

Plants absorb nitrate (NO_3^-) primarily through their roots, especially during active growth periods when nutrient demands are high for processes like protein synthesis. Effective nitrate absorption requires adequate soil moisture for transport to root cells, a proper soil pH for optimal nutrient availability, and a healthy root system maximizing uptake. Mycorrhizal fungi further enhance absorption, particularly in nutrient-poor soils. Good soil aeration is crucial for root respiration and energy production needed for active uptake. Finally, sufficient nitrate availability in the soil, influenced by fertility, organic matter, and fertilization, is essential for efficient plant absorption.