PHILIPS

Horticulture
LED Solutions

Case study
Kernock Park Plants
Pillaton, Saltash, Cornwall,
United Kingdom

Philips GreenPower LED production module and
Philips GreenPower LED toplighting

Improving the **quality and success rate** of propagation

LED lights will be used a great deal more for both our motherstock and propagation in the future

> Not only are we seeing quality improved, I am able to program our buying-in of unrooted cuttings with greater certainty, **knowing that we can supply plugs to our customers exactly when they require them."**

Bruce Harnett, Kernock Park Plants

Background

Kernock Park Plants was established by Richard Harnett in 1981. The term he coined – 'Patio Plants' – today embraces all plants suitable for container growing. From relatively small beginnings, the nursery now covers 4 ha (10 acres) of glass and polythene, heated by two biomass boilers. The wholesale nursery continues to innovate in plant introductions and marketing, and is the UK licensee for the well-known brand 'Proven Winners'. The company supplies over 1,500 growers in the UK and Europe with young plug plants to grow on for retail outlets.

The challenge

With a catalogue of nearly 1200 varieties, ranging from annuals to nursery stock, plus a further 400 varieties in trial, the challenge is to propagate all plants successfully. The production material comes from motherstock from the nursery, or is brought in as unrooted cuttings – tissue culture – from a number of sources, or from seed.

Supplementary lighting with HPS lamps had been used on the motherstock for many years, which also helped to control day length. However, with the rise of LED lighting for floricultural applications, Kernock Park Plants was keen to explore the potential of this technology to improve its propagation process.

The solution

In 2011, trials started with LED lighting – with various light spectra – on propagated material. This small-scale trial provided sufficient encouragement to conduct a larger trial over propagation beds using 84% red light from Philips GreenPower LED production modules (48 W), each lit for 16 hours per day. GreenPower LED production modules offer increased control, improved and uniform crop quality, and energy savings of up to 75%. The energy-efficient LEDs also give off less heat and create a more uniform light distribution, making the module ideal for conditioned environments.

The results were so positive that it was clear more trials should be held. In 2014, Philips was approached for advice on the way forward, including its then-new GreenPower LED toplighting modules. Delivering light levels typically ranging from 40-300 µmol/m²/s in a highly efficient way, GreenPower LED toplighting offers considerable opportunities to increase production and improve crop quality during the year. Together with its UK partner, CambridgeHOK, Philips recommended layouts to produce 50 µmol.

Benefits

The results with varieties known to be difficult to propagate were a revelation. In addition to a vastly improved success rate, in some cases it went from 30% to 96%. The rooting was quicker and botrytis control was limited to just one preventative spray. From just one season, it is estimated that the return on capital will be less than 2 years – not to mention the 30% reduction in the amount of power required compared to HPS lighting.

For the propagated plants, light intensity, optimum blue percentage and length of day are all factors that will be investigated further in order to achieve the best results. This has spurred Kernock Park Plants to extend the trial over a number of areas of the nursery in the 2015/16 season. In addition, Philips GreenPower LED production modules are being trialed in a multi-layer set-up to see if controlled light, heat and humidity assist production even more, and with better utilization of space. This work will continue into 2016.

> “The propagation success rate vastly improved, in some cases it went from 30% to 96%. **It is a win/win situation – saving money and getting better results.”**

Facts

Horticulturalist / grower
Kernock Park Plants

Sector
Floriculture

Crop
Perennials

Location
Pillaton, Saltash, Cornwall, United Kingdom

Solution
Philips GreenPower LED production module and Philips GreenPower LED toplighting

Philips LED Horti Partner
CambridgeHOK

Results
To maximize the quality and success rate of plant propagation

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