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» CASE STUDY
The Netherlands

SILI-FERT P TREATMENT AT DUTCH CUCUMBER GROWER

PERFORM | Horticulture

***Sili-Fert P** is a liquid silicon fertilizer enriched with micronutrients. The product allows plants to develop their maximal natural resistance against abiotic stress. A well-known cucumber grower in the Netherlands, wanted to take his cultivation practices and his end-products to the next level. A trial with **Sili-Fert P** was set up.*

GOAL OF TRIAL DESIGN

The trial took place in 2 greenhouses, each with their own irrigation system. In all other aspects, like size, climate, varieties, watering frequency, watering volume, both greenhouses are analogous.

- One greenhouse was treated with **Sili-Fert P** once every 2 weeks, with a dosage of 300 ml/ha.
- The other greenhouse did not receive treatment with **Sili-Fert P** and served as control.

The goal of this trial was to monitor the effect of **Sili-Fert P** on yield on the one hand, and on the quality of the fruit on the other hand.

- To monitor the effect on yield, the grower recorded the kilograms per m^2 (kg/m^2) and pieces per m^2 (pcs/m^2) harvested over a 14 week period.
- To asses the effect on quality, the average fruit weight (AFW) was also recorded over a 14 week period. The shelf life was also evaluated.

For the shelf life assessment, 10 harvestable cucumbers of the same variety of each greenhouse were collected and were weighed immediately after harvest to log their initial weight. Afterwards, the cucumbers were weighed once every other day for a period of 12 days. Weight loss is directly related to water loss from fruits, making this an important parameter to measure. Furthermore, the cucumbers were evaluated visually by classifying them as firm or mushy. The evaluations were documented with photographs.

RESULTS

After 14 weeks of cultivation, the data was statistically processed. The test showed that the average fruit weight from the cucumbers from the **Sili-Fert P** treated greenhouse was significantly higher than the AFW of the cucumbers from the control greenhouse (see table 1). The kg/m^2 and pcs/m^2 displayed an explicit trend with higher values of the **Sili-Fert P** treated greenhouse compared to the values of the control greenhouse.

THE BENEFITS

- **Increased period of firmness**
- **Less shriveling**
- **Extended shelf life**
- **More vital crop**
- **More resilient crop**

RECOMMENDED PRODUCT

Biostimulant

Enhances stress resistance

For foliar application and irrigation

Enriched with micronutrients: B, Cu, Zn, Mn & Mo

Condition	Mean Control	Mean Sili-Fert P treatment	Significance
Pcs/m²	4.89	5.30	0.602
Kg/m²	2.06	2.30	0.471
AFW	418.29	434.7	**0.043**

Table 1: Shows the means of the different parameters for both the control greenhouse and the Sili-Fert treatment greenhouse. The chosen significance level is 0.05.

Both cucumber batches lost approximately the same amount of weight over the 12 days during the shelf life trial, with a slightly better result for the batch treated with **Sili-Fert P** (0.45 g for **Sili-Fert P** treated cucumbers and 0.50 g for control cucumbers). Furthermore, a clear trend was also observed in the number of firm vs. mushy cucumbers of both batches (see graph 1).

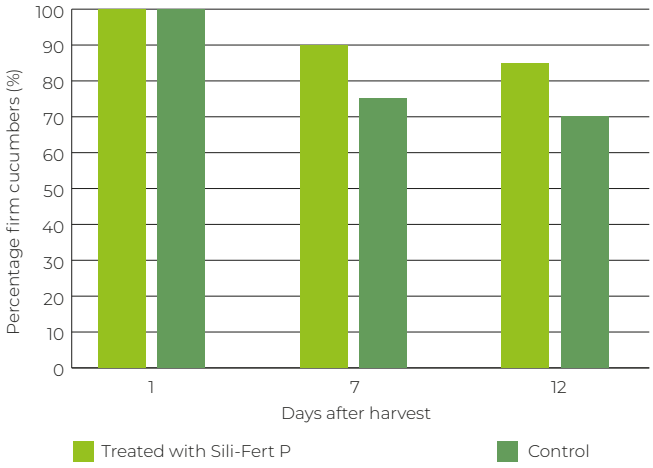

Fig 1: Firmness of cucumbers between the **Sili-Fert P** treated group and the untreated control group were compared and expressed in percentage.

Both batches start with 100% firm cucumbers, but after 7 days of storage, the control batch drops to 75% firm cucumbers, whereas the treated batch only decreases to 90%. After 12 days of storage, the control batch drops even further to 70%, while the treated batch still has 85% firm cucumbers.

CONCLUSION

Sili-Fert P has shown to have a positive impact on:

Quality
» The average fruit weight was significantly higher during the trial with **Sili-Fert P**
» More firm cucumbers after 7 and 12 days of storage

Yield
» An observable positive trend in yield, both in kg/m² as in pcs/m²

Due to these positive results, the grower will continue using **Sili-Fert P** in his greenhouse.

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