

Applications and Importance of Photosynthesis

Agriculture & Food Security

- Increase crop yields
- Improve water & nitrogen-use efficiency
- Breeding for stress-tolerant, efficient plants

Biofuels & Bioproducts

- Algal/plant biomass to fuels
- Toward carbon-neutral feedstocks

Biotechnology & Bioengineering

- Sugars
- Engineered photosystems
- O₂
- Solar-to-chemical devices

Climate & Carbon Cycle

- Draws down atmospheric CO₂
- Maintains O₂ for aerobic life
- Natural climate mitigation

Ecosystems & Services

- Base of food webs
- Supports habitat & soil health

Photosynthesis



CO₂ + H₂O