

Propagation success with LED lighting

A lighting trial carried out on difficult to propagate patio plants with Philips LED GreenPower toplighting at Kernock Park Plants, reports an increase from 30% to 96% in propagation success rates for one crop and up to 75% in energy savings.

Other benefits have included faster rooting and improved crop quality, uniformity and control of botrytis. The energy-efficient LEDs also give off less heat and create a more uniform light distribution, making the module ideal for conditioned environments.

Kernock Park Plants, based in Cornwall propagates nearly 1200 varieties for its catalog, ranging from

annuals to nursery stock, and trials a further 400 varieties on its 4 ha (10 acres) of glass and polythene greenhouses. The challenge is to successfully propagate as many high-quality plants as possible, especially those that are difficult to propagate using conventional HPS lighting methods. Using energy-efficient LEDs offers Kernock Park Plants the potential to increase production, profit margins on certain varieties and crop quality to strengthen its market share.

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

says Bruce Harnett, managing director of Kernock Park Plants. “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 on exactly the day they require them.”

Based on the success of initial propagation trials with Philips GreenPower LED production modules that began in 2011, new trials were designed and conducted in 2014. New GreenPower LED toplighting modules were used to deliver light levels typically ranging from 40-300 $\mu\text{mol}/\text{m}^2/\text{s}$ in a highly

efficient way. This set-up offers considerable opportunities to increase production and improve crop quality during the year.

The results with varieties known to be difficult to propagate were a revelation. Propagation success rates improved vastly – in some cases they rose from 30% to 96%. Other improvements included faster rooting and botrytis control was limited to just one preventative spray. Based on 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 will be investigated further to achieve the best results. Kernock Park Plants will 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 can further assist production and improve utilisation of space. This work will continue into 2016.