fertiliser, as well as carbon, oxygen, and hydrogen consumed from the air and water. Proteins play a significant role in the cell wall's structure. Plants are a valuable dietary source of the eight to ten essential amino acids for humans and other animals since proteins and their building blocks, amino acids, make up such a large part of plant life. Photosynthesis, the conversion of CO₂ and inorganic nutrients into plant material using light energy, is the ultimate source of the food protein needed for man's survival.

Plants can consume inorganic nutrients, water, and carbon dioxide from the atmosphere through their root systems. Plants "eat" sunlight and carbon dioxide in order to provide food for themselves and the millions of other species that depend on them. Green plants are capable of producing their own food.

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