

# Voltiris

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**9% revenue increase in fall-season  
strawberries demonstrated at  
Harvestis Hoogstraten**



## An economic analysis of Voltiris' spectral filtering modules in strawberry fall planting

In autumn 2025, Voltiris participated in a 500 m<sup>2</sup> reference trial with Harvestis on a fall planting of Elsanta strawberries. The goal: to increase revenue and reduce harvest labour in strawberries. In the trial, Voltiris showed +9% in revenue value while reducing estimated harvest labour by 12%, boosting the bottom-line in the fall period.

### KEY OUTCOMES

9% increase in revenue

12% reduction in harvest labour

€11.56/m<sup>2</sup> estimated total value creation per year

# Using spectral filtration to boost strawberry economics

Voltiris' spectral filters let photosynthetically active light (PAR) pass through to the crop, while converting heat radiation into renewable electricity. Beyond the clear benefits of sustainable energy production, extracting excess heat during high-irradiation periods provides 3-5°C cooling of the plant temperature under direct sunlight. This cooling effect is of particular interest to strawberry growers, for three reasons:

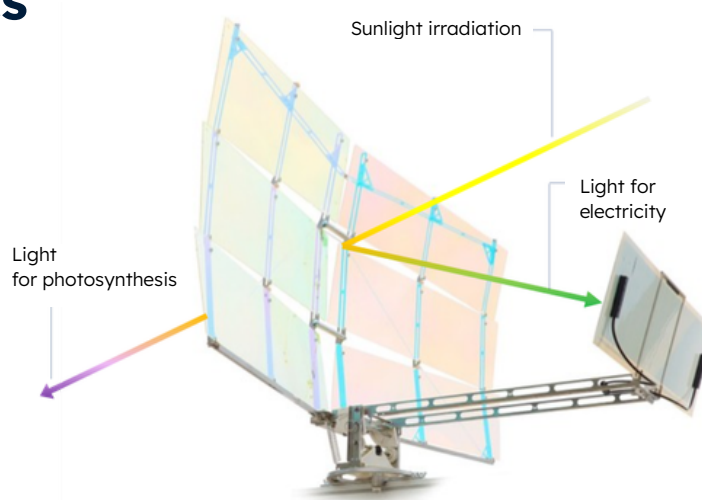


Fig.1. Schematic of a Voltiris module with lamellas that transmit plant-useful light and redirect excess light to a small solar panel.

**Cooler berries are bigger berries:** By lowering the plant temperature, strawberries under Voltiris' modules have more time to ripen and reach a bigger size. The markets prefer large berries (+27mm diameter) and are willing to pay a significant premium on the per-kilogram rate.

**Berry prices peak in late fall:** Strawberry supply drops after the summer, causing an increase in market prices in October and November. Reducing plant temperature lengthens the crop's production cycle and realises better prices.

**Reduced labour costs:** When berries grow larger, fewer fruits are needed for a kilogram. With fewer berries to be picked, labour costs go down.

In a recent agronomic trial, Voltiris has quantified the impact of these three mechanisms in a fall planting of Elsanta strawberries, running from August 14 until November 17.

## Research method

The trial consisted of two 500 m<sup>2</sup> compartments: a Voltiris test compartment compared directly with a standard greenhouse compartment under similar growing conditions. Throughout the fall cycle, weekly data was collected, including yield and berry size distribution. To assess the commercial impact, strawberry production was sorted into standard market categories: Large 2A (>31 mm), Large A (27-31 mm), and Small (<27 mm). Actual weekly Belgian auction (VBT) prices for the trial period were used as price data.

Total weekly revenues were calculated for both compartments by combining harvested volumes with the corresponding weekly market prices. Harvest labour was calculated based on the number of fruits picked, using average fruit weights per size class, assuming that the labour costs increase linearly with the number of berries picked.



