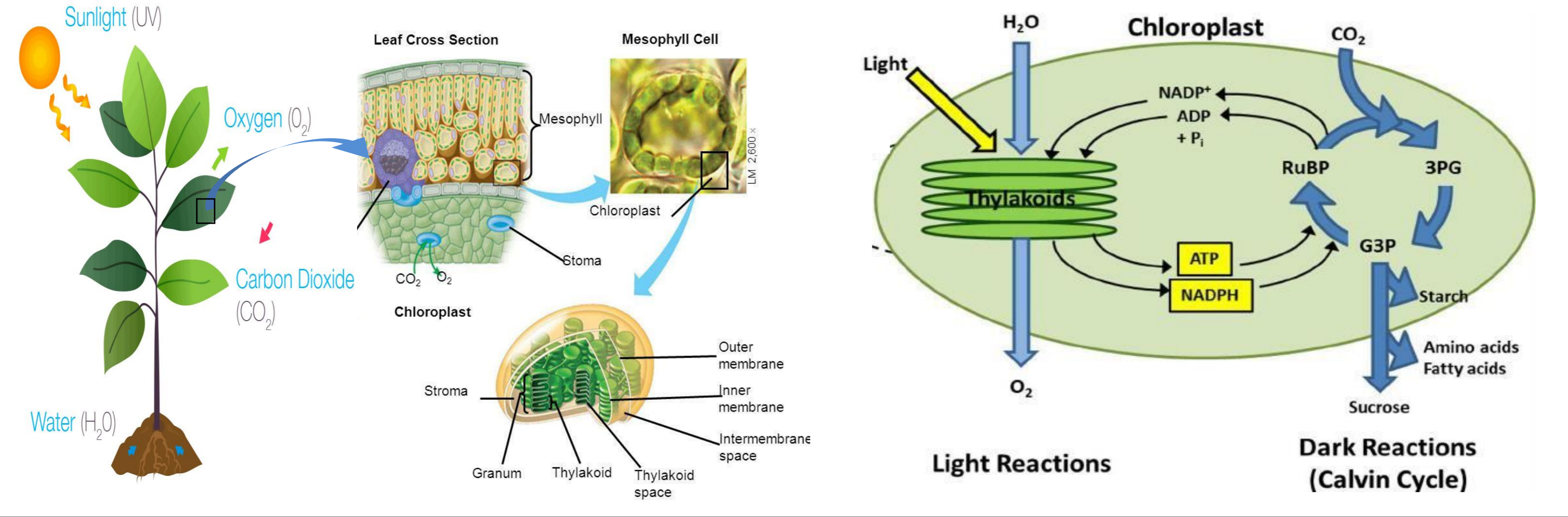


Photosynthesis : Source of life on earth

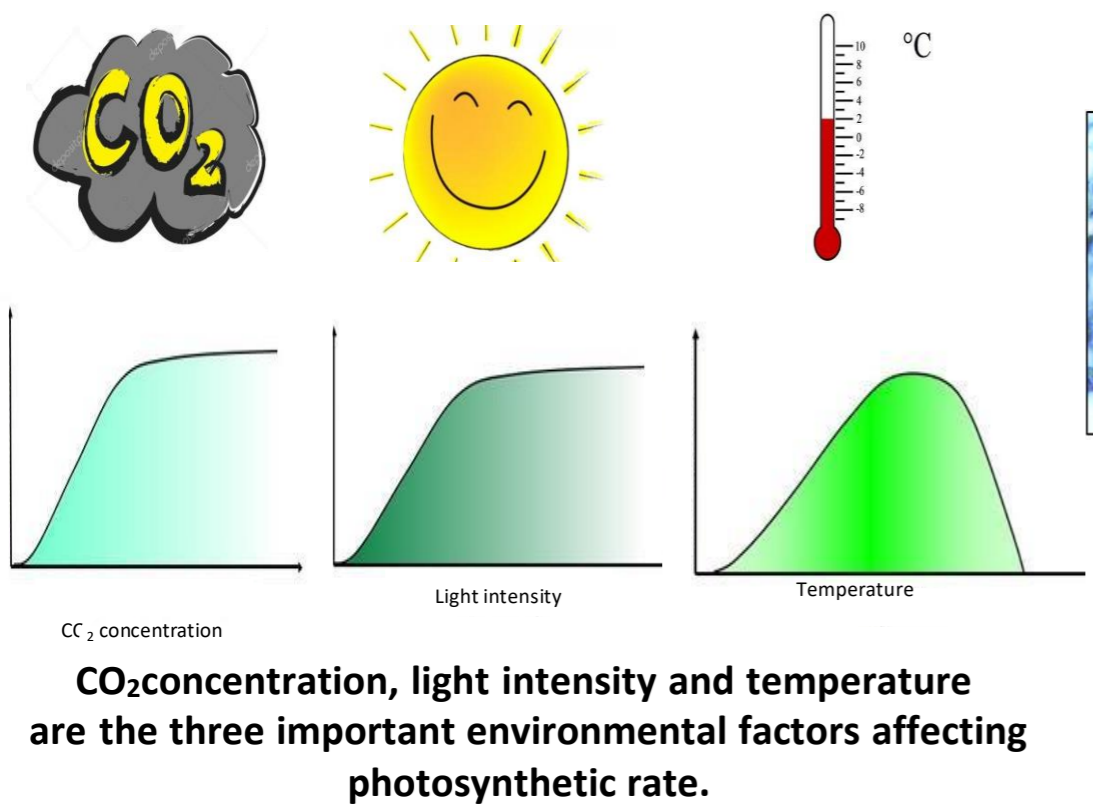
Photosynthesis is a key biochemical process in which green plants absorb sunlight and use carbon-di-oxide and water to produce oxygen and carbohydrates. Via photosynthesis oxygen has made possible the existence of all life forms which are not self sufficient, including mankind. Optimizing photosynthetic efficiency of crop plants could possibly be a major approach towards sustainable food production and energy

