

A woman with dark hair, wearing a white lab coat, is smiling and holding a large bunch of fresh green leafy vegetables. She is standing in a hydroponic farm with multiple levels of white trays containing plants. The background is filled with rows of these trays, creating a sense of depth. The lighting is bright and even, highlighting the freshness of the produce.

PHILIPS

Horticulture
LED Solutions

Case study
Delicious Cook Co., Ltd.

Chiba Prefecture, Japan



GreenPower LED production module

Indoor cultivation
yields **fresh, safe, ready-**
made meals

Vegetables grown indoors are much better – fresh, delicious
and fewer contaminants



“

I am amazed that our team with no cultivation experience, **is producing consistent quality beyond our expectations.**”

Katsuhiko Takahashi, Plant Factory Manager,
Delicious Cook Co., Ltd.



Background

Delicious Cook, a manufacturer of salads, sandwiches, soups and onigiri rice balls, found an effective way to improve quality and reduce costs when it moved indoors to grow ingredients. It procures large quantities of vegetables, rice, meats and other ingredients, and supplies these as prepared foods to convenience stores and supermarkets in the Kanto area. All processing is carried out under strict hygienic standards. In October 2015, the company established a new factory in Narashino City, Chiba Prefecture, which includes a climate-controlled chamber for growing plants indoors. This so-called vertical farm has 3 cultivation layers which add up to a total cultivation area of roughly 80 m² on a footprint of 80 m². This new initiative is used to cultivate relatively uncommon herbs, such as edible chrysanthemums and coriander, for the company's processed foods. Growing these herbs in-house ensures year-round availability of these ingredients compared to sourcing them outside the company.

The challenge

The company's strategy is to “reduce its consumption of outdoor-grown vegetables, and gradually transition to vegetables cultivated in the plant factory,” says plant factory manager Katsuhiko Takahashi. “Food safety and reliability are key issues for food manufacturers. If food becomes tainted with foreign contaminants, this may greatly inconvenience our business partners, who run convenience stores and supermarkets, and could even affect our future business.” When it is working with outdoor-grown vegetables, the company implements thorough inspections and cleaning procedures to fight contaminants, but it can never fully eliminate the risk of contamination in the form of bugs and small stones. Conversely, using vegetables cultivated in a plant factory reduces the risk of foreign contaminants and greatly reduces the inspection burden. Growing vegetables in-house also helps curb procurement costs for premium ingredients, such as fresh coriander, which is expensive when purchased in large quantities from external parties.

The solution

Delicious Cook evaluated several proposals for implementing a plant facility using LED as a light source. It ultimately adopted the proposal from CCS, a Phillips LED Horti Partner, because of the advanced LED technology and extensive training support they offered. The facility uses Philips GreenPower LED production module, an ideal solution for multi-layer cultivation. Philips advised Delicious Cook on the right light recipe: the colors, intensity and amount of light per day and over the growing cycle to use. CSS staff conducted a workshop about actual cultivation methods, and provided generous on-site support after the plant factory had begun operation.

Although the plant factory is staffed exclusively by Delicious Cook employees with no prior experience in vegetable cultivation, the process from startup to production went very smoothly. Less than a year after starting, the company is already running cultivation trials for kale, lettuce, basil, Italian parsley and other vegetables and herbs based on requests from sales. Delicious Cook hopes to supply all the vegetable ingredients for the factory in the future.

Benefits

The company is already supplying edible chrysanthemum for its soups. Because the herb is harvested in the plant factory and immediately processed in the food processing room next door, it is considerably fresher than chrysanthemum procured outside. In addition to its delicious taste and absence of contaminants, the company is impressed with the clean leaf shapes and consistent taste achieved across the seasons.

The plant factory has also helped improve the company's brand image. Existing and prospective customers who were given guided tours of the plant factory were impressed with how tasty the vegetables were and with the quality of the cutting-edge facilities. Manager Katsuhiko Takahashi proudly commented, "No one imagined that our company would be able to deliver results so quickly." As a result, Delicious Cook may well decide to add a larger plant factory in the not-too-distant future.



“

We are getting strong leaves and crisp lettuce **thanks to using Philips GreenPower LED lighting**”



Facts

Grower

Delicious Cook Co., Ltd.

Sector

City Farming

Crop

Edible chrysanthemum, coriander, kale, frilly lettuce, basil, Italian parsley, radishes

Location

Narashino 7-1-25 Chiba Prefecture, Japan

Solution

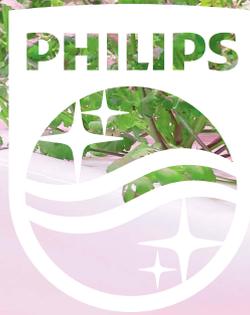
Philips GreenPower LED production module

Philips LED Horti Partner

CCS Inc.

Results

Lower risk of food contaminants, fresher and tastier vegetables and herbs, positive brand image



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