

Boost yields by optimizing sunlight



UbiGro is a spectrum-modifying, retrofit greenhouse film that contains quantum dots, a luminescent nanomaterial that shifts sunlight color. This unique optical property enables the UbiGro film to provide the optimum light spectrum to plants, boosting overall crop yields and improving crop quality. An easy-to-install and cutting edge technology, UbiGro is an electricity-free way to control the light spectrum in the greenhouse to enhance crop yields.

How it Works

Light from the sun is absorbed by quantum dots in the UbiGro film. The quantum dots shift some of the shorter wavelength colors, like UV or blue, towards the red. The optimized light is absorbed by crops, improving yield, cycle time, and crop quality.



UbiGro greenhouse film can be retrofit into any greenhouse architecture and is designed to optimize sunlight by shifting some UV and blue light towards the red

Why it Works

UbiGro retrofit films provide three ways to improve crop growth in your greenhouse



Photosynthesis

Color-shifting sunlight to have more orange and red light improves the photosynthetic efficiency in plants. By converting light more efficiently into biomass, plants can grow faster and larger, therefore producing more fruit/flowers.



Spectral Responses

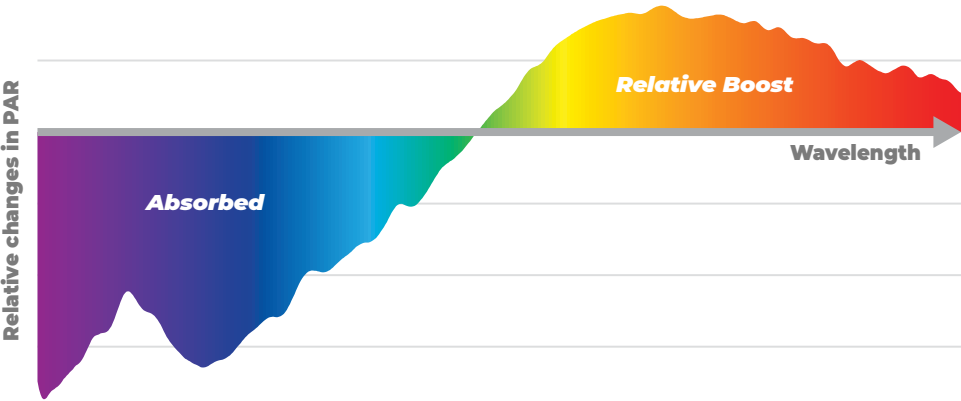
Boosting the orange/red portion of the spectrum triggers plants to focus more energy on producing fruit/flowers. UbiGro's spectrum mimics the late summer sun to trigger more fruit/flower production and can improve crop quality.



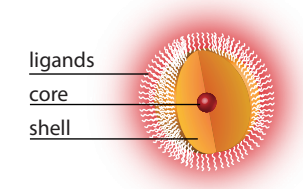
Diffuse Light

Diffuse light is known to reach deeper into the plant canopy. The quantum dots in the UbiGro film emit light in all directions which allows light to be absorbed by the entire plant and enhances fruit/flower yields.

Relative Spectrum Change from UbiGro Film



UbiGro retrofit films are designed to absorb some of the sun's UV and blue light and convert it to a warm glow. This glow boosts the relative PAR in the orange and red portions of the spectrum.



What are Quantum Dots?

Colloidal semiconductor nanocrystals, or quantum dots are nanoparticles so tiny that it would take roughly 10,000 of them to span the width of a human hair. Quantum dots have remarkably high light conversion efficiency and exhibit size-tunable photoluminescence over a wide range of colors.

About UbiGro

UbiGro is a line of greenhouse films enhanced with quantum dots. It is capable of optimizing the solar spectrum for crops, thereby increasing quality and yield. UbiGro is designed to fit seamlessly into greenhouses of any design. UbiGro is manufactured by UbiQD, a nanomaterials company based in Los Alamos, NM.

UbiQD's mission is to feed and power cities of the future with quantum dot based solutions.

Contact

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Tech Specs

Emission Wavelength	600 nm
Full Width Half Max	106 nm
Conversion Efficiency	85%
PAR Transmission	85%
Haze	2%
QD Composition	CuInS2/ZnS
Film Thickness	350 µm
Film Width	1.25 m



Greenhouses equipped with UbiGro emit a recognizable orange glow