

A man with grey hair, wearing a green t-shirt and a dark green apron with the 'eko' logo, is smiling and holding a red plastic basket filled with cucumbers. He is standing in a greenhouse with rows of cucumber plants. The background shows vertical LED light strips hanging from the ceiling.

PHILIPS



Horticulture
LED Solutions

Case study
Getliņi EKO

Latvia, Riga district

GreenPower LED toplighting and
GreenPower LED interlighting

Getliņi EKO produces **IMEA cucumbers** year-round in Latvia

Philips LED lighting facilitates economical, eco-friendly growth



“

The Signify plant specialist made this case a success. Signify actively shared know-how, which was important because this was our team's first experience with LED lights.”

Guntars Strauts, Getliņi EKO agronomist



Background

The Getliņi EKO greenhouses are located next to the largest municipal solid waste landfill in the Baltic States. And that is very good news for Latvians who want to enjoy fresh, local produce no matter the season. Since 2015, the landfill recycling program, which Riga and Stopini Municipalities operate, has generated heat that can be used to grow cucumbers and tomatoes year-round. The program processes biodegradable waste into biogas, which is delivered to the power unit where it is transformed into electricity and heat. The heat is then piped to the greenhouses. Getliņi EKO currently produces cucumbers and tomatoes, which it sells in its own store and through wholesalers to the leading food supermarket chains in Riga and nearby regions. The recycling program is among the most advanced in Eastern Europe and allows Getliņi EKO to be an ecologically responsible grower, along with bumblebees for pollination and white fly parasites and predatory mites as natural pest control. The company works closely with agronomists and technical specialists to ensure that its procedures are efficient.

The challenge

Getliņi EKO's agricultural successes led the company to look for ways to expand. "Latvia has four very distinct seasons," says Guntars Strauts, Getliņi EKO agronomist. "Cold winters with snow, short days and little sun, rainy autumns, blooming springs and fruitful summers. The local fruits and vegetables are grown only during summer time, which is basically three months a year. We were already growing orange and red tomatoes, even during the off-season using traditional lighting (high pressure sodium lights). We saw a business opportunity to grow cucumbers as well." For reliable advice Getliņi EKO contacted a Signify plant specialist, who suggested trialing Philips LED lighting. "The Signify plant specialist did a great job gaining our trust," says Strauts. "He proved with numbers and strong arguments that we should go beyond the traditional lighting we use for tomatoes." A Signify project at the agro university in Warsaw, Poland (SGGW) gave Getliņi EKO confidence in LED cucumber production. The trial had produced cucumbers with 60% less energy usage and 1.4 liters less water per kilo, and achieved 24.8% higher yields.

The solution

Getliņi EKO had been working with Signify's local business partner Hortilife since it started planning its greenhouses in 2011. "Hortilife and Signify helped us execute all our ideas for the cucumber project, some of them very forward thinking," says Strauts. "Our attempt to build the first full-LED cucumber greenhouse in the world was full of professional challenges. Hortilife and Signify worked together on realizing our vision and helped us solve virtually all our issues in the engineering stage."

The LED solution comprised:

- Philips GreenPower LED toplighting at 340 $\mu\text{mol/s/m}^2$
- Philips GreenPower LED interlighting installed in a double line set up at 88 $\mu\text{mol/s/m}^2$

The lighting is designed to allow intensive, energy efficient and ecologically friendly growth in the winter.

“

We needed to install lights with little heat radiation since we use heat produced by the recycling process. LED lighting was the most economical and ecologically friendly way.”

Benefits

The Philips LED lights give Getliņi EKO the means to extend the traditional Latvian May–August growth cycle to a complete off-season, November–August cycle. So Latvians can enjoy IMEA cucumbers all year round. "This is an important aspect," Staups explains, "since, as a Nordic country, Latvia has traditionally not had sufficient quality vegetable supplies in the winter and spring seasons. Our customers are very happy with our products, which regularly sell out." Although the cucumber project is still young, Getliņi EKO has already seen results that are in line with Signify's yield estimates. From September 2017 to early January 2018, Getliņi EKO harvested 146 fruits per square meter in its 3,000 square meter cucumber greenhouse. The Latvian company also expects to see energy savings from using LED lighting since it allows them to independently control light and heat in the greenhouse. "We needed to install lights with little heat radiation since we use heat produced by the recycling process. LED lighting was the most economical and ecologically friendly way."



Philips GreenPower LED toplighting

Philips GreenPower LED interlighting



"Getliņi EKO" property

Facts

Horticulturalist/grower

Getliņi EKO

Segment

Vegetables and fruits

Crop

Cucumber, variety: IMEA

Location

Latvia, Riga district

Solution

GreenPower LED toplighting and GreenPower LED interlighting

Philips LED Horti Partner

Hortilife

Results

146 cucumbers/m² harvested in 10 weeks during the winter months



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