## Measurement results

The trial demonstrated a clear economic benefit from spectral filtering during the fall Elsanta cultivation. Using actual 2025 market prices, the Voltiris compartment achieved a revenue uplift of approximately 9%, while reducing the estimated labour costs by 12%. These results are split below into the three mechanisms.

**Larger fruits.** An increase in fruit size was clearly visible in the trial results: the premium Large 2A class (>31mm) yield increased by +26%, while the smaller classes declined (-25% in Small, -7% in Large A). Combined, class-1 volume - all berries above 27mm - rose by 6%. As Fig.2 shows, when applying average prices per class, the improved size distribution alone generated a €0.24 higher turnover per m<sup>2</sup>, or a 2% increase in revenue compared to the reference compartment.

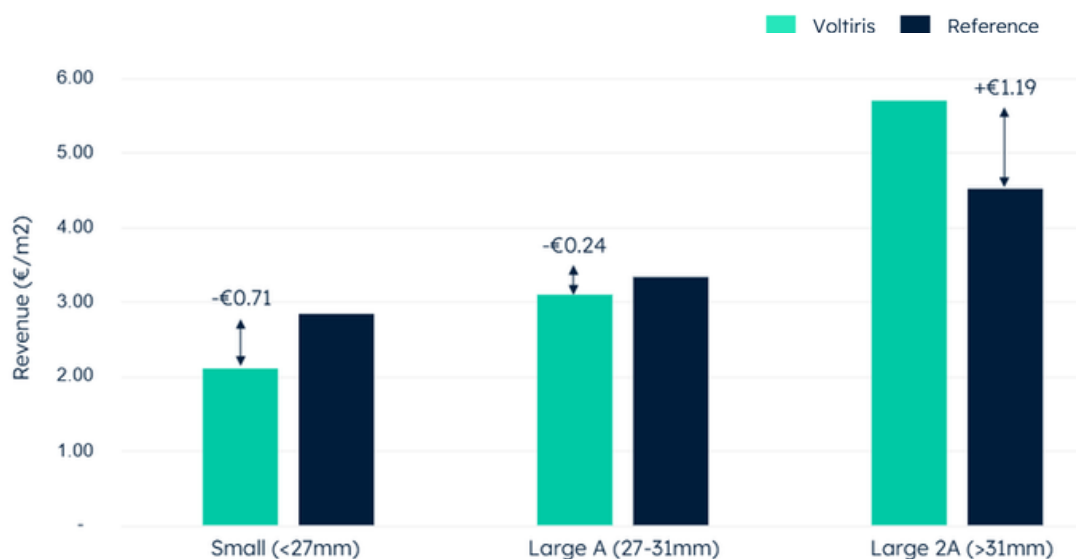


Fig.2. Revenue per size class — Voltiris vs. reference (Harvestis 2025).

**Delayed harvest.** The lower crop temperature resulted in a significant delay of the crop's production, as shown in Fig.3. The September peak (weeks 39 and 40) was flattened, and a strong third production wave appeared in November (weeks 45 to 47). This pushed the mid-harvest by seven days, a big delay. The third production wave in November was timed perfectly with traditionally high berry prices in this period.

The combined size and timing effects produced significantly higher cumulative revenue per m<sup>2</sup> over the trial period. Tested against actual market prices of 2025, the revenue uplift equalled +9%.

