



PHILIPS

Horticulture
LED Solutions

Case study
Agro-Inwest

Lyudinovo, Kaluga Region



Greenpower LED toplighting and
Greenpower LED interlighting

Agro-Inwest increases quality, taste and yield of tomato crops

Long term partnership with Philips plant specialists ensure
ongoing innovation



“

LED lights deliver the right light for the plant, exactly when and where the plant needs it the most, while radiating far less heat than conventional lighting. This allows us to place them closer to the plants.”

Irina Meshkova, Deputy CEO and General Director



Background

LLC Agro-Invest is one of Russia's most innovative greenhouse produce companies. In 2017-2018 they built a greenhouse the size of 40 football fields, more than 25 hectares, for growing tomatoes. They currently grow 25,000 tons of tomatoes and cucumbers, with plans to increase capacity every year. In addition, the company will expand its greenhouses by 37.5 hectares in 2018 - 2019, the fourth expansion since they opened their doors in 2015. The Agro-Invest facility is the largest modern greenhouse complex in Russia, targeting most popular online stores in Moscow and the surrounding region with its "Moe Leto" brand. Irina Meshkova is the Deputy CEO and General Director of Agro-Invest. Known for its innovative approach, strategic thinking and passion to improve crop taste and quality, Agro-Invest employs sustainable and eco-friendly processes, using *Macrolophus* insects to control entomophages and bumblebees to pollinate crops.

The challenge

Agro-Invest started off using traditional high pressure sodium lighting (HPS). However, this solution provided high levels of radiation heat rather than the more energy efficient convection heat. What is more important, HPS did not provide enough light, which is a critical commodity in producing the healthy, high quality tomatoes Agro-Invest wanted. In addition, the management of Agro-Invest was tasked with finding ways to save electricity and reduce costs, as well as reducing the loss of carbon dioxide required for photosynthesis. Above all, Agro-Invest wanted to increase the quality, taste and yield of its produce, a difficult proposition given HPS lights' limitations. The innovation-focused specialists at Agro-Invest recognized the advantages of LED lighting early on. "The future lay with LED lighting," Meshkova says. "It provides plants with the necessary light when and where it's needed. This technology ensures better yield during the darker season and allows us to significantly reduce our energy consumption."

The solution

Agro-Invest carefully researched several LED providers before choosing Philips. The Russian company installed Greenpower LED toplighting and Greenpower LED interlighting in their greenhouses.

To ensure that Agro-Invest gained sufficient technical, agricultural and lighting knowledge, Philips provided a special triad team comprising of a regional manager, a plant specialist and a technical specialist. Plant specialists from Philips worked with Agro-Invest to develop a strategy to grow tasty, high-quality tomatoes.

Benefits

Philips LED products emit far less heat in the greenhouse than conventional lighting, especially during the summer, when outside temperatures reach

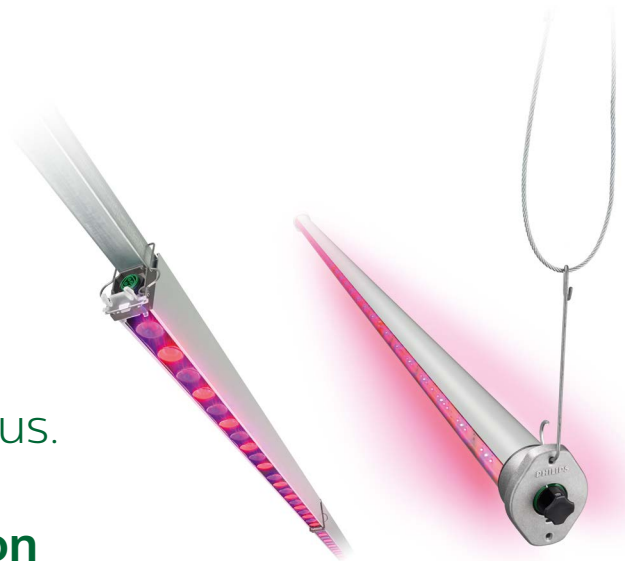
30 degrees Celsius or more in Russia. As a result, Agro-Invest has had to open fewer windows to provide ventilation in the greenhouses. Therefore, more CO₂ stays within the greenhouse to aid plant development and less CO₂ dissipates into the air. Greenpower LED toplighting, moreover, gave Agro-Invest precise control over light and temperature, a critical flexibility that helps the company grow tastier tomatoes.

LED lighting is also more energy efficient than HPS, helping Agro-Invest save up to 50% on energy costs. Such savings are expected to lead to an attractive return on investment in two and a half to three years.

“

The plant specialists have been an important benefit for us.

With their help we have been able to improve our production process.”



Philips GreenPower LED toplighting

Philips GreenPower LED interlighting



Facts

Horticulturalist/grower

Agro-Invest

Segment

Vegetables

Crop

Tomatoes

Location

Lyudinovo, Kaluga Region, Russia

Solution

Greenpower LED toplighting and Greenpower LED interlighting

Philips LED Horti Partner

Dutch partner Agrolux and Russian installer LLC ST Solution

Results

Develop tastier tomatoes with more consistent quality



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