



PHILIPS

Horticulture
LED Solutions

Case study
Bayer

's Gravenzande, The Netherlands



Philips GreenPower LED toplighting

Produce new vegetable varieties with LEDs

With the LED lighting we are able to screen more varieties
per season.



“

We can cut our growing time in half, so we can screen more potential varieties.”

Peter Does, Account Manager Lettuce, Bayer



Background

The year 2016 marks the 100th anniversary for Nunhems, the Bayer brand for vegetable seeds. Present on all continents, Bayer produces over 1,200 seed varieties across 24 vegetable crops, including lettuce. Its breeding programs deliver innovative cultivars, which in turn help improve their customers' business growth and profitability.

In 2008, the company invested in a research and breeding greenhouse that includes both a float system and a NFT System for lettuce. This greenhouse is equipped with state-of-the-art cultivation technologies to trial new varieties with different traits and characteristics designed to meet the requirements of customers, as growers require strong and efficient lettuce varieties. Growers are also able to visit the greenhouse and see demonstrations of new and existing varieties, as well as new product concepts. Since LED lighting is increasingly popular with growers, Bayer decided to equip the greenhouse with a new LED lighting

system that will allow them to keep developing new varieties for hydroponic lettuce production.

The challenge

When Bayer first built its hydroponic greenhouse, it was not equipped with a lighting system. In recent years, however, more hydroponic growers have begun using LED to accelerate crop growth and improve the quality of yields during winter. “To help our customers remain competitive, we have to adapt our lettuce varieties to meet the requirements of hydroponic systems that use LEDs,” says Peter Does, Account Manager Lettuce, Bayer. “Our customers use LEDs to increase production in the winter and to improve the quality of crops. To help our customers further, we need to develop new varieties that allow our customers to exploit LEDs to the fullest.”

The solution

At the beginning of 2016, Philips LED Horti Partner 'Light4Food' helped Bayer gain experience using LEDs to grow lettuce in its greenhouse. The first results were promising; red varieties became completely red within a few days, which does not happen with only natural light. Based on these results, Bayer decided to equip the entire greenhouse with a Philips LED installation.

The 1,000 square meter greenhouse now has Philips GreenPower LED toplighting, which produces a light intensity of 110 $\mu\text{mol}/\text{m}^2/\text{s}$, a light intensity that corresponds with the light level of Bayer's customers, enabling them to screen the crops at the same light level. The light recipe partially includes white LEDs, which are very useful for assessing crops and for demonstrations to the many growers that visit the greenhouse.

Benefits

Like its customers, Bayer is experiencing the benefits of LED lighting for its own business. Does: "We are always looking for more efficient ways to improve our breeding process so we can bring improved varieties to the market as fast as possible. With the LED lighting solution we are able to screen more varieties per season, which accelerates the process of finding the right varieties. Before we used LEDs in this greenhouse, we could only do one round of crops in the winter, which took 12 to 13 weeks. Now we can cut that growing time in half. Plus, we have much better coloration in our red lettuce, which can give our customers a real competitive edge."

“

We need to develop new varieties **that allow our customers to exploit LEDs to the fullest**”

Peter Does, Account Manager Lettuce, Bayer



Facts

Breeder

Bayer

Segment

Vegetables

Crop

Lettuce and leafy greens

Location

's Gravenzande, The Netherlands

Solution

Philips GreenPower LED toplighting

Philips LED Horti Partner

Light4Food

Results

Good fit with market demand. Possibility to screen more varieties per season.



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