



Case study GreenQ/Improvement Centre

Location
Philips Lighting

Bleiswijk, the Netherlands
Philips GreenPower LED interlighting



PHILIPS
sense and simplicity



“The tests show that the LEDs are ready for the market.”



Background

GreenQ Improvement Centre is a modern greenhouse complex in which new cultivation concepts and technical installations from all over the world are developed, tested and demonstrated. The results contribute to sustainable and profitable horticulture worldwide. GreenQ's Improvement Centre conducts trials and concept tests on a practical scale and has previously carried out tests involving the cultivation of tomatoes with the combination of LED lighting and SON-T lamps.

The challenge

Last year it was demonstrated at the Improvement Centre that in a greenhouse in which LEDs are used as interlighting the added light (30-45%) is converted more efficiently into tomato by the plant. This is in comparison with the testing area, where the same quantity of light was added with conventional SON-T lamps. This year

the objective of the cultivation was to harvest 79 kilos of tomatoes per m² with an energy reduction of 30 percent. The setup is comparable to those used by tomato growers that use lighting in practice. The Improvement Centre uses SON-T lamps and LED interlighting modules in two strings. The lighting is combined with climate technologies from The New Cultivation in the fields of dehumidification and screening strategy. A larger row spacing is also used. The purpose of this is to get more light to the crop and eliminate the shading effect. The number of plants per m² is the same as in practice. During the tests the Improvement Centre uses the coarse vine tomato Komeet.

The solution

This year the test again shows that LED lighting in the crop has a positive effect on fruit weight and total production. The energy saving achieved during the winter

GreenQ Improvement Centre achieving impressive results with interlighting for tomatoes



Fast Facts

Grower

GreenQ/Improvement Centre, Peter Klapwijk

Sector

Olericulture

Crop

Tomato, Komeet

Location

Bleiswijk, the Netherlands

Solution

Philips GreenPower LED interlighting

Philips LED Horti Partner

Wilk van der Sande

period is largely due to the intelligent use of the LED lighting in combination with the SON-T lighting. The LED interlighting is thus a stable component in the concept of the studies and GreenQ's objectives were met. Director Peter Klapwijk of GreenQ is positive about the future of LEDs in horticulture. "The tests show that the product is ready for the market. But we will of course continue to test and innovate."

Benefits

Previous tests showed that lighting the lowest leaves has a positive effect on coarseness and production. By distributing light into the crop more intelligently, light saturation or lower light utilization efficiency will occur less quickly. Light is often the limiting factor at the bottom of the crop. Interlighting with LEDs helps to supplement the light requirement deeper in the crop and in this way bring the entire crop to higher

production. Because of the low heat emission the light modules can be positioned in among the crop. Precisely where the plant needs it.

"LED light results in quite a few extra kilos."

As a member of the supervisory committee, grower Robert Zwinkels has for the past two years been involved in the LED tests in the Improvement Centre. As far as he is concerned, the LEDs have amply proved their added value. "The results have pleasantly surprised me. The LED light was used 30 to 40 percent more efficiently than if we had used extra SON-T lamps. That resulted in quite a few extra kilos."



© 2011 Koninklijke Philips Electronics N.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

10/2011

Document order number: 3222 635 66725

www.philips.com/horti