



PHILIPS



Horticulture
LED Solutions

Case study
Shanghai Floriculture
Experimental Farm

Shanghai, China

Philips GreenPower LED production module

Philips' unique 'light recipe'
approach **creates tailor-made
lighting conditions**

Producing stronger young plants, improve rooting and increase the
multiplication coefficient



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A Philips GreenPower LED production module with a unique light recipe tailored to Cordyline tissue culture – a red/blue spectrum combination – has been installed in the Farm’s tissue culture lab, **making it possible to improve the quality of the young Cordyline plants.”**

Shanghai Floriculture Experimental Farm



Background

Shanghai Floriculture Experimental Farm, part of the Shanghai Seed Industry Group, is a leading player in the Shanghai agricultural and forestry industry. Its tissue culture center functions not only as a production facility, but also as a research and quality testing center – the ideal place to combine the latest high technology with actual production. The Farm is committed to the pursuit of quality, and its Cordyline tissue culture production is widely renowned, with significant quantities being exported to America and Europe.

The challenge

As an experienced tissue culture grower, Shanghai Floriculture Experimental Farm is constantly on the look-out for new technologies to improve production. The traditional fluorescent tubes used in tissue culture rooms give off a lot of heat, raising the room temperature and burning the fragile leaves of the young plants. The continuous heat emission also means that large amounts of energy are required for air-conditioning. In addition, the lumen depreciation of the fluorescent tubes is quite severe, so the plants grow slowly. Consequently, the Farm wanted a better-quality growth light

to speed up production. At the same time, the Chinese government’s policy of ‘using green power for energy saving and emission reduction’ also demanded new light sources to replace the existing energy-intensive, inefficient lighting.

The solution

Light is an essential element in the tissue culture production of Cordyline. Both the amount and the quality of the light are important. After Philips introduced the idea of ‘light recipes’, the Farm decided to work together with Philips to install the very best light source for Cordyline tissue culture production. A Philips GreenPower LED production module with a unique light recipe tailored to Cordyline tissue culture – a red/blue spectrum combination – has been installed in the Farm’s tissue culture lab, making it possible to improve the quality of the young Cordyline plants. This specific custom-made light recipe solution is based on Philips’ extensive experience with similar growers all over the world. In addition to energy saving and reduced heat emission, the Philips GreenPower LED production modules exhibit very low micromol depreciation, which means they have a much longer lifetime and better light output performance.

Benefits

Every plant species (including cultivars) has optimal growing conditions (lighting, temperature, humidity, growth media, etc.) to which it responds best. The fluorescent lighting traditionally used for tissue culture is very simple – the light intensity and spectra cannot be changed. This lighting can maintain the basic growth of tissue culture plants, but it cannot satisfy the varied demands of different species and cultivars.

Philips' unique 'light recipe' approach, which involves modifying the light intensity and spectra to suit the specific needs of the plant in question, creates tailor-made lighting conditions that, among other things, produce stronger young plants, improve rooting and increase the multiplication coefficient. Philips' high-quality lighting solutions and its follow-up service are powerful tools that will help Shanghai Floricultural Experimental Farm further improve production and retain its leading position on the horticulture market.

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The Farm decided to work together with Philips to install **the very best light source** for Cordyline tissue culture production.”



Facts

Grower

Shanghai Floriculture Experimental Farm

Sector

Floriculture

Plant

Cordyline

Location

Shanghai, China

Solution

Philips GreenPower LED production module

Results

The Farm decided to work together with Philips to install the very best light source for Cordyline tissue culture production



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