



Aranet Sensors with Selecta one

How Selecta one uses real-time data
to improve plant trials

CASE STUDY



aranet
by SAF Tehnika

Industry: Horticulture – Plant Breeding and Production

Headquarters: Stuttgart, Germany

Aranet Sensor Deployment: Germany, multiple African greenhouse locations

Selecta one, a global leader in ornamental plant breeding and production, leverages Aranet wireless sensor technology to enhance precision, accelerate innovation, and optimize environmental conditions in both research and commercial growing operations.

Aranet sensors provide real-time data across a variety of climate parameters, helping Selecta one teams—from product development in Germany to commercial farms at African greenhouse sites—make informed decisions that improve plant health, operational efficiency, and trial quality.

Challenge

Accurate monitoring in mobile trial setups

At Selecta's Rooting Station in Stuttgart, Germany, trials are often set up in specific micro-zones within large greenhouses. Conditions in these areas may differ significantly from readings captured by central greenhouse sensors.



“Our trials are mobile and can happen anywhere in the rooting station,” explains Stefan Reiner, Product Development at Selecta. “A mobile system like Aranet is essential because central sensors don’t reflect the actual conditions at the trial site.”

Solution

Data-driven flexibility with Aranet

To address this, Selecta deploys Aranet sensors directly within each trial area, adapting the sensor configuration depending on the goal—whether it's understanding light effects, optimizing temperature, or measuring substrate conditions.

In lighting trials, for example, sensors are placed under different conditions — LED, HPS, and no lighting—to track the unique environmental impact of each setup. This granular approach enables side-by-side comparisons that would be impossible with central sensors alone.

“We discovered that our intuition about shade control didn’t always match plant behavior,” adds Reiner. “Using Aranet, we found we were closing shades too early, missing out on photosynthesis. Or opening them while the plants were still heat-stressed. Data helped us correct that.”

Results

Stuttgart, Germany –Breeding and Research

- Generated heat maps to visualize temperature gradients in trial environments.
- Enabled more accurate statistical modeling – using simpler models where gradients were minimal and more complex ones when necessary. Leveraged detailed environmental data to better understand variance and reduce experimental uncertainty.

“We don’t need to use the sensors continuously—but even one deployment has allowed us to improve our trial efficiency significantly,” noted the breeding team.

African greenhouse location A

– Commercial Production

- Real-time data supports immediate decision-making and rapid climate adjustments.
- Optimized fan usage and shade control, reducing energy costs and improving labor efficiency.
- Improved consistency in plant growth and fungal disease prevention through humidity and temperature monitoring.
- Enabled smarter spray timing to reduce phytotoxicity risks.

African greenhouse location B

– Emerging Adoption

Aranet sensor usage is expanding to a second African site, where the team is beginning to integrate environmental data into growing decisions. Early results indicate similar benefits as those observed in African Greenhouse Location A.

“Aranet helped us move away from manual guesswork. Now, decisions are based on actual data—from rooftop painting to night shift oversight,” said a member of the team at the African greenhouse site.

Looking ahead

Selecta is planning further automation, including:

- Sensor-based irrigation and nutrient scheduling.
- Monitoring EC and substrate moisture for optimal root development.
- Further expansion of mobile trial monitoring and statistical modeling.

They also emphasize the importance of maintaining cost-effective sensor solutions that allow scaling across operations without compromising on data quality.



Why Aranet?

- **Mobile and Flexible** – Easily deployed with trial movements.
- **Real-Time Monitoring** – Supports prompt decisions in dynamic environments.
- **Customizable** – Sensor configurations tailored to specific experiments.
- **Visual Insights** – Enables intuitive data presentation for trials and reporting.
- **Scalable and Cost-Conscious** – Affordable enough for broad deployment.

“Our mission is to empower growers like Selecta one to move from instinct to insight. When you understand what your plants are actually experiencing—minute by minute—you can make smarter decisions that drive better outcomes.”

— **Gints Antoms, Global Business Development Director at Aranet.**

“For data-driven trials and consistent production, Aranet is our sensor platform of choice.”

— **Stefan Reiner, Product Development, Selecta one**



Design and manufactured by SAF Tehnika

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