



The Root System

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The root is the underground part of a plant's body. It grows towards the force of gravity (geotropism). It provides anchorage to the plant, absorbing water and mineral nutrients from the soil. Some roots store excess food.

Types of Roots

Roots are classified into two main types:

i. Tap Roots

- Consists of one main long thick root growing downward.
- Many thinner lateral roots arise from the main root.
- Grows deep into the soil in search of water and minerals.

Examples: Sugar beet, carrot, bean, tea, peepal.

ii. Fibrous Roots

- No single main root; instead, a dense network of equal-sized roots emerges from the stem.
- These roots grow downward and outward, branching repeatedly.
- Do not penetrate deeply into the soil.

Examples: Lilies, grasses, wheat, rice, palm, onion.

Functions of Roots

Anchorage & Support: Roots attach the plant body to the ground and provide stability.

Absorption of Water & Minerals: Root hairs absorb water and essential nutrients from the soil and pass them to the stem.

Food Storage: Some roots, such as carrot, radish, and beetroot, store food produced by the plant and are edible.

Soil Binding & Erosion Prevention: Roots bind the soil, preventing it from being washed away by water or blown away by wind (prevents soil erosion).