PHILIPS

Horticulture
LED Solutions

Case study
Sierteeltkwekerij
Maarten Bloemen

Venhorst, the Netherlands

Philips GreenPower LED production module

LED lighting accelerates growing time by 25 to 30 percent

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Maarten Bloemen, owner, Sierteeltkwekerij Maarten Bloemen v.o.f.

Background

Maarten Bloemen’s nursery in Venhorst specializes in propagating a narrow range of acidophilous crops, including several varieties of pieris, azalea, leucothoe and vaccineum. The total farm structure is made up of 2,000 m^2 of container fields and 10,000 m^2 of greenhouses. Bloemen focuses on depth rather than breadth and has several patented varieties. All crops are obtained from the nursery’s own plant material.

The challenge

Bloemen had already started searching for the optimal growing conditions for propagating pieris cuttings at the end of the nineties. He knew that light plays a major part and was hoping to use light to make the rooting of his cuttings easier, to keep the cuttings vegetative, to achieve better quality and to limit the number of rejects. Even then it was clear that most plants reacted well to light.

Later Bloemen discovered the emerging LED technology. Based on his own judgment, he ordered LED lamps from Japanese manufacturers and even at that time achieved decent results with them. Since 2009 he has, in conjunction with Philips, been looking for the best lighting options for his cuttings. In the winter of 2009-2010 he began two tests on an area of 200 m^2. In the winter of 2010 this test was further extended so as to monitor closely the entire cultivation process under the LEDs. Other crops, such as leucothoe and pernettya, were also included in this test. Experts from Philips and research bureau DLV Plant wrote interim reports every four weeks during the growing season. Bloemen says: ‘The entire cultivation process was examined and recorded during the testing. Not only the light, but also the substrate, fertilizer and light loss due to the tunnels and the condensation that occurs in them. They wrote a report of all the measurements taken, including photos of the crops.’

The solution

The tests showed that LED GreenPower Production Module RB was the best solution for Bloemen's range of pieris cuttings. He is very impressed with it: 'Both the quality and the success rate of my rooted cuttings have improved. The yield per square meter is higher and we can grow more uniformly and more heavily. In addition, the amount of mould present is considerably lower, so that fewer pesticides need to be used. This saves a lot of money, since chemicals cause cost-increasing growth stress and additional labor costs. LED lighting also accelerates growing time by 25 to 30 percent. This means that I can produce a much better plant in the same time. So since September 2010 I have been fitting LEDs throughout the propagation section of my greenhouses.' Bloemen is far from finished. 'I'm now experimenting with higher light intensity by using more LEDs. This appears to be a success. There are many more root growing points.'

Benefits

The most important objective was achieved: Bloemen's range of pieris cuttings are of better quality. The percentage of rejects fell during the cutting period from 7 to 2%. During the potting phase this figure was reduced from 5 to 2%. But Bloemen is also impressed by the additional benefits of LED lighting. 'The lamps are energy-efficient and less harmful to the environment and cause much less heat radiation. This means I have greater control over the processes in my greenhouses. In addition, the life of the LEDs is 25,000 operating hours. So they last much longer than conventional lamps. It is absolutely a step forward in every respect.'

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Facts

Grower
Sierteeltkwekerij Maarten Bloemen v.o.f.

Sector
Tree nursery

Crop
Production of plant material for various acidophilous shrubs such as pieris, leucothoe and pernettya

Location
Venhorst, Noord-Brabant, the Netherlands

Solution
Philips GreenPower LED production module

Philips LED Horti Partner
Lights Interaction Agro b.v.

Results
Quality improvement of the crop and reduced production costs

Document order number: 3222 635 66727
01/2015
Data subject to change

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