PHILIPS

Horticulture
LED Solutions

Case study
Beijing Vegetable
Research Centre
Beijing, China

Philips GreenPower LED production module

Stronger seedlings, higher rooting rate, and shorter rooting time

They found that the rooting rate for many plants had improved

“The lighting solutions provided by Philips Horticulture LED lighting are professional and comprehensive. **We hope to cooperate with them in agriculture in the future.”**

Beijing Vegetable Research Centre

Background

Founded in 1958, the Beijing Vegetable Research Centre (BVRC) (hereafter the Centre) is an agricultural research institute affiliated with the municipality of Beijing. The Centre has advanced research facilities and technological capabilities; it is one of the top-ranked development centres in the industry and a leading Chinese professional vegetable research institute. In 1995, the Centre was officially recognized as a National Vegetable Engineering Research Centre by the Chinese Ministry of Science and Technology. Based in Beijing yet serving the whole country, the Centre strives to be the vanguard of world vegetable technology, promoting the improvement of Chinese vegetable industry. They also provide technology support for the effective and sustainable development of the Chinese vegetable industry. The Centre undertakes a number of key national, provincial, and ministry-level research projects each year and has obtained many important research results. The Centre is focused on innovation, so it constantly tests advanced technologies and their applications.

The challenge

The Centre has nine subordinate research laboratories, including a vegetable resource reservation and special vegetable adaptation research laboratories, vegetable bio-technology research laboratories, and vegetable growth and equipment research laboratories. Of the Centre’s many research laboratories, the tissue culture laboratory is important for the production of experimental materials and the preservation of precious species. Therefore, this laboratory’s internal lighting and cooling systems must meet the needs of the researchers. However, the tissue culture laboratory’s main lighting source is fluorescent; these lights have recently shown a serious decline in light intensity, a high heat radiation, poor spectrum for plants, and high replacement costs. In fact, most tissue culture laboratories in the Centre have high electric loads, slow cultured tissue growth speeds, and low rooting rates.

The solution
As the leader in LED lighting technology, Philips also leads in the application of LED lighting in agriculture and provides complete lighting solutions. The Centre started cooperating with Philips horticulture LED lighting at the beginning of 2012 by bringing advanced LED lighting solutions into the tissue culture laboratory for multiple crops. In order to ensure that experiments can be replicated, the Centre designed a number of different lighting solution combinations for different experimental materials. The Philips plant specialists visited the site, observed the lighting conditions currently available in the Centre, and recommended an ideal lighting solution based on accumulated experience and practical needs.

Benefits
After a few rounds of experiments by research staff in the Centre's tissue culture laboratory, they found that the rooting rate for many plants had improved significantly and the cost of energy consumption for lighting and air-conditioning was greatly reduced. The Centre is satisfied with the complete lighting solution provided by Philips horticulture LED lighting, and the Centre wishes to cooperate with Philips in other agricultural research for the future development of the domestic vegetable industry.

“**The Centre is satisfied with the complete lighting solution provided by Philips horticulture LED lighting,** and the Centre wishes to cooperate with Philips for the future development.”

Facts

Grower
Beijing Vegetable Research Centre (BVRC)

Sector
Multilayer tissue culture production

Plant
Tobacco and others

Location
Beijing, China

Solution
Philips GreenPower LED production module

Results
Stronger seedlings, higher rooting rate, and shorter rooting time

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