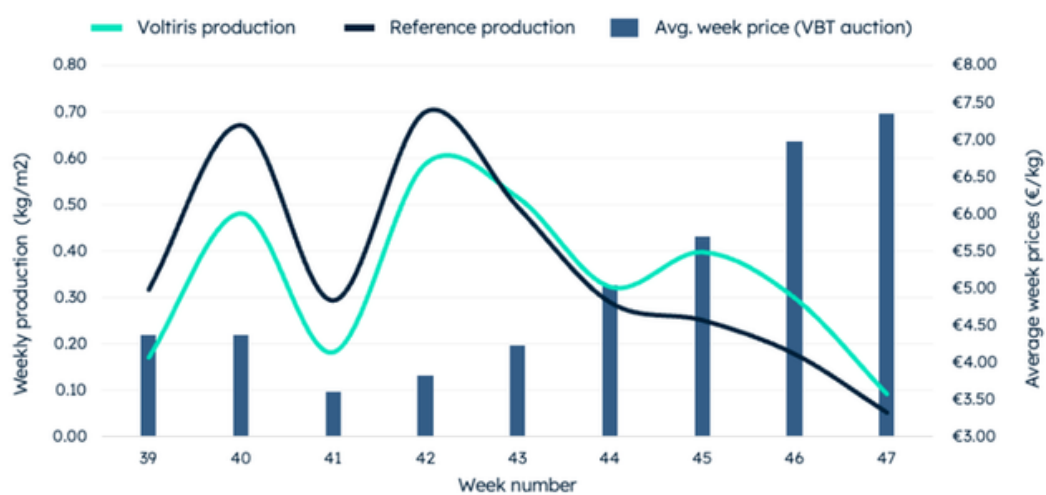


Fig.3. Weekly production and average market price — Voltiris vs. reference.

**Lower harvest labour.** Larger strawberries reduce the number of fruits that form a kilogram. By shifting production towards large fruits, harvest crews picked considerably fewer small fruits, resulting in a net reduction in harvest labour as shown in Fig.4. Compared to the reference, the total harvest labour was reduced by 12%.<sup>1</sup>

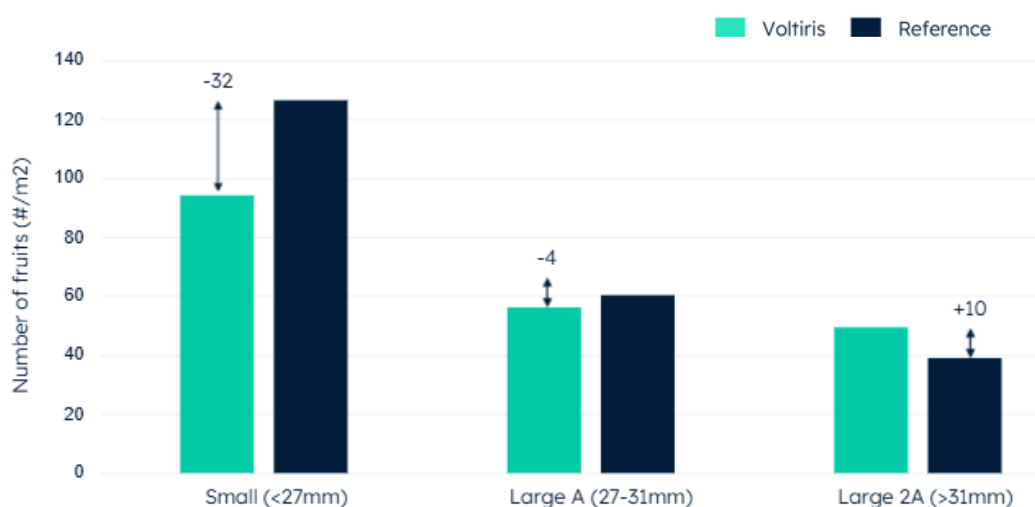


Fig.4. Number of berries per size class — Voltiris vs. reference.

<sup>1</sup>Fruit count was derived from harvested weight using fixed average fruit weights per size class. Independent trials at Delphy Improvement Center showed the same labour savings trend.

# Business Case

The Harvestis trial demonstrated a strong performance of the Voltiris system over a single fall season: a 9% increase in sales and a 12% reduction in harvest costs. These results can be extended into an indicative annual business case. As seasonal conditions vary throughout the year, this exercise should be regarded as illustrative only.

