



PHILIPS



Horticulture
LED Solutions

Case study
Famifarm

Joroinen, Finland

Philips GreenPower LED toplighting

Better crops.
Healthier planet.

Philips is challenging the whole idea of growing with LEDs



“

When looking at the plant quality, **then all future investments to lighting should be LED”**

Jorma Järvinen, Grower



Background

Famifarm in Finland was established by the Grotenfelt family and traces its roots back to 1674 when it was a traditional outdoor farm. Today, the company grows lettuce and herbs, sold in pots with the Jarvikyla brand. It sells directly to the main retailers in Finland.

The company has five hectares and built its first greenhouse in 1986. Quality and sustainability are key drivers. Managing Director Jukka Pehkonen says, “We aim to deliver the best quality products on the market, so our consumers can enjoy the taste of our food and everything that can come from plants. We measure our crop quality by how good it tastes.”

Famifarm wants to work ahead of the sustainability trend, to make its crops better for nature and for people. Therefore, they grow their crops in a closed-loop system, supplying nutrients via a gutter system, and adding new nutrients as needed. They are always looking for ways to save energy, and the environment.

The challenge

Famifarm recognized the potential of LED early on. For six years they carried out trials with different lighting manufacturers to learn how to grow with LEDs and meet the challenges of their situation. Shelf life is very crucial because of the great distances in Finland, so Famifarm is always looking into ways to increase shelf life and improve the plants’ structure. One way to improve shelf life is to use a vacuum cooler to cool the lettuce to 4°C directly after harvest. Second, Famifarm wanted to find out how the red coloration of lettuce can be improved with the lower daylight levels in the winter.

And third, it can be a challenge to meet European limits for nitrate levels because the nitrate levels differ over the year as the light changes. “We are hoping that LEDs can help us with that by providing a specific spectrum to address this. We are now carrying out a full LED trial to try this,” says Pehkonen.

The solution

During its investigation of LEDs, growers from Famifarm visited Philips GrowWise and BrightBox. They were very impressed. Pehkonen says, “We find Philips a very trustworthy manufacturer because of all the experiments they do. They are challenging themselves to develop LED technology and to challenge the whole idea of growing with LED. It’s not just the lights, but also the environment, the nutritional solution, the rhythm of growing.” Based on their visits, Famifarm decided to partner with Philips to install GreenPower LED toplighting with 200–210 $\mu\text{mol}/\text{m}^2/\text{s}$ on one hectare of their greenhouse. They especially appreciate the advice they get from Philips plant specialists who speak their language. Pehkonen says, “We have been growing plants under high pressure sodium (HPS) lights for 30 years. Growing with LEDs is totally different and many things will change: climate, control, nutrition system. That’s why we are taking it step by step, so then it’s easier to go to full LED lighting in the end.”

“

We can get better coloring, better structure, tastier herbs, better shelf life and energy savings with LEDs.”

Jukka Pehkonen, Managing Director

Benefits

The most important advantage of LED lighting for Famifarm is that it allows them to use the right light which benefits the plants most and at the same time saves energy, which is important for the future. On the quality side, it allows them to get better plants and better and faster growth. “When you add more light, you can get more growth, but we can also focus on a certain spectrum of the light to control certain characteristics compared to HPS light, such as compactness,” says grower Järvinen. This allows them to get a better structure for herbs, thicker leaves and tastier crops. A better structure also results in a better shelf life and will add benefits to the consumer.

Pehkonen says, “In short we can get better coloring, better structure, tastier herbs, better shelf life, and energy savings. “Famifarm is already planning to expand the LED area and add more and more light in the future.



Facts

Grower

Famifarm

Segment

Vegetables

Crop

Lettuce and herbs

Location

Joroinen, Finland

Solution

Philips GreenPower LED toplighting

Philips LED Horti Partner

Schetelig

Results

Better coloring, better structure, tastier herbs, better shelf life, and energy savings



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Document order number: 3222 635 70653
01/2017
Data subject to change

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