Photosynthesis : An Overview

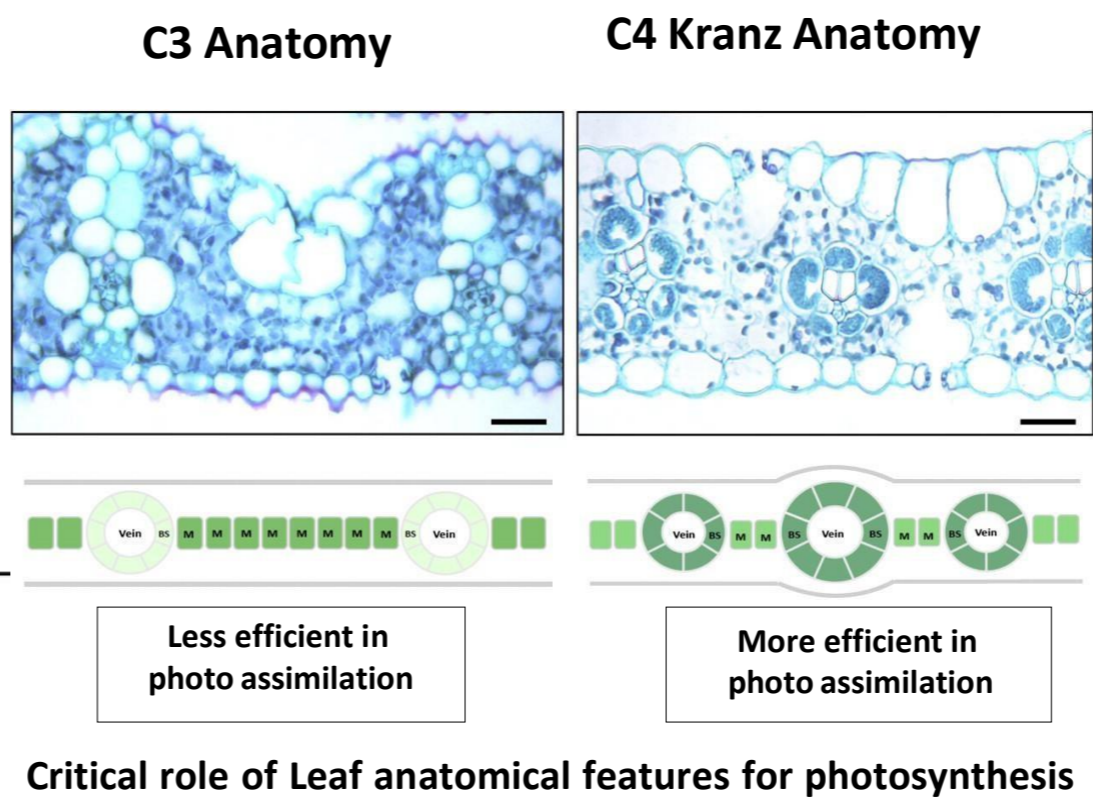


Factors Affecting photosynthesis

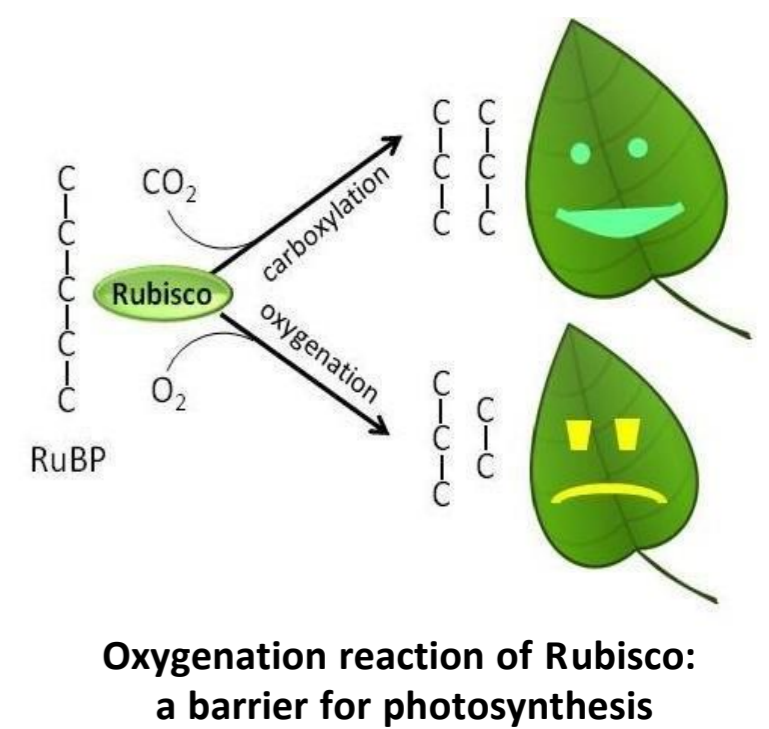
Environmental factors



Leaf anatomy



RUBISCO The key photosynthetic enzyme



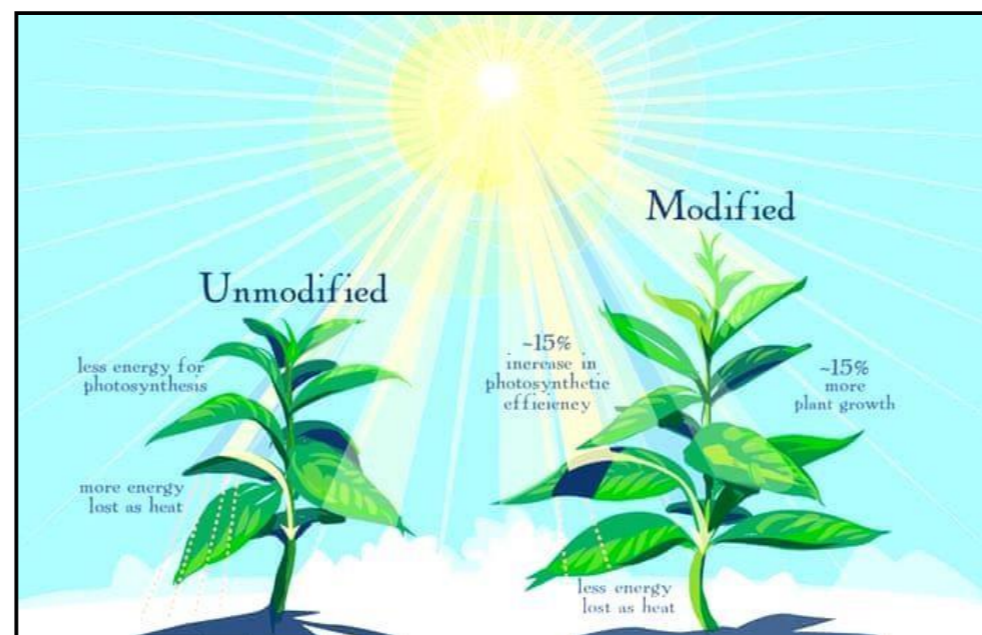
Large scale phenotyping of photosynthesis

LI-COR



Photosynthesis is monitored by [CO₂] consumption measured by IRGA (Infra red gas analysis) in Li-COR.

Photosynthesis needs tuning for food security



Improving photosynthetic efficiency could be a major approach for increasing the crop productivity to meet the demand of growing world population.

Modifications which can potentially improve photosynthetic efficiency

1. Optimization of leaf developmental features
2. Increasing carboxylation efficiency of Rubisco

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Increase biomass/yield