Assuming a baseline of €74/m<sup>2</sup> in annual sales and €12.50/m<sup>2</sup> in annual harvest labour costs, the Voltiris system increases annual sales by €6.66/m<sup>2</sup> and reduces labour costs by €1.50/m<sup>2</sup>. Beyond these gains, growers can expect to generate approximately 25 kWh/m<sup>2</sup> of renewable energy, adding another €3.40 of savings on electricity, tax and grid fees.<sup>2</sup> The distribution of the various gains is shown in Fig. 5.

The resulting total value creation of €11.56/m<sup>2</sup> is sufficient to pay back the system within three to five years when applying common subsidies like MEI, EIA and SIG&F.

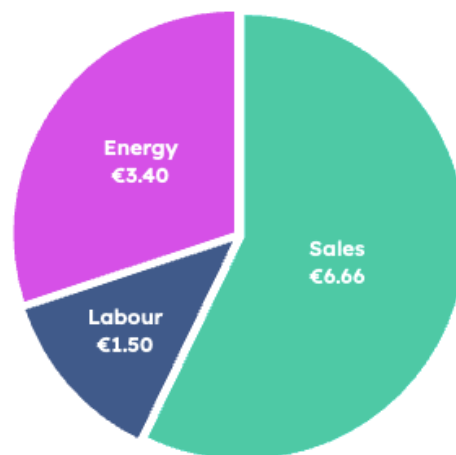
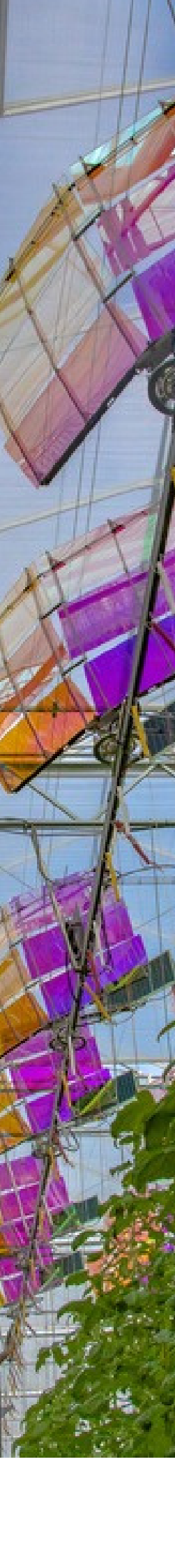


Fig.5. Illustrative impact of the three different value drivers in €/m<sup>2</sup>/yr

<sup>2</sup>Calculated using a total electricity price of €136/MWh: €73/MWh commodity price, €39/MWh energy tax, and €24/MWh variable grid fees.





# Growers Adopting Voltiris Technology at Scale

The Harvestis findings are corroborated by parallel strawberry trials at Delphy Improvement Center (Bleiswijk, Netherlands), where similar trends toward larger berry sizes and higher realised value were observed across different varieties and cultivation periods. The Delphy trials have been extended into 2026 to further complete the seasonal findings across a broader cultivation window.

## From trial to commercial-scale strawberry production

Voltiris is preparing its first commercial-scale strawberry installation with **Genson Fresh Fruits**, part of **Genson Group**, a leading Dutch strawberry grower. Nearly **2,000 Voltiris modules** are being installed at the Someren greenhouse by the end of Summer 2026.

“A cooler and more stable climate during peak summer leads to larger high quality berries and more predictable harvest timing, while the on-site energy generation adds to the sustainability profile of the operation as a whole”

**Bart Goorts**

Co-Owner and Operations Manager, Genson Fresh Fruits Someren

A commercial installation is planned near Hoogstraten in Belgium, with installation expected in the first half of 2027. Together, these projects represent more than 3,000 Voltiris modules and will validate the trial findings under real commercial growing conditions and across wider seasonal production windows.

Several subsidy routes, including MEI, EIA and SIG&F, are available to reward early-adopters of this breakthrough technology with significant financial support, which can substantially shorten payback times.



## Contact us today

Want to know what Voltiris can do in your greenhouse? Don't hesitate to reach out to the Voltiris team through the contact details below.

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