SUNPULSE

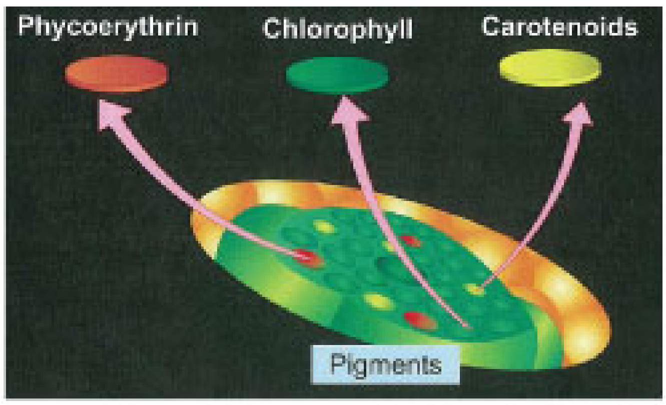
Spectrum

Plants have evolved over millions of years to adapt precisely to the light that shines on Earth.

Different pigments absorb different colors of sunlight at different wavelengths.

Pigments make light more efficient for the photosynthetic process.

Pigment Type	Reflected light (Pigment color)	Absorbs colors of sunlight	Wave length of absorbed sunlight
Chlorophyll *a* Chlorophyll *b*	Green	Red, blue	430nm and 662nm 453nm and 642nm
Carotene xanthophyll	Yellow Orange Red	Blue and green	460nm and 550nm
phycoerythrin	Red, orange	Blue, yellow and green	400nm and 650nm
phycocyanin	Blue (Only in blue bacteria and blue algae)	Red, yellow and green	500nm and 700nm

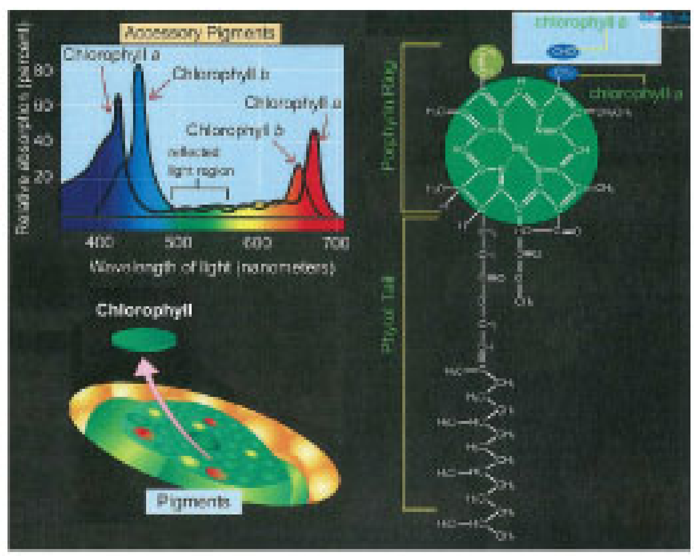


The two most important pigment carotenoids are beta-carotene and xanthophyll.

This chart shows the actual color that humans see from the colors of these pigments.

Spectral absorption levels of Photo-System 1 and 2, Chlorophyll A, and Chlorophyll B.

The image shows the necessity of exciting both photo systems and both light harvesting complexes with proper broad-spectrum lighting. Mono-chromatic bandwidth narrowed lighting will not excite proper NADPH and ATP conversion in the reaction center, causing poor chloroplast development and low glucose production.



The colors illustrate their absorption frequencies and reflection frequencies.

Plants must receive light in the way that they have evolved with, to perform to optimum levels.

The Original Digital Lamp