



PHILIPS

Horticulture
LED Solutions

Case study
Bailey Nurseries Inc.

St. Paul, Minnesota, USA



Philips GreenPower LED production module

A win-win for the nursery and our customers

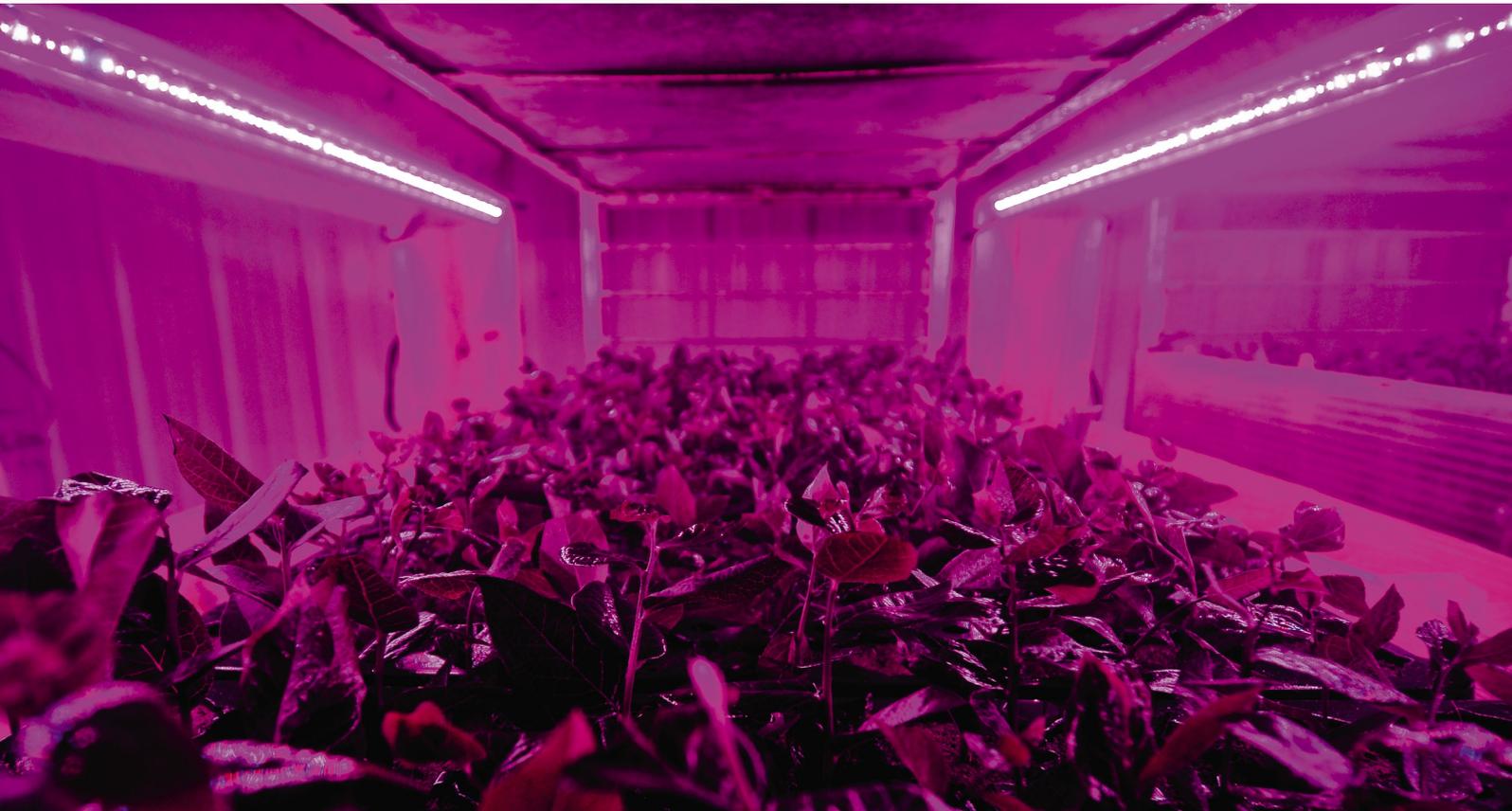
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“

I tested the GreenPower LED production modules this year. **The result of this trial indicates to me that we will improve plant stand, reduce crop time, increase overall plant health, and also conserve energy during the winter months.**”

Jean Marc Versolato, Bailey's Plant Health Department



Background

Bailey Nurseries is one of the United States' largest wholesale nurseries, with products distributed by more than 4,500 independent garden centers, landscapers, growers and re-wholesalers throughout the USA and Canada. It has locations in four states and offers a complete line of nursery stock that includes deciduous trees and shrubs, evergreens, fruits, perennials, annuals and roses. Plants are offered from seedlings and rooted cuttings to finished bareroot and container-grown stock.

The challenge

Bailey Nurseries wanted to improve the rooting of hard-to-root crops, reduce losses during propagation, and shorten rooting time. Hard-to-propagate crops historically have a low rate of success, the average success rate for a regular crop being around 85%. This means that for every 100 cuttings, 85 successfully develop roots. Hard-to-root crops, on the other hand, can have a success rate of 30% or less. These crops require a lot of growing space, and/or a lot of grower care, just to get the necessary yield.

The solution

At its facility in St. Paul, Minnesota, Bailey's trialed Philips GreenPower LED production modules in a separate propagation room – not in the greenhouses – with humidity of 98% and a temperature of 72 °F (23 °C). The LED fixtures, mounted less than 20 inches (50 cm) away from the cuttings and delivering red and blue light, were switched on for 16 hours a day. The red and blue LED lights come in different recipes depending on what a grower wants the plants to do – develop roots, hasten flower initiation, or speed up time to flower.

Benefits

With the shift from greenhouse to controlled environment increasing the scope for fall and winter production, the energy-saving potential of the GreenPower LED production modules is a significant asset. For most crops, the GreenPower LED production modules in the controlled environment of a growth room allowed better control of the plant growth cycle, compared with the greenhouse, resulting in higher rooting percentages.



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Faster growth shaving a week off the rooting schedule!”

Quality improved drastically over the previous growing conditions, with more uniform and consistent growth, better roots and stronger plants. Lilacs in particular showed a much higher percentage of successfully rooted plants. Faster growth, shaving a week off the rooting schedule, was attributable to the combined effect of the LED lighting plus the climate and root zone management strategies. The LED fixtures' lower level of heat generation also eliminated the need to apply additional water. In the winter time the LED lighting clearly freed up the grower: in the greenhouse these crops required hourly maintenance, whereas in the growth chamber the grower only needs to look at the crop once or twice a day.

Jean Marc Versolato, from Bailey's Plant Health Department, enthused: 'I tested the GreenPower LED production modules this year. They do work! As an example, tissue culture lilacs rooted quickly and with minimum care under these lights. The result of this trial, amongst others, indicates to me that we will improve plant stand, reduce crop time, increase overall plant health, and also conserve energy during the winter months – a win-win for the nursery and our customers.' After a year of successful trials in the St. Paul location, with a success rate close to 85%, other facilities are now investigating the use of LED lighting, and Bailey's is starting to convert crops to production under LEDs.



Facts

Grower

Bailey Nurseries Inc.

Sector

Young plants and cuttings

Crop

Multiple crops

Location

St. Paul, Minnesota, USA

Solution

Philips GreenPower LED production module

Philips LED Horti partner

Hort Americas, LLC

Results

Faster propagation, better plant quality, a higher success rate, and energy savings



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