# PHILIPS

### Horticulture LED Solutions

Case study Boereboom Eindhoven, the Netherlands



Philips GreenPower LED research module

# Efficient use of space

We can precisely control the conditions in terms of light, temperature and air humidity





André Boereboom, Boereboom Stekcultures



#### Background

Boereboom Stekcultures is a tree nursery in Eindhoven, the Netherlands which specializes in propagating tree nursery crops and ornamental plants. The company produces 4,000,000 cuttings a year consisting primarily of shrubs and hardy plants. These crops are propagated mainly in the greenhouse, much of which has soil heating. Boereboom Invitro Cultures also propagates crops by means of plant tissue culture. This is done under controlled conditions in their plant tissue culture laboratory. With this method it is possible to propagate crops that are difficult or impossible to propagate with cuttings.

#### The challenge

André Boereboom of Boereboom Stekcultures is always on the look-out for sustainable and innovative growing solutions. He has already acquired experience with Philips LED solutions in his plant tissue culture lab. He was so enthusiastic about them that he has now taken the initiative to fit out a conditioned growing room. Here he has been rooting cuttings material and shoots obtained from plant tissue culture under non-daylight conditions since February 2012. Besides Philips, Cultus Agro Advies, knowledge institution Applied Plant Research (PPO) and VTI Horst are also involved in this test room. 'The aim of the trial is to find the right light recipe for propagating various ligneous crops under non-daylight conditions' says Boereboom. 'This has many advantages. Not only is it possible to control the temperature, lighting and air humidity perfectly, it also enables me to cultivate in several stacked layers an this saves an enormous amount of space.'

#### The solution

The new non-daylight cell was put into service at the start of February 2012. This cell is thirty square meters in size and is fitted with a multilayer system using Philips LED lighting. This makes it possible to experiment with different climates, light intensities and light spectra under controlled conditions. The first crops being trialed for rooting in the cell are Leucothoe, Nandina from plant tissue culture Photinia and Thuja. Cultus and PPO have both been involved in the trials for the purpose of observing and reporting. Some of



# **66 I'm now the first tree nursery** to root cuttings without daylight."

the plant material used in the trials comes from the firm's own nursery but there is also material used that has been supplied by other growers. 'This is a large practical trial that we are very pleased with' says Boereboom. 'We can precisely control the conditions in terms of light, temperature and air humidity. The purpose of this practical trial is to find cultivation recipes that will make it possible in the future to cultivate in multiple layers. By entering into this partnership with the various parties I certainly expect that we will achieve this goal.'

#### Benefits

In conjunction with the other participants in this initiative, Boereboom is aiming to find a practically applicable solution for rooting tree nursery products without daylight. He is very enthusiastic about the potential. 'For some time now, I have been following trials with LEDs to see how the technology can be used in the tree nursery sector. I'm so convinced by the results that I'm now the first tree nursery to root cuttings without daylight. We also have the option of keeping track of the various light colors and the reaction to the rooting. The aim is to create a concept for a variety of crops so that in the future we can root our cuttings in a production hall without daylight. This will make business operations much more efficient and ultimately more economical. The LEDs are a revolution for my way of working.'



## **Facts**

**Grower** Boereboom

**Sector** Tree nursery

**Crop** Various ligneous crops

Location Eindhoven, Noord-Brabant, the Netherlands

**Solution** Philips GreenPower LED research module

**Philips LED Horti Partners** VTI Horst and Lights Interaction BV

**Results** Rooting cuttings without daylight and efficient use of space through multilayer arrangement



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