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HORTICULTURE ARTICLE

Increase Yield with LED Lights

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Do you want higher yields? Who doesn't, right?

A careful analysis of your growing environment can ensure that your plants are getting exactly what they need to give you their best.

A critical part of that analysis will necessarily include a look at photosynthetic activity. Photosynthesis, of course, is the process by which a plant converts light into the energy needed to execute its basic life functions, including growth. As light is the energy source, it makes sense that giving a plant the exact light it needs would maximize its ability to grow and produce fruit.

Many scientists believe photosynthesis is only about 5 percent as efficient as it could be, particularly for crops such as wheat, barley and potatoes. That means that the same plants could produce 10 to 20 times as much food if the process could be optimized.

Researchers also know there are numerous actions that can be performed in order to optimize photosynthesis. While some of these methods involve altering plants at their cellular level — not particularly practical for most growers — others are easier to institute.

Give them the light they need.

Proper lighting ensures plants are getting the most beneficial PPFD at each growing stage, thereby enabling accelerated and more efficient photosynthesis.

How does LED light increase plant yields? Intense, specific wavelengths can be tuned to excite

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38% yield increase with Illumitex LED lights

photosystems that are the drivers of photosynthesis. The proper light can induce greater rates of photosynthesis with less energy consumption than traditional lighting sources.

It doesn't make sense to waste watts giving plants light they don't use. We know that plants only use light from small parts of the visible light range — so give them that light. Give your plants the light diet they need and they'll reward you with increased yields.

Properly blending light wavelengths is critical, too. Researchers at Wageningen University in The Netherlands found that specific combinations of various light colors results in more photosynthesis than the sum of the individual light colors — this is known as the enhancement effect. In a study conducted this fall, Wageningen researchers also found that strawberry production increased 15% using LEDs placed just above the plants.

Illumitex's plant scientists have done the trials and studied the plants. We've developed specific LEDs that emit the correct wavelengths to maximize your plants' photosynthesis, and therefore their yield.

Just ask the head of R&D at one of North America's biggest vertical farms, Green Spirit Farms. Dan Kluko says his southern Michigan-based operation has seen a 38% increase in yield since switching to Illumitex Eclipse Series lights.

You can definitely increase yield with LED lights. Give your plants the scientifically determined photons they need from Illumitex's precisely crafted grow lights, and watch yields — and profits — climb.